STATE MATCH SUPPLEMENT

Florida Next Generation Sunshine State Standards

Reading and Language Arts, Mathematics, and Science
Grades 8–12

and

EXPLORE®, PLAN®, the ACT®, and WorkKeys®

July 2008

ACT®

List of Supplement Tables

Preface

This document is a supplement to the *State Match Florida Next Generation Sunshine State Standards Reading and Language Arts, Mathematics, and Science Grades 8–12 and EXPLORE, PLAN, the ACT, and WorkKeys (July 2008)*. This supplement identifies specific ACT College Readiness Standards that correspond to each Florida Standard in a side-by-side format. The left side of each page presents the Florida Standards (highlighted if measured by ACT's corresponding testing program). The right side of each page presents the specific ACT College Readiness Standard(s) and WorkKeys Level Skill(s) that correspond to each Florida Standard.

Florida Standards listed here are from the Florida Next Generation Sunshine State Standards as presented on the Florida Department of Education's website in June 2008.

Supplement
Tables 1A–1E:

Reading and Language Arts

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 5: Fluency The student demonstrates the ability to read grade level text orally with accuracy, appropriate rate, and expression.	
LA.8.1.5.1. The student will adjust reading rate based on purpose, text difficulty, form, and style.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development The student uses multiple strategies to develop grade appropriate vocabulary. The student will:	
LA.8.1.6.1. use new vocabulary that is introduced and taught directly;	
LA.8.1.6.2. listen to, read, and discuss familiar and conceptually challenging text;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Generalizations and Conclusions:
	Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
	Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw simple generalizations and conclusions using details that support the main points of more challenging passages
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.8.1.6.3. use context clues to determine meanings of unfamiliar words;	**Meanings of Words:** Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.8.1.6.4. categorize key vocabulary and identify salient features;	
LA.8.1.6.5. relate new vocabulary to familiar words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.8.1.6.6. distinguish denotative and connotative meanings of words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.8.1.6.7. identify and understand the meaning of conceptually advanced prefixes, suffixes, and root words;	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.8.1.6.8. identify advanced word/phrase relationships and their meanings;	**Meanings of Words:** Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.8.1.6.9. determine the correct meaning of words with multiple meanings in context;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.8.1.6.10. determine meanings of words, pronunciation, parts of speech, etymologies, and alternate word choices by using a dictionary, thesaurus, and digital tools; and	
LA.8.1.6.11. identify the meaning of words and phrases derived from Anglo-Saxon, Greek, and Roman mythology.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension The student uses a variety of strategies to comprehend grade level text. The student will:	
LA.8.1.7.1. use background knowledge of subject and related content areas, prereading strategies, graphic representations, and knowledge of text structure to make and confirm complex predictions of content, purpose, and organization of a reading selection;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
LA.8.1.7.2. analyze the authors purpose and/or perspective in a variety of texts and understand how they affect meaning;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension	
	Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
LA.8.1.7.3. determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details;	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Locate important details in uncomplicated passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages
LA.8.1.7.4. identify cause-and-effect relationships in text;	**Sequential, Comparative, and Cause-Effect Relationships:** Recognize clear cause-effect relationships described within a single sentence in a passage Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Identify clear cause-effect relationships in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages
LA.8.1.7.5. analyze a variety of text structures (e.g., comparison/contrast, cause/effect, chronological order, argument/support, lists) and text features (main headings with subheadings) and explain their impact on meaning in text;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages
LA.8.1.7.6. analyze and evaluate similar themes or topics by different authors across a variety of fiction and nonfiction selections;	
LA.8.1.7.7. compare and contrast elements in multiple texts (e.g., setting, characters, problems); and	
LA.8.1.7.8. use strategies to repair comprehension of grade-appropriate text when self-monitoring indicates confusion, including but not limited to rereading, checking context clues, predicting, note-making, summarizing, using graphic and semantic organizers, questioning, and clarifying by checking other sources.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction The student identifies, analyzes, and applies knowledge of the elements of a variety of fiction and literary texts to develop a thoughtful response to a literary selection. The student will:	
LA.8.2.1.1. identify, analyze, and compare the characteristics of various genres (e.g., poetry, fiction, short story, dramatic literature) as forms chosen by an author to accomplish a purpose;	
LA.8.2.1.2. locate and analyze elements of characterization, setting, and plot, including rising action, conflict, resolution, theme, and other literary elements as appropriate in a variety of fiction;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Generalizations and Conclusions:
	Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
	Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw simple generalizations and conclusions using details that support the main points of more challenging passages
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
LA.8.2.1.3. locate various literary devices (e.g., sound, meter, figurative and descriptive language), graphics, and structure and analyze how they contribute to mood and meaning in poetry;	
LA.8.2.1.4. identify and analyze universal themes and symbols across genres and historical periods, and explain their significance;	
LA.8.2.1.5. develop an interpretation of a selection and support through sustained use of examples and contextual evidence;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Generalizations and Conclusions:
	Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
	Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw simple generalizations and conclusions using details that support the main points of more challenging passages
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
LA.8.2.1.6. compare literary texts that express a universal theme, providing textual evidence (e.g., examples, details, quotations) as support for the identified theme;	
LA.8.2.1.7. locate and analyze an author's use of allusions and descriptive, idiomatic, and figurative language in a variety of literary text, identifying how word choice is used to appeal to the reader's senses and emotions, providing evidence from text to support the analysis;	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.8.2.1.8. explain how ideas, values, and themes of a literary work often reflect the historical period in which it was written;	
LA.8.2.1.9. describe changes in the English language over time, and support these descriptions with examples of literary texts; and	
LA.8.2.1.10. use interest and recommendation of others to select a balance of age and ability appropriate fiction materials to read (e.g., novels, historical fiction, mythology, poetry) to expand the core foundation of knowledge necessary to function as a fully literate member of a shared culture.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction The student identifies, analyzes, and applies knowledge of the elements of a variety of nonfiction, informational, and expository texts to demonstrate an understanding of the information presented. The student will:	
LA.8.2.2.1. locate, use, and analyze specific information from organizational text features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/guide words);	
LA.8.2.2.2. synthesize and use information from the text to state the main idea or provide relevant details;	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Locate important details in uncomplicated passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages
LA.8.2.2.3. organize information to show understanding or relationships among facts, ideas, and events (e.g., representing key points within text through charting, mapping, paraphrasing, summarizing, or comparing/contrasting);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Locate important details in uncomplicated passages
	Make simple inferences about how details are used in passages
	Locate important details in more challenging passages
	Locate and interpret minor or subtly stated details in uncomplicated passages
	Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
LA.8.2.2.4. identify and analyze the characteristics of a variety of types of text (e.g., reference works, reports, technical manuals, newspapers, magazines, biographies, periodicals, procedures, instructions, practical/functional texts); and	
LA.8.2.2.5. use interest and recommendation of others to select a variety of age and ability appropriate nonfiction materials (e.g., biographies and topical areas, such as science, music, art, history, sports, current events) to expand the core knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 1: Prewriting The student will use prewriting strategies to generate ideas and formulate a plan. The student will prewrite by:	
LA.8.3.1.1. generating ideas from multiple sources (e.g., prior knowledge, discussion with others, writers notebook, research materials, or other reliable sources) based upon teacher-directed topics and personal interests;	
LA.8.3.1.2. making a plan for writing that addresses purpose, audience, main idea, logical sequence, and time frame for completion; and	
LA.8.3.1.3. using organizational strategies and tools (e.g., technology, spreadsheet, outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to develop a personal organizational style.	
STANDARD 2: Drafting The student will write a draft appropriate to the topic, audience, and purpose. The student will draft writing by:	
LA.8.3.2.1. developing ideas from the prewriting plan using primary and secondary sources appropriate to the purpose and audience;	
LA.8.3.2.2. establishing a logical organizational pattern with supporting details that are substantial, specific, and relevant; and	
LA.8.3.2.3. analyzing language techniques of professional authors (rhythm, varied sentence structure) to develop a personal style, demonstrating a command of language with freshness of expression.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising The student will revise and refine the draft for clarity and effectiveness. The student will revise by:	
LA.8.3.3.1. evaluating the draft for development of ideas and content, logical organization, voice, point of view, word choice, and sentence variation;	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”)

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
LA.8.3.3.2. creating clarity and logic by maintaining central theme, idea, or unifying point and developing relationships among ideas;	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
LA.8.3.3.3. creating precision and interest by elaborating ideas through supporting details (e.g., facts, statistics, expert opinions, anecdotes), a variety of sentence structures, creative language devices, and modifying word choices using resources and reference materials (e.g., dictionary, thesaurus); and	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
LA.8.3.3.4. applying appropriate tools or strategies to evaluate and refine the draft (e.g., peer review, checklists, rubrics).	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions The student will edit and correct the draft for standard language conventions. The student will edit for correct use of:	
LA.8.3.4.1. spelling, using spelling rules, orthographic patterns, generalizations, knowledge of root words, prefixes, suffixes, and knowledge of Greek and Latin root words and using a dictionary, thesaurus, or other resources as necessary;	
LA.8.3.4.2. capitalization, including names of academic courses (e.g., Algebra I) and proper adjectives (e.g., German shepherd, Italian restaurant);	
LA.8.3.4.3. punctuation, including commas, colons, semicolons, quotation marks, and apostrophes;	**Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
LA.8.3.4.4. the eight parts of speech (noun, pronoun, verb, adverb, adjective, conjunction, preposition, interjection), regular and irregular verbs, and pronoun agreement; and	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
	Conventions of Usage: Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of*
LA.8.3.4.5. subject/verb agreement, noun/pronoun agreement.	**Conventions of Usage:** Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences
STANDARD 5: Publishing The student will write a final product for the intended audience. The student will:	
LA.8.3.5.1. prepare writing using technology in a format appropriate to audience and purpose (e.g., manuscript, multimedia);	
LA.8.3.5.2. use elements of spacing and design for graphics (e.g., tables, drawings, charts, graphs) when applicable to enhance the appearance of the document; and	
LA.8.3.5.3. share the writing with the intended audience.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 4: Writing Applications	
STANDARD 1: Creative The student develops and demonstrates creative writing. The student will write:	
LA.8.4.1.1. narrative accounts with an engaging plot (including rising action, conflict, suspense, climax, falling action and resolution), and that use a range of appropriate strategies and specific narrative action (e.g., dialogue, movement, gestures, expressions) and include well-chosen details using both narrative and descriptive strategies (e.g., relevant dialogue, specific action, physical description, background description, comparison/contrast of characters); and	
LA.8.4.1.2. a variety of expressive forms (e.g., realistic fiction, one-act play, suspense story, poetry) that, according to the type of writing employed, incorporate figurative language, rhythm, dialogue, characterization, plot, and appropriate format.	
STANDARD 2: Informative The student develops and demonstrates technical writing that provides information related to real-world tasks. The student will:	
LA.8.4.2.1. write in a variety of informational/expository forms (e.g., summaries, procedures, instructions, experiments, rubrics, how-to manuals, assembly instructions);	
LA.8.4.2.2. record information (e.g., observations, notes, lists, charts, legends) related to a topic, including visual aids to organize and record information, as appropriate, and attribute sources of information;	
LA.8.4.2.3. write specialized informational/expository essays (e.g., process, description, explanation, comparison/ contrast, problem/solution) that include a thesis statement, supporting details, an organizational structure particular to its type, and introductory, body, and concluding paragraphs;	
LA.8.4.2.4. write a variety of informal communications (e.g., friendly letters, thank-you notes, messages) and formal communications (e.g., conventional business letters, invitations) that follow a format and that have a clearly stated purpose and that include the date, proper salutation, body, closing and signature; and	
LA.8.4.2.5. write detailed directions to unfamiliar locations using cardinal and ordinal directions, landmarks, streets, and distances, and create an accompanying map.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 4: Writing Applications	
STANDARD 3: Persuasive The student develops and demonstrates persuasive writing that is used for the purpose of influencing the reader. The student will:	
LA.8.4.3.1. write persuasive text (e.g., advertisement, speech, essay, public service announcement) that establishes and develops a controlling idea, and supports arguments for the validity of the proposed idea with detailed evidence; and	
LA.8.4.3.2. include persuasive techniques (e.g., word choice, repetition, emotional appeal, hyperbole, appeal to authority, celebrity endorsement, rhetorical question, irony, symbols, glittering generalities, card stacking).	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE College Readiness Standards
Strand 5: Communication	
STANDARD 1: Penmanship The student engages in the writing process and writes to communicate ideas and experiences.	
LA.8.5.1.1. The student will use fluent and legible handwriting skills.	
STANDARD 2: Listening and Speaking The student effectively applies listening and speaking strategies. The student will:	
LA.8.5.2.1. demonstrate effective listening skills and behaviors for a variety of purposes, and demonstrate understanding by paraphrasing and/or summarizing;	
LA.8.5.2.2. use effective listening and speaking strategies for informal and formal discussions, connecting to and building on the ideas of a previous speaker and respecting the viewpoints of others when identifying bias or faulty logic;	
LA.8.5.2.3. select and use a variety of creative oral language techniques for clarity and effect (e.g., connotation, denotation, hyperbole, understatement);	
LA.8.5.2.4. research, organize, and effectively deliver speeches to entertain, inform, and persuade; and	
LA.8.5.2.5. demonstrate language choices, body language, eye contact, gestures, and appropriate use of graphics and available technology.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 1: Informational Text The student comprehends the wide array of informational text that is part of our day to day experiences. The student will:	
LA.8.6.1.1. explain how text features (e.g., charts, maps, diagrams, sub-headings, captions, illustrations, graphs) aid the reader's understanding;	
LA.8.6.1.2. use information from a variety of consumer (e.g., warranties, instructional manuals), workplace (e.g., applications, contracts) and other documents to explain a situation and justify a decision; and	
LA.8.6.1.3. create a technical manual or solve a problem.	
STANDARD 2: Research Process The student uses a systematic process for the collection, processing, and presentation of information. The student will:	
LA.8.6.2.1. select a topic and develop a search plan with multiple research strategies, and apply evaluative criteria (e.g., scope and depth of content, authority, reputation of author/publisher, objectivity, freedom from bias) to assess appropriateness of resources;	
LA.8.6.2.2. assess, organize, synthesize, and evaluate the validity and reliability of information in text, using a variety of techniques by examining several sources of information, including both primary and secondary sources;	
LA.8.6.2.3. write an informational report that includes a focused topic, appropriate facts and relevant details, a logical sequence, a concluding statement, and a list of sources used; and	
LA.8.6.2.4. understand the importance of legal and ethical practices, including laws regarding libel, slander, copyright, and plagiarism in the use of mass media and digital sources, know the associated consequences, and comply with the law.	
STANDARD 3: Media Literacy The student develops and demonstrates an understanding of media literacy as a life skill that is integral to informed decision making. The student will:	
LA.8.6.3.1. analyze ways that production elements (e.g., graphics, color, motion, sound, digital technology) affect communication across the media;	
LA.8.6.3.2. demonstrate the ability to select and ethically use print and nonprint media appropriate for the purpose, occasion, and audience to develop into a formal presentation; and	
LA.8.6.3.3. distinguish between propaganda and ethical reasoning strategies in print and nonprint media.	

TABLE 1A

FLORIDA Grade 8 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 4: Technology The student develops the essential technology skills for using and understanding conventional and current tools, materials and processes. The student will:	
LA.8.6.4.1. use appropriate available technologies to enhance communication and achieve a purpose (e.g., video, digital technology); and	
LA.8.6.4.2. evaluate and apply digital tools (e.g., word processing, multimedia authoring, web tools, graphic organizers) to publications and presentations.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 5: Fluency The student demonstrates the ability to read grade level text orally with accuracy, appropriate rate, and expression.	
LA.910.1.5.1. The student will adjust reading rate based on purpose, text difficulty, form, and style.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development The student uses multiple strategies to develop grade appropriate vocabulary. The student will:	
LA.910.1.6.1. use new vocabulary that is introduced and taught directly;	
LA.910.1.6.2. listen to, read, and discuss familiar and conceptually challenging text;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Generalizations and Conclusions:
	Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
	Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw simple generalizations and conclusions using details that support the main points of more challenging passages
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.910.1.6.3. use context clues to determine meanings of unfamiliar words;	**Meanings of Words:** Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.910.1.6.4. categorize key vocabulary and identify salient features;	
LA.910.1.6.5. relate new vocabulary to familiar words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.910.1.6.6. distinguish denotative and connotative meanings of words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.910.1.6.7. identify and understand the meaning of conceptually advanced prefixes, suffixes, and root words;	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.910.1.6.8. identify advanced word/phrase relationships and their meanings;	**Meanings of Words:** Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.910.1.6.9. determine the correct meaning of words with multiple meanings in context;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.910.1.6.10. determine meanings of words, pronunciation, parts of speech, etymologies, and alternate word choices by using a dictionary, thesaurus, and digital tools; and	
LA.910.1.6.11. identify the meaning of words and phrases from other languages commonly used by writers of English (e.g., ad hoc, post facto, RSVP).	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension The student uses a variety of strategies to comprehend grade level text. The student will:	
LA.910.1.7.1. use background knowledge of subject and related content areas, prereading strategies (e.g., previewing, discussing, generating questions), text features, and text structure to make and confirm complex predictions of content, purpose, and organization of a reading selection;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
LA.910.1.7.2. analyze the authors purpose and/or perspective in a variety of text and understand how they affect meaning;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension	
	Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
LA.910.1.7.3. determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details;	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Locate important details in uncomplicated passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages
LA.910.1.7.4. identify cause-and-effect relationships in text;	**Sequential, Comparative, and Cause-Effect Relationships:** Recognize clear cause-effect relationships described within a single sentence in a passage Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Identify clear cause-effect relationships in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages
LA.910.1.7.5. analyze a variety of text structures (e.g., comparison/contrast, cause/effect, chronological order, argument/support, lists) and text features (main headings with subheadings) and explain their impact on meaning in text;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages
LA.910.1.7.6. analyze and evaluate similar themes or topics by different authors across a variety of fiction and nonfiction selections;	
LA.910.1.7.7. compare and contrast elements in multiple texts; and	
LA.910.1.7.8. use strategies to repair comprehension of grade-appropriate text when self-monitoring indicates confusion, including but not limited to rereading, checking context clues, predicting, note-making, summarizing, using graphic and semantic organizers, questioning, and clarifying by checking other sources.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction The student identifies, analyzes, and applies knowledge of the elements of a variety of fiction and literary texts to develop a thoughtful response to a literary selection. The student will:	
LA.910.2.1.1. analyze and compare historically and culturally significant works of literature, identifying the relationships among the major genres (e.g., poetry, fiction, nonfiction, short story, dramatic literature, essay) and the literary devices unique to each, and analyze how they support and enhance the theme and main ideas of the text;	
LA.910.2.1.2. analyze and compare a variety of traditional, classical, and contemporary literary works, and identify the literary elements of each (e.g., setting, plot, characterization, conflict);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
LA.910.2.1.3. explain how meaning is enhanced through various features of poetry, including sound (e.g., rhythm, repetition, alliteration, consonance, assonance), structure (e.g., meter, rhyme scheme), and graphic elements (e.g., line length, punctuation, word position);	
LA.910.2.1.4. identify and analyze universal themes and symbols across genres and historical periods, and explain their significance;	
LA.910.2.1.5. analyze and develop an interpretation of a literary work by describing an author's use of literary elements (e.g., theme, point of view, characterization, setting, plot), and explain and analyze different elements of figurative language (e.g., simile, metaphor, personification, hyperbole, symbolism, allusion, imagery);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
LA.910.2.1.6. create a complex, multi-genre response to the reading of two or more literary works, describing and analyzing an author's use of literary elements (e.g., theme, point of view, characterization, setting, plot), figurative language (e.g., simile, metaphor, personification, hyperbole, symbolism, allusion, imagery), and analyzing an author's development of time and sequence through the use of complex literary devices such as foreshadowing and flashback;	
LA.910.2.1.7. analyze, interpret, and evaluate an author's use of descriptive language (e.g., tone, irony, mood, imagery, pun, alliteration, onomatopoeia, allusion), figurative language (e.g., symbolism, metaphor, personification, hyperbole), common idioms, and mythological and literary allusions, and explain how they impact meaning in a variety of texts;	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
LA.910.2.1.8. explain how ideas, values, and themes of a literary work often reflect the historical period in which it was written;	
LA.910.2.1.9. identify, analyze, and compare the differences in English language patterns and vocabulary choices of contemporary and historical texts; and	
LA.910.2.1.10. select a variety of age and ability appropriate fiction materials to read based on knowledge of authors' styles, themes, and genres to expand the core foundation of knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction The student identifies, analyzes, and applies knowledge of the elements of a variety of nonfiction, informational, and expository texts to demonstrate an understanding of the information presented. The student will:	
LA.910.2.2.1. analyze and evaluate information from text features (e.g., transitional devices, table of contents, glossary, index, bold or italicized text, headings, charts and graphs, illustrations, subheadings);	
LA.910.2.2.2. use information from the text to answer questions or to state the main idea or provide relevant details;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Generalizations and Conclusions:
	Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
	Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages
	Draw simple generalizations and conclusions using details that support the main points of more challenging passages
	Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
LA.910.2.2.3. organize information to show understanding or relationships among facts, ideas, and events (e.g., representing key points within text through charting, mapping, paraphrasing, summarizing, comparing, contrasting, or outlining);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
LA.910.2.2.4. identify and analyze the characteristics of a variety of types of text (e.g., references, reports, technical manuals, articles, editorials, primary source historical documents, periodicals, job-related materials, practical/ functional text); and	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
LA.910.2.2.5. select a variety of age and ability appropriate nonfiction materials (e.g., biographies and topical areas, such as science, music, art, history, sports, current events) to expand the core knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 1: Prewriting The student will use prewriting strategies to generate ideas and formulate a plan. The student will prewrite by:	
LA.910.3.1.1. generating ideas from multiple sources (e.g., brainstorming, notes, journals, discussion, research materials or other reliable sources) based upon teacher-directed topics and personal interests;	
LA.910.3.1.2. making a plan for writing that addresses purpose, audience, a controlling idea, logical sequence, and time frame for completion; and	
LA.910.3.1.3. using organizational strategies and tools (e.g., technology, spreadsheet, outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to develop a personal organizational style.	
STANDARD 2: Drafting The student will write a draft appropriate to the topic, audience, and purpose. The student will draft writing by:	
LA.910.3.2.1. developing ideas from the prewriting plan using primary and secondary sources appropriate to the purpose and audience;	
LA.910.3.2.2. establishing a logical organizational pattern with supporting details that are substantial, specific, and relevant; and	
LA.910.3.2.3. analyzing language techniques of professional authors (e.g., figurative language, denotation, connotation) to establish a personal style, demonstrating a command of language with confidence of expression.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising The student will revise and refine the draft for clarity and effectiveness. The student will revise by:	
LA.910.3.3.1. evaluating the draft for development of ideas and content, logical organization, voice, point of view, word choice, and sentence variation;	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”)

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
LA.910.3.3.2. creating clarity and logic by maintaining central theme, idea, or unifying point and developing meaningful relationships among ideas;	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
LA.910.3.3.3. creating precision and interest by elaborating ideas through supporting details (e.g., facts, statistics, expert opinions, anecdotes), a variety of sentence structures, creative language devices, and modifying word choices using resources and reference materials (e.g., dictionary, thesaurus) to select more effective and precise language; and	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement
LA.910.3.3.4. applying appropriate tools or strategies to evaluate and refine the draft (e.g., peer review, checklists, rubrics).	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions The student will edit and correct the draft for standard language conventions. The student will edit for correct use of:	
LA.910.3.4.1. spelling, using spelling rules, orthographic patterns, generalizations, knowledge of root words, prefixes, suffixes, knowledge of Greek, Latin, and Anglo-Saxon root words, and knowledge of foreign words commonly used in English (laissez faire, croissant);	
LA.910.3.4.2. capitalization, including names of academic courses and proper adjectives;	
LA.910.3.4.3. punctuation, including commas, colons, semicolons, apostrophes, dashes, quotation marks, and underlining or italics;	**Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons
LA.910.3.4.4. possessives, subject/verb agreement, comparative and superlative adjectives and adverbs, and noun/pronoun agreement; and	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences **Conventions of Punctuation:** Use apostrophes to indicate simple possessive nouns

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
LA.910.3.4.5. sentence formation, including absolutes and absolute phrases, infinitives and infinitive phrases, and use of fragments for effect.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems
STANDARD 5: Publishing The student will write a final product for the intended audience. The student will:	
LA.910.3.5.1. prepare writing using technology in a format appropriate to the purpose (e.g., for display, multimedia);	
LA.910.3.5.2. include such techniques as principle of design (e.g., margins, tabs, spacing, columns) and graphics (e.g., drawings, charts, graphs); and	
LA.910.3.5.3. share with others or submit for publication.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE English College Readiness Standards
Strand 4: Writing Applications	
STANDARD 1: Creative The student develops and demonstrates creative writing. The student will:	
LA.910.4.1.1. write in a variety of expressive and reflective forms that use a range of appropriate strategies and specific narrative techniques, employ literary devices, and sensory description; and	
LA.910.4.1.2. incorporate figurative language, emotions, gestures, rhythm, dialogue, characterization, plot, and appropriate format.	
STANDARD 2: Informative The student develops and demonstrates technical writing that provides information related to real-world tasks. The student will:	
LA.910.4.2.1. write in a variety of informational/expository forms, including a variety of technical documents (e.g., how-to-manuals, procedures, assembly directions);	
LA.910.4.2.2. record information and ideas from primary and/or secondary sources accurately and coherently, noting the validity and reliability of these sources and attributing sources of information;	
LA.910.4.2.3. write informational/expository essays that speculate on the causes and effects of a situation, establish the connection between the postulated causes or effects, offer evidence supporting the validity of the proposed causes or effects, and include introductory, body, and concluding paragraphs;	
LA.910.4.2.4. write a business letter and/or memo that presents information purposefully and succinctly to meet the needs of the intended audience, following a conventional format (e.g., block, modified block, memo, email);	
LA.910.4.2.5. write detailed travel directions and design an accompanying graphic using the cardinal and ordinal directions, landmarks, streets and highways, and distances; and	
LA.910.4.2.6. write a work-related document (e.g., application, resume, meeting minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation).	
STANDARD 3: Persuasive The student develops and demonstrates persuasive writing that is used for the purpose of influencing the reader. The student will:	
LA.910.4.3.1. write essays that state a position or claim, present detailed evidence, examples, and reasoning to support effective arguments and emotional appeals, and acknowledge and refute opposing arguments; and	
LA.910.4.3.2. include persuasive techniques.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE College Readiness Standards
Strand 5: Communication	
STANDARD 1: Penmanship The student engages in the writing process and writes to communicate ideas and experiences.	
LA.910.5.1.1. The student will use fluent and legible handwriting skills.	
STANDARD 2: Listening and Speaking The student effectively applies listening and speaking strategies. The student will:	
LA.910.5.2.1. select and use appropriate listening strategies according to the intended purpose (e.g., solving problems, interpreting and evaluating the techniques and intent of a presentation);	
LA.910.5.2.2. research and organize information for oral communication appropriate for the occasion, audience, and purpose (e.g., class discussions, entertaining, informative, persuasive, or technical presentations);	
LA.910.5.2.3. use appropriate eye contact, body movements, voice register and oral language choices for audience engagement in formal and informal speaking situations;	
LA.910.5.2.4. use an engaging introduction and conclusion and the use of figurative language to reinforce the intended message; and	
LA.910.5.2.5. research and organize information that integrates appropriate media into presentations for oral communication (e.g., digital presentations, charts, photos, primary sources, webcasts).	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 1: Informational Text The student comprehends the wide array of informational text that is part of our day to day experiences. The student will:	
LA.910.6.1.1. explain how text features (e.g., charts, maps, diagrams, sub-headings, captions, illustrations, graphs) aid the reader's understanding;	
LA.910.6.1.2. analyze the structure and format (e.g., diagrams, graphics, fonts) of functional workplace, consumer, or technical documents; and	
LA.910.6.1.3. use the knowledge to a create workplace, consumer, or technical document.	
STANDARD 2: Research Process The student uses a systematic process for the collection, processing, and presentation of information. The student will:	
LA.910.6.2.1. select a topic and develop a comprehensive flexible search plan, and analyze and apply evaluative criteria (e.g., objectivity, freedom from bias, topic format) to assess appropriateness of resources;	
LA.910.6.2.2. organize, synthesize, analyze, and evaluate the validity and reliability of information from multiple sources (including primary and secondary sources) to draw conclusions using a variety of techniques, and correctly use standardized citations;	
LA.910.6.2.3. write an informational report that integrates information and makes distinctions between the relative value and significance of specific data, facts, and ideas; and	
LA.910.6.2.4. understand the importance of legal and ethical practices, including laws regarding libel, slander, copyright, and plagiarism in the use of mass media and digital sources, know the associated consequences, and comply with the law.	
STANDARD 3: Media Literacy The student develops and demonstrates an understanding of media literacy as a life skill that is integral to informed decision making. The student will:	
LA.910.6.3.1. distinguish between propaganda and ethical reasoning strategies in print and nonprint media;	
LA.910.6.3.2. ethically use mass media and digital technology in assignments and presentations, citing sources according to standardized citation styles; and	
LA.910.6.3.3. demonstrate the ability to select print and nonprint media appropriate for the purpose, occasion, and audience to develop into a formal presentation.	

TABLE 1B

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	EXPLORE College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 4: Technology The student develops the essential technology skills for using and understanding conventional and current tools, materials and processes. The student will:	
LA.910.6.4.1. use appropriate available technologies to enhance communication and achieve a purpose (e.g., video, digital technology); and	
LA.910.6.4.2. routinely use digital tools for publication, communication and productivity.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 5: Fluency The student demonstrates the ability to read grade level text orally with accuracy, appropriate rate, and expression.	
LA.910.1.5.1. The student will adjust reading rate based on purpose, text difficulty, form, and style.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development The student uses multiple strategies to develop grade appropriate vocabulary. The student will:	
LA.910.1.6.1. use new vocabulary that is introduced and taught directly;	
LA.910.1.6.2. listen to, read, and discuss familiar and conceptually challenging text;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages Locate and interpret minor or subtly stated details in more challenging passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages Order sequences of events in more challenging passages Understand the dynamics between people, ideas, and so on in more challenging passages Understand implied or subtly stated cause-effect relationships in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.910.1.6.3. use context clues to determine meanings of unfamiliar words;	**Meanings of Words:** Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.910.1.6.4. categorize key vocabulary and identify salient features;	
LA.910.1.6.5. relate new vocabulary to familiar words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.910.1.6.6. distinguish denotative and connotative meanings of words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.910.1.6.7. identify and understand the meaning of conceptually advanced prefixes, suffixes, and root words;	
LA.910.1.6.8. identify advanced word/phrase relationships and their meanings;	**Meanings of Words:** Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.910.1.6.9. determine the correct meaning of words with multiple meanings in context;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.910.1.6.10. determine meanings of words, pronunciation, parts of speech, etymologies, and alternate word choices by using a dictionary, thesaurus, and digital tools; and	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.910.1.6.11. identify the meaning of words and phrases from other languages commonly used by writers of English (e.g., ad hoc, post facto, RSVP).	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension The student uses a variety of strategies to comprehend grade level text. The student will:	
LA.910.1.7.1. use background knowledge of subject and related content areas, prereading strategies (e.g., previewing, discussing, generating questions), text features, and text structure to make and confirm complex predictions of content, purpose, and organization of a reading selection;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.910.1.7.2. analyze the authors purpose and/or perspective in a variety of text and understand how they affect meaning;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension	
	Supporting Details: Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
LA.910.1.7.3. determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details;	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs Summarize events and ideas in virtually any passage **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Locate important details in uncomplicated passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Locate and interpret minor or subtly stated details in more challenging passages
LA.910.1.7.4. identify cause-and-effect relationships in text;	**Sequential, Comparative, and Cause-Effect Relationships:** Recognize clear cause-effect relationships described within a single sentence in a passage Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Identify clear cause-effect relationships in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages Understand implied or subtly stated cause-effect relationships in more challenging passages
LA.910.1.7.5. analyze a variety of text structures (e.g., comparison/contrast, cause/effect, chronological order, argument/support, lists) and text features (main headings with subheadings) and explain their impact on meaning in text;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension	
LA.910.1.7.6. analyze and evaluate similar themes or topics by different authors across a variety of fiction and nonfiction selections;	
LA.910.1.7.7. compare and contrast elements in multiple texts; and	
LA.910.1.7.8. use strategies to repair comprehension of grade-appropriate text when self-monitoring indicates confusion, including but not limited to rereading, checking context clues, predicting, note-making, summarizing, using graphic and semantic organizers, questioning, and clarifying by checking other sources.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction The student identifies, analyzes, and applies knowledge of the elements of a variety of fiction and literary texts to develop a thoughtful response to a literary selection. The student will:	
LA.910.2.1.1. analyze and compare historically and culturally significant works of literature, identifying the relationships among the major genres (e.g., poetry, fiction, nonfiction, short story, dramatic literature, essay) and the literary devices unique to each, and analyze how they support and enhance the theme and main ideas of the text;	
LA.910.2.1.2. analyze and compare a variety of traditional, classical, and contemporary literary works, and identify the literary elements of each (e.g., setting, plot, characterization, conflict);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Locate and interpret minor or subtly stated details in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Order sequences of events in more challenging passages
	Understand the dynamics between people, ideas, and so on in more challenging passages
	Understand implied or subtly stated cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.910.2.1.3. explain how meaning is enhanced through various features of poetry, including sound (e.g., rhythm, repetition, alliteration, consonance, assonance), structure (e.g., meter, rhyme scheme), and graphic elements (e.g., line length, punctuation, word position);	
LA.910.2.1.4. identify and analyze universal themes and symbols across genres and historical periods, and explain their significance;	
LA.910.2.1.5. analyze and develop an interpretation of a literary work by describing an author's use of literary elements (e.g., theme, point of view, characterization, setting, plot), and explain and analyze different elements of figurative language (e.g., simile, metaphor, personification, hyperbole, symbolism, allusion, imagery);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Locate simple details at the sentence and paragraph level in uncomplicated passages
	Recognize a clear function of a part of an uncomplicated passage
	Locate important details in uncomplicated passages
	Make simple inferences about how details are used in passages
	Locate important details in more challenging passages
	Locate and interpret minor or subtly stated details in uncomplicated passages
	Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
	Locate and interpret minor or subtly stated details in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Order sequences of events in more challenging passages
	Understand the dynamics between people, ideas, and so on in more challenging passages
	Understand implied or subtly stated cause-effect relationships in more challenging passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Meanings of Words: Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.910.2.1.6. create a complex, multi-genre response to the reading of two or more literary works, describing and analyzing an author's use of literary elements (e.g., theme, point of view, characterization, setting, plot), figurative language (e.g., simile, metaphor, personification, hyperbole, symbolism, allusion, imagery), and analyzing an author's development of time and sequence through the use of complex literary devices such as foreshadowing and flashback;	

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FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
LA.910.2.1.7. analyze, interpret, and evaluate an author's use of descriptive language (e.g., tone, irony, mood, imagery, pun, alliteration, onomatopoeia, allusion), figurative language (e.g., symbolism, metaphor, personification, hyperbole), common idioms, and mythological and literary allusions, and explain how they impact meaning in a variety of texts;	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.910.2.1.8. explain how ideas, values, and themes of a literary work often reflect the historical period in which it was written;	
LA.910.2.1.9. identify, analyze, and compare the differences in English language patterns and vocabulary choices of contemporary and historical texts; and	
LA.910.2.1.10. select a variety of age and ability appropriate fiction materials to read based on knowledge of authors' styles, themes, and genres to expand the core foundation of knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

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FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction The student identifies, analyzes, and applies knowledge of the elements of a variety of nonfiction, informational, and expository texts to demonstrate an understanding of the information presented. The student will:	
LA.910.2.2.1. analyze and evaluate information from text features (e.g., transitional devices, table of contents, glossary, index, bold or italicized text, headings, charts and graphs, illustrations, subheadings);	
LA.910.2.2.2. use information from the text to answer questions or to state the main idea or provide relevant details;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Locate and interpret minor or subtly stated details in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Order sequences of events in more challenging passages
	Understand the dynamics between people, ideas, and so on in more challenging passages
	Understand implied or subtly stated cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.910.2.2.3. organize information to show understanding or relationships among facts, ideas, and events (e.g., representing key points within text through charting, mapping, paraphrasing, summarizing, comparing, contrasting, or outlining);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Locate important details in more challenging passages
	Locate and interpret minor or subtly stated details in uncomplicated passages
	Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
	Locate and interpret minor or subtly stated details in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Order sequences of events in more challenging passages
	Understand the dynamics between people, ideas, and so on in more challenging passages
	Understand implied or subtly stated cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.910.2.2.4. identify and analyze the characteristics of a variety of types of text (e.g., references, reports, technical manuals, articles, editorials, primary source historical documents, periodicals, job-related materials, practical/ functional text); and	
LA.910.2.2.5. select a variety of age and ability appropriate nonfiction materials (e.g., biographies and topical areas, such as science, music, art, history, sports, current events) to expand the core knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 3: Writing Process	
STANDARD 1: Prewriting The student will use prewriting strategies to generate ideas and formulate a plan. The student will prewrite by:	
LA.910.3.1.1. generating ideas from multiple sources (e.g., brainstorming, notes, journals, discussion, research materials or other reliable sources) based upon teacher-directed topics and personal interests;	
LA.910.3.1.2. making a plan for writing that addresses purpose, audience, a controlling idea, logical sequence, and time frame for completion; and	
LA.910.3.1.3. using organizational strategies and tools (e.g., technology, spreadsheet, outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to develop a personal organizational style.	
STANDARD 2: Drafting The student will write a draft appropriate to the topic, audience, and purpose. The student will draft writing by:	
LA.910.3.2.1. developing ideas from the prewriting plan using primary and secondary sources appropriate to the purpose and audience;	
LA.910.3.2.2. establishing a logical organizational pattern with supporting details that are substantial, specific, and relevant; and	
LA.910.3.2.3. analyzing language techniques of professional authors (e.g., figurative language, denotation, connotation) to establish a personal style, demonstrating a command of language with confidence of expression.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising The student will revise and refine the draft for clarity and effectiveness. The student will revise by:	
LA.910.3.3.1. evaluating the draft for development of ideas and content, logical organization, voice, point of view, word choice, and sentence variation;	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., "alarmingly startled") Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
LA.910.3.3.2. creating clarity and logic by maintaining central theme, idea, or unifying point and developing meaningful relationships among ideas;	**Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
LA.910.3.3.3. creating precision and interest by elaborating ideas through supporting details (e.g., facts, statistics, expert opinions, anecdotes), a variety of sentence structures, creative language devices, and modifying word choices using resources and reference materials (e.g., dictionary, thesaurus) to select more effective and precise language; and	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation
LA.910.3.3.4. applying appropriate tools or strategies to evaluate and refine the draft (e.g., peer review, checklists, rubrics).	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions The student will edit and correct the draft for standard language conventions. The student will edit for correct use of:	
LA.910.3.4.1. spelling, using spelling rules, orthographic patterns, generalizations, knowledge of root words, prefixes, suffixes, knowledge of Greek, Latin, and Anglo-Saxon root words, and knowledge of foreign words commonly used in English (laissez faire, croissant);	
LA.910.3.4.2. capitalization, including names of academic courses and proper adjectives;	
LA.910.3.4.3. punctuation, including commas, colons, semicolons, apostrophes, dashes, quotation marks, and underlining or italics;	**Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause
LA.910.3.4.4. possessives, subject/verb agreement, comparative and superlative adjectives and adverbs, and noun/pronoun agreement; and	**Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
	Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Conventions of Punctuation:** Use apostrophes to indicate simple possessive nouns
LA.910.3.4.5. sentence formation, including absolutes and absolute phrases, infinitives and infinitive phrases, and use of fragments for effect.	**Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs
STANDARD 5: Publishing The student will write a final product for the intended audience. The student will:	
LA.910.3.5.1. prepare writing using technology in a format appropriate to the purpose (e.g., for display, multimedia);	
LA.910.3.5.2. include such techniques as principle of design (e.g., margins, tabs, spacing, columns) and graphics (e.g., drawings, charts, graphs); and	
LA.910.3.5.3. share with others or submit for publication.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN English College Readiness Standards
Strand 4: Writing Applications	
STANDARD 1: Creative The student develops and demonstrates creative writing. The student will:	
LA.910.4.1.1. write in a variety of expressive and reflective forms that use a range of appropriate strategies and specific narrative techniques, employ literary devices, and sensory description; and	
LA.910.4.1.2. incorporate figurative language, emotions, gestures, rhythm, dialogue, characterization, plot, and appropriate format.	
STANDARD 2: Informative The student develops and demonstrates technical writing that provides information related to real-world tasks. The student will:	
LA.910.4.2.1. write in a variety of informational/expository forms, including a variety of technical documents (e.g., how-to-manuals, procedures, assembly directions);	
LA.910.4.2.2. record information and ideas from primary and/or secondary sources accurately and coherently, noting the validity and reliability of these sources and attributing sources of information;	
LA.910.4.2.3. write informational/expository essays that speculate on the causes and effects of a situation, establish the connection between the postulated causes or effects, offer evidence supporting the validity of the proposed causes or effects, and include introductory, body, and concluding paragraphs;	
LA.910.4.2.4. write a business letter and/or memo that presents information purposefully and succinctly to meet the needs of the intended audience, following a conventional format (e.g., block, modified block, memo, email);	
LA.910.4.2.5. write detailed travel directions and design an accompanying graphic using the cardinal and ordinal directions, landmarks, streets and highways, and distances; and	
LA.910.4.2.6. write a work-related document (e.g., application, resume, meeting minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation).	
STANDARD 3: Persuasive The student develops and demonstrates persuasive writing that is used for the purpose of influencing the reader. The student will:	
LA.910.4.3.1. write essays that state a position or claim, present detailed evidence, examples, and reasoning to support effective arguments and emotional appeals, and acknowledge and refute opposing arguments; and	
LA.910.4.3.2. include persuasive techniques.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN College Readiness Standards
Strand 5: Communication	
STANDARD 1: Penmanship The student engages in the writing process and writes to communicate ideas and experiences.	
LA.910.5.1.1. The student will use fluent and legible handwriting skills.	
STANDARD 2: Listening and Speaking The student effectively applies listening and speaking strategies. The student will:	
LA.910.5.2.1. select and use appropriate listening strategies according to the intended purpose (e.g., solving problems, interpreting and evaluating the techniques and intent of a presentation);	
LA.910.5.2.2. research and organize information for oral communication appropriate for the occasion, audience, and purpose (e.g., class discussions, entertaining, informative, persuasive, or technical presentations);	
LA.910.5.2.3. use appropriate eye contact, body movements, voice register and oral language choices for audience engagement in formal and informal speaking situations;	
LA.910.5.2.4. use an engaging introduction and conclusion and the use of figurative language to reinforce the intended message; and	
LA.910.5.2.5. research and organize information that integrates appropriate media into presentations for oral communication (e.g., digital presentations, charts, photos, primary sources, webcasts).	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 1: Informational Text The student comprehends the wide array of informational text that is part of our day to day experiences. The student will:	
LA.910.6.1.1. explain how text features (e.g., charts, maps, diagrams, sub-headings, captions, illustrations, graphs) aid the reader's understanding;	
LA.910.6.1.2. analyze the structure and format (e.g., diagrams, graphics, fonts) of functional workplace, consumer, or technical documents; and	
LA.910.6.1.3. use the knowledge to a create workplace, consumer, or technical document.	
STANDARD 2: Research Process The student uses a systematic process for the collection, processing, and presentation of information. The student will:	
LA.910.6.2.1. select a topic and develop a comprehensive flexible search plan, and analyze and apply evaluative criteria (e.g., objectivity, freedom from bias, topic format) to assess appropriateness of resources;	
LA.910.6.2.2. organize, synthesize, analyze, and evaluate the validity and reliability of information from multiple sources (including primary and secondary sources) to draw conclusions using a variety of techniques, and correctly use standardized citations;	
LA.910.6.2.3. write an informational report that integrates information and makes distinctions between the relative value and significance of specific data, facts, and ideas; and	
LA.910.6.2.4. understand the importance of legal and ethical practices, including laws regarding libel, slander, copyright, and plagiarism in the use of mass media and digital sources, know the associated consequences, and comply with the law.	
STANDARD 3: Media Literacy The student develops and demonstrates an understanding of media literacy as a life skill that is integral to informed decision making. The student will:	
LA.910.6.3.1. distinguish between propaganda and ethical reasoning strategies in print and nonprint media;	
LA.910.6.3.2. ethically use mass media and digital technology in assignments and presentations, citing sources according to standardized citation styles; and	
LA.910.6.3.3. demonstrate the ability to select print and nonprint media appropriate for the purpose, occasion, and audience to develop into a formal presentation.	

TABLE 1C

FLORIDA Grades 9–10 Reading and Language Arts Next Generation Sunshine State Standards	PLAN College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 4: Technology The student develops the essential technology skills for using and understanding conventional and current tools, materials and processes. The student will:	
LA.910.6.4.1. use appropriate available technologies to enhance communication and achieve a purpose (e.g., video, digital technology); and	
LA.910.6.4.2. routinely use digital tools for publication, communication and productivity.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 5: Fluency The student demonstrates the ability to read grade level text orally with accuracy, appropriate rate, and expression.	
LA.1112.1.5.1. The student will adjust reading rate based on purpose, text difficulty, form, and style.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development The student uses multiple strategies to develop grade appropriate vocabulary. The student will:	
LA.1112.1.6.1. use new vocabulary that is introduced and taught directly;	
LA.1112.1.6.2. listen to, read, and discuss familiar and conceptually challenging text;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages Locate and interpret minor or subtly stated details in more challenging passages

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages Order sequences of events in more challenging passages Understand the dynamics between people, ideas, and so on in more challenging passages Understand implied or subtly stated cause-effect relationships in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.1112.1.6.3. use context clues to determine meanings of unfamiliar words;	**Meanings of Words:** Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.1112.1.6.4. categorize key vocabulary and identify salient features;	
LA.1112.1.6.5. relate new vocabulary to familiar words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.1112.1.6.6. distinguish denotative and connotative meanings of words;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.1112.1.6.7. identify and understand the meaning of conceptually advanced prefixes, suffixes, and root words;	
LA.1112.1.6.8. identify advanced word/phrase relationships and their meanings;	**Meanings of Words:** Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.1112.1.6.9. determine the correct meaning of words with multiple meanings in context;	**Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.1112.1.6.10. determine meanings of words, pronunciation, parts of speech, etymologies, and alternate word choices by using a dictionary, thesaurus, and digital tools; and	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.1112.1.6.11. identify the meaning of unfamiliar terms in political science and medicine derived from Greek and Latin words (e.g., oligarchy, homeopathic).	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension The student uses a variety of strategies to comprehend grade level text. The student will:	
LA.1112.1.7.1. use background knowledge of subject and related content areas, prereading strategies (e.g., previewing, discussing, generating questions), text features, and text structure to make and confirm complex predictions of content, purpose, and organization of a reading selection;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.1112.1.7.2. analyze the author's purpose and/or perspective in a variety of text and understand how they affect meaning;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension	
	Supporting Details: Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
LA.1112.1.7.3. determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details and facts;	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs Summarize events and ideas in virtually any passage **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Locate important details in uncomplicated passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Locate and interpret minor or subtly stated details in more challenging passages
LA.1112.1.7.4. identify cause-and-effect relationships in text;	**Sequential, Comparative, and Cause-Effect Relationships:** Recognize clear cause-effect relationships described within a single sentence in a passage Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Identify clear cause-effect relationships in uncomplicated passages Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages Understand implied or subtly stated cause-effect relationships in more challenging passages
LA.1112.1.7.5. analyze a variety of text structures (e.g., comparison/contrast, cause/effect, chronological order, argument/support, lists) and text features (main headings with subheadings) and explain their impact on meaning in text;	**Main Ideas and Author's Approach:** Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension	
LA.1112.1.7.6. analyze and evaluate similar themes or topics by different authors across a variety of fiction and nonfiction selections;	
LA.1112.1.7.7. compare and contrast elements in multiple texts; and	
LA.1112.1.7.8. use strategies to repair comprehension of grade-appropriate text when self-monitoring indicates confusion, including but not limited to rereading, checking context clues, predicting, note-making, summarizing, using graphic and semantic organizers, questioning, and clarifying by checking other sources.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction The student identifies, analyzes, and applies knowledge of the elements of a variety of fiction and literary texts to develop a thoughtful response to a literary selection. The student will:	
LA.1112.2.1.1. analyze and compare historically and culturally significant works of literature, identifying the relationships among the major genres (e.g., poetry, fiction, nonfiction, short story, dramatic literature, essay) and the literary devices unique to each, and analyze how they support and enhance the theme and main ideas of the text;	
LA.1112.2.1.2. analyze and compare a variety of traditional, classical, and contemporary literary works, and identify the literary elements of each (e.g., setting, plot, characterization, conflict);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Locate and interpret minor or subtly stated details in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Order sequences of events in more challenging passages
	Understand the dynamics between people, ideas, and so on in more challenging passages
	Understand implied or subtly stated cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
	Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.1112.2.1.3. analyze, compare, evaluate, and interpret poetry for the effects of various literary devices, graphics, structure, and theme to convey mood, meaning, and aesthetic qualities;	
LA.1112.2.1.4. analyze the way in which the theme or meaning of a selection represents a view or comment on life, providing textual evidence for the identified theme;	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs Summarize events and ideas in virtually any passage
LA.1112.2.1.5. analyze and discuss characteristics of subgenres (e.g., satire, parody, allegory) that overlap or cut across the lines of genre classifications such as poetry, novel, drama, short story, essay or editorial;	
LA.1112.2.1.6. create a complex, multi-genre response to the reading of two or more literary works using multiple critical perspectives (e.g., historical, archetypal, social), describing and analyzing an authors use of literary elements (e.g., theme, point of view, characterization, setting, plot), figurative language (e.g., simile, metaphor, personification, hyperbole, symbolism, allusion, and imagery), and analyzing an authors development of time and sequence (e.g., through the use of complex literary devices such as foreshadowing and flashback);	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
LA.1112.2.1.7. analyze, interpret, and evaluate an author's use of descriptive language (e.g., tone, irony, mood, imagery, pun, alliteration, onomatopoeia, allusion), figurative language (e.g., symbolism, metaphor, personification, hyperbole), common idioms, and mythological and literary allusions, and explain how they impact meaning in a variety of texts with an emphasis on how they evoke reader's emotions;	**Supporting Details:** Recognize a clear function of a part of an uncomplicated passage Make simple inferences about how details are used in passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts
LA.1112.2.1.8. explain how ideas, values, and themes of a literary work often reflect the historical period in which it was written;	
LA.1112.2.1.9. describe changes in the English language over time, and support these descriptions with examples from literary texts; and	
LA.1112.2.1.10. select a variety of age and ability appropriate fiction materials to read based on knowledge of authors' styles, themes, and genres to expand the core foundation of knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction The student identifies, analyzes, and applies knowledge of the elements of a variety of nonfiction, informational, and expository texts to demonstrate an understanding of the information presented. The student will:	
LA.1112.2.2.1. analyze and evaluate information from text features (e.g., transitional devices, table of contents, glossary, index, bold or italicized text, headings, charts and graphs, illustrations, subheadings);	
LA.1112.2.2.2. use information from the text to answer questions or to state the main idea or provide relevant details;	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages Locate important details in more challenging passages Locate and interpret minor or subtly stated details in uncomplicated passages Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages Locate and interpret minor or subtly stated details in more challenging passages

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Sequential, Comparative, and Cause-Effect Relationships: Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages Identify clear cause-effect relationships in more challenging passages Order sequences of events in more challenging passages Understand the dynamics between people, ideas, and so on in more challenging passages Understand implied or subtly stated cause-effect relationships in more challenging passages **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Generalizations and Conclusions: Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.1112.2.2.3. organize information to show understanding or relationships among facts, ideas, and events (e.g., representing key points within text through charting, mapping, paraphrasing, summarizing, comparing, contrasting, outlining);	**Main Ideas and Author's Approach:** Recognize a clear intent of an author or narrator in uncomplicated literary narratives Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages Infer the main idea or purpose of straightforward paragraphs in more challenging passages Summarize basic events and ideas in more challenging passages Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages Infer the main idea or purpose of more challenging passages or their paragraphs **Supporting Details:** Locate basic facts (e.g., names, dates, events) clearly stated in a passage Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage Locate important details in uncomplicated passages Make simple inferences about how details are used in passages

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Locate important details in more challenging passages
	Locate and interpret minor or subtly stated details in uncomplicated passages
	Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages
	Locate and interpret minor or subtly stated details in more challenging passages
	Sequential, Comparative, and Cause-Effect Relationships:
	Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages
	Recognize clear cause-effect relationships described within a single sentence in a passage
	Identify relationships between main characters in uncomplicated literary narratives
	Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives
	Order simple sequences of events in uncomplicated literary narratives
	Identify clear relationships between people, ideas, and so on in uncomplicated passages
	Identify clear cause-effect relationships in uncomplicated passages
	Order sequences of events in uncomplicated passages
	Understand relationships between people, ideas, and so on in uncomplicated passages
	Identify clear relationships between characters, ideas, and so on in more challenging literary narratives
	Understand implied or subtly stated cause-effect relationships in uncomplicated passages
	Identify clear cause-effect relationships in more challenging passages
	Order sequences of events in more challenging passages
	Understand the dynamics between people, ideas, and so on in more challenging passages
	Understand implied or subtly stated cause-effect relationships in more challenging passages
	Meanings of Words:
	Understand the implication of a familiar word or phrase and of simple descriptive language
	Use context to understand basic figurative language
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT Reading College Readiness Standards
Strand 2: Literary Analysis	
STANDARD 2: Nonfiction	
	Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
LA.1112.2.2.4. identify and analyze the characteristics of a variety of types of text (e.g., references, reports, technical manuals, articles, editorials, primary source historical documents, periodicals, job-related materials, practical/functional text); and	
LA.1112.2.2.5. select a variety of age and ability appropriate nonfiction materials (e.g., biographies and topical areas, such as science, music, art, history, sports, current events) to expand the core knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 1: Prewriting The student will use prewriting strategies to generate ideas and formulate a plan. The student will prewrite by:	
LA.1112.3.1.1. generating ideas from multiple sources (e.g., brainstorming, notes, journals, discussion, research materials or other reliable sources) based upon teacher-directed topics and personal interests;	
LA.1112.3.1.2. making a plan for writing that addresses purpose, audience, a controlling idea, logical sequence, and time frame for completion; and	
LA.1112.3.1.3. using organizational strategies and tools (e.g., technology, spreadsheet, outline, chart, table, graph, Venn Diagram, web, story map, plot pyramid) to develop a personal organizational style.	
STANDARD 2: Drafting The student will write a draft appropriate to the topic, audience, and purpose. The student will draft writing by:	
LA.1112.3.2.1. developing ideas from the prewriting plan using primary and secondary sources appropriate to the purpose and audience;	
LA.1112.3.2.2. establishing a logical organizational pattern with supporting details that are substantial, specific, and relevant; and	**Writing** College Readiness Standards **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples Develop several ideas fully, using specific and relevant reasons, details, and examples Show effective movement between general and specific ideas and examples **Organizing Ideas:** Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas Present a somewhat developed introduction and conclusion Provide unity and coherence throughout the essay, often with a logical progression of ideas Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas Present a well-developed introduction and conclusion
LA.1112.3.2.3. analyzing language techniques of professional authors (e.g., figurative language, denotation, connotation) to establish a personal style, demonstrating a command of language with conviction of expression.	

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FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising The student will revise and refine the draft for clarity and effectiveness. The student will revise by:	
LA.1112.3.3.1. evaluating the draft for development of ideas and content, logical organization, voice, point of view, word choice, and sentence variation;	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal Delete material primarily because it disturbs the flow and development of the paragraph Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*) Select the most logical place to add a sentence in a paragraph Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*) Decide the most logical place to add a sentence in an essay Add a sentence that introduces a simple paragraph Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Word Choice in Terms of Style, Tone, Clarity, and Economy: Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay Delete redundant material when information is repeated in different parts of speech (e.g., “alarmingly startled”) Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Determine the clearest and most logical conjunction to link clauses Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence Identify and correct ambiguous pronoun references Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion **Focusing on the Topic:** Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Present a thesis that establishes a focus on the writer’s position on the issue Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay Present a critical thesis that clearly establishes the focus on the writer’s position on the issue **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples Develop several ideas fully, using specific and relevant reasons, details, and examples

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Show effective movement between general and specific ideas and examples **Organizing Ideas:** Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas Present a somewhat developed introduction and conclusion Provide unity and coherence throughout the essay, often with a logical progression of ideas Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas Present a well-developed introduction and conclusion **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.3.2. creating clarity and logic by maintaining central theme, idea, or unifying point and developing meaningful relationships among ideas;	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Delete a clause or sentence because it is obviously irrelevant to the essay Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal
	Delete material primarily because it disturbs the flow and development of the paragraph
	Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material
	Organization, Unity, and Coherence:
	Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*)
	Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first*, *afterward*, *in response*)
	Add a sentence that introduces a simple paragraph
	Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*)
	Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward
	Writing College Readiness Standards
	Expressing Judgments:
	Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt
	Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion
	Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion
	Focusing on the Topic:
	Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay
	Present a thesis that establishes a focus on the writer's position on the issue
	Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay
	Present a critical thesis that clearly establishes the focus on the writer's position on the issue
	Developing a Position:
	Develop most ideas fully, using some specific and relevant reasons, details, and examples
	Show clear movement between general and specific ideas and examples

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Develop several ideas fully, using specific and relevant reasons, details, and examples Show effective movement between general and specific ideas and examples **Organizing Ideas:** Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas Present a somewhat developed introduction and conclusion Provide unity and coherence throughout the essay, often with a logical progression of ideas Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas Present a well-developed introduction and conclusion **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.3.3. creating precision and interest by elaborating ideas through supporting details (e.g., facts, statistics, expert opinions, anecdotes), a variety of sentence structures, creative language devices, and modifying word choices using resources and reference materials (e.g., dictionary, thesaurus) to select more effective and precise language; and	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence, or to determine the need to delete plausible but irrelevant material Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation **Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion **Focusing on the Topic:** Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Present a thesis that establishes a focus on the writer's position on the issue Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay Present a critical thesis that clearly establishes the focus on the writer's position on the issue **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples Develop several ideas fully, using specific and relevant reasons, details, and examples Show effective movement between general and specific ideas and examples **Organizing Ideas:** Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas Present a somewhat developed introduction and conclusion Provide unity and coherence throughout the essay, often with a logical progression of ideas

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 3: Revising	
	Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas Present a well-developed introduction and conclusion **Using Language:** Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.3.4. applying appropriate tools or strategies to evaluate and refine the draft (e.g., peer review, checklists, rubrics).	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions The student will edit and correct the draft for standard language conventions. The student will edit for correct use of:	
LA.1112.3.4.1. spelling, using spelling rules, orthographic patterns, generalizations, knowledge of root words, prefixes, suffixes, knowledge of Greek, Latin, and Anglo-Saxon root words, and knowledge of foreign words commonly used in English (laissez faire, croissant);	**Writing** College Readiness Standards Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.4.2. capitalization, including names of academic courses and proper adjectives;	**Writing** College Readiness Standards Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
	• using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.4.3. punctuation, including commas, colons, semicolons, apostrophes, dashes, quotation marks, parentheses, ellipses, brackets, and underlining or italics;	**English** College Readiness Standards **Conventions of Punctuation:** Delete commas that create basic sense problems (e.g., between verb and direct object) Provide appropriate punctuation in straightforward situations (e.g., items in a series) Delete commas that disturb the sentence flow (e.g., between modifier and modified element) Use commas to set off simple parenthetical phrases Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause) Use punctuation to set off complex parenthetical phrases Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*) Use apostrophes to indicate simple possessive nouns Recognize inappropriate uses of colons and semicolons Use commas to set off a nonessential/nonrestrictive appositive or clause **Writing** College Readiness Standards Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
	• using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.4.4. grammar and usage, including but not limited to parts of speech, verb tense, noun/pronoun agreement, subject/verb agreement, pronoun/antecedent agreement, parallel structure, modifier placement, comparative and superlative adjectives and adverbs, and unintended shift in person or tense; and	**English** College Readiness Standards **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Decide the appropriate verb tense and voice by considering the meaning of the entire sentence Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole **Conventions of Usage:** Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and which preposition to use in simple contexts Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead* Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Ensure that a verb agrees with its subject when there is some text between the two Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
	Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using *have* rather than *of* Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom* Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun) **Writing** College Readiness Standards Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
LA.1112.3.4.5. varied sentence structure, including the elimination of dangling or misplaced modifiers, run-on or fused sentences, and unintended sentence fragments.	**English** College Readiness Standards **Sentence Structure and Formation:** Use conjunctions or punctuation to join simple clauses Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers) Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 3: Writing Process	
STANDARD 4: Editing for Language Conventions	
	Writing College Readiness Standards Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning Show effective use of language to clearly communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors • using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
STANDARD 5: Publishing The student will write a final product for the intended audience. The student will:	
LA.1112.3.5.1. prepare writing using technology in a format appropriate to the purpose (e.g., for display, multimedia);	
LA.1112.3.5.2. include such techniques as principle of design (e.g., margins, tabs, spacing, and columns) and graphics (e.g., drawings, charts, graphs); and	
LA.1112.3.5.3. share with others or submit for publication.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 4: Writing Applications	
STANDARD 1: Creative The student develops and demonstrates creative writing. The student will:	
LA.1112.4.1.1. write in a variety of expressive and reflective forms that use a range of appropriate strategies and specific narrative techniques, employ literary devices and sensory description; and	
LA.1112.4.1.2. incorporate figurative language, emotions, gestures, rhythm, dialogue, characterization, plot, and appropriate format.	
STANDARD 2: Informative The student develops and demonstrates technical writing that provides information related to real-world tasks. The student will:	
LA.1112.4.2.1. write in a variety of informational/expository forms, including documents using precise technical and scientific vocabulary (e.g., manuals, procedures, directions);	
LA.1112.4.2.2. record information and ideas from primary and/or secondary sources accurately and coherently, noting the validity and reliability of these sources and attributing sources of information;	
LA.1112.4.2.3. write informational/expository essays that speculate on the causes and effects of a situation, establish the connection between the postulated causes or effects, offer evidence supporting the validity of the proposed causes or effects, and include introductory, body, and concluding paragraphs;	
LA.1112.4.2.4. write a business letter and/or memo that presents information purposefully and succinctly to meet the needs of the intended audience following a conventional format (e.g., block, modified block, memo, email);	
LA.1112.4.2.5. write detailed travel directions and design an accompanying graphic using the cardinal and ordinal directions, landmarks, streets and highways, and distances; and	
LA.1112.4.2.6. write a work-related document (e.g., application, resume, meeting minutes, memo, cover letter, letter of application, speaker introduction, letter of recommendation).	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 4: Writing Applications	
STANDARD 3: Persuasive The student develops and demonstrates persuasive writing that is used for the purpose of influencing the reader. The student will:	
LA.1112.4.3.1. write essays that state a position or claim, present detailed evidence, examples, and reasoning to support effective arguments and emotional appeals, and acknowledge and refute opposing arguments; and	**Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show some recognition of the complexity of the issue in the prompt by • acknowledging counterarguments to the writer's position • providing some response to counterarguments to the writer's position Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion Show recognition of the complexity of the issue in the prompt by • partially evaluating implications and/or complications of the issue, and/or • posing and partially responding to counterarguments to the writer's position Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion Show understanding of the complexity of the issue in the prompt by • examining different perspectives, and/or • evaluating implications or complications of the issue, and/or • posing and fully discussing counterarguments to the writer's position **Focusing on the Topic:** Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Present a thesis that establishes a focus on the writer's position on the issue Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay Present a critical thesis that clearly establishes the focus on the writer's position on the issue **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples Develop several ideas fully, using specific and relevant reasons, details, and examples

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 4: Writing Applications	
STANDARD 3: Persuasive	
	Show effective movement between general and specific ideas and examples
LA.1112.4.3.2. include persuasive techniques (e.g., word choice, repetition, emotional appeal, hyperbole, appeal to authority, celebrity endorsement, rhetorical question, irony, symbols, glittering generalities, card stacking, testimonials, bandwagon, image association, transfer).	**Writing** College Readiness Standards **Expressing Judgments:** Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show some recognition of the complexity of the issue in the prompt by • acknowledging counterarguments to the writer's position • providing some response to counterarguments to the writer's position Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion Show recognition of the complexity of the issue in the prompt by • partially evaluating implications and/or complications of the issue, and/or • posing and partially responding to counterarguments to the writer's position Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion Show understanding of the complexity of the issue in the prompt by • examining different perspectives, and/or • evaluating implications or complications of the issue, and/or • posing and fully discussing counterarguments to the writer's position **Focusing on the Topic:** Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Present a thesis that establishes a focus on the writer's position on the issue Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay Present a critical thesis that clearly establishes the focus on the writer's position on the issue **Developing a Position:** Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples Develop several ideas fully, using specific and relevant reasons, details, and examples

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT English and/or Writing College Readiness Standards
Strand 4: Writing Applications	
STANDARD 3: Persuasive	
	Show effective movement between general and specific ideas and examples

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT College Readiness Standards
Strand 5: Communication	
STANDARD 1: Penmanship The student engages in the writing process and writes to communicate ideas and experiences.	
LA.1112.5.1.1. The student will use fluent and legible handwriting skills.	
STANDARD 2: Listening and Speaking The student effectively applies listening and speaking strategies. The student will:	
LA.1112.5.2.1. demonstrate effective listening skills and behaviors for a variety of purposes, and demonstrate understanding by critically evaluating and analyzing oral presentations;	
LA.1112.5.2.2. apply oral communication skills in interviews, formal presentations, and impromptu situations according to designed rubric criteria;	
LA.1112.5.2.3. use research and visual aids to deliver oral presentations that inform, persuade, or entertain, and evaluates one's own and others' oral presentations according to designed rubric criteria;	
LA.1112.5.2.4. use appropriate eye contact, body movements, and voice register for audience engagement in formal and informal speaking situations; and	
LA.1112.5.2.5. research and organize information and demonstrate effective speaking skills and behaviors for a variety of formal and informal purposes.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 1: Informational Text The student comprehends the wide array of informational text that is part of our day to day experiences. The student will:	
LA.1112.6.1.1. explain how text features (e.g., charts, maps, diagrams, sub-headings, captions, illustrations, graphs) aid the reader's understanding;	
LA.1112.6.1.2. analyze the structure and format (e.g., diagrams, graphics, fonts) of functional workplace consumer, or technical documents; and	
LA.1112.6.1.3. use the knowledge to create workplace, consumer, or technical documents.	
STANDARD 2: Research Process The student uses a systematic process for the collection, processing, and presentation of information. The student will:	
LA.1112.6.2.1. select a topic and develop a comprehensive flexible search plan, and analyze and apply evaluative criteria (e.g., objectivity, freedom from bias, topic format) to assess appropriateness of resources;	
LA.1112.6.2.2. organize, synthesize, analyze, and evaluate the validity and reliability of information from multiple sources (including primary and secondary sources) to draw conclusions using a variety of techniques, and correctly use standardized citations;	
LA.1112.6.2.3. write an informational report that integrates information and makes distinctions between the relative value and significance of specific data, facts, and ideas; and	
LA.1112.6.2.4. understand the importance of legal and ethical practices, including laws regarding libel, slander, copyright, and plagiarism in the use of mass media and digital sources, know the associated consequences, and comply with the law.	
STANDARD 3: Media Literacy The student develops and demonstrates an understanding of media literacy as a life skill that is integral to informed decision making. The student will:	
LA.1112.6.3.1. distinguish between propaganda and ethical reasoning strategies in print and nonprint media;	
LA.1112.6.3.2. ethically use mass media and digital technology in assignments and presentations, citing sources according to standardized citation styles; and	
LA.1112.6.3.3. demonstrate the ability to select print and nonprint media appropriate for the purpose, occasion, and audience to develop into a formal presentation.	

TABLE 1D

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	ACT College Readiness Standards
Strand 6: Information and Media Literacy	
STANDARD 4: Technology The student develops the essential technology skills for using and understanding conventional and current tools, materials and processes. The student will:	
LA.1112.6.4.1. select and use appropriate available technologies (e.g., computer, digital camera) to enhance communication and achieve a purpose (e.g., video, presentations); and	
LA.1112.6.4.2. routinely use digital tools for publication, communication and productivity.	

TABLE 1E

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	WorkKeys Reading For Information Level Skills
Strand 1: Reading Process	
STANDARD 5: Fluency The student demonstrates the ability to read grade level text orally with accuracy, appropriate rate, and expression.	
LA.1112.1.5.1. The student will adjust reading rate based on purpose, text difficulty, form, and style.	

TABLE 1E

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	WorkKeys Reading For Information Level Skills
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development The student uses multiple strategies to develop grade appropriate vocabulary. The student will:	
LA.1112.1.6.1. use new vocabulary that is introduced and taught directly;	
LA.1112.1.6.2. listen to, read, and discuss familiar and conceptually challenging text;	
LA.1112.1.6.3. use context clues to determine meanings of unfamiliar words;	Use the reading material to figure out the meaning of words that are not defined Figure out the correct meaning of a word based on how the word is used Figure out the less common meaning of a word based on the context Figure out the definitions of difficult, uncommon words based on how they are used Figure out the meaning of jargon or technical terms based on how they are used
LA.1112.1.6.4. categorize key vocabulary and identify salient features;	
LA.1112.1.6.5. relate new vocabulary to familiar words;	Choose the correct meaning of a word that is clearly defined in the reading Choose the correct meaning of common, everyday and workplace words Identify the paraphrased definition of a technical term or jargon that is defined in the document
LA.1112.1.6.6. distinguish denotative and connotative meanings of words;	
LA.1112.1.6.7. identify and understand the meaning of conceptually advanced prefixes, suffixes, and root words;	
LA.1112.1.6.8. identify advanced word/phrase relationships and their meanings;	Identify important details that may not be clearly stated Identify the correct meaning of an acronym that is defined in the document Identify the paraphrased definition of a technical term or jargon that is defined in the document Identify implied details
LA.1112.1.6.9. determine the correct meaning of words with multiple meanings in context;	Use the reading material to figure out the meaning of words that are not defined Figure out the correct meaning of a word based on how the word is used Figure out the less common meaning of a word based on the context Figure out the definitions of difficult, uncommon words based on how they are used Figure out the meaning of jargon or technical terms based on how they are used

TABLE 1E

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	WorkKeys Reading For Information Level Skills
Strand 1: Reading Process	
STANDARD 6: Vocabulary Development	
LA.1112.1.6.10. determine meanings of words, pronunciation, parts of speech, etymologies, and alternate word choices by using a dictionary, thesaurus, and digital tools; and	
LA.1112.1.6.11. identify the meaning of unfamiliar terms in political science and medicine derived from Greek and Latin words (e.g., oligarchy, homeopathic).	

TABLE 1E

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	WorkKeys Reading For Information Level Skills
Strand 1: Reading Process	
STANDARD 7: Reading Comprehension The student uses a variety of strategies to comprehend grade level text. The student will:	
LA.1112.1.7.1. use background knowledge of subject and related content areas, prereading strategies (e.g., previewing, discussing, generating questions), text features, and text structure to make and confirm complex predictions of content, purpose, and organization of a reading selection;	Figure out the principles behind policies, rules, and procedures Apply general principles from the materials to similar and new situations Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials
LA.1112.1.7.2. analyze the author's purpose and/or perspective in a variety of text and understand how they affect meaning;	
LA.1112.1.7.3. determine the main idea or essential message in grade-level or higher texts through inferring, paraphrasing, summarizing, and identifying relevant details and facts;	Identify main ideas and clearly stated details Identify important details that may not be clearly stated Identify implied details Explain the rationale behind a procedure, policy, or communication
LA.1112.1.7.4. identify cause-and-effect relationships in text;	Choose what to do when changing conditions call for a different action (follow directions that include "if-then" statements) Apply complex instructions that include conditionals to situations described in the materials
LA.1112.1.7.5. analyze a variety of text structures (e.g., comparison/contrast, cause/effect, chronological order, argument/support, lists) and text features (main headings with subheadings) and explain their impact on meaning in text;	
LA.1112.1.7.6. analyze and evaluate similar themes or topics by different authors across a variety of fiction and nonfiction selections;	
LA.1112.1.7.7. compare and contrast elements in multiple texts; and	
LA.1112.1.7.8. use strategies to repair comprehension of grade-appropriate text when self-monitoring indicates confusion, including but not limited to rereading, checking context clues, predicting, note-making, summarizing, using graphic and semantic organizers, questioning, and clarifying by checking other sources.	Identify main ideas and clearly stated details Identify important details that may not be clearly stated Explain the rationale behind a procedure, policy, or communication Figure out the principles behind policies, rules, and procedures Apply general principles from the materials to similar and new situations Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials

TABLE 1E

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	WorkKeys Reading For Information Level Skills
Strand 2: Literary Analysis	
STANDARD 1: Fiction The student identifies, analyzes, and applies knowledge of the elements of a variety of fiction and literary texts to develop a thoughtful response to a literary selection. The student will:	
LA.1112.2.1.1. analyze and compare historically and culturally significant works of literature, identifying the relationships among the major genres (e.g., poetry, fiction, nonfiction, short story, dramatic literature, essay) and the literary devices unique to each, and analyze how they support and enhance the theme and main ideas of the text;	
LA.1112.2.1.2. analyze and compare a variety of traditional, classical, and contemporary literary works, and identify the literary elements of each (e.g., setting, plot, characterization, conflict);	
LA.1112.2.1.3. analyze, compare, evaluate, and interpret poetry for the effects of various literary devices, graphics, structure, and theme to convey mood, meaning, and aesthetic qualities;	
LA.1112.2.1.4. analyze the way in which the theme or meaning of a selection represents a view or comment on life, providing textual evidence for the identified theme;	
LA.1112.2.1.5. analyze and discuss characteristics of subgenres (e.g., satire, parody, allegory) that overlap or cut across the lines of genre classifications such as poetry, novel, drama, short story, essay or editorial;	
LA.1112.2.1.6. create a complex, multi-genre response to the reading of two or more literary works using multiple critical perspectives (e.g., historical, archetypal, social), describing and analyzing an authors use of literary elements (e.g., theme, point of view, characterization, setting, plot), figurative language (e.g., simile, metaphor, personification, hyperbole, symbolism, allusion, and imagery), and analyzing an authors development of time and sequence (e.g., through the use of complex literary devices such as foreshadowing and flashback);	
LA.1112.2.1.7. analyze, interpret, and evaluate an author's use of descriptive language (e.g., tone, irony, mood, imagery, pun, alliteration, onomatopoeia, allusion), figurative language (e.g., symbolism, metaphor, personification, hyperbole), common idioms, and mythological and literary allusions, and explain how they impact meaning in a variety of texts with an emphasis on how they evoke reader's emotions;	
LA.1112.2.1.8. explain how ideas, values, and themes of a literary work often reflect the historical period in which it was written;	
LA.1112.2.1.9. describe changes in the English language over time, and support these descriptions with examples from literary texts; and	

TABLE 1E

FLORIDA Grades 11–12 Reading and Language Arts Next Generation Sunshine State Standards	WorkKeys Reading For Information Level Skills
Strand 2: Literary Analysis	
STANDARD 1: Fiction	
LA.1112.2.1.10. select a variety of age and ability appropriate fiction materials to read based on knowledge of authors' styles, themes, and genres to expand the core foundation of knowledge necessary to connect topics and function as a fully literate member of a shared culture.	
STANDARD 2: Nonfiction The student identifies, analyzes, and applies knowledge of the elements of a variety of nonfiction, informational, and expository texts to demonstrate an understanding of the information presented. The student will:	
LA.1112.2.2.1. analyze and evaluate information from text features (e.g., transitional devices, table of contents, glossary, index, bold or italicized text, headings, charts and graphs, illustrations, subheadings);	
LA.1112.2.2.2. use information from the text to answer questions or to state the main idea or provide relevant details;	Identify main ideas and clearly stated details Identify important details that may not be clearly stated Identify implied details Explain the rationale behind a procedure, policy, or communication
LA.1112.2.2.3. organize information to show understanding or relationships among facts, ideas, and events (e.g., representing key points within text through charting, mapping, paraphrasing, summarizing, comparing, contrasting, outlining);	Identify main ideas and clearly stated details Identify important details that may not be clearly stated Identify implied details Explain the rationale behind a procedure, policy, or communication
LA.1112.2.2.4. identify and analyze the characteristics of a variety of types of text (e.g., references, reports, technical manuals, articles, editorials, primary source historical documents, periodicals, job-related materials, practical/functional text); and	Identify main ideas and clearly stated details Identify important details that may not be clearly statedIdentify implied details Explain the rationale behind a procedure, policy, or communication
LA.1112.2.2.5. select a variety of age and ability appropriate nonfiction materials (e.g., biographies and topical areas, such as science, music, art, history, sports, current events) to expand the core knowledge necessary to connect topics and function as a fully literate member of a shared culture.	

SUPPLEMENT
TABLES 2A–2E:
MATHEMATICS

TABLE 2A

FLORIDA Grade 8 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
BIG IDEA 1: Analyze and represent linear functions and solve linear equations and systems of linear equations.	
MA.8.A.1.1. Create and interpret tables, graphs, and models to represent, analyze, and solve problems related to linear equations, including analysis of domain, range and the difference between discrete and continuous data.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.8.A.1.2. Interpret the slope and the x- and y-intercepts when graphing a linear equation for a real-world problem.	
MA.8.A.1.3. Use tables, graphs, and models to represent, analyze, and solve real-world problems related to systems of linear equations.	**Probability, Statistics, & Data Analysis:** Perform computations on data from tables and graphs Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs
MA.8.A.1.4. Identify the solution to a system of linear equations using graphs.	**Probability, Statistics, & Data Analysis:** Manipulate data from tables and graphs
MA.8.A.1.5. Translate among verbal, tabular, graphical and algebraic representations of linear functions.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Perform straightforward word-to-symbol translations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.8.A.1.6. Compare the graphs of linear and non-linear functions for real-world situations.	**Probability, Statistics, & Data Analysis:** Read tables and graphs
SUPPORTING IDEAS: Algebra	
MA.8.A.4.1. Solve literal equations for a specified variable.	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Solve routine first-degree equations Perform straightforward word-to-symbol translations Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.8.A.4.2. Solve and graph one- and two-step inequalities in one variable.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)

TABLE 2A

FLORIDA Grade 8 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
SUPPORTING IDEAS: Number and Operations	
MA.8.A.6.1. Use exponents and scientific notation to write large and small numbers and vice versa and to solve problems.	**Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers
MA.8.A.6.2. Make reasonable approximations of square roots and mathematical expressions that include square roots, and use them to estimate solutions to problems and to compare mathematical expressions involving real numbers and radical expressions.	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
MA.8.A.6.3. Simplify real number expressions using the laws of exponents.	**Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers
MA.8.A.6.4. Perform operations on real numbers (including integer exponents, radicals, percents, scientific notation, absolute value, rational numbers, and irrational numbers) using multi-step and real world problems.	**Basic Operations & Applications:** Solve problems in one or two steps using whole numbers Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) **Probability, Statistics, & Data Analysis:** Calculate the average, given the number of data values and the sum of the data values Perform computations on data from tables and graphs Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values **Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers **Properties of Plane Figures:** Use several angle properties to find an unknown angle measure **Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required

TABLE 2A

FLORIDA Grade 8 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Geometry	
BIG IDEA 2: Analyze two- and three-dimensional figures by using distance and angle.	
MA.8.G.2.1. Use similar triangles to solve problems that include height and distances.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.8.G.2.2. Classify and determine the measure of angles, including angles created when parallel lines are cut by transversals.	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.8.G.2.3. Demonstrate that the sum of the angles in a triangle is 180-degrees and apply this fact to find unknown measure of angles, and the sum of angles in polygons.	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.8.G.2.4. Validate and apply Pythagorean Theorem to find distances in real world situations or between points in the coordinate plane.	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
SUPPORTING IDEAS: Geometry and Measurement	
MA.8.G.5.1. Compare, contrast, and convert units of measure between different measurement systems (US customary or metric (SI)) and dimensions including temperature, area, volume, and derived units to solve problems.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2A

FLORIDA Grade 8 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Statistics	
BIG IDEA 3: Analyze and summarize data sets.	
MA.8.S.3.1. Select, organize and construct appropriate data displays, including box and whisker plots, scatter plots, and lines of best fit to convey information and make conjectures about possible relationships.	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.8.S.3.2. Determine and describe how changes in data values impact measures of central tendency.	**Probability, Statistics, & Data Analysis:** Perform computations on data from tables and graphs Manipulate data from tables and graphs

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
MA.912.A.1.1. Know equivalent forms of real numbers (including integer exponents and radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers). ✹	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with scientific notation Work with squares and square roots of numbers
MA.912.A.1.2. Compare real number expressions. ✹	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions Work with scientific notation Work with squares and square roots of numbers
MA.912.A.1.3. Simplify real number expressions using the laws of exponents. ✹	**Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers
MA.912.A.1.4. Perform operations on real numbers (including integer exponents, radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers) using multi-step and real-world problems. ✹	**Basic Operations & Applications:** Solve problems in one or two steps using whole numbers Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) **Probability, Statistics, & Data Analysis:** Calculate the average, given the number of data values and the sum of the data values Perform computations on data from tables and graphs Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values **Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers **Properties of Plane Figures:** Use several angle properties to find an unknown angle measure **Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
MA.912.A.1.5. Use dimensional (unit) analysis to perform conversions between units of measure, including rates. ✹	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
MA.912.A.1.6. Identify the real and imaginary parts of complex numbers and perform basic operations.	
MA.912.A.1.7. Represent complex numbers geometrically.	
MA.912.A.1.8. Use the zero product property of real numbers in a variety of contexts to identify solutions to equations.	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations
STANDARD 2: Relations and Functions	
MA.912.A.2.1. Create a graph to represent a real-world situation. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
MA.912.A.2.2. Interpret a graph representing a real-world situation. ✹	
MA.912.A.2.3. Describe the concept of a function, use function notation, determine whether a given relation is a function, and link equations to functions. ✹	
MA.912.A.2.4. Determine the domain and range of a relation. ✹	
MA.912.A.2.5. Graph absolute value equations and inequalities in two variables.	
MA.912.A.2.6. Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
MA.912.A.2.7. Perform operations (addition, subtraction, division and multiplication) of functions algebraically, numerically, and graphically.	
MA.912.A.2.8. Determine the composition of functions.	
MA.912.A.2.9. Recognize, interpret, and graph functions defined piece-wise, with and without technology.	
MA.912.A.2.10. Describe and graph transformations of functions.	
MA.912.A.2.11. Solve problems involving functions and their inverses.	
MA.912.A.2.12. Solve problems using **direct**, inverse, and joint variations. ✹	
MA.912.A.2.13. Solve real-world problems involving relations and functions.	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.1. Solve linear equations in one variable that include simplifying algebraic expressions. ✹	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Solve routine first-degree equations Solve real-world problems using first-degree equations
MA.912.A.3.2. Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality. ✹	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Solve routine first-degree equations
MA.912.A.3.3. Solve literal equations for a specified variable. ✹	
MA.912.A.3.4. Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution. ✹	
MA.912.A.3.5. Symbolically represent and solve multi-step and real-world applications that involve linear equations and inequalities. ✹	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.912.A.3.6. Solve and graph the solutions of absolute value equations and inequalities with one variable.	
MA.912.A.3.7. Rewrite equations of a line into slope-intercept form and standard form. ✹	
MA.912.A.3.8. Graph a line given any of the following information: a table of values, the x- and y-intercepts, two points, the slope and a point, the equation of the line in slope-intercept form, standard form, or point-slope form. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
MA.912.A.3.9. Determine the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line. ✹	
MA.912.A.3.10. Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line. ✹	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.11. Write an equation of a line that models a data set and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
MA.912.A.3.12. Graph a linear equation or inequality in two variables with and without graphing technology. Write an equation or inequality represented by a given graph. ✹	
MA.912.A.3.13. Use a graph to approximate the solution of a system of linear equations or inequalities in two variables with and without technology. ✹	
MA.912.A.3.14. Solve systems of linear equations and inequalities in **two** and three **variables** using graphical, substitution, and elimination methods. ✹	
MA.912.A.3.15. Solve real-world problems involving systems of linear equations and inequalities in **two** and three **variables**. ✹	
STANDARD 4: Polynomials	
MA.912.A.4.1. Simplify monomials and monomial expressions using the laws of integral exponents. ✹	
MA.912.A.4.2. Add, subtract, and multiply polynomials. ✹	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions
MA.912.A.4.3. Factor polynomial expressions. ✹	
MA.912.A.4.4. Divide polynomials by **monomials** and polynomials with various techniques, including synthetic division. ✹	
MA.912.A.4.5. Graph polynomial functions with and without technology and describe end behavior.	
MA.912.A.4.6. Use theorems of polynomial behavior (including but not limited to the Fundamental Theorem of Algebra, Remainder Theorem, the Rational Root Theorem, Descartes' Rule of Signs, and the Conjugate Root Theorem) to find the zeros of a polynomial function.	
MA.912.A.4.7. Write a polynomial equation for a given set of real and/or complex roots.	
MA.912.A.4.8. Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology.	
MA.912.A.4.9. Use graphing technology to find approximate solutions for polynomial equations.	
MA.912.A.4.10. Use polynomial equations to solve real-world problems.	
MA.912.A.4.11. Solve a polynomial inequality by examining the graph with and without the use of technology.	
MA.912.A.4.12. Apply the Binomial Theorem.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 5: Rational Expressions and Equations	
MA.912.A.5.1. Simplify algebraic ratios. ✹	
MA.912.A.5.2. Add, subtract, multiply, and divide rational expressions.	
MA.912.A.5.3. Simplify complex fractions.	
MA.912.A.5.4. Solve algebraic proportions. ✹	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.912.A.5.5. Solve rational equations.	
MA.912.A.5.6. Identify removable and non-removable discontinuities, and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function.	
MA.912.A.5.7. Solve real-world problems involving rational equations (mixture, distance, work, interest, and ratio).	
STANDARD 6: Radical Expressions and Equations	
MA.912.A.6.1. Simplify radical expressions. ✹	
MA.912.A.6.2. Add, subtract, multiply and divide radical expressions (**square roots** and higher). ✹	
MA.912.A.6.3. Simplify expressions using properties of rational exponents.	
MA.912.A.6.4. Convert between rational exponent and radical forms of expressions.	
MA.912.A.6.5. Solve equations that contain radical expressions.	
STANDARD 7: Quadratic Equations	
MA.912.A.7.1. Graph quadratic equations with and without graphing technology. ✹	
MA.912.A.7.2. Solve quadratic equations over the real numbers by factoring, and by using the quadratic formula. ✹	
MA.912.A.7.3. Solve quadratic equations over the real numbers by completing the square.	
MA.912.A.7.4. Use the discriminant to determine the nature of the roots of a quadratic equation.	
MA.912.A.7.5. Solve quadratic equations over the complex number system.	
MA.912.A.7.6. Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola.	
MA.912.A.7.7. Solve non-linear systems of equations with and without using technology.	
MA.912.A.7.8. Use quadratic equations to solve real-world problems. ✹	
MA.912.A.7.9. Solve optimization problems.	
MA.912.A.7.10. Use graphing technology to find approximate solutions of quadratic equations.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 8: Logarithmic and Exponential Functions	
MA.912.A.8.1. Define exponential and logarithmic functions and determine their relationship.	
MA.912.A.8.2. Define and use the properties of logarithms to simplify logarithmic expressions and to find their approximate values.	
MA.912.A.8.3. Graph exponential and logarithmic functions.	
MA.912.A.8.4. Prove laws of logarithms.	
MA.912.A.8.5. Solve logarithmic and exponential equations.	
MA.912.A.8.6. Use the change of base formula.	
MA.912.A.8.7. Solve applications of exponential growth and decay.	
STANDARD 9: Conic Sections	
MA.912.A.9.1. Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity, etc.).	
MA.912.A.9.2. Graph conic sections with and without using graphing technology.	
MA.912.A.9.3. Solve real-world problems involving conic sections.	
STANDARD 10: Mathematical Reasoning and Problem Solving	
MA.912.A.10.1. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, working backwards, and creating a table. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.912.A.10.2. Decide whether a solution is reasonable in the context of the original situation. ✹	
MA.912.A.10.3. Decide whether a given statement is always, sometimes, or never true (statements involving **linear** or quadratic **expressions, equations, or inequalities** rational or radical expressions or logarithmic or exponential functions). ✹	
MA.912.A.10.4. Use counterexamples to show that statements are false.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 1: Recursion	
MA.912.D.1.1. Use recursive and iterative thinking to solve problems, including identification of patterns, population growth and decline, and compound interest.	
MA.912.D.1.2. Use finite differences to solve problems and to find explicit formulas for recurrence relations.	
MA.912.D.1.3. Use mathematical induction to prove various concepts in number theory (such as sums of infinite integer series, divisibility statements, and parity statements), recurrence relations, and other applications.	
STANDARD 2: Graph Theory	
MA.912.D.2.1. Use Euler and Hamilton cycles and paths in graphs to solve routing problems.	
MA.912.D.2.2. Use critical path analysis to solve scheduling problems.	
MA.912.D.2.3. Use graph coloring techniques to solve problems.	
MA.912.D.2.4. Use spanning trees, rooted trees, binary trees, and decision trees to solve problems.	
MA.912.D.2.5. Use bin-packing techniques to solve problems concerning optimizing resource usage.	
STANDARD 3: Social Choice	
MA.912.D.3.1. Use election theory techniques to analyze election data.	
MA.912.D.3.2. Use weighted voting techniques to decide voting power within a group.	
MA.912.D.3.3. Use fair division techniques to divide continuous objects.	
MA.912.D.3.4. Use fair division techniques to solve apportionment problems.	
STANDARD 4: Linear Programming	
MA.912.D.4.1. Solve maximal profit/minimal cost problems.	
STANDARD 5: Game Theory	
MA.912.D.5.1. Use game theory to solve strictly determined games.	
MA.912.D.5.2. Use game theory to solve non-strictly determined games.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 6: Logic	
MA.912.D.6.1. Use truth tables to determine truth values of propositional statements.	
MA.912.D.6.2. Find the converse, inverse, and contrapositive of a statement. ✹	
MA.912.D.6.3. Determine whether two propositions are logically equivalent.	
MA.912.D.6.4. Use methods of direct and indirect proof and determine whether a short proof is logically valid. ✹	
MA.912.D.6.5. Identify and give examples of: ✹ • undefined terms; • axioms; • theorems; • inductive and deductive proofs; and, • inductive and deductive reasoning.	
MA.912.D.6.6. Construct logical arguments using laws of detachment (modus ponens), syllogism, tautology, and contradiction; judge the validity of arguments, and give counterexamples to disprove statements.	
MA.912.D.6.7. Use applications of the universal and existential quantifiers to propositional statements.	
STANDARD 7: Set Theory	
MA.912.D.7.1. Perform set operations such as union and intersection, complement, and cross product. ✹	
MA.912.D.7.2. Use Venn diagrams to explore relationships and patterns, and to make arguments about relationships between sets. ✹	
STANDARD 8: Matrices	
MA.912.D.8.1. Use matrices to organize and store data. Perform matrix operations (addition, subtraction, scalar multiplication, multiplication).	
MA.912.D.8.2. Use matrix operations to solve problems.	
MA.912.D.8.3. Use row-reduction techniques to solve problems.	
MA.912.D.8.4. Find the inverse of a matrix and use the inverse to solve problems with and without the use of technology.	
MA.912.D.8.5. Use determinants of 2 × 2 and 3 × 3 matrices as well as higher order matrices with and without the use of technology.	
MA.912.D.8.6. Use matrices to solve Markov chain problems that link present events to future events using probabilities.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 9: Vectors	
MA.912.D.9.1. Demonstrate an understanding of the geometric interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	
MA.912.D.9.2. Demonstrate an understanding of the algebraic interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	
MA.912.D.9.3. Use vectors to model and solve application problems.	
STANDARD 10: Parametric Equations	
MA.912.D.10.1. Sketch the graph of a curve in the plane represented parametrically, indicating the direction of motion.	
MA.912.D.10.2. Convert from a parametric representation of a plane curve to a rectangular equation, and vice-versa.	
MA.912.D.10.3. Use parametric equations to model applications of motion in the plane.	
STANDARD 11: Sequences and Series	
MA.912.D.11.1. Define arithmetic and geometric sequences and series.	
MA.912.D.11.2. Use sigma notation to describe series.	
MA.912.D.11.3. Find specified terms of arithmetic and geometric sequences.	
MA.912.D.11.4. Find partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use Sigma notation where applicable.	
MA.912.D.11.5. Explore and use other sequences found in nature such as the Fibonacci sequence and the golden ratio.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 1: Simple and Compound Interest	
MA.912.F.1.1. Explain the difference between simple and compound interest.	
MA.912.F.1.2. Solve problems involving compound interest.	
MA.912.F.1.3. Demonstrate the relationship between simple interest and linear growth.	
MA.912.F.1.4. Demonstrate the relationship between compound interest and exponential growth.	
STANDARD 2: Net Present and Net Future Value (NPV and NFV)	
MA.912.F.2.1. Calculate the future value of a given amount of money, with and without technology.	
MA.912.F.2.2. Calculate the present value of a certain amount of money for a given length of time in the future, with and without technology.	
MA.912.F.2.3. Use a consumer price index to express dollars in constant terms, with and without technology.	
MA.912.F.2.4. Calculate the present value of an income stream, with and without technology.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.1. Compare the advantages and disadvantages of using cash versus a credit card.	
MA.912.F.3.2. Analyze credit scores and reports.	
MA.912.F.3.3. Calculate the finance charges and total amount due on a credit card bill.	
MA.912.F.3.4. Compare the advantages and disadvantages of deferred payments.	
MA.912.F.3.5. Calculate deferred payments.	
MA.912.F.3.6. Calculate total cost of purchasing consumer durables over time given different down payments, financing options, and fees.	
MA.912.F.3.7. Calculate the following fees associated with a mortgage: • discount points • origination fee • maximum brokerage fee on a net or gross loan • documentary stamps • prorated expenses (interest, county and/or city property taxes, and mortgage on an assumed mortgage)	
MA.912.F.3.8. Substitute to solve a variety of mortgage formulas, including but not limited to Front End Ratio, Total Debt-to-Income Ratio, Loan-to-Value Ratio (LTV), Combined Loan-to-Value Ratio (CLTV), and Amount of Interest Paid Over the Life of a Loan.	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
MA.912.F.3.9. Calculate the total amount to be paid over the life of a fixed rate loan.	
MA.912.F.3.10. Calculate the effects on the monthly payment in the change of interest rate based on an adjustable rate mortgage.	
MA.912.F.3.11. Calculate the final pay out amount for a balloon mortgage.	
MA.912.F.3.12. Compare the cost of paying a higher interest rate and lower points versus a lower interest rate and more points.	
MA.912.F.3.13. Calculate the total amount paid for the life of a loan for a house including the down payment, points, fees, and interest.	
MA.912.F.3.14. Compare the total cost for a set purchase price using a fixed rate, adjustable rate, and a balloon mortgage.	
MA.912.F.3.15. Interpret the legal description using the metes and bounds; lot and block (plat); government survey; and monument methods.	
MA.912.F.3.16. Estimate real property value using the sales comparison approach, cost-depreciation approach, or the income capitalization approach.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.17. Compare interest rate calculations and annual percentage rate calculations to distinguish between the two rates.	
STANDARD 4: Individual Financial and Investment Planning	
MA.912.F.4.1. Develop personal budgets that fit within various income brackets.	
MA.912.F.4.2. Explain cash management strategies including debit accounts, checking accounts, and savings accounts.	
MA.912.F.4.3. Calculate net worth.	
MA.912.F.4.4. Establish a plan to pay off debt.	
MA.912.F.4.5. Develop and apply a variety of strategies to use tax tables, determine, calculate, and complete yearly federal income tax.	
MA.912.F.4.6. Compare different insurance options and fees.	
MA.912.F.4.7. Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.	
MA.912.F.4.8. Collect, organize, and interpret data to determine an effective retirement savings plan to meet personal financial goals.	
MA.912.F.4.9. Calculate, compare, and contrast different types of retirement plans, including IRAs, ROTH accounts, and annuities.	
MA.912.F.4.10. Analyze diversification in investments.	
MA.912.F.4.11. Purchase stock with a set amount of money and follow the process through gains, losses, and selling.	
MA.912.F.4.12. Compare and contrast income from purchase of common stock, preferred stock, and bonds.	
MA.912.F.4.13. Given current exchange rates, be able to convert from one form of currency to another.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.912.F.4.14. Use data to compare historical rates of return on investments with investment claims to make informed decisions and identify potential fraud.	
STANDARD 5: Economic Concepts	
MA.912.F.5.1. Demonstrate how price and quantity demanded relate, how price and quantity supplied relate, and how price changes or price controls affect distribution and allocation in the economy.	
MA.912.F.5.2. Use basic terms and indicators associated with levels of economic performance and the state of the economy.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 1: Points, Lines, Angles, and Planes	
MA.912.G.1.1. Find the lengths and midpoints of line segments in two-dimensional coordinate systems. ✹	
MA.912.G.1.2. Construct congruent segments and angles, angle bisectors, and parallel and perpendicular lines using a straight edge and compass or a drawing program, explaining and justifying the process used.	
MA.912.G.1.3. Identify and use the relationships between special pairs of angles formed by parallel lines and transversals. ✹	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.912.G.1.4. Use coordinate geometry to find slopes, parallel lines, perpendicular lines, and equations of lines. ✹	
STANDARD 2: Polygons	
MA.912.G.2.1. Identify and describe convex, concave, regular, and irregular polygons. ✹	
MA.912.G.2.2. Determine the measures of interior and exterior angles of polygons, justifying the method used. ✹	
MA.912.G.2.3. Use properties of congruent and similar polygons to solve mathematical or real-world problems. ✹	
MA.912.G.2.4. Apply transformations (translations, reflections, rotations, dilations, and scale factors) to polygons. to determine congruence, similarity, and symmetry. Know that images formed by translations, reflections, and rotations are congruent to the original shape. Create and verify tessellations of the plane using polygons. ✹	
MA.912.G.2.5. Explain the derivation and apply formulas for perimeter and area of polygons (triangles, quadrilaterals, pentagons, etc.). ✹	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the area of rectangles when whole number dimensions are given Compute the area of triangles and rectangles when one or more additional simple steps are required
MA.912.G.2.6. Use coordinate geometry to prove properties of congruent, regular and similar polygons, and to perform transformations in the plane. ✹	
MA.912.G.2.7. Determine how changes in dimensions affect the perimeter and area of common geometric figures. ✹	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 3: Quadrilaterals	
MA.912.G.3.1. Describe, classify, and compare relationships among quadrilaterals including the square, rectangle, rhombus, parallelogram, trapezoid, and kite. ✹	
MA.912.G.3.2. Compare and contrast special quadrilaterals on the basis of their properties. ✹	
MA.912.G.3.3. Use coordinate geometry to prove properties of congruent, regular and similar quadrilaterals. ✹	
MA.912.G.3.4. Prove theorems involving quadrilaterals.	
STANDARD 4: Triangles	
MA.912.G.4.1. Classify, construct, and describe triangles that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular. ✹	
MA.912.G.4.2. Define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter. ✹	
MA.912.G.4.3. Construct triangles congruent to given triangles.	
MA.912.G.4.4. Use properties of congruent and similar triangles to solve problems involving lengths and areas. ✹	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.912.G.4.5. Apply theorems involving segments divided proportionally. ✹	
MA.912.G.4.6. Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles. ✹	
MA.912.G.4.7. Apply the inequality theorems: triangle inequality, inequality in one triangle, and the Hinge Theorem. ✹	
MA.912.G.4.8. Use coordinate geometry to prove properties of congruent, regular, and similar triangles.	
STANDARD 5: Right Triangles	
MA.912.G.5.1. Prove and apply the Pythagorean Theorem and its converse. ✹	
MA.912.G.5.2. State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle.	
MA.912.G.5.3. Use special right triangles (30°-60°-90° and 45°-45°-90°) to solve problems. ✹	
MA.912.G.5.4. Solve real-world problems involving right triangles.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 6: Circles	
MA.912.G.6.1. Determine the center of a given circle. Given three points not on a line, construct the circle that passes through them. Construct tangents to circles. Circumscribe and inscribe circles about and within triangles and regular polygons.	
MA.912.G.6.2. Define and identify: circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles. ✹	
MA.912.G.6.3. Prove theorems related to circles, including related angles, chords, tangents, and secants.	
MA.912.G.6.4. Determine and use measures of arcs and related angles (central, inscribed, and intersections of secants and tangents). ✹	
MA.912.G.6.5. Solve real-world problems using measures of circumference, arc length, and areas of circles and sectors. ✹	**Measurement:** Compute the area and circumference of circles after identifying necessary information
MA.912.G.6.6. Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle. ✹	
MA.912.G.6.7. Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle.	
STANDARD 7: Polyhedra and Other Solids	
MA.912.G.7.1. Describe and make regular, non-regular, and oblique polyhedra and sketch the net for a given polyhedron and vice versa. ✹	
MA.912.G.7.2. Describe the relationships between the faces, edges, and vertices of polyhedra.	
MA.912.G.7.3. Identify, sketch, and determine areas and/or perimeters of cross sections of three-dimensional solids.	
MA.912.G.7.4. Identify chords, tangents, radii, and great circles of spheres. ✹	
MA.912.G.7.5. Explain and use formulas for lateral area, surface area, and volume of three-dimensional solids. ✹	**Measurement:** Use geometric formulas when all necessary information is given
MA.912.G.7.6. Identify and use properties of congruent and similar three-dimensional solids. ✹	
MA.912.G.7.7. Determine how changes in dimensions affect the surface area and volume of common three-dimensional geometric solids. ✹	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 8: Mathematical Reasoning and Problem Solving	
MA.912.G.8.1. Analyze the structure of Euclidean geometry as an axiomatic system. Distinguish between undefined terms, definitions, postulates and theorems.	
MA.912.G.8.2. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	
MA.912.G.8.3. Determine whether a solution is reasonable in the context of the original situation. ✹	
MA.912.G.8.4. Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the proof of a conjecture. ✹	
MA.912.G.8.5. Write geometric proofs, including proofs by contradiction and proofs involving coordinate geometry. Use and compare a variety of ways to present deductive proofs, such as flow charts, paragraphs, two-column, and indirect proofs.	
MA.912.G.8.6. Perform basic constructions using straight-edge and compass, and/or drawing programs describing and justifying the procedures used. Distinguish between sketching, constructing and drawing geometric figures.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Probability	
STANDARD 1: Counting Principles	
MA.912.P.1.1. Use counting principles, including the addition and the multiplication principles, to determine size of finite sample spaces and probabilities of events in those spaces. ✹	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations
MA.912.P.1.2. Use formulas for permutations and combinations to count outcomes and determine probabilities of events.	
STANDARD 2: Determine Probabilities	
MA.912.P.2.1. Determine probabilities of complementary events, and calculate odds for and against the occurrence of events. ✹	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement
MA.912.P.2.2. Determine probabilities of independent events. ✹	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
MA.912.P.2.3. Understand and use the concept of conditional probability, including: understanding how conditioning affects the probability of events; finding conditional probabilities from a two-way frequency table.	
STANDARD 3: Probability Distributions	
MA.912.P.3.1. Determine probabilities of events from distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations
MA.912.P.3.2. Determine the mean and variance of distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers
MA.912.P.3.3. Apply the properties of the normal distribution.	
MA.912.P.3.4. Apply the Central Limit Theorem to determine the probability that a sample mean will be in a certain interval.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 1: Formulating Questions	
MA.912.S.1.1. Formulate an appropriate research question to be answered by collecting data or performing an experiment.	
MA.912.S.1.2. Determine appropriate and consistent standards of measurement for the data to be collected in a survey or experiment.	
STANDARD 2: Data Collection	
MA.912.S.2.1. Compare the difference between surveys, experiments, and observational studies, and what types of questions can and cannot be answered by a particular design.	
MA.912.S.2.2. Apply the definition of random sample and basic types of sampling, including representative samples, stratified samples, censuses.	
MA.912.S.2.3. Identify sources of bias, including sampling and nonsampling errors. ✹	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.1. Read and interpret data presented in various formats. Determine whether data is presented in appropriate format, and identify possible corrections. ✹ Formats to include: • **bar graphs** • **line graphs** • **stem and leaf plots** • **circle graphs** • **histograms** • **box and whiskers plots** • **scatter plots** • cumulative frequency (ogive) graphs	**Probability, Statistics, & Data Analysis:** Read tables and graphs
MA.912.S.3.2. Collect, organize, and analyze data sets, determine the best format for the data and present visual summaries from the following: ✹ • **bar graphs** • **line graphs** • **stem and leaf plots** • **circle graphs** • **histograms** • **box and whisker plots** • **scatter plots** • cumulative frequency (ogive) graphs	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs
MA.912.S.3.3. Calculate and interpret measures of the center of a set of data, including mean, median, and weighted mean, and use these measures to make comparisons among sets of data. ✹	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Perform computations on data from tables and graphs Calculate the average, given the frequency counts of all the data values

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.4. Calculate and interpret measures of variance and standard deviation. Use these measures to make comparisons among sets of data.	
MA.912.S.3.5. Calculate and interpret the range and quartiles of a set of data. ✹	**Probability, Statistics, & Data Analysis:** Perform a single computation using information from a table or chart
MA.912.S.3.6. Use empirical rules (e.g. 68-95-99.7 rule) to estimate spread of distributions and to make comparisons among sets of data.	
MA.912.S.3.7. Calculate the correlation coefficient of a set of paired data, and interpret the coefficient as a measure of the strength and direction of the relationship between the variables.	
MA.912.S.3.8. Determine whether a data distribution is symmetric or skewed based on an appropriate graphical presentation of the data.	
MA.912.S.3.9. Identify outliers in a set of data based on an appropriate graphical presentation of the data, and describe the effect of outliers on the mean, median, and range of the data.	
STANDARD 4: Analyzing Data	
MA.912.S.4.1. Explain and interpret the concepts of confidence level and "margin of error".	
MA.912.S.4.2. Use a simulation to approximate sampling distributions for the mean, using repeated sampling simulations from a given population.	
MA.912.S.4.3. Apply the Central Limit Theorem to solve problems.	
MA.912.S.4.4. Approximate confidence intervals for means using simulations of the distribution of the sample mean.	
MA.912.S.4.5. Find the equation of the least squares regression line for a set of data.	
STANDARD 5: Interpreting Results	
MA.912.S.5.1. Analyze the relationship between confidence level, margin of error and sample size.	
MA.912.S.5.2. Apply the general principles of hypothesis testing.	
MA.912.S.5.3. Explain and identify the following: null hypothesis, alternative hypotheses, Type I error, and Type II error.	
MA.912.S.5.4. Explain the meaning of *p-value* and its role in hypothesis testing.	
MA.912.S.5.5. Perform hypothesis tests of means and proportions for large samples, using simulations to determine whether a sample mean (proportion) has a low likelihood of occurring.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 5: Interpreting Results	
MA.912.S.5.6. Interpret the results of hypothesis tests of means and proportions, and make decisions based on p-values of test.	
MA.912.S.5.7. Use simulations to approximate the p-value of a correlation coefficient, and use the results to determine whether the correlation between two variables is significant.	
MA.912.S.5.8. Use a regression line equation to make predictions.	
MA.912.S.5.9. Interpret the coefficient of determination, r^2, for a least-squares regression.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Trigonometry	
STANDARD 1: Trigonometric Functions	
MA.912.T.1.1. Convert between degree and radian measures.	
MA.912.T.1.2. Define and determine sine and cosine using the unit circle.	
MA.912.T.1.3. State and use exact values of trigonometric functions for special angles; i.e., multiples of $\frac{\pi}{6}$ and $\frac{\pi}{4}$ (degree and radian measures).	
MA.912.T.1.4. Find approximate values of trigonometric and inverse trigonometric functions using appropriate technology.	
MA.912.T.1.5. Make connections between right triangle ratios, trigonometric functions, and circular functions.	
MA.912.T.1.6. Define and graph trigonometric functions using domain, range, intercepts, period, amplitude, phase shift, vertical shift, and asymptotes with and without the use of graphing technology.	
MA.912.T.1.7. Define and graph inverse trigonometric relations and functions.	
MA.912.T.1.8. Solve real-world problems involving applications of trigonometric functions using graphing technology when appropriate.	
STANDARD 2: Trigonometry in Triangles	
MA.912.T.2.1. Define and use the trigonometric ratios (**sine, cosine, tangent**, cotangent, secant, cosecant) in terms of angles of right triangles. ✹	
MA.912.T.2.2. Solve real-world problems involving right triangles using technology when appropriate. ✹	
MA.912.T.2.3. Apply the laws of sines and cosines to solve real-world problems using technology.	
MA.912.T.2.4. Use the area of triangles given two sides and an angle or three sides to solve real-world problems.	
STANDARD 3: Trigonometric Identities and Equations	
MA.912.T.3.1. Verify the basic Pythagorean identities, e.g., $\sin^2 x + \cos^2 x = 1$, and show they are equivalent to the Pythagorean Theorem.	
MA.912.T.3.2. Use basic trigonometric identities to verify other identities and simplify expressions.	
MA.912.T.3.3. Use the sum and difference, half-angle and double-angle formulas for sine, cosine, and tangent, when formulas are provided.	
MA.912.T.3.4. Solve trigonometric equations and real-world problems involving applications of trigonometric equations using technology when appropriate.	

TABLE 2B

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	EXPLORE Mathematics College Readiness Standards
Body of Knowledge: Trigonometry	
STANDARD 4: Polar Coordinates and Trigonometric Form of Complex Numbers	
MA.912.T.4.1. Define polar coordinates and relate polar coordinates to Cartesian coordinates with and without the use of technology.	
MA.912.T.4.2. Represent equations given in rectangular coordinates in terms of polar coordinates.	
MA.912.T.4.3. Graph equations in the polar coordinate plane with and without the use of graphing technology.	
MA.912.T.4.4. Define the trigonometric form of complex numbers, convert complex numbers to trigonometric form, and multiply complex numbers in trigonometric form.	
MA.912.T.4.5. Apply DeMoivre's Theorem to perform operations with complex numbers.	
STANDARD 5: Mathematical Reasoning and Problem Solving	
MA.912.T.5.1. Use a variety of problem-solving strategies, such as drawing a diagram, guess-and-check, solving a simpler problem, examining simpler problems, and working backwards, using technology when appropriate.	
MA.912.T.5.2. Decide whether a solution is reasonable in the context of the original situation.	
MA.912.T.5.3. Determine whether a given trigonometric statement is always, sometimes, or never true. Use the properties of the real numbers, order of operations, and trigonometric identities to justify the steps involved in verifying identities and solving equations.	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
MA.912.A.1.1. Know equivalent forms of real numbers (including integer exponents and radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers). ✹	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers
MA.912.A.1.2. Compare real number expressions. ✹	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers
MA.912.A.1.3. Simplify real number expressions using the laws of exponents. ✹	**Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers Apply rules of exponents
MA.912.A.1.4. Perform operations on real numbers (including integer exponents, radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers) using multi-step and real-world problems. ✹	**Basic Operations & Applications:** Solve problems in one or two steps using whole numbers Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages **Probability, Statistics, & Data Analysis:** Calculate the average, given the number of data values and the sum of the data values Perform computations on data from tables and graphs Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
	Calculate or use a weighted average **Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers Apply rules of exponents **Properties of Plane Figures:** Use several angle properties to find an unknown angle measure Use properties of isosceles triangles Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem **Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the perimeter of simple composite geometric figures with unknown side lengths Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.A.1.5. Use dimensional (unit) analysis to perform conversions between units of measure, including rates. ✹	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages
MA.912.A.1.6. Identify the real and imaginary parts of complex numbers and perform basic operations.	
MA.912.A.1.7. Represent complex numbers geometrically.	
MA.912.A.1.8. Use the zero product property of real numbers in a variety of contexts to identify solutions to equations.	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Solve quadratic equations

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 2: Relations and Functions	
MA.912.A.2.1. Create a graph to represent a real-world situation. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
MA.912.A.2.2. Interpret a graph representing a real-world situation. ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.2.3. Describe the concept of a function, use function notation, determine whether a given relation is a function, and link equations to functions. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.2.4. Determine the domain and range of a relation. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.2.5. Graph absolute value equations and inequalities in two variables.	
MA.912.A.2.6. Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Match linear graphs with their equations Interpret and use information from graphs in the coordinate plane
MA.912.A.2.7. Perform operations (addition, subtraction, division and multiplication) of functions algebraically, numerically, and graphically.	
MA.912.A.2.8. Determine the composition of functions.	
MA.912.A.2.9. Recognize, interpret, and graph functions defined piece-wise, with and without technology.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.2.10. Describe and graph transformations of functions.	
MA.912.A.2.11. Solve problems involving functions and their inverses.	
MA.912.A.2.12. Solve problems using direct, inverse, and joint variations. ✹	
MA.912.A.2.13. Solve real-world problems involving relations and functions.	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.1. Solve linear equations in one variable that include simplifying algebraic expressions. ✹	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Solve routine first-degree equations Solve real-world problems using first-degree equations Manipulate expressions and equations
MA.912.A.3.2. Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality. ✹	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Solve routine first-degree equations Multiply two binomials
MA.912.A.3.3. Solve literal equations for a specified variable. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.3.4. Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution. ✹	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign **Graphical Representations:** Identify the graph of a linear inequality on the number line Match number line graphs with solution sets of linear inequalities
MA.912.A.3.5. Symbolically represent and solve multi-step and real-world applications that involve linear equations and inequalities. ✹	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings
MA.912.A.3.6. Solve and graph the solutions of absolute value equations and inequalities with one variable.	**Expressions, Equations, & Inequalities:** Solve absolute value equations

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.7. Rewrite equations of a line into slope-intercept form and standard form. ✹	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.3.8. Graph a line given any of the following information: a table of values, the x- and y-intercepts, two points, the slope and a point, the equation of the line in slope-intercept form, standard form, or point-slope form. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Match linear graphs with their equations
MA.912.A.3.9. Determine the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line. ✹	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations **Graphical Representations:** Exhibit knowledge of slope Determine the slope of a line from points or equations Interpret and use information from graphs in the coordinate plane
MA.912.A.3.10. Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line. ✹	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
MA.912.A.3.11. Write an equation of a line that models a data set and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.3.12. Graph a linear equation or inequality in two variables with and without graphing technology. Write an equation or inequality represented by a given graph. ✹	**Graphical Representations:** Match linear graphs with their equations Match number line graphs with solution sets of linear inequalities
MA.912.A.3.13. Use a graph to approximate the solution of a system of linear equations or inequalities in two variables with and without technology. ✹	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
MA.912.A.3.14. Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods. ✹	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
MA.912.A.3.15. Solve real-world problems involving systems of linear equations and inequalities in two and three variables. ✹	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 4: Polynomials	
MA.912.A.4.1. Simplify monomials and monomial expressions using the laws of integral exponents. ✹	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
MA.912.A.4.2. Add, subtract, and multiply polynomials. ✹	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Multiply two binomials Add, subtract, and multiply polynomials
MA.912.A.4.3. Factor polynomial expressions. ✹	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Manipulate expressions and equations
MA.912.A.4.4. Divide polynomials by monomials and polynomials with various techniques, including synthetic division. ✹	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.4.5. Graph polynomial functions with and without technology and describe end behavior.	
MA.912.A.4.6. Use theorems of polynomial behavior (including but not limited to the Fundamental Theorem of Algebra, Remainder Theorem, the Rational Root Theorem, Descartes' Rule of Signs, and the Conjugate Root Theorem) to find the zeros of a polynomial function.	
MA.912.A.4.7. Write a polynomial equation for a given set of real and/or complex roots.	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
MA.912.A.4.8. Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.4.9. Use graphing technology to find approximate solutions for polynomial equations.	
MA.912.A.4.10. Use polynomial equations to solve real-world problems.	
MA.912.A.4.11. Solve a polynomial inequality by examining the graph with and without the use of technology.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.4.12. Apply the Binomial Theorem.	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 5: Rational Expressions and Equations	
MA.912.A.5.1. Simplify algebraic ratios. ✹	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.2. Add, subtract, multiply, and divide rational expressions.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.3. Simplify complex fractions.	
MA.912.A.5.4. Solve algebraic proportions. ✹	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.5. Solve rational equations.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.6. Identify removable and non-removable discontinuities, and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function.	
MA.912.A.5.7. Solve real-world problems involving rational equations (mixture, distance, work, interest, and ratio).	
STANDARD 6: Radical Expressions and Equations	
MA.912.A.6.1. Simplify radical expressions. ✹	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.6.2. Add, subtract, multiply and divide radical expressions (square roots and higher). ✹	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.6.3. Simplify expressions using properties of rational exponents.	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Apply rules of exponents
MA.912.A.6.4. Convert between rational exponent and radical forms of expressions.	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply rules of exponents **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.6.5. Solve equations that contain radical expressions.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 7: Quadratic Equations	
MA.912.A.7.1. Graph quadratic equations with and without graphing technology. ✸	
MA.912.A.7.2. Solve quadratic equations over the real numbers by factoring, and by using the quadratic formula. ✸	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Solve quadratic equations
MA.912.A.7.3. Solve quadratic equations over the real numbers by completing the square.	**Expressions, Equations, & Inequalities:** Solve quadratic equations
MA.912.A.7.4. Use the discriminant to determine the nature of the roots of a quadratic equation.	
MA.912.A.7.5. Solve quadratic equations over the complex number system.	**Expressions, Equations, & Inequalities:** Solve quadratic equations
MA.912.A.7.6. Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola.	
MA.912.A.7.7. Solve non-linear systems of equations with and without using technology.	
MA.912.A.7.8. Use quadratic equations to solve real-world problems. ✸	
MA.912.A.7.9. Solve optimization problems.	
MA.912.A.7.10. Use graphing technology to find approximate solutions of quadratic equations.	
STANDARD 8: Logarithmic and Exponential Functions	
MA.912.A.8.1. Define exponential and logarithmic functions and determine their relationship.	
MA.912.A.8.2. Define and use the properties of logarithms to simplify logarithmic expressions and to find their approximate values.	
MA.912.A.8.3. Graph exponential and logarithmic functions.	
MA.912.A.8.4. Prove laws of logarithms.	
MA.912.A.8.5. Solve logarithmic and exponential equations.	
MA.912.A.8.6. Use the change of base formula.	
MA.912.A.8.7. Solve applications of exponential growth and decay.	**Basic Operations & Applications:** Solve word problems containing several rates, proportions, or percentages
STANDARD 9: Conic Sections	
MA.912.A.9.1. Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity, etc.).	
MA.912.A.9.2. Graph conic sections with and without using graphing technology.	
MA.912.A.9.3. Solve real-world problems involving conic sections.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 10: Mathematical Reasoning and Problem Solving	
MA.912.A.10.1. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, working backwards, and creating a table. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.10.2. Decide whether a solution is reasonable in the context of the original situation. ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Numbers: Concepts & Properties:** Determine when an expression is undefined **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.10.3. Decide whether a given statement is always, sometimes, or never true (statements involving **linear** or quadratic **expressions, equations, or inequalities** rational or radical expressions or logarithmic or exponential functions). ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Numbers: Concepts & Properties:** Determine when an expression is undefined **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.10.4. Use counterexamples to show that statements are false.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 1: Recursion	
MA.912.D.1.1. Use recursive and iterative thinking to solve problems, including identification of patterns, population growth and decline, and compound interest.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
MA.912.D.1.2. Use finite differences to solve problems and to find explicit formulas for recurrence relations.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
MA.912.D.1.3. Use mathematical induction to prove various concepts in number theory (such as sums of infinite integer series, divisibility statements, and parity statements), recurrence relations, and other applications.	
STANDARD 2: Graph Theory	
MA.912.D.2.1. Use Euler and Hamilton cycles and paths in graphs to solve routing problems.	
MA.912.D.2.2. Use critical path analysis to solve scheduling problems.	
MA.912.D.2.3. Use graph coloring techniques to solve problems.	
MA.912.D.2.4. Use spanning trees, rooted trees, binary trees, and decision trees to solve problems.	
MA.912.D.2.5. Use bin-packing techniques to solve problems concerning optimizing resource usage.	
STANDARD 3: Social Choice	
MA.912.D.3.1. Use election theory techniques to analyze election data.	
MA.912.D.3.2. Use weighted voting techniques to decide voting power within a group.	
MA.912.D.3.3. Use fair division techniques to divide continuous objects.	
MA.912.D.3.4. Use fair division techniques to solve apportionment problems.	
STANDARD 4: Linear Programming	
MA.912.D.4.1. Solve maximal profit/minimal cost problems.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 5: Game Theory	
MA.912.D.5.1. Use game theory to solve strictly determined games.	
MA.912.D.5.2. Use game theory to solve non-strictly determined games.	
STANDARD 6: Logic	
MA.912.D.6.1. Use truth tables to determine truth values of propositional statements.	
MA.912.D.6.2. Find the converse, inverse, and contrapositive of a statement. ✹	
MA.912.D.6.3. Determine whether two propositions are logically equivalent.	
MA.912.D.6.4. Use methods of direct and indirect proof and determine whether a short proof is logically valid. ✹	
MA.912.D.6.5. Identify and give examples of: ✹ • undefined terms; • axioms; • theorems; • inductive and deductive proofs; and, • inductive and deductive reasoning.	
MA.912.D.6.6. Construct logical arguments using laws of detachment (modus ponens), syllogism, tautology, and contradiction; judge the validity of arguments, and give counterexamples to disprove statements.	
MA.912.D.6.7. Use applications of the universal and existential quantifiers to propositional statements.	
STANDARD 7: Set Theory	
MA.912.D.7.1. Perform set operations such as union and intersection, complement, and cross product. ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
MA.912.D.7.2. Use Venn diagrams to explore relationships and patterns, and to make arguments about relationships between sets. ✹	**Probability, Statistics, & Data Analysis:** Use Venn diagrams in counting Interpret and use information from figures, tables, and graphs

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 8: Matrices	
MA.912.D.8.1. Use matrices to organize and store data. Perform matrix operations (addition, subtraction, scalar multiplication, multiplication).	
MA.912.D.8.2. Use matrix operations to solve problems.	
MA.912.D.8.3. Use row-reduction techniques to solve problems.	
MA.912.D.8.4. Find the inverse of a matrix and use the inverse to solve problems with and without the use of technology.	
MA.912.D.8.5. Use determinants of 2 × 2 and 3 × 3 matrices as well as higher order matrices with and without the use of technology.	
MA.912.D.8.6. Use matrices to solve Markov chain problems that link present events to future events using probabilities.	
STANDARD 9: Vectors	
MA.912.D.9.1. Demonstrate an understanding of the geometric interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	
MA.912.D.9.2. Demonstrate an understanding of the algebraic interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	
MA.912.D.9.3. Use vectors to model and solve application problems.	
STANDARD 10: Parametric Equations	
MA.912.D.10.1. Sketch the graph of a curve in the plane represented parametrically, indicating the direction of motion.	
MA.912.D.10.2. Convert from a parametric representation of a plane curve to a rectangular equation, and vice-versa.	
MA.912.D.10.3. Use parametric equations to model applications of motion in the plane.	
STANDARD 11: Sequences and Series	
MA.912.D.11.1. Define arithmetic and geometric sequences and series.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
MA.912.D.11.2. Use sigma notation to describe series.	
MA.912.D.11.3. Find specified terms of arithmetic and geometric sequences.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
MA.912.D.11.4. Find partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use Sigma notation where applicable.	
MA.912.D.11.5. Explore and use other sequences found in nature such as the Fibonacci sequence and the golden ratio.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 1: Simple and Compound Interest	
MA.912.F.1.1. Explain the difference between simple and compound interest.	
MA.912.F.1.2. Solve problems involving compound interest.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.912.F.1.3. Demonstrate the relationship between simple interest and linear growth.	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.912.F.1.4. Demonstrate the relationship between compound interest and exponential growth.	
STANDARD 2: Net Present and Net Future Value (NPV and NFV)	
MA.912.F.2.1. Calculate the future value of a given amount of money, with and without technology.	
MA.912.F.2.2. Calculate the present value of a certain amount of money for a given length of time in the future, with and without technology.	
MA.912.F.2.3. Use a consumer price index to express dollars in constant terms, with and without technology.	
MA.912.F.2.4. Calculate the present value of an income stream, with and without technology.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.1. Compare the advantages and disadvantages of using cash versus a credit card.	
MA.912.F.3.2. Analyze credit scores and reports.	
MA.912.F.3.3. Calculate the finance charges and total amount due on a credit card bill.	
MA.912.F.3.4. Compare the advantages and disadvantages of deferred payments.	
MA.912.F.3.5. Calculate deferred payments.	
MA.912.F.3.6. Calculate total cost of purchasing consumer durables over time given different down payments, financing options, and fees.	
MA.912.F.3.7. Calculate the following fees associated with a mortgage: • discount points • origination fee • maximum brokerage fee on a net or gross loan • documentary stamps • prorated expenses (interest, county and/or city property taxes, and mortgage on an assumed mortgage)	
MA.912.F.3.8. Substitute to solve a variety of mortgage formulas, including but not limited to Front End Ratio, Total Debt-to-Income Ratio, Loan-to-Value Ratio (LTV), Combined Loan-to-Value Ratio (CLTV), and Amount of Interest Paid Over the Life of a Loan.	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
MA.912.F.3.9. Calculate the total amount to be paid over the life of a fixed rate loan.	
MA.912.F.3.10. Calculate the effects on the monthly payment in the change of interest rate based on an adjustable rate mortgage.	
MA.912.F.3.11. Calculate the final pay out amount for a balloon mortgage.	
MA.912.F.3.12. Compare the cost of paying a higher interest rate and lower points versus a lower interest rate and more points.	
MA.912.F.3.13. Calculate the total amount paid for the life of a loan for a house including the down payment, points, fees, and interest.	
MA.912.F.3.14. Compare the total cost for a set purchase price using a fixed rate, adjustable rate, and a balloon mortgage.	
MA.912.F.3.15. Interpret the legal description using the metes and bounds; lot and block (plat); government survey; and monument methods.	
MA.912.F.3.16. Estimate real property value using the sales comparison approach, cost-depreciation approach, or the income capitalization approach.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.17. Compare interest rate calculations and annual percentage rate calculations to distinguish between the two rates.	
STANDARD 4: Individual Financial and Investment Planning	
MA.912.F.4.1. Develop personal budgets that fit within various income brackets.	
MA.912.F.4.2. Explain cash management strategies including debit accounts, checking accounts, and savings accounts.	
MA.912.F.4.3. Calculate net worth.	
MA.912.F.4.4. Establish a plan to pay off debt.	
MA.912.F.4.5. Develop and apply a variety of strategies to use tax tables, determine, calculate, and complete yearly federal income tax.	
MA.912.F.4.6. Compare different insurance options and fees.	
MA.912.F.4.7. Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.	
MA.912.F.4.8. Collect, organize, and interpret data to determine an effective retirement savings plan to meet personal financial goals.	
MA.912.F.4.9. Calculate, compare, and contrast different types of retirement plans, including IRAs, ROTH accounts, and annuities.	
MA.912.F.4.10. Analyze diversification in investments.	
MA.912.F.4.11. Purchase stock with a set amount of money and follow the process through gains, losses, and selling.	
MA.912.F.4.12. Compare and contrast income from purchase of common stock, preferred stock, and bonds.	
MA.912.F.4.13. Given current exchange rates, be able to convert from one form of currency to another.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.912.F.4.14. Use data to compare historical rates of return on investments with investment claims to make informed decisions and identify potential fraud.	
STANDARD 5: Economic Concepts	
MA.912.F.5.1. Demonstrate how price and quantity demanded relate, how price and quantity supplied relate, and how price changes or price controls affect distribution and allocation in the economy.	
MA.912.F.5.2. Use basic terms and indicators associated with levels of economic performance and the state of the economy.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 1: Points, Lines, Angles, and Planes	
MA.912.G.1.1. Find the lengths and midpoints of line segments in two-dimensional coordinate systems. ✹	**Graphical Representations:** Find the midpoint of a line segment Use the distance formula
MA.912.G.1.2. Construct congruent segments and angles, angle bisectors, and parallel and perpendicular lines using a straight edge and compass or a drawing program, explaining and justifying the process used.	
MA.912.G.1.3. Identify and use the relationships between special pairs of angles formed by parallel lines and transversals. ✹	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.912.G.1.4. Use coordinate geometry to find slopes, parallel lines, perpendicular lines, and equations of lines. ✹	**Graphical Representations:** Exhibit knowledge of slope Determine the slope of a line from points or equations Match linear graphs with their equations Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 2: Polygons	
MA.912.G.2.1. Identify and describe convex, concave, regular, and irregular polygons. ✹	
MA.912.G.2.2. Determine the measures of interior and exterior angles of polygons, justifying the method used. ✹	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.912.G.2.3. Use properties of congruent and similar polygons to solve mathematical or real-world problems. ✹	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.2.4. Apply transformations (translations, reflections, rotations, dilations, and scale factors) to polygons. to determine congruence, similarity, and symmetry. Know that images formed by translations, reflections, and rotations are congruent to the original shape. Create and verify tessellations of the plane using polygons. ✹	
MA.912.G.2.5. Explain the derivation and apply formulas for perimeter and area of polygons (triangles, quadrilaterals, pentagons, etc.). ✹	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the area of rectangles when whole number dimensions are given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the perimeter of simple composite geometric figures with unknown side lengths Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.G.2.6. Use coordinate geometry to prove properties of congruent, regular and similar polygons, and to perform transformations in the plane. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.2.7. Determine how changes in dimensions affect the perimeter and area of common geometric figures. ✹	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 3: Quadrilaterals	
MA.912.G.3.1. Describe, classify, and compare relationships among quadrilaterals including the square, rectangle, rhombus, parallelogram, trapezoid, and kite. ✹	
MA.912.G.3.2. Compare and contrast special quadrilaterals on the basis of their properties. ✹	
MA.912.G.3.3. Use coordinate geometry to prove properties of congruent, regular and similar quadrilaterals. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.3.4. Prove theorems involving quadrilaterals.	
STANDARD 4: Triangles	
MA.912.G.4.1. Classify, construct, and describe triangles that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular. ✹	
MA.912.G.4.2. Define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter. ✹	
MA.912.G.4.3. Construct triangles congruent to given triangles.	
MA.912.G.4.4. Use properties of congruent and similar triangles to solve problems involving lengths and areas. ✹	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.G.4.5. Apply theorems involving segments divided proportionally. ✹	
MA.912.G.4.6. Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles. ✹	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.4.7. Apply the inequality theorems: triangle inequality, inequality in one triangle, and the Hinge Theorem. ✹	
MA.912.G.4.8. Use coordinate geometry to prove properties of congruent, regular, and similar triangles.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 5: Right Triangles	
MA.912.G.5.1. Prove and apply the Pythagorean Theorem and its converse. ✹	**Properties of Plane Figures:** Use the Pythagorean theorem
MA.912.G.5.2. State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle.	
MA.912.G.5.3. Use special right triangles (30°-60°-90° and 45°-45°-90°) to solve problems. ✹	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.5.4. Solve real-world problems involving right triangles.	**Properties of Plane Figures:** Recognize Pythagorean triples Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem
STANDARD 6: Circles	
MA.912.G.6.1. Determine the center of a given circle. Given three points not on a line, construct the circle that passes through them. Construct tangents to circles. Circumscribe and inscribe circles about and within triangles and regular polygons.	
MA.912.G.6.2. Define and identify: circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles. ✹	
MA.912.G.6.3. Prove theorems related to circles, including related angles, chords, tangents, and secants.	
MA.912.G.6.4. Determine and use measures of arcs and related angles (central, inscribed, and intersections of secants and tangents). ✹	
MA.912.G.6.5. Solve real-world problems using measures of circumference, arc length, and areas of circles and sectors. ✹	**Measurement:** Compute the area and circumference of circles after identifying necessary information Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.G.6.6. Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle. ✹	
MA.912.G.6.7. Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 7: Polyhedra and Other Solids	
MA.912.G.7.1. Describe and make regular, non-regular, and oblique polyhedra and sketch the net for a given polyhedron and vice versa. ✹	
MA.912.G.7.2. Describe the relationships between the faces, edges, and vertices of polyhedra.	
MA.912.G.7.3. Identify, sketch, and determine areas and/or perimeters of cross sections of three-dimensional solids.	
MA.912.G.7.4. Identify chords, tangents, radii, and great circles of spheres. ✹	
MA.912.G.7.5. Explain and use formulas for lateral area, surface area, and volume of three-dimensional solids. ✹	**Measurement:** Use geometric formulas when all necessary information is given **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.7.6. Identify and use properties of congruent and similar three-dimensional solids. ✹	
MA.912.G.7.7. Determine how changes in dimensions affect the surface area and volume of common three-dimensional geometric solids. ✹	
STANDARD 8: Mathematical Reasoning and Problem Solving	
MA.912.G.8.1. Analyze the structure of Euclidean geometry as an axiomatic system. Distinguish between undefined terms, definitions, postulates and theorems.	
MA.912.G.8.2. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	
MA.912.G.8.3. Determine whether a solution is reasonable in the context of the original situation. ✹	
MA.912.G.8.4. Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the proof of a conjecture. ✹	
MA.912.G.8.5. Write geometric proofs, including proofs by contradiction and proofs involving coordinate geometry. Use and compare a variety of ways to present deductive proofs, such as flow charts, paragraphs, two-column, and indirect proofs.	
MA.912.G.8.6. Perform basic constructions using straight-edge and compass, and/or drawing programs describing and justifying the procedures used. Distinguish between sketching, constructing and drawing geometric figures.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Probability	
STANDARD 1: Counting Principles	
MA.912.P.1.1. Use counting principles, including the addition and the multiplication principles, to determine size of finite sample spaces and probabilities of events in those spaces. ✹	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Exhibit knowledge of simple counting techniques Compute straightforward probabilities for common situations Use Venn diagrams in counting Apply counting techniques
MA.912.P.1.2. Use formulas for permutations and combinations to count outcomes and determine probabilities of events.	
STANDARD 2: Determine Probabilities	
MA.912.P.2.1. Determine probabilities of complementary events, and calculate odds for and against the occurrence of events. ✹	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement
MA.912.P.2.2. Determine probabilities of independent events. ✹	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
MA.912.P.2.3. Understand and use the concept of conditional probability, including: understanding how conditioning affects the probability of events; finding conditional probabilities from a two-way frequency table.	
STANDARD 3: Probability Distributions	
MA.912.P.3.1. Determine probabilities of events from distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations Compute a probability when the event and/or sample space are not given or obvious
MA.912.P.3.2. Determine the mean and variance of distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers
MA.912.P.3.3. Apply the properties of the normal distribution.	
MA.912.P.3.4. Apply the Central Limit Theorem to determine the probability that a sample mean will be in a certain interval.	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 1: Formulating Questions	
MA.912.S.1.1. Formulate an appropriate research question to be answered by collecting data or performing an experiment.	
MA.912.S.1.2. Determine appropriate and consistent standards of measurement for the data to be collected in a survey or experiment.	
STANDARD 2: Data Collection	
MA.912.S.2.1. Compare the difference between surveys, experiments, and observational studies, and what types of questions can and cannot be answered by a particular design.	
MA.912.S.2.2. Apply the definition of random sample and basic types of sampling, including representative samples, stratified samples, censuses.	
MA.912.S.2.3. Identify sources of bias, including sampling and nonsampling errors. ✹	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.1. Read and interpret data presented in various formats. Determine whether data is presented in appropriate format, and identify possible corrections. ✹ Formats to include: • **bar graphs** • **line graphs** • **stem and leaf plots** • **circle graphs** • **histograms** • **box and whiskers plots** • **scatter plots** • cumulative frequency (ogive) graphs	**Probability, Statistics, & Data Analysis:** Read tables and graphs Interpret and use information from figures, tables, and graphs
MA.912.S.3.2. Collect, organize, and analyze data sets, determine the best format for the data and present visual summaries from the following: ✹ • **bar graphs** • **line graphs** • **stem and leaf plots** • **circle graphs** • **histograms** • **box and whisker plots** • **scatter plots** • cumulative frequency (ogive) graphs	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.3. Calculate and interpret measures of the center of a set of data, including mean, median, and weighted mean, and use these measures to make comparisons among sets of data. ✹	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Perform computations on data from tables and graphs Calculate the average, given the frequency counts of all the data values Calculate or use a weighted average Interpret and use information from figures, tables, and graphs
MA.912.S.3.4. Calculate and interpret measures of variance and standard deviation. Use these measures to make comparisons among sets of data.	
MA.912.S.3.5. Calculate and interpret the range and quartiles of a set of data. ✹	**Probability, Statistics, & Data Analysis:** Perform a single computation using information from a table or chart Interpret and use information from figures, tables, and graphs
MA.912.S.3.6. Use empirical rules (e.g. 68-95-99.7 rule) to estimate spread of distributions and to make comparisons among sets of data.	
MA.912.S.3.7. Calculate the correlation coefficient of a set of paired data, and interpret the coefficient as a measure of the strength and direction of the relationship between the variables.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
MA.912.S.3.8. Determine whether a data distribution is symmetric or skewed based on an appropriate graphical presentation of the data.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
MA.912.S.3.9. Identify outliers in a set of data based on an appropriate graphical presentation of the data, and describe the effect of outliers on the mean, median, and range of the data.	
STANDARD 4: Analyzing Data	
MA.912.S.4.1. Explain and interpret the concepts of confidence level and "margin of error".	
MA.912.S.4.2. Use a simulation to approximate sampling distributions for the mean, using repeated sampling simulations from a given population.	
MA.912.S.4.3. Apply the Central Limit Theorem to solve problems.	
MA.912.S.4.4. Approximate confidence intervals for means using simulations of the distribution of the sample mean.	
MA.912.S.4.5. Find the equation of the least squares regression line for a set of data.	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 5: Interpreting Results	
MA.912.S.5.1. Analyze the relationship between confidence level, margin of error and sample size.	
MA.912.S.5.2. Apply the general principles of hypothesis testing.	
MA.912.S.5.3. Explain and identify the following: null hypothesis, alternative hypotheses, Type I error, and Type II error.	
MA.912.S.5.4. Explain the meaning of *p-value* and its role in hypothesis testing.	
MA.912.S.5.5. Perform hypothesis tests of means and proportions for large samples, using simulations to determine whether a sample mean (proportion) has a low likelihood of occurring.	
MA.912.S.5.6. Interpret the results of hypothesis tests of means and proportions, and make decisions based on p-values of test.	
MA.912.S.5.7. Use simulations to approximate the p-value of a correlation coefficient, and use the results to determine whether the correlation between two variables is significant.	
MA.912.S.5.8. Use a regression line equation to make predictions.	
MA.912.S.5.9. Interpret the coefficient of determination, r^2, for a least-squares regression.	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Trigonometry	
STANDARD 1: Trigonometric Functions	
MA.912.T.1.1. Convert between degree and radian measures.	
MA.912.T.1.2. Define and determine sine and cosine using the unit circle.	
MA.912.T.1.3. State and use exact values of trigonometric functions for special angles; i.e., multiples of $\frac{\pi}{6}$ and $\frac{\pi}{4}$ (degree and radian measures).	
MA.912.T.1.4. Find approximate values of trigonometric and inverse trigonometric functions using appropriate technology.	
MA.912.T.1.5. Make connections between right triangle ratios, trigonometric functions, and circular functions.	
MA.912.T.1.6. Define and graph trigonometric functions using domain, range, intercepts, period, amplitude, phase shift, vertical shift, and asymptotes with and without the use of graphing technology.	
MA.912.T.1.7. Define and graph inverse trigonometric relations and functions.	
MA.912.T.1.8. Solve real-world problems involving applications of trigonometric functions using graphing technology when appropriate.	
STANDARD 2: Trigonometry in Triangles	
MA.912.T.2.1. Define and use the trigonometric ratios (**sine, cosine, tangent**, cotangent, secant, cosecant) in terms of angles of right triangles. ✹	
MA.912.T.2.2. Solve real-world problems involving right triangles using technology when appropriate. ✹	
MA.912.T.2.3. Apply the laws of sines and cosines to solve real-world problems using technology.	
MA.912.T.2.4. Use the area of triangles given two sides and an angle or three sides to solve real-world problems.	
STANDARD 3: Trigonometric Identities and Equations	
MA.912.T.3.1. Verify the basic Pythagorean identities, e.g., $\sin^2 x + \cos^2 x = 1$, and show they are equivalent to the Pythagorean Theorem.	
MA.912.T.3.2. Use basic trigonometric identities to verify other identities and simplify expressions.	
MA.912.T.3.3. Use the sum and difference, half-angle and double-angle formulas for sine, cosine, and tangent, when formulas are provided.	
MA.912.T.3.4. Solve trigonometric equations and real-world problems involving applications of trigonometric equations using technology when appropriate.	

TABLE 2C

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	PLAN Mathematics College Readiness Standards
Body of Knowledge: Trigonometry	
STANDARD 4: Polar Coordinates and Trigonometric Form of Complex Numbers	
MA.912.T.4.1. Define polar coordinates and relate polar coordinates to Cartesian coordinates with and without the use of technology.	
MA.912.T.4.2. Represent equations given in rectangular coordinates in terms of polar coordinates.	
MA.912.T.4.3. Graph equations in the polar coordinate plane with and without the use of graphing technology.	
MA.912.T.4.4. Define the trigonometric form of complex numbers, convert complex numbers to trigonometric form, and multiply complex numbers in trigonometric form.	
MA.912.T.4.5. Apply DeMoivre's Theorem to perform operations with complex numbers.	
STANDARD 5: Mathematical Reasoning and Problem Solving	
MA.912.T.5.1. Use a variety of problem-solving strategies, such as drawing a diagram, guess-and-check, solving a simpler problem, examining simpler problems, and working backwards, using technology when appropriate.	
MA.912.T.5.2. Decide whether a solution is reasonable in the context of the original situation.	
MA.912.T.5.3. Determine whether a given trigonometric statement is always, sometimes, or never true. Use the properties of the real numbers, order of operations, and trigonometric identities to justify the steps involved in verifying identities and solving equations.	

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
MA.912.A.1.1. Know equivalent forms of real numbers (including integer exponents and radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers). ✹	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers
MA.912.A.1.2. Compare real number expressions. ✹	**Numbers: Concepts & Properties:** Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers
MA.912.A.1.3. Simplify real number expressions using the laws of exponents. ✹	**Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers Apply rules of exponents
MA.912.A.1.4. Perform operations on real numbers (including integer exponents, radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers) using multi-step and real-world problems. ✹	**Basic Operations & Applications:** Solve problems in one or two steps using whole numbers Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings) **Probability, Statistics, & Data Analysis:** Calculate the average, given the number of data values and the sum of the data values

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
	Perform computations on data from tables and graphs Calculate the missing data value, given the average and all data values but one Calculate the average, given the frequency counts of all the data values Calculate or use a weighted average Exhibit knowledge of conditional and joint probability **Numbers: Concepts & Properties:** Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents Work with cubes and cube roots of numbers Apply rules of exponents **Properties of Plane Figures:** Use several angle properties to find an unknown angle measure Use properties of isosceles triangles Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas Use relationships among angles, arcs, and distances in a circle **Measurement:** Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the perimeter of simple composite geometric figures with unknown side lengths Use relationships involving area, perimeter, and volume of geometric figures to compute another measure Compute the area of composite geometric figures when planning or visualization is required
MA.912.A.1.5. Use dimensional (unit) analysis to perform conversions between units of measure, including rates. ✸	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) Solve word problems containing several rates, proportions, or percentages

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
MA.912.A.1.6. Identify the real and imaginary parts of complex numbers and perform basic operations.	**Numbers: Concepts & Properties:** Exhibit some knowledge of the complex numbers Multiply two complex numbers
MA.912.A.1.7. Represent complex numbers geometrically.	
MA.912.A.1.8. Use the zero product property of real numbers in a variety of contexts to identify solutions to equations.	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Solve quadratic equations

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 2: Relations and Functions	
MA.912.A.2.1. Create a graph to represent a real-world situation. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
MA.912.A.2.2. Interpret a graph representing a real-world situation. ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.2.3. Describe the concept of a function, use function notation, determine whether a given relation is a function, and link equations to functions. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane **Functions:** Evaluate quadratic functions, expressed in function notation, at integer values Evaluate polynomial functions, expressed in function notation, at integer values
MA.912.A.2.4. Determine the domain and range of a relation. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.2.5. Graph absolute value equations and inequalities in two variables.	
MA.912.A.2.6. Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Match linear graphs with their equations Interpret and use information from graphs in the coordinate plane Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.2.7. Perform operations (addition, subtraction, division and multiplication) of functions algebraically, numerically, and graphically.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.2.8. Determine the composition of functions.	**Graphical Representations:** Match number line graphs with solution sets of simple quadratic inequalities
MA.912.A.2.9. Recognize, interpret, and graph functions defined piece-wise, with and without technology.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 2: Relations and Functions	
MA.912.A.2.10. Describe and graph transformations of functions.	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.2.11. Solve problems involving functions and their inverses.	
MA.912.A.2.12. Solve problems using direct, inverse, and joint variations. ✹	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers
MA.912.A.2.13. Solve real-world problems involving relations and functions.	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Write equations and inequalities that require planning, manipulating, and/or solving

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.1. Solve linear equations in one variable that include simplifying algebraic expressions. ✹	**Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Solve routine first-degree equations Solve real-world problems using first-degree equations Manipulate expressions and equations
MA.912.A.3.2. Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality. ✹	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Expressions, Equations, & Inequalities:** Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Solve routine first-degree equations Multiply two binomials
MA.912.A.3.3. Solve literal equations for a specified variable. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
MA.912.A.3.4. Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution. ✹	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign Solve linear inequalities that require reversing the inequality sign Solve simple absolute value inequalities **Graphical Representations:** Identify the graph of a linear inequality on the number line Match number line graphs with solution sets of linear inequalities Match number line graphs with solution sets of simple quadratic inequalities

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.5. Symbolically represent and solve multi-step and real-world applications that involve linear equations and inequalities. ✹	**Expressions, Equations, & Inequalities:** Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
MA.912.A.3.6. Solve and graph the solutions of absolute value equations and inequalities with one variable.	**Expressions, Equations, & Inequalities:** Solve absolute value equations Solve simple absolute value inequalities
MA.912.A.3.7. Rewrite equations of a line into slope-intercept form and standard form. ✹	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.3.8. Graph a line given any of the following information: a table of values, the x- and y-intercepts, two points, the slope and a point, the equation of the line in slope-intercept form, standard form, or point-slope form. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) **Graphical Representations:** Match linear graphs with their equations Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.3.9. Determine the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line. ✹	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations **Graphical Representations:** Exhibit knowledge of slope Determine the slope of a line from points or equations Interpret and use information from graphs in the coordinate plane Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.3.10. Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line. ✹	**Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.11. Write an equation of a line that models a data set and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Solve problems integrating multiple algebraic and/or geometric concepts Analyze and draw conclusions based on information from graphs in the coordinate plane
MA.912.A.3.12. Graph a linear equation or inequality in two variables with and without graphing technology. Write an equation or inequality represented by a given graph. ✹	**Graphical Representations:** Match linear graphs with their equations Match number line graphs with solution sets of linear inequalities Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.3.13. Use a graph to approximate the solution of a system of linear equations or inequalities in two variables with and without technology. ✹	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.3.14. Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods. ✹	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.3.15. Solve real-world problems involving systems of linear equations and inequalities in two and three variables. ✹	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 4: Polynomials	
MA.912.A.4.1. Simplify monomials and monomial expressions using the laws of integral exponents. ✹	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
MA.912.A.4.2. Add, subtract, and multiply polynomials. ✹	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$) Add and subtract simple algebraic expressions Multiply two binomials Add, subtract, and multiply polynomials
MA.912.A.4.3. Factor polynomial expressions. ✹	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor **Expressions, Equations, & Inequalities:** Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Manipulate expressions and equations
MA.912.A.4.4. Divide polynomials by monomials and polynomials with various techniques, including synthetic division. ✹	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.4.5. Graph polynomial functions with and without technology and describe end behavior.	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.4.6. Use theorems of polynomial behavior (including but not limited to the Fundamental Theorem of Algebra, Remainder Theorem, the Rational Root Theorem, Descartes' Rule of Signs, and the Conjugate Root Theorem) to find the zeros of a polynomial function.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.4.7. Write a polynomial equation for a given set of real and/or complex roots.	**Numbers: Concepts & Properties:** Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
MA.912.A.4.8. Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 4: Polynomials	
MA.912.A.4.9. Use graphing technology to find approximate solutions for polynomial equations.	
MA.912.A.4.10. Use polynomial equations to solve real-world problems.	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.4.11. Solve a polynomial inequality by examining the graph with and without the use of technology.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Match number line graphs with solution sets of simple quadratic inequalities
MA.912.A.4.12. Apply the Binomial Theorem.	
STANDARD 5: Rational Expressions and Equations	
MA.912.A.5.1. Simplify algebraic ratios. ✹	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.2. Add, subtract, multiply, and divide rational expressions.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.3. Simplify complex fractions.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.4. Solve algebraic proportions. ✹	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.5. Solve rational equations.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.5.6. Identify removable and non-removable discontinuities, and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function.	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.5.7. Solve real-world problems involving rational equations (mixture, distance, work, interest, and ratio).	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 6: Radical Expressions and Equations	
MA.912.A.6.1. Simplify radical expressions. ✹	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.6.2. Add, subtract, multiply and divide radical expressions (square roots and higher). ✹	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.6.3. Simplify expressions using properties of rational exponents.	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply rules of exponents
MA.912.A.6.4. Convert between rational exponent and radical forms of expressions.	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers Apply rules of exponents **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.6.5. Solve equations that contain radical expressions.	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
STANDARD 7: Quadratic Equations	
MA.912.A.7.1. Graph quadratic equations with and without graphing technology. ✹	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.7.2. Solve quadratic equations over the real numbers by factoring, and by using the quadratic formula. ✹	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Solve quadratic equations
MA.912.A.7.3. Solve quadratic equations over the real numbers by completing the square.	**Expressions, Equations, & Inequalities:** Solve quadratic equations
MA.912.A.7.4. Use the discriminant to determine the nature of the roots of a quadratic equation.	
MA.912.A.7.5. Solve quadratic equations over the complex number system.	**Numbers: Concepts & Properties:** Exhibit some knowledge of the complex numbers **Expressions, Equations, & Inequalities:** Solve quadratic equations

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 7: Quadratic Equations	
MA.912.A.7.6. Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola.	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
MA.912.A.7.7. Solve non-linear systems of equations with and without using technology.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.7.8. Use quadratic equations to solve real-world problems. ✹	**Expressions, Equations, & Inequalities:** Write equations and inequalities that require planning, manipulating, and/or solving
MA.912.A.7.9. Solve optimization problems.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.7.10. Use graphing technology to find approximate solutions of quadratic equations.	
STANDARD 8: Logarithmic and Exponential Functions	
MA.912.A.8.1. Define exponential and logarithmic functions and determine their relationship.	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.8.2. Define and use the properties of logarithms to simplify logarithmic expressions and to find their approximate values.	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.8.3. Graph exponential and logarithmic functions.	**Graphical Representations:** Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.8.4. Prove laws of logarithms.	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Expressions, Equations, & Inequalities:** Manipulate expressions and equations
MA.912.A.8.5. Solve logarithmic and exponential equations.	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Expressions, Equations, & Inequalities:** Manipulate expressions and equations **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.8.6. Use the change of base formula.	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Expressions, Equations, & Inequalities:** Manipulate expressions and equations

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 8: Logarithmic and Exponential Functions	
MA.912.A.8.7. Solve applications of exponential growth and decay.	**Basic Operations & Applications:** Solve word problems containing several rates, proportions, or percentages **Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
STANDARD 9: Conic Sections	
MA.912.A.9.1. Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity, etc.).	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.9.2. Graph conic sections with and without using graphing technology.	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
MA.912.A.9.3. Solve real-world problems involving conic sections.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 10: Mathematical Reasoning and Problem Solving	
MA.912.A.10.1. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, working backwards, and creating a table. ✹	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Interpret and use information from figures, tables, and graphs **Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Write expressions, equations, and inequalities for common algebra settings Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.A.10.2. Decide whether a solution is reasonable in the context of the original situation. ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Numbers: Concepts & Properties:** Determine when an expression is undefined Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Algebra	
STANDARD 10: Mathematical Reasoning and Problem Solving	
MA.912.A.10.3. Decide whether a given statement is always, sometimes, or never true (statements involving **linear** or quadratic **expressions, equations, or inequalities** rational or radical expressions or logarithmic or exponential functions). ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs **Numbers: Concepts & Properties:** Determine when an expression is undefined Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers **Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane
MA.912.A.10.4. Use counterexamples to show that statements are false.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 1: Recursion	
MA.912.D.1.1. Use recursive and iterative thinking to solve problems, including identification of patterns, population growth and decline, and compound interest.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve word problems containing several rates, proportions, or percentages **Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
MA.912.D.1.2. Use finite differences to solve problems and to find explicit formulas for recurrence relations.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Expressions, Equations, & Inequalities:** Write expressions, equations, and inequalities for common algebra settings
MA.912.D.1.3. Use mathematical induction to prove various concepts in number theory (such as sums of infinite integer series, divisibility statements, and parity statements), recurrence relations, and other applications.	
STANDARD 2: Graph Theory	
MA.912.D.2.1. Use Euler and Hamilton cycles and paths in graphs to solve routing problems.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.D.2.2. Use critical path analysis to solve scheduling problems.	
MA.912.D.2.3. Use graph coloring techniques to solve problems.	
MA.912.D.2.4. Use spanning trees, rooted trees, binary trees, and decision trees to solve problems.	
MA.912.D.2.5. Use bin-packing techniques to solve problems concerning optimizing resource usage.	
STANDARD 3: Social Choice	
MA.912.D.3.1. Use election theory techniques to analyze election data.	
MA.912.D.3.2. Use weighted voting techniques to decide voting power within a group.	
MA.912.D.3.3. Use fair division techniques to divide continuous objects.	
MA.912.D.3.4. Use fair division techniques to solve apportionment problems.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 4: Linear Programming	
MA.912.D.4.1. Solve maximal profit/minimal cost problems.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
STANDARD 5: Game Theory	
MA.912.D.5.1. Use game theory to solve strictly determined games.	
MA.912.D.5.2. Use game theory to solve non-strictly determined games.	
STANDARD 6: Logic	
MA.912.D.6.1. Use truth tables to determine truth values of propositional statements.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
MA.912.D.6.2. Find the converse, inverse, and contrapositive of a statement. ✹	
MA.912.D.6.3. Determine whether two propositions are logically equivalent.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
MA.912.D.6.4. Use methods of direct and indirect proof and determine whether a short proof is logically valid. ✹	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
MA.912.D.6.5. Identify and give examples of: ✹ • undefined terms; • axioms; • theorems; • inductive and deductive proofs; and, • inductive and deductive reasoning.	
MA.912.D.6.6. Construct logical arguments using laws of detachment (modus ponens), syllogism, tautology, and contradiction; judge the validity of arguments, and give counterexamples to disprove statements.	
MA.912.D.6.7. Use applications of the universal and existential quantifiers to propositional statements.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
STANDARD 7: Set Theory	
MA.912.D.7.1. Perform set operations such as union and intersection, complement, and cross product. ✹	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.D.7.2. Use Venn diagrams to explore relationships and patterns, and to make arguments about relationships between sets. ✹	**Probability, Statistics, & Data Analysis:** Use Venn diagrams in counting Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 8: Matrices	
MA.912.D.8.1. Use matrices to organize and store data. Perform matrix operations (addition, subtraction, scalar multiplication, multiplication).	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.8.2. Use matrix operations to solve problems.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.8.3. Use row-reduction techniques to solve problems.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.8.4. Find the inverse of a matrix and use the inverse to solve problems with and without the use of technology.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.8.5. Use determinants of 2 × 2 and 3 × 3 matrices as well as higher order matrices with and without the use of technology.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.8.6. Use matrices to solve Markov chain problems that link present events to future events using probabilities.	
STANDARD 9: Vectors	
MA.912.D.9.1. Demonstrate an understanding of the geometric interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.9.2. Demonstrate an understanding of the algebraic interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
MA.912.D.9.3. Use vectors to model and solve application problems.	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
STANDARD 10: Parametric Equations	
MA.912.D.10.1. Sketch the graph of a curve in the plane represented parametrically, indicating the direction of motion.	
MA.912.D.10.2. Convert from a parametric representation of a plane curve to a rectangular equation, and vice-versa.	
MA.912.D.10.3. Use parametric equations to model applications of motion in the plane.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Discrete Mathematics	
STANDARD 11: Sequences and Series	
MA.912.D.11.1. Define arithmetic and geometric sequences and series.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Exhibit knowledge of logarithms and geometric sequences
MA.912.D.11.2. Use sigma notation to describe series.	
MA.912.D.11.3. Find specified terms of arithmetic and geometric sequences.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Exhibit knowledge of logarithms and geometric sequences
MA.912.D.11.4. Find partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use Sigma notation where applicable.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Exhibit knowledge of logarithms and geometric sequences
MA.912.D.11.5. Explore and use other sequences found in nature such as the Fibonacci sequence and the golden ratio.	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Exhibit knowledge of logarithms and geometric sequences **Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 1: Simple and Compound Interest	
MA.912.F.1.1. Explain the difference between simple and compound interest.	
MA.912.F.1.2. Solve problems involving compound interest.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings) **Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences
MA.912.F.1.3. Demonstrate the relationship between simple interest and linear growth.	**Expressions, Equations, & Inequalities:** Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
MA.912.F.1.4. Demonstrate the relationship between compound interest and exponential growth.	**Expressions, Equations, & Inequalities:** Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving
STANDARD 2: Net Present and Net Future Value (NPV and NFV)	
MA.912.F.2.1. Calculate the future value of a given amount of money, with and without technology.	**Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
MA.912.F.2.2. Calculate the present value of a certain amount of money for a given length of time in the future, with and without technology.	**Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
MA.912.F.2.3. Use a consumer price index to express dollars in constant terms, with and without technology.	
MA.912.F.2.4. Calculate the present value of an income stream, with and without technology.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.1. Compare the advantages and disadvantages of using cash versus a credit card.	
MA.912.F.3.2. Analyze credit scores and reports.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.F.3.3. Calculate the finance charges and total amount due on a credit card bill.	**Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
MA.912.F.3.4. Compare the advantages and disadvantages of deferred payments.	
MA.912.F.3.5. Calculate deferred payments.	**Basic Operations & Applications:** Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)
MA.912.F.3.6. Calculate total cost of purchasing consumer durables over time given different down payments, financing options, and fees.	
MA.912.F.3.7. Calculate the following fees associated with a mortgage: • discount points • origination fee • maximum brokerage fee on a net or gross loan • documentary stamps • prorated expenses (interest, county and/or city property taxes, and mortgage on an assumed mortgage)	
MA.912.F.3.8. Substitute to solve a variety of mortgage formulas, including but not limited to Front End Ratio, Total Debt-to-Income Ratio, Loan-to-Value Ratio (LTV), Combined Loan-to-Value Ratio (CLTV), and Amount of Interest Paid Over the Life of a Loan.	**Expressions, Equations, & Inequalities:** Substitute whole numbers for unknown quantities to evaluate expressions Evaluate algebraic expressions by substituting integers for unknown quantities
MA.912.F.3.9. Calculate the total amount to be paid over the life of a fixed rate loan.	
MA.912.F.3.10. Calculate the effects on the monthly payment in the change of interest rate based on an adjustable rate mortgage.	
MA.912.F.3.11. Calculate the final pay out amount for a balloon mortgage.	
MA.912.F.3.12. Compare the cost of paying a higher interest rate and lower points versus a lower interest rate and more points.	
MA.912.F.3.13. Calculate the total amount paid for the life of a loan for a house including the down payment, points, fees, and interest.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.14. Compare the total cost for a set purchase price using a fixed rate, adjustable rate, and a balloon mortgage.	
MA.912.F.3.15. Interpret the legal description using the metes and bounds; lot and block (plat); government survey; and monument methods.	
MA.912.F.3.16. Estimate real property value using the sales comparison approach, cost-depreciation approach, or the income capitalization approach.	
MA.912.F.3.17. Compare interest rate calculations and annual percentage rate calculations to distinguish between the two rates.	
STANDARD 4: Individual Financial and Investment Planning	
MA.912.F.4.1. Develop personal budgets that fit within various income brackets.	
MA.912.F.4.2. Explain cash management strategies including debit accounts, checking accounts, and savings accounts.	
MA.912.F.4.3. Calculate net worth.	
MA.912.F.4.4. Establish a plan to pay off debt.	
MA.912.F.4.5. Develop and apply a variety of strategies to use tax tables, determine, calculate, and complete yearly federal income tax.	
MA.912.F.4.6. Compare different insurance options and fees.	
MA.912.F.4.7. Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.	
MA.912.F.4.8. Collect, organize, and interpret data to determine an effective retirement savings plan to meet personal financial goals.	
MA.912.F.4.9. Calculate, compare, and contrast different types of retirement plans, including IRAs, ROTH accounts, and annuities.	
MA.912.F.4.10. Analyze diversification in investments.	
MA.912.F.4.11. Purchase stock with a set amount of money and follow the process through gains, losses, and selling.	
MA.912.F.4.12. Compare and contrast income from purchase of common stock, preferred stock, and bonds.	
MA.912.F.4.13. Given current exchange rates, be able to convert from one form of currency to another.	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
MA.912.F.4.14. Use data to compare historical rates of return on investments with investment claims to make informed decisions and identify potential fraud.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Financial Literacy	
STANDARD 5: Economic Concepts	
MA.912.F.5.1. Demonstrate how price and quantity demanded relate, how price and quantity supplied relate, and how price changes or price controls affect distribution and allocation in the economy.	
MA.912.F.5.2. Use basic terms and indicators associated with levels of economic performance and the state of the economy.	

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 1: Points, Lines, Angles, and Planes	
MA.912.G.1.1. Find the lengths and midpoints of line segments in two-dimensional coordinate systems. ✹	**Graphical Representations:** Find the midpoint of a line segment Use the distance formula
MA.912.G.1.2. Construct congruent segments and angles, angle bisectors, and parallel and perpendicular lines using a straight edge and compass or a drawing program, explaining and justifying the process used.	
MA.912.G.1.3. Identify and use the relationships between special pairs of angles formed by parallel lines and transversals. ✹	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.912.G.1.4. Use coordinate geometry to find slopes, parallel lines, perpendicular lines, and equations of lines. ✹	**Graphical Representations:** Exhibit knowledge of slope Determine the slope of a line from points or equations Match linear graphs with their equations Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
STANDARD 2: Polygons	
MA.912.G.2.1. Identify and describe convex, concave, regular, and irregular polygons. ✹	
MA.912.G.2.2. Determine the measures of interior and exterior angles of polygons, justifying the method used. ✹	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Use several angle properties to find an unknown angle measure
MA.912.G.2.3. Use properties of congruent and similar polygons to solve mathematical or real-world problems. ✹	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.2.4. Apply transformations (translations, reflections, rotations, dilations, and scale factors) to polygons. to determine congruence, similarity, and symmetry. Know that images formed by translations, reflections, and rotations are congruent to the original shape. Create and verify tessellations of the plane using polygons. ✹	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 2: Polygons	
MA.912.G.2.5. Explain the derivation and apply formulas for perimeter and area of polygons (triangles, quadrilaterals, pentagons, etc.). ✹	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the area of rectangles when whole number dimensions are given Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the perimeter of simple composite geometric figures with unknown side lengths Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.G.2.6. Use coordinate geometry to prove properties of congruent, regular and similar polygons, and to perform transformations in the plane. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Solve problems integrating multiple algebraic and/or geometric concepts Analyze and draw conclusions based on information from graphs in the coordinate plane **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
MA.912.G.2.7. Determine how changes in dimensions affect the perimeter and area of common geometric figures. ✹	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
STANDARD 3: Quadrilaterals	
MA.912.G.3.1. Describe, classify, and compare relationships among quadrilaterals including the square, rectangle, rhombus, parallelogram, trapezoid, and kite. ✹	
MA.912.G.3.2. Compare and contrast special quadrilaterals on the basis of their properties. ✹	
MA.912.G.3.3. Use coordinate geometry to prove properties of congruent, regular and similar quadrilaterals. ✹	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 3: Quadrilaterals	
MA.912.G.3.4. Prove theorems involving quadrilaterals.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
STANDARD 4: Triangles	
MA.912.G.4.1. Classify, construct, and describe triangles that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular. ✹	
MA.912.G.4.2. Define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter. ✹	
MA.912.G.4.3. Construct triangles congruent to given triangles.	
MA.912.G.4.4. Use properties of congruent and similar triangles to solve problems involving lengths and areas. ✹	**Basic Operations & Applications:** Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles **Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.G.4.5. Apply theorems involving segments divided proportionally. ✹	
MA.912.G.4.6. Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles. ✹	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions
MA.912.G.4.7. Apply the inequality theorems: triangle inequality, inequality in one triangle, and the Hinge Theorem. ✹	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
MA.912.G.4.8. Use coordinate geometry to prove properties of congruent, regular, and similar triangles.	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane Analyze and draw conclusions based on information from graphs in the coordinate plane **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Draw conclusions based on a set of conditions

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FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 5: Right Triangles	
MA.912.G.5.1. Prove and apply the Pythagorean Theorem and its converse. ✹	**Properties of Plane Figures:** Use the Pythagorean theorem
MA.912.G.5.2. State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle.	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.5.3. Use special right triangles (30°-60°-90° and 45°-45°-90°) to solve problems. ✹	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.5.4. Solve real-world problems involving right triangles.	**Properties of Plane Figures:** Recognize Pythagorean triples Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem **Functions:** Apply basic trigonometric ratios to solve right-triangle problems
STANDARD 6: Circles	
MA.912.G.6.1. Determine the center of a given circle. Given three points not on a line, construct the circle that passes through them. Construct tangents to circles. Circumscribe and inscribe circles about and within triangles and regular polygons.	
MA.912.G.6.2. Define and identify: circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles. ✹	
MA.912.G.6.3. Prove theorems related to circles, including related angles, chords, tangents, and secants.	**Properties of Plane Figures:** Draw conclusions based on a set of conditions Use relationships among angles, arcs, and distances in a circle
MA.912.G.6.4. Determine and use measures of arcs and related angles (central, inscribed, and intersections of secants and tangents). ✹	**Properties of Plane Figures:** Use relationships among angles, arcs, and distances in a circle
MA.912.G.6.5. Solve real-world problems using measures of circumference, arc length, and areas of circles and sectors. ✹	**Measurement:** Compute the area and circumference of circles after identifying necessary information Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
MA.912.G.6.6. Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle. ✹	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
MA.912.G.6.7. Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle.	**Graphical Representations:** Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 7: Polyhedra and Other Solids	
MA.912.G.7.1. Describe and make regular, non-regular, and oblique polyhedra and sketch the net for a given polyhedron and vice versa. ✹	
MA.912.G.7.2. Describe the relationships between the faces, edges, and vertices of polyhedra.	
MA.912.G.7.3. Identify, sketch, and determine areas and/or perimeters of cross sections of three-dimensional solids.	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
MA.912.G.7.4. Identify chords, tangents, radii, and great circles of spheres. ✹	
MA.912.G.7.5. Explain and use formulas for lateral area, surface area, and volume of three-dimensional solids. ✹	**Measurement:** Use geometric formulas when all necessary information is given **Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
MA.912.G.7.6. Identify and use properties of congruent and similar three-dimensional solids. ✹	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
MA.912.G.7.7. Determine how changes in dimensions affect the surface area and volume of common three-dimensional geometric solids. ✹	**Properties of Plane Figures:** Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas
STANDARD 8: Mathematical Reasoning and Problem Solving	
MA.912.G.8.1. Analyze the structure of Euclidean geometry as an axiomatic system. Distinguish between undefined terms, definitions, postulates and theorems.	
MA.912.G.8.2. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	
MA.912.G.8.3. Determine whether a solution is reasonable in the context of the original situation. ✹	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
MA.912.G.8.4. Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the proof of a conjecture. ✹	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
MA.912.G.8.5. Write geometric proofs, including proofs by contradiction and proofs involving coordinate geometry. Use and compare a variety of ways to present deductive proofs, such as flow charts, paragraphs, two-column, and indirect proofs.	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane **Properties of Plane Figures:** Draw conclusions based on a set of conditions

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Geometry	
STANDARD 8: Mathematical Reasoning and Problem Solving	
MA.912.G.8.6. Perform basic constructions using straight-edge and compass, and/or drawing programs describing and justifying the procedures used. Distinguish between sketching, constructing and drawing geometric figures.	

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Probability	
STANDARD 1: Counting Principles	
MA.912.P.1.1. Use counting principles, including the addition and the multiplication principles, to determine size of finite sample spaces and probabilities of events in those spaces. ✹	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Exhibit knowledge of simple counting techniques Compute straightforward probabilities for common situations Use Venn diagrams in counting Apply counting techniques
MA.912.P.1.2. Use formulas for permutations and combinations to count outcomes and determine probabilities of events.	**Probability, Statistics, & Data Analysis:** Apply counting techniques Compute a probability when the event and/or sample space are not given or obvious
STANDARD 2: Determine Probabilities	
MA.912.P.2.1. Determine probabilities of complementary events, and calculate odds for and against the occurrence of events. ✹	**Probability, Statistics, & Data Analysis:** Use the relationship between the probability of an event and the probability of its complement
MA.912.P.2.2. Determine probabilities of independent events. ✹	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
MA.912.P.2.3. Understand and use the concept of conditional probability, including: understanding how conditioning affects the probability of events; finding conditional probabilities from a two-way frequency table.	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of conditional and joint probability
STANDARD 3: Probability Distributions	
MA.912.P.3.1. Determine probabilities of events from distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	**Probability, Statistics, & Data Analysis:** Determine the probability of a simple event Compute straightforward probabilities for common situations Compute a probability when the event and/or sample space are not given or obvious
MA.912.P.3.2. Determine the mean and variance of distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers
MA.912.P.3.3. Apply the properties of the normal distribution.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.P.3.4. Apply the Central Limit Theorem to determine the probability that a sample mean will be in a certain interval.	

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 1: Formulating Questions	
MA.912.S.1.1. Formulate an appropriate research question to be answered by collecting data or performing an experiment.	
MA.912.S.1.2. Determine appropriate and consistent standards of measurement for the data to be collected in a survey or experiment.	
STANDARD 2: Data Collection	
MA.912.S.2.1. Compare the difference between surveys, experiments, and observational studies, and what types of questions can and cannot be answered by a particular design.	
MA.912.S.2.2. Apply the definition of random sample and basic types of sampling, including representative samples, stratified samples, censuses.	
MA.912.S.2.3. Identify sources of bias, including sampling and nonsampling errors. ✹	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.1. Read and interpret data presented in various formats. Determine whether data is presented in appropriate format, and identify possible corrections. ✹ Formats to include: • **bar graphs** • **line graphs** • **stem and leaf plots** • **circle graphs** • **histograms** • **box and whiskers plots** • **scatter plots** • cumulative frequency (ogive) graphs	**Probability, Statistics, & Data Analysis:** Read tables and graphs Interpret and use information from figures, tables, and graphs Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.S.3.2. Collect, organize, and analyze data sets, determine the best format for the data and present visual summaries from the following: ✹ • **bar graphs** • **line graphs** • **stem and leaf plots** • **circle graphs** • **histograms** • **box and whisker plots** • **scatter plots** • cumulative frequency (ogive) graphs	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph) Manipulate data from tables and graphs Analyze and draw conclusions based on information from figures, tables, and graphs

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.3. Calculate and interpret measures of the center of a set of data, including mean, median, and weighted mean, and use these measures to make comparisons among sets of data. ✹	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of positive whole numbers Calculate the average of a list of numbers Perform computations on data from tables and graphs Calculate the average, given the frequency counts of all the data values Calculate or use a weighted average Interpret and use information from figures, tables, and graphs Distinguish between mean, median, and mode for a list of numbers Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.S.3.4. Calculate and interpret measures of variance and standard deviation. Use these measures to make comparisons among sets of data.	**Probability, Statistics, & Data Analysis:** Perform computations on data from tables and graphs Analyze and draw conclusions based on information from figures, tables, and graphs
MA.912.S.3.5. Calculate and interpret the range and quartiles of a set of data. ✹	**Probability, Statistics, & Data Analysis:** Perform a single computation using information from a table or chart Interpret and use information from figures, tables, and graphs Distinguish between mean, median, and mode for a list of numbers
MA.912.S.3.6. Use empirical rules (e.g. 68-95-99.7 rule) to estimate spread of distributions and to make comparisons among sets of data.	
MA.912.S.3.7. Calculate the correlation coefficient of a set of paired data, and interpret the coefficient as a measure of the strength and direction of the relationship between the variables.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
MA.912.S.3.8. Determine whether a data distribution is symmetric or skewed based on an appropriate graphical presentation of the data.	**Probability, Statistics, & Data Analysis:** Interpret and use information from figures, tables, and graphs
MA.912.S.3.9. Identify outliers in a set of data based on an appropriate graphical presentation of the data, and describe the effect of outliers on the mean, median, and range of the data.	**Probability, Statistics, & Data Analysis:** Analyze and draw conclusions based on information from figures, tables, and graphs

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Statistics	
STANDARD 4: Analyzing Data	
MA.912.S.4.1. Explain and interpret the concepts of confidence level and "margin of error".	
MA.912.S.4.2. Use a simulation to approximate sampling distributions for the mean, using repeated sampling simulations from a given population.	
MA.912.S.4.3. Apply the Central Limit Theorem to solve problems.	
MA.912.S.4.4. Approximate confidence intervals for means using simulations of the distribution of the sample mean.	
MA.912.S.4.5. Find the equation of the least squares regression line for a set of data.	
STANDARD 5: Interpreting Results	
MA.912.S.5.1. Analyze the relationship between confidence level, margin of error and sample size.	
MA.912.S.5.2. Apply the general principles of hypothesis testing.	
MA.912.S.5.3. Explain and identify the following: null hypothesis, alternative hypotheses, Type I error, and Type II error.	
MA.912.S.5.4. Explain the meaning of *p-value* and its role in hypothesis testing.	
MA.912.S.5.5. Perform hypothesis tests of means and proportions for large samples, using simulations to determine whether a sample mean (proportion) has a low likelihood of occurring.	
MA.912.S.5.6. Interpret the results of hypothesis tests of means and proportions, and make decisions based on p-values of test.	
MA.912.S.5.7. Use simulations to approximate the p-value of a correlation coefficient, and use the results to determine whether the correlation between two variables is significant.	
MA.912.S.5.8. Use a regression line equation to make predictions.	
MA.912.S.5.9. Interpret the coefficient of determination, r^2, for a least-squares regression.	

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Trigonometry	
STANDARD 1: Trigonometric Functions	
MA.912.T.1.1. Convert between degree and radian measures.	**Functions:** Use trigonometric concepts and basic identities to solve problems
MA.912.T.1.2. Define and determine sine and cosine using the unit circle.	**Functions:** Exhibit knowledge of unit circle trigonometry
MA.912.T.1.3. State and use exact values of trigonometric functions for special angles; i.e., multiples of $\frac{\pi}{6}$ and $\frac{\pi}{4}$ (degree and radian measures).	**Functions:** Exhibit knowledge of unit circle trigonometry
MA.912.T.1.4. Find approximate values of trigonometric and inverse trigonometric functions using appropriate technology.	
MA.912.T.1.5. Make connections between right triangle ratios, trigonometric functions, and circular functions.	**Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Exhibit knowledge of unit circle trigonometry
MA.912.T.1.6. Define and graph trigonometric functions using domain, range, intercepts, period, amplitude, phase shift, vertical shift, and asymptotes with and without the use of graphing technology.	**Functions:** Match graphs of basic trigonometric functions with their equations
MA.912.T.1.7. Define and graph inverse trigonometric relations and functions.	**Functions:** Use trigonometric concepts and basic identities to solve problems
MA.912.T.1.8. Solve real-world problems involving applications of trigonometric functions using graphing technology when appropriate.	**Functions:** Apply basic trigonometric ratios to solve right-triangle problems
STANDARD 2: Trigonometry in Triangles	
MA.912.T.2.1. Define and use the trigonometric ratios (**sine, cosine, tangent**, cotangent, secant, cosecant) in terms of angles of right triangles. ✹	Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Use trigonometric concepts and basic identities to solve problems
MA.912.T.2.2. Solve real-world problems involving right triangles using technology when appropriate. ✹	**Functions:** Apply basic trigonometric ratios to solve right-triangle problems
MA.912.T.2.3. Apply the laws of sines and cosines to solve real-world problems using technology.	**Functions:** Use trigonometric concepts and basic identities to solve problems
MA.912.T.2.4. Use the area of triangles given two sides and an angle or three sides to solve real-world problems.	**Functions:** Use trigonometric concepts and basic identities to solve problems

TABLE 2D

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	ACT Mathematics College Readiness Standards
Body of Knowledge: Trigonometry	
STANDARD 3: Trigonometric Identities and Equations	
MA.912.T.3.1. Verify the basic Pythagorean identities, e.g., $\sin^2 x + \cos^2 x = 1$, and show they are equivalent to the Pythagorean Theorem.	**Functions:** Use trigonometric concepts and basic identities to solve problems
MA.912.T.3.2. Use basic trigonometric identities to verify other identities and simplify expressions.	**Functions:** Use trigonometric concepts and basic identities to solve problems
MA.912.T.3.3. Use the sum and difference, half-angle and double-angle formulas for sine, cosine, and tangent, when formulas are provided.	**Functions:** Use trigonometric concepts and basic identities to solve problems
MA.912.T.3.4. Solve trigonometric equations and real-world problems involving applications of trigonometric equations using technology when appropriate.	**Functions:** Use trigonometric concepts and basic identities to solve problems
STANDARD 4: Polar Coordinates and Trigonometric Form of Complex Numbers	
MA.912.T.4.1. Define polar coordinates and relate polar coordinates to Cartesian coordinates with and without the use of technology.	
MA.912.T.4.2. Represent equations given in rectangular coordinates in terms of polar coordinates.	
MA.912.T.4.3. Graph equations in the polar coordinate plane with and without the use of graphing technology.	
MA.912.T.4.4. Define the trigonometric form of complex numbers, convert complex numbers to trigonometric form, and multiply complex numbers in trigonometric form.	
MA.912.T.4.5. Apply DeMoivre's Theorem to perform operations with complex numbers.	
STANDARD 5: Mathematical Reasoning and Problem Solving	
MA.912.T.5.1. Use a variety of problem-solving strategies, such as drawing a diagram, guess-and-check, solving a simpler problem, examining simpler problems, and working backwards, using technology when appropriate.	
MA.912.T.5.2. Decide whether a solution is reasonable in the context of the original situation.	**Numbers: Concepts & Properties:** Determine when an expression is undefined
MA.912.T.5.3. Determine whether a given trigonometric statement is always, sometimes, or never true. Use the properties of the real numbers, order of operations, and trigonometric identities to justify the steps involved in verifying identities and solving equations.	**Functions:** Use trigonometric concepts and basic identities to solve problems

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Algebra	
STANDARD 1: Real and Complex Number Systems	
MA.912.A.1.1. Know equivalent forms of real numbers (including integer exponents and radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers). ✹	Change numbers from one form to another using whole numbers, fractions, decimals, or percentages
MA.912.A.1.2. Compare real number expressions. ✹	
MA.912.A.1.3. Simplify real number expressions using the laws of exponents. ✹	
MA.912.A.1.4. Perform operations on real numbers (including integer exponents, radicals, percents, scientific notation, absolute value, rational numbers, irrational numbers) using multi-step and real-world problems. ✹	Solve problems that require one or two operations Use fractions, negative numbers, ratios, percentages, or mixed numbers Find the best deal using one- and two-step calculations and then comparing results Find the best deal and use the result for another calculation Find the best deal when there are several choices
MA.912.A.1.5. Use dimensional (unit) analysis to perform conversions between units of measure, including rates. ✹	Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Decide what information, calculations, or unit conversions to use to solve the problem Calculate multiple rates Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages
MA.912.A.1.6. Identify the real and imaginary parts of complex numbers and perform basic operations.	
MA.912.A.1.7. Represent complex numbers geometrically.	
MA.912.A.1.8. Use the zero product property of real numbers in a variety of contexts to identify solutions to equations.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Algebra	
STANDARD 2: Relations and Functions	
MA.912.A.2.1. Create a graph to represent a real-world situation. ✹	
MA.912.A.2.2. Interpret a graph representing a real-world situation. ✹	
MA.912.A.2.3. Describe the concept of a function, use function notation, determine whether a given relation is a function, and link equations to functions. ✹	
MA.912.A.2.4. Determine the domain and range of a relation. ✹	
MA.912.A.2.5. Graph absolute value equations and inequalities in two variables.	
MA.912.A.2.6. Identify and graph common functions (including but not limited to linear, rational, quadratic, cubic, radical, absolute value).	
MA.912.A.2.7. Perform operations (addition, subtraction, division and multiplication) of functions algebraically, numerically, and graphically.	
MA.912.A.2.8. Determine the composition of functions.	
MA.912.A.2.9. Recognize, interpret, and graph functions defined piece-wise, with and without technology.	
MA.912.A.2.10. Describe and graph transformations of functions.	
MA.912.A.2.11. Solve problems involving functions and their inverses.	
MA.912.A.2.12. Solve problems using direct, inverse, and joint variations. ✹	
MA.912.A.2.13. Solve real-world problems involving relations and functions.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Algebra	
STANDARD 3: Linear Equations and Inequalities	
MA.912.A.3.1. Solve linear equations in one variable that include simplifying algebraic expressions. ✹	
MA.912.A.3.2. Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality. ✹	
MA.912.A.3.3. Solve literal equations for a specified variable. ✹	
MA.912.A.3.4. Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution. ✹	
MA.912.A.3.5. Symbolically represent and solve multi-step and real-world applications that involve linear equations and inequalities. ✹	
MA.912.A.3.6. Solve and graph the solutions of absolute value equations and inequalities with one variable.	
MA.912.A.3.7. Rewrite equations of a line into slope-intercept form and standard form. ✹	
MA.912.A.3.8. Graph a line given any of the following information: a table of values, the x- and y-intercepts, two points, the slope and a point, the equation of the line in slope-intercept form, standard form, or point-slope form. ✹	
MA.912.A.3.9. Determine the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line. ✹	
MA.912.A.3.10. Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line. ✹	
MA.912.A.3.11. Write an equation of a line that models a data set and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. ✹	
MA.912.A.3.12. Graph a linear equation or inequality in two variables with and without graphing technology. Write an equation or inequality represented by a given graph. ✹	
MA.912.A.3.13. Use a graph to approximate the solution of a system of linear equations or inequalities in two variables with and without technology. ✹	
MA.912.A.3.14. Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods. ✹	
MA.912.A.3.15. Solve real-world problems involving systems of linear equations and inequalities in two and three variables. ✹	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Algebra	
STANDARD 4: Polynomials	
MA.912.A.4.1. Simplify monomials and monomial expressions using the laws of integral exponents. ✹	
MA.912.A.4.2. Add, subtract, and multiply polynomials. ✹	
MA.912.A.4.3. Factor polynomial expressions. ✹	
MA.912.A.4.4. Divide polynomials by monomials and polynomials with various techniques, including synthetic division. ✹	
MA.912.A.4.5. Graph polynomial functions with and without technology and describe end behavior.	
MA.912.A.4.6. Use theorems of polynomial behavior (including but not limited to the Fundamental Theorem of Algebra, Remainder Theorem, the Rational Root Theorem, Descartes' Rule of Signs, and the Conjugate Root Theorem) to find the zeros of a polynomial function.	
MA.912.A.4.7. Write a polynomial equation for a given set of real and/or complex roots.	
MA.912.A.4.8. Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression, with and without technology.	
MA.912.A.4.9. Use graphing technology to find approximate solutions for polynomial equations.	
MA.912.A.4.10. Use polynomial equations to solve real-world problems.	
MA.912.A.4.11. Solve a polynomial inequality by examining the graph with and without the use of technology.	
MA.912.A.4.12. Apply the Binomial Theorem.	
STANDARD 5: Rational Expressions and Equations	
MA.912.A.5.1. Simplify algebraic ratios. ✹	
MA.912.A.5.2. Add, subtract, multiply, and divide rational expressions.	
MA.912.A.5.3. Simplify complex fractions.	
MA.912.A.5.4. Solve algebraic proportions. ✹	Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Set up and manipulate complex ratios or proportions
MA.912.A.5.5. Solve rational equations.	
MA.912.A.5.6. Identify removable and non-removable discontinuities, and vertical, horizontal, and oblique asymptotes of a graph of a rational function, find the zeros, and graph the function.	
MA.912.A.5.7. Solve real-world problems involving rational equations (mixture, distance, work, interest, and ratio).	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Algebra	
STANDARD 6: Radical Expressions and Equations	
MA.912.A.6.1. Simplify radical expressions. ✹	
MA.912.A.6.2. Add, subtract, multiply and divide radical expressions (square roots and higher). ✹	
MA.912.A.6.3. Simplify expressions using properties of rational exponents.	
MA.912.A.6.4. Convert between rational exponent and radical forms of expressions.	
MA.912.A.6.5. Solve equations that contain radical expressions.	
STANDARD 7: Quadratic Equations	
MA.912.A.7.1. Graph quadratic equations with and without graphing technology. ✹	
MA.912.A.7.2. Solve quadratic equations over the real numbers by factoring, and by using the quadratic formula. ✹	
MA.912.A.7.3. Solve quadratic equations over the real numbers by completing the square.	
MA.912.A.7.4. Use the discriminant to determine the nature of the roots of a quadratic equation.	
MA.912.A.7.5. Solve quadratic equations over the complex number system.	
MA.912.A.7.6. Identify the axis of symmetry, vertex, domain, range and intercept(s) for a given parabola.	
MA.912.A.7.7. Solve non-linear systems of equations with and without using technology.	
MA.912.A.7.8. Use quadratic equations to solve real-world problems. ✹	
MA.912.A.7.9. Solve optimization problems.	
MA.912.A.7.10. Use graphing technology to find approximate solutions of quadratic equations.	
STANDARD 8: Logarithmic and Exponential Functions	
MA.912.A.8.1. Define exponential and logarithmic functions and determine their relationship.	
MA.912.A.8.2. Define and use the properties of logarithms to simplify logarithmic expressions and to find their approximate values.	
MA.912.A.8.3. Graph exponential and logarithmic functions.	
MA.912.A.8.4. Prove laws of logarithms.	
MA.912.A.8.5. Solve logarithmic and exponential equations.	
MA.912.A.8.6. Use the change of base formula.	
MA.912.A.8.7. Solve applications of exponential growth and decay.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Algebra	
STANDARD 9: Conic Sections	
MA.912.A.9.1. Write the equations of conic sections in standard form and general form, in order to identify the conic section and to find its geometric properties (foci, asymptotes, eccentricity, etc.).	
MA.912.A.9.2. Graph conic sections with and without using graphing technology.	
MA.912.A.9.3. Solve real-world problems involving conic sections.	
STANDARD 10: Mathematical Reasoning and Problem Solving	
MA.912.A.10.1. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, working backwards, and creating a table. ✹	
MA.912.A.10.2. Decide whether a solution is reasonable in the context of the original situation. ✹	
MA.912.A.10.3. Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities rational or radical expressions or logarithmic or exponential functions). ✹	
MA.912.A.10.4. Use counterexamples to show that statements are false.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Discrete Mathematics	
STANDARD 1: Recursion	
MA.912.D.1.1. Use recursive and iterative thinking to solve problems, including identification of patterns, population growth and decline, and compound interest.	
MA.912.D.1.2. Use finite differences to solve problems and to find explicit formulas for recurrence relations.	
MA.912.D.1.3. Use mathematical induction to prove various concepts in number theory (such as sums of infinite integer series, divisibility statements, and parity statements), recurrence relations, and other applications.	
STANDARD 2: Graph Theory	
MA.912.D.2.1. Use Euler and Hamilton cycles and paths in graphs to solve routing problems.	
MA.912.D.2.2. Use critical path analysis to solve scheduling problems.	
MA.912.D.2.3. Use graph coloring techniques to solve problems.	
MA.912.D.2.4. Use spanning trees, rooted trees, binary trees, and decision trees to solve problems.	
MA.912.D.2.5. Use bin-packing techniques to solve problems concerning optimizing resource usage.	
STANDARD 3: Social Choice	
MA.912.D.3.1. Use election theory techniques to analyze election data.	
MA.912.D.3.2. Use weighted voting techniques to decide voting power within a group.	
MA.912.D.3.3. Use fair division techniques to divide continuous objects.	
MA.912.D.3.4. Use fair division techniques to solve apportionment problems.	
STANDARD 4: Linear Programming	
MA.912.D.4.1. Solve maximal profit/minimal cost problems.	
STANDARD 5: Game Theory	
MA.912.D.5.1. Use game theory to solve strictly determined games.	
MA.912.D.5.2. Use game theory to solve non-strictly determined games.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Discrete Mathematics	
STANDARD 6: Logic	
MA.912.D.6.1. Use truth tables to determine truth values of propositional statements.	
MA.912.D.6.2. Find the converse, inverse, and contrapositive of a statement. ✹	
MA.912.D.6.3. Determine whether two propositions are logically equivalent.	
MA.912.D.6.4. Use methods of direct and indirect proof and determine whether a short proof is logically valid. ✹	
MA.912.D.6.5. Identify and give examples of: ✹ • undefined terms; • axioms; • theorems; • inductive and deductive proofs; and, • inductive and deductive reasoning.	
MA.912.D.6.6. Construct logical arguments using laws of detachment (modus ponens), syllogism, tautology, and contradiction; judge the validity of arguments, and give counterexamples to disprove statements.	
MA.912.D.6.7. Use applications of the universal and existential quantifiers to propositional statements.	
STANDARD 7: Set Theory	
MA.912.D.7.1. Perform set operations such as union and intersection, complement, and cross product. ✹	
MA.912.D.7.2. Use Venn diagrams to explore relationships and patterns, and to make arguments about relationships between sets. ✹	
STANDARD 8: Matrices	
MA.912.D.8.1. Use matrices to organize and store data. Perform matrix operations (addition, subtraction, scalar multiplication, multiplication).	
MA.912.D.8.2. Use matrix operations to solve problems.	
MA.912.D.8.3. Use row-reduction techniques to solve problems.	
MA.912.D.8.4. Find the inverse of a matrix and use the inverse to solve problems with and without the use of technology.	
MA.912.D.8.5. Use determinants of 2 × 2 and 3 × 3 matrices as well as higher order matrices with and without the use of technology.	
MA.912.D.8.6. Use matrices to solve Markov chain problems that link present events to future events using probabilities.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Discrete Mathematics	
STANDARD 9: Vectors	
MA.912.D.9.1. Demonstrate an understanding of the geometric interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	
MA.912.D.9.2. Demonstrate an understanding of the algebraic interpretation of vectors and vector operations including addition, scalar multiplication, dot product and cross product in the plane and in three-dimensional space.	
MA.912.D.9.3. Use vectors to model and solve application problems.	
STANDARD 10: Parametric Equations	
MA.912.D.10.1. Sketch the graph of a curve in the plane represented parametrically, indicating the direction of motion.	
MA.912.D.10.2. Convert from a parametric representation of a plane curve to a rectangular equation, and vice-versa.	
MA.912.D.10.3. Use parametric equations to model applications of motion in the plane.	
STANDARD 11: Sequences and Series	
MA.912.D.11.1. Define arithmetic and geometric sequences and series.	
MA.912.D.11.2. Use sigma notation to describe series.	
MA.912.D.11.3. Find specified terms of arithmetic and geometric sequences.	
MA.912.D.11.4. Find partial sums of arithmetic and geometric series, and find sums of infinite convergent geometric series. Use Sigma notation where applicable.	
MA.912.D.11.5. Explore and use other sequences found in nature such as the Fibonacci sequence and the golden ratio.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Financial Literacy	
STANDARD 1: Simple and Compound Interest	
MA.912.F.1.1. Explain the difference between simple and compound interest.	
MA.912.F.1.2. Solve problems involving compound interest.	
MA.912.F.1.3. Demonstrate the relationship between simple interest and linear growth.	
MA.912.F.1.4. Demonstrate the relationship between compound interest and exponential growth.	
STANDARD 2: Net Present and Net Future Value (NPV and NFV)	
MA.912.F.2.1. Calculate the future value of a given amount of money, with and without technology.	
MA.912.F.2.2. Calculate the present value of a certain amount of money for a given length of time in the future, with and without technology.	
MA.912.F.2.3. Use a consumer price index to express dollars in constant terms, with and without technology.	
MA.912.F.2.4. Calculate the present value of an income stream, with and without technology.	
STANDARD 3: Loans and Financing	
MA.912.F.3.1. Compare the advantages and disadvantages of using cash versus a credit card.	
MA.912.F.3.2. Analyze credit scores and reports.	
MA.912.F.3.3. Calculate the finance charges and total amount due on a credit card bill.	
MA.912.F.3.4. Compare the advantages and disadvantages of deferred payments.	
MA.912.F.3.5. Calculate deferred payments.	
MA.912.F.3.6. Calculate total cost of purchasing consumer durables over time given different down payments, financing options, and fees.	
MA.912.F.3.7. Calculate the following fees associated with a mortgage: • discount points • origination fee • maximum brokerage fee on a net or gross loan • documentary stamps • prorated expenses (interest, county and/or city property taxes, and mortgage on an assumed mortgage)	
MA.912.F.3.8. Substitute to solve a variety of mortgage formulas, including but not limited to Front End Ratio, Total Debt-to-Income Ratio, Loan-to-Value Ratio (LTV), Combined Loan-to-Value Ratio (CLTV), and Amount of Interest Paid Over the Life of a Loan.	
MA.912.F.3.9. Calculate the total amount to be paid over the life of a fixed rate loan.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Financial Literacy	
STANDARD 3: Loans and Financing	
MA.912.F.3.10. Calculate the effects on the monthly payment in the change of interest rate based on an adjustable rate mortgage.	
MA.912.F.3.11. Calculate the final pay out amount for a balloon mortgage.	
MA.912.F.3.12. Compare the cost of paying a higher interest rate and lower points versus a lower interest rate and more points.	
MA.912.F.3.13. Calculate the total amount paid for the life of a loan for a house including the down payment, points, fees, and interest.	
MA.912.F.3.14. Compare the total cost for a set purchase price using a fixed rate, adjustable rate, and a balloon mortgage.	
MA.912.F.3.15. Interpret the legal description using the metes and bounds; lot and block (plat); government survey; and monument methods.	
MA.912.F.3.16. Estimate real property value using the sales comparison approach, cost-depreciation approach, or the income capitalization approach.	
MA.912.F.3.17. Compare interest rate calculations and annual percentage rate calculations to distinguish between the two rates.	
STANDARD 4: Individual Financial and Investment Planning	
MA.912.F.4.1. Develop personal budgets that fit within various income brackets.	
MA.912.F.4.2. Explain cash management strategies including debit accounts, checking accounts, and savings accounts.	
MA.912.F.4.3. Calculate net worth.	
MA.912.F.4.4. Establish a plan to pay off debt.	
MA.912.F.4.5. Develop and apply a variety of strategies to use tax tables, determine, calculate, and complete yearly federal income tax.	
MA.912.F.4.6. Compare different insurance options and fees.	
MA.912.F.4.7. Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.	
MA.912.F.4.8. Collect, organize, and interpret data to determine an effective retirement savings plan to meet personal financial goals.	
MA.912.F.4.9. Calculate, compare, and contrast different types of retirement plans, including IRAs, ROTH accounts, and annuities.	
MA.912.F.4.10. Analyze diversification in investments.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Financial Literacy	
STANDARD 4: Individual Financial and Investment Planning	
MA.912.F.4.11. Purchase stock with a set amount of money and follow the process through gains, losses, and selling.	
MA.912.F.4.12. Compare and contrast income from purchase of common stock, preferred stock, and bonds.	
MA.912.F.4.13. Given current exchange rates, be able to convert from one form of currency to another.	Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals
MA.912.F.4.14. Use data to compare historical rates of return on investments with investment claims to make informed decisions and identify potential fraud.	
STANDARD 5: Economic Concepts	
MA.912.F.5.1. Demonstrate how price and quantity demanded relate, how price and quantity supplied relate, and how price changes or price controls affect distribution and allocation in the economy.	
MA.912.F.5.2. Use basic terms and indicators associated with levels of economic performance and the state of the economy.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Geometry	
STANDARD 1: Points, Lines, Angles, and Planes	
MA.912.G.1.1. Find the lengths and midpoints of line segments in two-dimensional coordinate systems. ✹	
MA.912.G.1.2. Construct congruent segments and angles, angle bisectors, and parallel and perpendicular lines using a straight edge and compass or a drawing program, explaining and justifying the process used.	
MA.912.G.1.3. Identify and use the relationships between special pairs of angles formed by parallel lines and transversals. ✹	
MA.912.G.1.4. Use coordinate geometry to find slopes, parallel lines, perpendicular lines, and equations of lines. ✹	
STANDARD 2: Polygons	
MA.912.G.2.1. Identify and describe convex, concave, regular, and irregular polygons. ✹	
MA.912.G.2.2. Determine the measures of interior and exterior angles of polygons, justifying the method used. ✹	
MA.912.G.2.3. Use properties of congruent and similar polygons to solve mathematical or real-world problems. ✹	
MA.912.G.2.4. Apply transformations (translations, reflections, rotations, dilations, and scale factors) to polygons. to determine congruence, similarity, and symmetry. Know that images formed by translations, reflections, and rotations are congruent to the original shape. Create and verify tessellations of the plane using polygons. ✹	
MA.912.G.2.5. Explain the derivation and apply formulas for perimeter and area of polygons (triangles, quadrilaterals, pentagons, etc.). ✹	
MA.912.G.2.6. Use coordinate geometry to prove properties of congruent, regular and similar polygons, and to perform transformations in the plane. ✹	
MA.912.G.2.7. Determine how changes in dimensions affect the perimeter and area of common geometric figures. ✹	
STANDARD 3: Quadrilaterals	
MA.912.G.3.1. Describe, classify, and compare relationships among quadrilaterals including the square, rectangle, rhombus, parallelogram, trapezoid, and kite. ✹	
MA.912.G.3.2. Compare and contrast special quadrilaterals on the basis of their properties. ✹	
MA.912.G.3.3. Use coordinate geometry to prove properties of congruent, regular and similar quadrilaterals. ✹	
MA.912.G.3.4. Prove theorems involving quadrilaterals.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Geometry	
STANDARD 4: Triangles	
MA.912.G.4.1. Classify, construct, and describe triangles that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular. ✹	
MA.912.G.4.2. Define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter. ✹	
MA.912.G.4.3. Construct triangles congruent to given triangles.	
MA.912.G.4.4. Use properties of congruent and similar triangles to solve problems involving lengths and areas. ✹	
MA.912.G.4.5. Apply theorems involving segments divided proportionally. ✹	
MA.912.G.4.6. Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles. ✹	
MA.912.G.4.7. Apply the inequality theorems: triangle inequality, inequality in one triangle, and the Hinge Theorem. ✹	
MA.912.G.4.8. Use coordinate geometry to prove properties of congruent, regular, and similar triangles.	
STANDARD 5: Right Triangles	
MA.912.G.5.1. Prove and apply the Pythagorean Theorem and its converse. ✹	
MA.912.G.5.2. State and apply the relationships that exist when the altitude is drawn to the hypotenuse of a right triangle.	
MA.912.G.5.3. Use special right triangles (30°-60°-90° and 45°-45°-90°) to solve problems. ✹	
MA.912.G.5.4. Solve real-world problems involving right triangles.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Geometry	
STANDARD 6: Circles	
MA.912.G.6.1. Determine the center of a given circle. Given three points not on a line, construct the circle that passes through them. Construct tangents to circles. Circumscribe and inscribe circles about and within triangles and regular polygons.	
MA.912.G.6.2. Define and identify: circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles. ✹	Calculate perimeters and areas of basic shapes (rectangles and circles)
MA.912.G.6.3. Prove theorems related to circles, including related angles, chords, tangents, and secants.	
MA.912.G.6.4. Determine and use measures of arcs and related angles (central, inscribed, and intersections of secants and tangents). ✹	
MA.912.G.6.5. Solve real-world problems using measures of circumference, arc length, and areas of circles and sectors. ✹	Look up a formula and perform single-step conversions within or between systems of measurement Calculate perimeters and areas of basic shapes (rectangles and circles) Rearrange a formula before solving a problem Find areas of basic shapes when it may be necessary to rearrange the formula, convert units of measurement in the calculations, or use the result in further calculations
MA.912.G.6.6. Given the center and the radius, find the equation of a circle in the coordinate plane or given the equation of a circle in center-radius form, state the center and the radius of the circle. ✹	
MA.912.G.6.7. Given the equation of a circle in center-radius form or given the center and the radius of a circle, sketch the graph of the circle.	
STANDARD 7: Polyhedra and Other Solids	
MA.912.G.7.1. Describe and make regular, non-regular, and oblique polyhedra and sketch the net for a given polyhedron and vice versa. ✹	
MA.912.G.7.2. Describe the relationships between the faces, edges, and vertices of polyhedra.	
MA.912.G.7.3. Identify, sketch, and determine areas and/or perimeters of cross sections of three-dimensional solids.	
MA.912.G.7.4. Identify chords, tangents, radii, and great circles of spheres. ✹	
MA.912.G.7.5. Explain and use formulas for lateral area, surface area, and volume of three-dimensional solids. ✹	
MA.912.G.7.6. Identify and use properties of congruent and similar three-dimensional solids. ✹	
MA.912.G.7.7. Determine how changes in dimensions affect the surface area and volume of common three-dimensional geometric solids. ✹	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Geometry	
STANDARD 8: Mathematical Reasoning and Problem Solving	
MA.912.G.8.1. Analyze the structure of Euclidean geometry as an axiomatic system. Distinguish between undefined terms, definitions, postulates and theorems.	
MA.912.G.8.2. Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	
MA.912.G.8.3. Determine whether a solution is reasonable in the context of the original situation. ✹	
MA.912.G.8.4. Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the proof of a conjecture. ✹	
MA.912.G.8.5. Write geometric proofs, including proofs by contradiction and proofs involving coordinate geometry. Use and compare a variety of ways to present deductive proofs, such as flow charts, paragraphs, two-column, and indirect proofs.	
MA.912.G.8.6. Perform basic constructions using straight-edge and compass, and/or drawing programs describing and justifying the procedures used. Distinguish between sketching, constructing and drawing geometric figures.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Probability	
STANDARD 1: Counting Principles	
MA.912.P.1.1. Use counting principles, including the addition and the multiplication principles, to determine size of finite sample spaces and probabilities of events in those spaces. ✹	
MA.912.P.1.2. Use formulas for permutations and combinations to count outcomes and determine probabilities of events.	
STANDARD 2: Determine Probabilities	
MA.912.P.2.1. Determine probabilities of complementary events, and calculate odds for and against the occurrence of events. ✹	
MA.912.P.2.2. Determine probabilities of independent events. ✹	
MA.912.P.2.3. Understand and use the concept of conditional probability, including: understanding how conditioning affects the probability of events; finding conditional probabilities from a two-way frequency table.	
STANDARD 3: Probability Distributions	
MA.912.P.3.1. Determine probabilities of events from distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	
MA.912.P.3.2. Determine the mean and variance of distributions, including: • discrete uniform (all outcomes in a finite set equally likely) • binomial • normal • exponential	
MA.912.P.3.3. Apply the properties of the normal distribution.	
MA.912.P.3.4. Apply the Central Limit Theorem to determine the probability that a sample mean will be in a certain interval.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Statistics	
STANDARD 1: Formulating Questions	
MA.912.S.1.1. Formulate an appropriate research question to be answered by collecting data or performing an experiment.	
MA.912.S.1.2. Determine appropriate and consistent standards of measurement for the data to be collected in a survey or experiment.	
STANDARD 2: Data Collection	
MA.912.S.2.1. Compare the difference between surveys, experiments, and observational studies, and what types of questions can and cannot be answered by a particular design.	
MA.912.S.2.2. Apply the definition of random sample and basic types of sampling, including representative samples, stratified samples, censuses.	
MA.912.S.2.3. Identify sources of bias, including sampling and nonsampling errors. ✹	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.1. Read and interpret data presented in various formats. Determine whether data is presented in appropriate format, and identify possible corrections. ✹ Formats to include: • bar graphs • line graphs • stem and leaf plots • circle graphs • histograms • box and whiskers plots • scatter plots • cumulative frequency (ogive) graphs	
MA.912.S.3.2. Collect, organize, and analyze data sets, determine the best format for the data and present visual summaries from the following: ✹ • bar graphs • line graphs • stem and leaf plots • circle graphs • histograms • box and whisker plots • scatter plots • cumulative frequency (ogive) graphs	
MA.912.S.3.3. Calculate and interpret measures of the center of a set of data, including mean, median, and weighted mean, and use these measures to make comparisons among sets of data. ✹	Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Apply basic statistical concepts
MA.912.S.3.4. Calculate and interpret measures of variance and standard deviation. Use these measures to make comparisons among sets of data.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Statistics	
STANDARD 3: Summarizing Data (Descriptive Statistics)	
MA.912.S.3.5. Calculate and interpret the range and quartiles of a set of data. ✸	
MA.912.S.3.6. Use empirical rules (e.g. 68-95-99.7 rule) to estimate spread of distributions and to make comparisons among sets of data.	
MA.912.S.3.7. Calculate the correlation coefficient of a set of paired data, and interpret the coefficient as a measure of the strength and direction of the relationship between the variables.	
MA.912.S.3.8. Determine whether a data distribution is symmetric or skewed based on an appropriate graphical presentation of the data.	
MA.912.S.3.9. Identify outliers in a set of data based on an appropriate graphical presentation of the data, and describe the effect of outliers on the mean, median, and range of the data.	
STANDARD 4: Analyzing Data	
MA.912.S.4.1. Explain and interpret the concepts of confidence level and "margin of error".	
MA.912.S.4.2. Use a simulation to approximate sampling distributions for the mean, using repeated sampling simulations from a given population.	
MA.912.S.4.3. Apply the Central Limit Theorem to solve problems.	
MA.912.S.4.4. Approximate confidence intervals for means using simulations of the distribution of the sample mean.	
MA.912.S.4.5. Find the equation of the least squares regression line for a set of data.	
STANDARD 5: Interpreting Results	
MA.912.S.5.1. Analyze the relationship between confidence level, margin of error and sample size.	
MA.912.S.5.2. Apply the general principles of hypothesis testing.	
MA.912.S.5.3. Explain and identify the following: null hypothesis, alternative hypotheses, Type I error, and Type II error.	
MA.912.S.5.4. Explain the meaning of *p-value* and its role in hypothesis testing.	
MA.912.S.5.5. Perform hypothesis tests of means and proportions for large samples, using simulations to determine whether a sample mean (proportion) has a low likelihood of occurring.	
MA.912.S.5.6. Interpret the results of hypothesis tests of means and proportions, and make decisions based on p-values of test.	

TABLE 2E

FLORIDA Grades 9–12 Mathematics Next Generation Sunshine State Standards	WorkKeys Applied Mathematics Level Skills
Body of Knowledge: Statistics	
STANDARD 5: Interpreting Results	
MA.912.S.5.7. Use simulations to approximate the p-value of a correlation coefficient, and use the results to determine whether the correlation between two variables is significant.	
MA.912.S.5.8. Use a regression line equation to make predictions.	
MA.912.S.5.9. Interpret the coefficient of determination, r^2, for a least-squares regression.	

SUPPLEMENT
TABLES 3A–3D

SCIENCE

TABLE 3A

FLORIDA Grade 8 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
BIG IDEA 1: The Practice of Science	
SC.8.N.1.1. Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram **Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Determine whether given information supports or contradicts a simple hypothesis or conclusion, and why Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
SC.8.N.1.2. Design and conduct a study using repeated trials and replication.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram

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TABLE 3A

FLORIDA Grade 8 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
	Scientific Investigation: Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
SC.8.N.1.3. Use phrases such as "results support" or "fail to support" in science, understanding that science does not offer conclusive 'proof' of a knowledge claim.	
SC.8.N.1.4. Explain how hypotheses are valuable if they lead to further investigations, even if they turn out not to be supported by the data.	
SC.8.N.1.5. Analyze the methods used to develop a scientific explanation as seen in different fields of science.	
SC.8.N.1.6. Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.	
BIG IDEA 2: The Characteristics of Scientific Knowledge	
SC.8.N.2.1. Distinguish between scientific and pseudoscientific ideas.	
SC.8.N.2.2. Discuss what characterizes science and its methods.	

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TABLE 3A

FLORIDA Grade 8 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
BIG IDEA 3: The Role of Theories, Laws, Hypotheses, and Models	
SC.8.N.3.1. Select models useful in relating the results of their own investigations.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram **Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Identify key issues or assumptions in a model Determine whether given information supports or contradicts a simple hypothesis or conclusion, and why Identify strengths and weaknesses in one or more models Identify similarities and differences between models Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
SC.8.N.3.2. Explain why theories may be modified but are rarely discarded.	
BIG IDEA 4: Science and Society	
SC.8.N.4.1. Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.	
SC.8.N.4.2. Explain how political, social, and economic concerns can affect science, and vice versa.	

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TABLE 3A

FLORIDA Grade 8 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Earth and Space Science	
BIG IDEA 5: Earth in Space and Time	
SC.8.E.5.1. Recognize that there are enormous distances between objects in space and apply our knowledge of light and space travel to understand this distance.	
SC.8.E.5.2. Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars.	
SC.8.E.5.3. Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size, and composition.	
SC.8.E.5.4. Explore the Law of Universal Gravitation by explaining the role that gravity plays in the formation of planets, stars, and solar systems and in determining their motions.	
SC.8.E.5.5. Describe and classify specific physical properties of stars: apparent magnitude (brightness), temperature (color), size, and luminosity (absolute brightness).	
SC.8.E.5.6. Create models of solar properties including: rotation, structure of the Sun, convection, sunspots, solar flares, and prominences.	
SC.8.E.5.7. Compare and contrast the properties of objects in the Solar System including the Sun, planets, and moons to those of Earth, such as gravitational force, distance from the Sun, speed, movement, temperature, and atmospheric conditions.	
SC.8.E.5.8. Compare various historical models of the Solar System, including geocentric and heliocentric.	
SC.8.E.5.9. Explain the impact of objects in space on each other including: 1. the Sun on the Earth including seasons and gravitational attraction 2. the Moon on the Earth, including phases, tides, and eclipses, and the relative position of each body.	
SC.8.E.5.10. Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information.	
SC.8.E.5.11. Identify and compare characteristics of the electromagnetic spectrum such as wavelength, frequency, use, and hazards and recognize its application to an understanding of planetary images and satellite photographs.	
SC.8.E.5.12. Summarize the effects of space exploration on the economy and culture of Florida.	

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TABLE 3A

FLORIDA Grade 8 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Physical Science	
BIG IDEA 8: Properties of Matter	
SC.8.P.8.1. Explore the scientific theory of atoms (also known as atomic theory) by using models to explain the motion of particles in solids, liquids, and gases.	
SC.8.P.8.2. Differentiate between weight and mass recognizing that weight is the amount of gravitational pull on an object and is distinct from, though proportional to, mass.	
SC.8.P.8.3. Explore and describe the densities of various materials through measurement of their masses and volumes.	
SC.8.P.8.4. Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that these properties are independent of the amount of the sample.	
SC.8.P.8.5. Recognize that there are a finite number of elements and that their atoms combine in a multitude of ways to produce compounds that make up all of the living and nonliving things that we encounter.	
SC.8.P.8.6. Recognize that elements are grouped in the periodic table according to similarities of their properties.	
SC.8.P.8.7. Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of sub-atomic particles (electrons surrounding a nucleus containing protons and neutrons).	
SC.8.P.8.8. Identify basic examples of and compare and classify the properties of compounds, including acids, bases, and salts.	
SC.8.P.8.9. Distinguish among mixtures (including solutions) and pure substances.	
BIG IDEA 9: Changes in Matter	
SC.8.P.9.1. Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.	
SC.8.P.9.2. Differentiate between physical changes and chemical changes.	
SC.8.P.9.3. Investigate and describe how temperature influences chemical changes.	

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TABLE 3A

FLORIDA Grade 8 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
BIG IDEA 18: Matter and Energy Transformations	
SC.8.L.18.1. Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.	
SC.8.L.18.2. Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide.	
SC.8.L.18.3. Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment.	
SC.8.L.18.4. Cite evidence that living systems follow the Laws of Conservation of Mass and Energy.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 1: The Practice of Science	
SC.912.N.1.1. Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: ✹ 1. pose questions about the natural world, 2. conduct systematic observations, 3. examine books and other sources of information to see what is already known, 4. review what is known in light of empirical evidence, 5. plan investigations, 6. use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), 7. pose answers, explanations, or descriptions of events, 8. generate explanations that explicate or describe natural phenomena (inferences), 9. use appropriate evidence and reasoning to justify these explanations to others, 10. communicate results of scientific investigations, and 11. evaluate the merits of the explanations produced by others.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram **Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Identify key issues or assumptions in a model Determine whether given information supports or contradicts a simple hypothesis or conclusion, and why Identify strengths and weaknesses in one or more models Identify similarities and differences between models Determine which model(s) is(are) supported or weakened by new information Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
SC.912.N.1.2. Describe and explain what characterizes science and its methods. ✹	
SC.912.N.1.3. Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented. ✹	
SC.912.N.1.4. Identify sources of information and assess their reliability according to the strict standards of scientific investigation. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 1: The Practice of Science	
SC.912.N.1.5. Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome. ✹	
SC.912.N.1.6. Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied. ✹	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram **Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
SC.912.N.1.7. Recognize the role of creativity in constructing scientific questions, methods and explanations. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 2: The Characteristics of Scientific Knowledge	
SC.912.N.2.1. Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science). ✹	
SC.912.N.2.2. Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion. ✹	
SC.912.N.2.3. Identify examples of pseudoscience (such as astrology, phrenology) in society. ✹	
SC.912.N.2.4. Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability. ✹	
SC.912.N.2.5. Describe instances in which scientists' varied backgrounds, talents, interests, and goals influence the inferences and thus the explanations that they make about observations of natural phenomena and describe that competing interpretations (explanations) of scientists are a strength of science as they are a source of new, testable ideas that have the potential to add new evidence to support one or another of the explanations. ✹	
STANDARD 3: The Role of Theories, Laws, Hypotheses, and Models	
SC.912.N.3.1. Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer. ✹	
SC.912.N.3.2. Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science. ✹	
SC.912.N.3.3. Explain that scientific laws are descriptions of specific relationships under given conditions in nature, but do not offer explanations for those relationships. ✹	
SC.912.N.3.4. Recognize that theories do not become laws, nor do laws become theories; theories are well supported explanations and laws are well supported descriptions. ✹	
SC.912.N.3.5. Describe the function of models in science, and identify the wide range of models used in science. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 4: Science and Society	
SC.912.N.4.1. Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making. ✹	
SC.912.N.4.2. Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Earth and Space Science	
STANDARD 5: Earth in Space and Time	
SC.912.E.5.1. Cite evidence used to develop and verify the scientific theory of the Big Bang (also known as the Big Bang Theory) of the origin of the universe. ✹	
SC.912.E.5.2. Identify patterns in the organization and distribution of matter in the universe and the forces that determine them. ✹	
SC.912.E.5.3. Describe and predict how the initial mass of a star determines its evolution. ✹	
SC.912.E.5.4. Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth. ✹	
SC.912.E.5.5. Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems. ✹	
SC.912.E.5.6. Develop logical connections through physical principles, including Kepler's and Newton's Laws about the relationships and the effects of Earth, Moon, and Sun on each other. ✹	
SC.912.E.5.7. Relate the history of and explain the justification for future space exploration and continuing technology development. ✹	
SC.912.E.5.8. Connect the concepts of radiation and the electromagnetic spectrum to the use of historical and newly-developed observational tools. ✹	
SC.912.E.5.9. Analyze the broad effects of space exploration on the economy and culture of Florida. ✹	
SC.912.E.5.10. Describe and apply the coordinate system used to locate objects in the sky.	
SC.912.E.5.11. Distinguish the various methods of measuring astronomical distances and apply each in appropriate situations.	
STANDARD 6: Earth Structures	
SC.912.E.6.1. Describe and differentiate the layers of Earth and the interactions among them. ✹	
SC.912.E.6.2. Connect surface features to surface processes that are responsible for their formation. ✹	
SC.912.E.6.3. Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates. ✹	
SC.912.E.6.4. Analyze how specific geologic processes and features are expressed in Florida and elsewhere. ✹	
SC.912.E.6.5. Describe the geologic development of the present day oceans and identify commonly found features.	
SC.912.E.6.6. Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Earth and Space Science	
STANDARD 7: Earth Systems and Patterns	
SC.912.E.7.1. Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon. ✹	
SC.912.E.7.2. Analyze the causes of the various kinds of surface and deep water motion within the oceans and their impacts on the transfer of energy between the poles and the equator. ✹	
SC.912.E.7.3. Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. ✹	
SC.912.E.7.4. Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans. ✹	
SC.912.E.7.5. Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertainties of such predictions. ✹	
SC.912.E.7.6. Relate the formation of severe weather to the various physical factors. ✹	
SC.912.E.7.7. Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change. ✹	
SC.912.E.7.8. Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively. ✹	
SC.912.E.7.9. Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Physical Science	
STANDARD 8: Matter	
SC.912.P.8.1. Differentiate among the four states of matter. ✹	
SC.912.P.8.2. Differentiate between physical and chemical properties and physical and chemical changes of matter. ✹	
SC.912.P.8.3. Explore the scientific theory of atoms (also known as atomic theory) by describing changes in the atomic model over time and why those changes were necessitated by experimental evidence. ✹	
SC.912.P.8.4. Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom. ✹	
SC.912.P.8.5. Relate properties of atoms and their position in the periodic table to the arrangement of their electrons. ✹	
SC.912.P.8.6. Distinguish between bonding forces holding compounds together and other attractive forces, including hydrogen bonding and van der Waals forces. ✹	
SC.912.P.8.7. Interpret formula representations of molecules and compounds in terms of composition and structure. ✹	
SC.912.P.8.8. Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions. ✹	
SC.912.P.8.9. Apply the mole concept and the law of conservation of mass to calculate quantities of chemicals participating in reactions. ✹	
SC.912.P.8.10. Describe oxidation-reduction reactions in living and non-living systems. ✹	
SC.912.P.8.11. Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH. ✹	
SC.912.P.8.12. Describe the properties of the carbon atom that make the diversity of carbon compounds possible. ✹	
SC.912.P.8.13. Identify selected functional groups and relate how they contribute to properties of carbon compounds. ✹	
STANDARD 10: Energy	
SC.912.P.10.1. Differentiate among the various forms of energy and recognize that they can be transformed from one form to others. ✹	
SC.912.P.10.2. Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. ✹	
SC.912.P.10.3. Compare and contrast work and power qualitatively and quantitatively. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Physical Science	
STANDARD 10: Energy	
SC.912.P.10.4. Describe heat as the energy transferred by convection, conduction, and radiation, and explain the connection of heat to change in temperature or states of matter. ✹	
SC.912.P.10.5. Relate temperature to the average molecular kinetic energy. ✹	
SC.912.P.10.6. Create and interpret potential energy diagrams, for example: chemical reactions, orbits around a central body, motion of a pendulum. ✹	
SC.912.P.10.7. Distinguish between endothermic and exothermic chemical processes. ✹	
SC.912.P.10.8. Explain entropy's role in determining the efficiency of processes that convert energy to work.	
SC.912.P.10.9. Describe the quantization of energy at the atomic level. ✹	
SC.912.P.10.10. Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear). ✹	
SC.912.P.10.11. Explain and compare nuclear reactions (radioactive decay, fission and fusion), the energy changes associated with them and their associated safety issues. ✹	
SC.912.P.10.12. Differentiate between chemical and nuclear reactions. ✹	
SC.912.P.10.13. Relate the configuration of static charges to the electric field, electric force, electric potential, and electric potential energy.	
SC.912.P.10.14. Differentiate among conductors, semiconductors, and insulators. ✹	
SC.912.P.10.15. Investigate and explain the relationships among current, voltage, resistance, and power. ✹	
SC.912.P.10.16. Explain the relationship between moving charges and magnetic fields, as well as changing magnetic fields and electric fields, and their application to modern technologies. ✹	
SC.912.P.10.17. Explore the theory of electromagnetism by explaining electromagnetic waves in terms of oscillating electric and magnetic fields.	
SC.912.P.10.18. Explore the theory of electromagnetism by comparing and contrasting the different parts of the electro-magnetic spectrum in terms of wavelength, frequency, and energy, and relate them to phenomena and applications. ✹	
SC.912.P.10.19. Explain that all objects emit and absorb electromagnetic radiation and distinguish between objects that are blackbody radiators and those that are not.	
SC.912.P.10.20. Describe the measurable properties of waves and explain the relationships among them and how these properties change when the wave moves from one medium to another. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Physical Science	
STANDARD 10: Energy	
SC.912.P.10.21. Qualitatively describe the shift in frequency in sound or electromagnetic waves due to the relative motion of a source or a receiver. ✹	
SC.912.P.10.22. Construct ray diagrams and use thin lens and mirror equations to locate the images formed by lenses and mirrors.	
STANDARD 12: Motion	
SC.912.P.12.1. Distinguish between scalar and vector quantities and assess which should be used to describe an event. ✹	
SC.912.P.12.2. Analyze the motion of an object in terms of its position, velocity, and acceleration (with respect to a frame of reference) as functions of time. ✹	
SC.912.P.12.3. Interpret and apply Newton's three laws of motion. ✹	
SC.912.P.12.4. Describe how the gravitational force between two objects depends on their masses and the distance between them. ✹	
SC.912.P.12.5. Apply the law of conservation of linear momentum to interactions, such as collisions between objects. ✹	
SC.912.P.12.6. Qualitatively apply the concept of angular momentum. ✹	
SC.912.P.12.7. Recognize that nothing travels faster than the speed of light in vacuum which is the same for all observers no matter how they or the light source are moving. ✹	
SC.912.P.12.8. Recognize that Newton's Laws are a limiting case of Einstein's Special Theory of Relativity at speeds that are much smaller than the speed of light.	
SC.912.P.12.9. Recognize that time, length, and energy depend on the frame of reference.	
SC.912.P.12.10. Interpret the behavior of ideal gases in terms of kinetic molecular theory. ✹	
SC.912.P.12.11. Describe phase transitions in terms of kinetic molecular theory.	
SC.912.P.12.12. Explain how various factors, such as concentration, temperature, and presence of a catalyst affect the rate of a chemical reaction.	
SC.912.P.12.13. Explain the concept of dynamic equilibrium in terms of reversible processes occurring at the same rates.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.1. Describe the scientific theory of cells (cell theory) and relate the history of its discovery to the process of science. ✹	
SC.912.L.14.2. Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport). ✹	
SC.912.L.14.3. Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells. ✹	
SC.912.L.14.4. Compare and contrast structure and function of various types of microscopes.	
SC.912.L.14.5. Explain the evidence supporting the scientific theory of the origin of eukaryotic cells (endosymbiosis). ✹	
SC.912.L.14.6. Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health. ✹	
SC.912.L.14.7. Relate the structure of each of the major plant organs and tissues to physiological processes. ✹	
SC.912.L.14.8. Explain alternation of generations in plants.	
SC.912.L.14.9. Relate the major structure of fungi to their functions.	
SC.912.L.14.10. Discuss the relationship between the evolution of land plants and their anatomy.	
SC.912.L.14.11. Classify and state the defining characteristics of epithelial tissue, connective tissue, muscle tissue, and nervous tissue.	
SC.912.L.14.12. Describe the anatomy and histology of bone tissue.	
SC.912.L.14.13. Distinguish between bones of the axial skeleton and the appendicular skeleton.	
SC.912.L.14.14. Identify the major bones of the axial and appendicular skeleton.	
SC.912.L.14.15. Identify major markings (such as foramina, fossae, tubercles, etc.) on a skeleton. Explain why these markings are important.	
SC.912.L.14.16. Describe the anatomy and histology, including ultrastructure, of muscle tissue.	
SC.912.L.14.17. List the steps involved in the sliding filament of muscle contraction.	
SC.912.L.14.18. Describe signal transmission across a myoneural junction.	
SC.912.L.14.19. Explain the physiology of skeletal muscle.	
SC.912.L.14.20. Identify the major muscles of the human on a model or diagram.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.21. Describe the anatomy, histology, and physiology of the central and peripheral nervous systems and name the major divisions of the nervous system.	
SC.912.L.14.22. Describe the physiology of nerve conduction, including the generator potential, action potential, and the synapse.	
SC.912.L.14.23. Identify the parts of a reflex arc.	
SC.912.L.14.24. Identify the general parts of a synapse and describe the physiology of signal transmission across a synapse.	
SC.912.L.14.25. Identify the major parts of a cross section through the spinal cord.	
SC.912.L.14.26. Identify the major parts of the brain on diagrams or models.	
SC.912.L.14.27. Identify the functions of the major parts of the brain, including the meninges, medulla, pons, midbrain, hypothalamus, thalamus, cerebellum and cerebrum.	
SC.912.L.14.28. Identify the major functions of the spinal cord.	
SC.912.L.14.29. Define the terms endocrine and exocrine.	
SC.912.L.14.30. Compare endocrine and neural controls of physiology.	
SC.912.L.14.31. Describe the physiology of hormones including the different types and the mechanisms of their action.	
SC.912.L.14.32. Describe the anatomy and physiology of the endocrine system.	
SC.912.L.14.33. Describe the basic anatomy and physiology of the reproductive system.	
SC.912.L.14.34. Describe the composition and physiology of blood, including that of the plasma and the formed elements.	
SC.912.L.14.35. Describe the steps in hemostasis, including the mechanism of coagulation. Include the basis for blood typing and transfusion reactions.	
SC.912.L.14.36. Describe the factors affecting blood flow through the cardiovascular system.	
SC.912.L.14.37. Explain the components of an electrocardiogram.	
SC.912.L.14.38. Describe normal heart sounds and what they mean.	
SC.912.L.14.39. Describe hypertension and some of the factors that produce it.	
SC.912.L.14.40. Describe the histology of the major arteries and veins of systemic, pulmonary, hepatic portal, and coronary circulation.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.41. Describe fetal circulation and changes that occur to the circulatory system at birth.	
SC.912.L.14.42. Describe the anatomy and the physiology of the lymph system.	
SC.912.L.14.43. Describe the histology of the respiratory system.	
SC.912.L.14.44. Describe the physiology of the respiratory system including the mechanisms of ventilation, gas exchange, gas transport and the mechanisms that control the rate of ventilation.	
SC.912.L.14.45. Describe the histology of the alimentary canal and its associated accessory organs.	
SC.912.L.14.46. Describe the physiology of the digestive system, including mechanical digestion, chemical digestion, absorption and the neural and hormonal mechanisms of control.	
SC.912.L.14.47. Describe the physiology of urine formation by the kidney.	
SC.912.L.14.48. Describe the anatomy, histology, and physiology of the ureters, the urinary bladder and the urethra.	
SC.912.L.14.49. Identify the major functions associated with the sympathetic and parasympathetic nervous systems.	
SC.912.L.14.50. Describe the structure of vertebrate sensory organs. Relate structure to function in vertebrate sensory systems.	
SC.912.L.14.51. Describe the function of the vertebrate integumentary system.	
SC.912.L.14.52. Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.	
SC.912.L.14.53. Discuss basic classification and characteristics of plants. Identify bryophytes, pteridophytes, gymnosperms, and angiosperms.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 15: Diversity and Evolution of Living Organisms	
SC.912.L.15.1. Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change. ✹	
SC.912.L.15.2. Discuss the use of molecular clocks to estimate how long ago various groups of organisms diverged evolutionarily from one another.	
SC.912.L.15.3. Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction.	
SC.912.L.15.4. Describe how and why organisms are hierarchically classified and based on evolutionary relationships. ✹	
SC.912.L.15.5. Explain the reasons for changes in how organisms are classified.	
SC.912.L.15.6. Discuss distinguishing characteristics of the domains and kingdoms of living organisms. ✹	
SC.912.L.15.7. Discuss distinguishing characteristics of vertebrate and representative invertebrate phyla, and chordate classes using typical examples.	
SC.912.L.15.8. Describe the scientific explanations of the origin of life on Earth. ✹	
SC.912.L.15.9. Explain the role of reproductive isolation in the process of speciation.	
SC.912.L.15.10. Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans, including brain size, jaw size, language, and manufacture of tools. ✹	
SC.912.L.15.11. Discuss specific fossil hominids and what they show about human evolution.	
SC.912.L.15.12. List the conditions for Hardy-Weinberg equilibrium in a population and why these conditions are not likely to appear in nature. Use the Hardy-Weinberg equation to predict genotypes in a population from observed phenotypes.	
SC.912.L.15.13. Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success. ✹	
SC.912.L.15.14. Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow. ✹	
SC.912.L.15.15. Describe how mutation and genetic recombination increase genetic variation. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 10: Energy	
STANDARD 16: Heredity and Reproduction	
SC.912.L.16.1. Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance. ✹	
SC.912.L.16.2. Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles. ✹	
SC.912.L.16.3. Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information. ✹	
SC.912.L.16.4. Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring. ✹	
SC.912.L.16.5. Explain the basic processes of transcription and translation, and how they result in the expression of genes. ✹	
SC.912.L.16.6. Discuss the mechanisms for regulation of gene expression in prokaryotes and eukaryotes at transcription and translation level.	
SC.912.L.16.7. Describe how viruses and bacteria transfer genetic material between cells and the role of this process in biotechnology.	
SC.912.L.16.8. Explain the relationship between mutation, cell cycle, and uncontrolled cell growth potentially resulting in cancer. ✹	
SC.912.L.16.9. Explain how and why the genetic code is universal and is common to almost all organisms. ✹	
SC.912.L.16.10. Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues. ✹	
SC.912.L.16.11. Discuss the technologies associated with forensic medicine and DNA identification, including restriction fragment length polymorphism (RFLP) analysis.	
SC.912.L.16.12. Describe how basic DNA technology (restriction digestion by endonucleases, gel electrophoresis, polymerase chain reaction, ligation, and transformation) is used to construct recombinant DNA molecules (DNA cloning).	
SC.912.L.16.13. Describe the basic anatomy and physiology of the human reproductive system. Describe the process of human development from fertilization to birth and major changes that occur in each trimester of pregnancy. ✹	
SC.912.L.16.14. Describe the cell cycle, including the process of mitosis. Explain the role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 10: Energy	
SC.912.L.16.15. Compare and contrast binary fission and mitotic cell division.	
SC.912.L.16.16. Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores. ✹	
SC.912.L.16.17. Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation. ✹	
STANDARD 17: Independence	
SC.912.L.17.1. Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.	
SC.912.L.17.2. Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. ✹	
SC.912.L.17.3. Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms. ✹	
SC.912.L.17.4. Describe changes in ecosystems resulting from seasonal variations, climate change and succession. ✹	
SC.912.L.17.5. Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity. ✹	
SC.912.L.17.6. Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism. ✹	
SC.912.L.17.7. Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems.	
SC.912.L.17.8. Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species. ✹	
SC.912.L.17.9. Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. ✹	
SC.912.L.17.10. Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle. ✹	
SC.912.L.17.11. Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests. ✹	
SC.912.L.17.12. Discuss the political, social, and environmental consequences of sustainable use of land.	
SC.912.L.17.13. Discuss the need for adequate monitoring of environmental parameters when making policy decisions.	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 17: Independence	
SC.912.L.17.14. Assess the need for adequate waste management strategies.	
SC.912.L.17.15. Discuss the effects of technology on environmental quality.	
SC.912.L.17.16. Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.	
SC.912.L.17.17. Assess the effectiveness of innovative methods of protecting the environment.	
SC.912.L.17.18. Describe how human population size and resource use relate to environmental quality.	
SC.912.L.17.19. Describe how different natural resources are produced and how their rates of use and renewal limit availability.	
SC.912.L.17.20. Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability. ✹	
STANDARD 18: Matter and Energy Transformations	
SC.912.L.18.1. Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules. ✹	
SC.912.L.18.2. Describe the important structural characteristics of monosaccharides, disaccharides, and polysaccharides and explain the functions of carbohydrates in living things.	
SC.912.L.18.3. Describe the structures of fatty acids, triglycerides, phospholipids, and steroids. Explain the functions of lipids in living organisms. Identify some reactions that fatty acids undergo. Relate the structure and function of cell membranes.	
SC.912.L.18.4. Describe the structures of proteins and amino acids. Explain the functions of proteins in living organisms. Identify some reactions that amino acids undergo. Relate the structure and function of enzymes.	
SC.912.L.18.5. Discuss the use of chemiosmotic gradients for ATP production in chloroplasts and mitochondria.	
SC.912.L.18.6. Discuss the role of anaerobic respiration in living things and in human society.	
SC.912.L.18.7. Identify the reactants, products, and basic functions of photosynthesis. ✹	
SC.912.L.18.8. Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration. ✹	
SC.912.L.18.9. Explain the interrelated nature of photosynthesis and cellular respiration. ✹	
SC.912.L.18.10. Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell. ✹	

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TABLE 3B

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	EXPLORE Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 18: Matter and Energy Transformations	
SC.912.L.18.11. Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, and their effect on enzyme activity. ✸	
SC.912.L.18.12. Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent. ✸	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 1: The Practice of Science	
SC.912.N.1.1. Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: ✹ 1. pose questions about the natural world, 2. conduct systematic observations, 3. examine books and other sources of information to see what is already known, 4. review what is known in light of empirical evidence, 5. plan investigations, 6. use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), 7. pose answers, explanations, or descriptions of events, 8. generate explanations that explicate or describe natural phenomena (inferences), 9. use appropriate evidence and reasoning to justify these explanations to others, 10. communicate results of scientific investigations, and 11. evaluate the merits of the explanations produced by others.	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram **Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment Determine the hypothesis for an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Identify key issues or assumptions in a model Determine whether given information supports or contradicts a simple hypothesis or conclusion, and why Identify strengths and weaknesses in one or more models Identify similarities and differences between models Determine which model(s) is(are) supported or weakened by new information Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
SC.912.N.1.2. Describe and explain what characterizes science and its methods. ✹	
SC.912.N.1.3. Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented. ✹	
SC.912.N.1.4. Identify sources of information and assess their reliability according to the strict standards of scientific investigation. ✹	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 1: The Practice of Science	
SC.912.N.1.5. Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome. ✹	
SC.912.N.1.6. Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied. ✹	**Interpretation of Data:** Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram) Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels) Select two or more pieces of data from a simple data presentation Understand basic scientific terminology Find basic information in a brief body of text Determine how the value of one variable changes as the value of another variable changes in a simple data presentation Compare or combine data from a simple data presentation (e.g., order or sum data from a table) Translate information into a table, graph, or diagram **Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
SC.912.N.1.7. Recognize the role of creativity in constructing scientific questions, methods and explanations. ✹	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 2: The Characteristics of Scientific Knowledge	
SC.912.N.2.1. Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science). ✹	
SC.912.N.2.2. Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion. ✹	
SC.912.N.2.3. Identify examples of pseudoscience (such as astrology, phrenology) in society. ✹	
SC.912.N.2.4. Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability. ✹	
SC.912.N.2.5. Describe instances in which scientists' varied backgrounds, talents, interests, and goals influence the inferences and thus the explanations that they make about observations of natural phenomena and describe that competing interpretations (explanations) of scientists are a strength of science as they are a source of new, testable ideas that have the potential to add new evidence to support one or another of the explanations. ✹	
STANDARD 3: The Role of Theories, Laws, Hypotheses, and Models	
SC.912.N.3.1. Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer. ✹	
SC.912.N.3.2. Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science. ✹	
SC.912.N.3.3. Explain that scientific laws are descriptions of specific relationships under given conditions in nature, but do not offer explanations for those relationships. ✹	
SC.912.N.3.4. Recognize that theories do not become laws, nor do laws become theories; theories are well supported explanations and laws are well supported descriptions. ✹	
SC.912.N.3.5. Describe the function of models in science, and identify the wide range of models used in science. ✹	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: The Nature of Science	
STANDARD 4: Science and Society	
SC.912.N.4.1. Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making. ✸	
SC.912.N.4.2. Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental. ✸	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Earth and Space Science	
STANDARD 5: Earth in Space and Time	
SC.912.E.5.1. Cite evidence used to develop and verify the scientific theory of the Big Bang (also known as the Big Bang Theory) of the origin of the universe. ✹	
SC.912.E.5.2. Identify patterns in the organization and distribution of matter in the universe and the forces that determine them. ✹	
SC.912.E.5.3. Describe and predict how the initial mass of a star determines its evolution. ✹	
SC.912.E.5.4. Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth. ✹	
SC.912.E.5.5. Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems. ✹	
SC.912.E.5.6. Develop logical connections through physical principles, including Kepler's and Newton's Laws about the relationships and the effects of Earth, Moon, and Sun on each other. ✹	
SC.912.E.5.7. Relate the history of and explain the justification for future space exploration and continuing technology development. ✹	
SC.912.E.5.8. Connect the concepts of radiation and the electromagnetic spectrum to the use of historical and newly-developed observational tools. ✹	
SC.912.E.5.9. Analyze the broad effects of space exploration on the economy and culture of Florida. ✹	
SC.912.E.5.10. Describe and apply the coordinate system used to locate objects in the sky.	
SC.912.E.5.11. Distinguish the various methods of measuring astronomical distances and apply each in appropriate situations.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Earth and Space Science	
STANDARD 6: Earth Structures	
SC.912.E.6.1. Describe and differentiate the layers of Earth and the interactions among them. ✹	
SC.912.E.6.2. Connect surface features to surface processes that are responsible for their formation. ✹	
SC.912.E.6.3. Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates. ✹	
SC.912.E.6.4. Analyze how specific geologic processes and features are expressed in Florida and elsewhere. ✹	
SC.912.E.6.5. Describe the geologic development of the present day oceans and identify commonly found features.	
SC.912.E.6.6. Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies.	
STANDARD 7: Earth Systems and Patterns	
SC.912.E.7.1. Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon. ✹	
SC.912.E.7.2. Analyze the causes of the various kinds of surface and deep water motion within the oceans and their impacts on the transfer of energy between the poles and the equator. ✹	
SC.912.E.7.3. Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. ✹	
SC.912.E.7.4. Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans. ✹	
SC.912.E.7.5. Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertainties of such predictions. ✹	
SC.912.E.7.6. Relate the formation of severe weather to the various physical factors. ✹	
SC.912.E.7.7. Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change. ✹	
SC.912.E.7.8. Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively. ✹	
SC.912.E.7.9. Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Physical Science	
STANDARD 8: Matter	
SC.912.P.8.1. Differentiate among the four states of matter. ✹	
SC.912.P.8.2. Differentiate between physical and chemical properties and physical and chemical changes of matter. ✹	
SC.912.P.8.3. Explore the scientific theory of atoms (also known as atomic theory) by describing changes in the atomic model over time and why those changes were necessitated by experimental evidence. ✹	
SC.912.P.8.4. Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom. ✹	
SC.912.P.8.5. Relate properties of atoms and their position in the periodic table to the arrangement of their electrons. ✹	
SC.912.P.8.6. Distinguish between bonding forces holding compounds together and other attractive forces, including hydrogen bonding and van der Waals forces. ✹	
SC.912.P.8.7. Interpret formula representations of molecules and compounds in terms of composition and structure. ✹	
SC.912.P.8.8. Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions. ✹	
SC.912.P.8.9. Apply the mole concept and the law of conservation of mass to calculate quantities of chemicals participating in reactions. ✹	
SC.912.P.8.10. Describe oxidation-reduction reactions in living and non-living systems. ✹	
SC.912.P.8.11. Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH. ✹	
SC.912.P.8.12. Describe the properties of the carbon atom that make the diversity of carbon compounds possible. ✹	
SC.912.P.8.13. Identify selected functional groups and relate how they contribute to properties of carbon compounds. ✹	
STANDARD 10: Energy	
SC.912.P.10.1. Differentiate among the various forms of energy and recognize that they can be transformed from one form to others. ✹	
SC.912.P.10.2. Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. ✹	
SC.912.P.10.3. Compare and contrast work and power qualitatively and quantitatively. ✹	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Physical Science	
STANDARD 10: Energy	
SC.912.P.10.4. Describe heat as the energy transferred by convection, conduction, and radiation, and explain the connection of heat to change in temperature or states of matter. ✹	
SC.912.P.10.5. Relate temperature to the average molecular kinetic energy. ✹	
SC.912.P.10.6. Create and interpret potential energy diagrams, for example: chemical reactions, orbits around a central body, motion of a pendulum. ✹	
SC.912.P.10.7. Distinguish between endothermic and exothermic chemical processes. ✹	
SC.912.P.10.8. Explain entropy's role in determining the efficiency of processes that convert energy to work.	
SC.912.P.10.9. Describe the quantization of energy at the atomic level. ✹	
SC.912.P.10.10. Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear). ✹	
SC.912.P.10.11. Explain and compare nuclear reactions (radioactive decay, fission and fusion), the energy changes associated with them and their associated safety issues. ✹	
SC.912.P.10.12. Differentiate between chemical and nuclear reactions. ✹	
SC.912.P.10.13. Relate the configuration of static charges to the electric field, electric force, electric potential, and electric potential energy.	
SC.912.P.10.14. Differentiate among conductors, semiconductors, and insulators. ✹	
SC.912.P.10.15. Investigate and explain the relationships among current, voltage, resistance, and power. ✹	
SC.912.P.10.16. Explain the relationship between moving charges and magnetic fields, as well as changing magnetic fields and electric fields, and their application to modern technologies. ✹	
SC.912.P.10.17. Explore the theory of electromagnetism by explaining electromagnetic waves in terms of oscillating electric and magnetic fields.	
SC.912.P.10.18. Explore the theory of electromagnetism by comparing and contrasting the different parts of the electro-magnetic spectrum in terms of wavelength, frequency, and energy, and relate them to phenomena and applications. ✹	
SC.912.P.10.19. Explain that all objects emit and absorb electromagnetic radiation and distinguish between objects that are blackbody radiators and those that are not.	
SC.912.P.10.20. Describe the measurable properties of waves and explain the relationships among them and how these properties change when the wave moves from one medium to another. ✹	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Physical Science	
STANDARD 10: Energy	
SC.912.P.10.21. Qualitatively describe the shift in frequency in sound or electromagnetic waves due to the relative motion of a source or a receiver. ✹	
SC.912.P.10.22. Construct ray diagrams and use thin lens and mirror equations to locate the images formed by lenses and mirrors.	
STANDARD 12: Motion	
SC.912.P.12.1. Distinguish between scalar and vector quantities and assess which should be used to describe an event. ✹	
SC.912.P.12.2. Analyze the motion of an object in terms of its position, velocity, and acceleration (with respect to a frame of reference) as functions of time. ✹	
SC.912.P.12.3. Interpret and apply Newton's three laws of motion. ✹	
SC.912.P.12.4. Describe how the gravitational force between two objects depends on their masses and the distance between them. ✹	
SC.912.P.12.5. Apply the law of conservation of linear momentum to interactions, such as collisions between objects. ✹	
SC.912.P.12.6. Qualitatively apply the concept of angular momentum. ✹	
SC.912.P.12.7. Recognize that nothing travels faster than the speed of light in vacuum which is the same for all observers no matter how they or the light source are moving. ✹	
SC.912.P.12.8. Recognize that Newton's Laws are a limiting case of Einstein's Special Theory of Relativity at speeds that are much smaller than the speed of light.	
SC.912.P.12.9. Recognize that time, length, and energy depend on the frame of reference.	
SC.912.P.12.10. Interpret the behavior of ideal gases in terms of kinetic molecular theory. ✹	
SC.912.P.12.11. Describe phase transitions in terms of kinetic molecular theory.	
SC.912.P.12.12. Explain how various factors, such as concentration, temperature, and presence of a catalyst affect the rate of a chemical reaction.	
SC.912.P.12.13. Explain the concept of dynamic equilibrium in terms of reversible processes occurring at the same rates.	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.1. Describe the scientific theory of cells (cell theory) and relate the history of its discovery to the process of science. ✹	
SC.912.L.14.2. Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport). ✹	
SC.912.L.14.3. Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells. ✹	
SC.912.L.14.4. Compare and contrast structure and function of various types of microscopes.	
SC.912.L.14.5. Explain the evidence supporting the scientific theory of the origin of eukaryotic cells (endosymbiosis). ✹	
SC.912.L.14.6. Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health. ✹	
SC.912.L.14.7. Relate the structure of each of the major plant organs and tissues to physiological processes. ✹	
SC.912.L.14.8. Explain alternation of generations in plants.	
SC.912.L.14.9. Relate the major structure of fungi to their functions.	
SC.912.L.14.10. Discuss the relationship between the evolution of land plants and their anatomy.	
SC.912.L.14.11. Classify and state the defining characteristics of epithelial tissue, connective tissue, muscle tissue, and nervous tissue.	
SC.912.L.14.12. Describe the anatomy and histology of bone tissue.	
SC.912.L.14.13. Distinguish between bones of the axial skeleton and the appendicular skeleton.	
SC.912.L.14.14. Identify the major bones of the axial and appendicular skeleton.	
SC.912.L.14.15. Identify major markings (such as foramina, fossae, tubercles, etc.) on a skeleton. Explain why these markings are important.	
SC.912.L.14.16. Describe the anatomy and histology, including ultrastructure, of muscle tissue.	
SC.912.L.14.17. List the steps involved in the sliding filament of muscle contraction.	
SC.912.L.14.18. Describe signal transmission across a myoneural junction.	
SC.912.L.14.19. Explain the physiology of skeletal muscle.	
SC.912.L.14.20. Identify the major muscles of the human on a model or diagram.	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.21. Describe the anatomy, histology, and physiology of the central and peripheral nervous systems and name the major divisions of the nervous system.	
SC.912.L.14.22. Describe the physiology of nerve conduction, including the generator potential, action potential, and the synapse.	
SC.912.L.14.23. Identify the parts of a reflex arc.	
SC.912.L.14.24. Identify the general parts of a synapse and describe the physiology of signal transmission across a synapse.	
SC.912.L.14.25. Identify the major parts of a cross section through the spinal cord.	
SC.912.L.14.26. Identify the major parts of the brain on diagrams or models.	
SC.912.L.14.27. Identify the functions of the major parts of the brain, including the meninges, medulla, pons, midbrain, hypothalamus, thalamus, cerebellum and cerebrum.	
SC.912.L.14.28. Identify the major functions of the spinal cord.	
SC.912.L.14.29. Define the terms endocrine and exocrine.	
SC.912.L.14.30. Compare endocrine and neural controls of physiology.	
SC.912.L.14.31. Describe the physiology of hormones including the different types and the mechanisms of their action.	
SC.912.L.14.32. Describe the anatomy and physiology of the endocrine system.	
SC.912.L.14.33. Describe the basic anatomy and physiology of the reproductive system.	
SC.912.L.14.34. Describe the composition and physiology of blood, including that of the plasma and the formed elements.	
SC.912.L.14.35. Describe the steps in hemostasis, including the mechanism of coagulation. Include the basis for blood typing and transfusion reactions.	
SC.912.L.14.36. Describe the factors affecting blood flow through the cardiovascular system.	
SC.912.L.14.37. Explain the components of an electrocardiogram.	
SC.912.L.14.38. Describe normal heart sounds and what they mean.	
SC.912.L.14.39. Describe hypertension and some of the factors that produce it.	
SC.912.L.14.40. Describe the histology of the major arteries and veins of systemic, pulmonary, hepatic portal, and coronary circulation.	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.41. Describe fetal circulation and changes that occur to the circulatory system at birth.	
SC.912.L.14.42. Describe the anatomy and the physiology of the lymph system.	
SC.912.L.14.43. Describe the histology of the respiratory system.	
SC.912.L.14.44. Describe the physiology of the respiratory system including the mechanisms of ventilation, gas exchange, gas transport and the mechanisms that control the rate of ventilation.	
SC.912.L.14.45. Describe the histology of the alimentary canal and its associated accessory organs.	
SC.912.L.14.46. Describe the physiology of the digestive system, including mechanical digestion, chemical digestion, absorption and the neural and hormonal mechanisms of control.	
SC.912.L.14.47. Describe the physiology of urine formation by the kidney.	
SC.912.L.14.48. Describe the anatomy, histology, and physiology of the ureters, the urinary bladder and the urethra.	
SC.912.L.14.49. Identify the major functions associated with the sympathetic and parasympathetic nervous systems.	
SC.912.L.14.50. Describe the structure of vertebrate sensory organs. Relate structure to function in vertebrate sensory systems.	
SC.912.L.14.51. Describe the function of the vertebrate integumentary system.	
SC.912.L.14.52. Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.	
SC.912.L.14.53. Discuss basic classification and characteristics of plants. Identify bryophytes, pteridophytes, gymnosperms, and angiosperms.	

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TABLE 3C

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 15: Diversity and Evolution of Living Organisms	
SC.912.L.15.1. Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change. ✹	
SC.912.L.15.2. Discuss the use of molecular clocks to estimate how long ago various groups of organisms diverged evolutionarily from one another.	
SC.912.L.15.3. Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction.	
SC.912.L.15.4. Describe how and why organisms are hierarchically classified and based on evolutionary relationships. ✹	
SC.912.L.15.5. Explain the reasons for changes in how organisms are classified.	
SC.912.L.15.6. Discuss distinguishing characteristics of the domains and kingdoms of living organisms. ✹	
SC.912.L.15.7. Discuss distinguishing characteristics of vertebrate and representative invertebrate phyla, and chordate classes using typical examples.	
SC.912.L.15.8. Describe the scientific explanations of the origin of life on Earth. ✹	
SC.912.L.15.9. Explain the role of reproductive isolation in the process of speciation.	
SC.912.L.15.10. Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans, including brain size, jaw size, language, and manufacture of tools. ✹	
SC.912.L.15.11. Discuss specific fossil hominids and what they show about human evolution.	
SC.912.L.15.12. List the conditions for Hardy-Weinberg equilibrium in a population and why these conditions are not likely to appear in nature. Use the Hardy-Weinberg equation to predict genotypes in a population from observed phenotypes.	
SC.912.L.15.13. Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success. ✹	
SC.912.L.15.14. Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow. ✹	
SC.912.L.15.15. Describe how mutation and genetic recombination increase genetic variation. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 16: Heredity and Reproduction	
SC.912.L.16.1. Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance. ✹	
SC.912.L.16.2. Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles. ✹	
SC.912.L.16.3. Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information. ✹	
SC.912.L.16.4. Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring. ✹	
SC.912.L.16.5. Explain the basic processes of transcription and translation, and how they result in the expression of genes. ✹	
SC.912.L.16.6. Discuss the mechanisms for regulation of gene expression in prokaryotes and eukaryotes at transcription and translation level.	
SC.912.L.16.7. Describe how viruses and bacteria transfer genetic material between cells and the role of this process in biotechnology.	
SC.912.L.16.8. Explain the relationship between mutation, cell cycle, and uncontrolled cell growth potentially resulting in cancer. ✹	
SC.912.L.16.9. Explain how and why the genetic code is universal and is common to almost all organisms. ✹	
SC.912.L.16.10. Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues. ✹	
SC.912.L.16.11. Discuss the technologies associated with forensic medicine and DNA identification, including restriction fragment length polymorphism (RFLP) analysis.	
SC.912.L.16.12. Describe how basic DNA technology (restriction digestion by endonucleases, gel electrophoresis, polymerase chain reaction, ligation, and transformation) is used to construct recombinant DNA molecules (DNA cloning).	
SC.912.L.16.13. Describe the basic anatomy and physiology of the human reproductive system. Describe the process of human development from fertilization to birth and major changes that occur in each trimester of pregnancy. ✹	
SC.912.L.16.14. Describe the cell cycle, including the process of mitosis. Explain the role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction. ✹	
SC.912.L.16.15. Compare and contrast binary fission and mitotic cell division.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 16: Heredity and Reproduction	
SC.912.L.16.16. Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores. ✹	
SC.912.L.16.17. Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation. ✹	
STANDARD 17: Independence	
SC.912.L.17.1. Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.	
SC.912.L.17.2. Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. ✹	
SC.912.L.17.3. Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms. ✹	
SC.912.L.17.4. Describe changes in ecosystems resulting from seasonal variations, climate change and succession. ✹	
SC.912.L.17.5. Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity. ✹	
SC.912.L.17.6. Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism. ✹	
SC.912.L.17.7. Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems.	
SC.912.L.17.8. Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species. ✹	
SC.912.L.17.9. Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. ✹	
SC.912.L.17.10. Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle. ✹	
SC.912.L.17.11. Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests. ✹	
SC.912.L.17.12. Discuss the political, social, and environmental consequences of sustainable use of land.	
SC.912.L.17.13. Discuss the need for adequate monitoring of environmental parameters when making policy decisions.	
SC.912.L.17.14. Assess the need for adequate waste management strategies.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 17: Independence	
SC.912.L.17.15. Discuss the effects of technology on environmental quality.	
SC.912.L.17.16. Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.	
SC.912.L.17.17. Assess the effectiveness of innovative methods of protecting the environment.	
SC.912.L.17.18. Describe how human population size and resource use relate to environmental quality.	
SC.912.L.17.19. Describe how different natural resources are produced and how their rates of use and renewal limit availability.	
SC.912.L.17.20. Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability. ✹	
STANDARD 18: Matter and Energy Transformations	
SC.912.L.18.1. Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules. ✹	
SC.912.L.18.2. Describe the important structural characteristics of monosaccharides, disaccharides, and polysaccharides and explain the functions of carbohydrates in living things.	
SC.912.L.18.3. Describe the structures of fatty acids, triglycerides, phospholipids, and steroids. Explain the functions of lipids in living organisms. Identify some reactions that fatty acids undergo. Relate the structure and function of cell membranes.	
SC.912.L.18.4. Describe the structures of proteins and amino acids. Explain the functions of proteins in living organisms. Identify some reactions that amino acids undergo. Relate the structure and function of enzymes.	
SC.912.L.18.5. Discuss the use of chemiosmotic gradients for ATP production in chloroplasts and mitochondria.	
SC.912.L.18.6. Discuss the role of anaerobic respiration in living things and in human society.	
SC.912.L.18.7. Identify the reactants, products, and basic functions of photosynthesis. ✹	
SC.912.L.18.8. Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration. ✹	
SC.912.L.18.9. Explain the interrelated nature of photosynthesis and cellular respiration. ✹	
SC.912.L.18.10. Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	PLAN and ACT Science College Readiness Standards
Body of Knowledge: Life Science	
STANDARD 18: Matter and Energy Transformations	
SC.912.L.18.11. Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, and their effect on enzyme activity. ✸	
SC.912.L.18.12. Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent. ✸	

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TABLE 3D

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: The Nature of Science	
STANDARD 1: The Practice of Science	
SC.912.N.1.1. Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: ✹ 1. pose questions about the natural world, 2. conduct systematic observations, 3. examine books and other sources of information to see what is already known, 4. review what is known in light of empirical evidence, 5. plan investigations, 6. use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), 7. pose answers, explanations, or descriptions of events, 8. generate explanations that explicate or describe natural phenomena (inferences), 9. use appropriate evidence and reasoning to justify these explanations to others, 10. communicate results of scientific investigations, and 11. evaluate the merits of the explanations produced by others.	Fill in one or two pieces of information that are missing from a graphic Find several pieces of information in one or two graphics Understand how graphics are related to each other Summarize information from one or two straightforward graphics Identify trends shown in one or two straightforward graphics Compare information and trends shown in one or two straightforward graphics Summarize information from one or more detailed graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Draw conclusions based on one complicated graphic or several related graphics Apply information from one or more complicated graphics to specific situations
SC.912.N.1.2. Describe and explain what characterizes science and its methods. ✹	
SC.912.N.1.3. Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented. ✹	
SC.912.N.1.4. Identify sources of information and assess their reliability according to the strict standards of scientific investigation. ✹	
SC.912.N.1.5. Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome. ✹	
SC.912.N.1.6. Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied. ✹	
SC.912.N.1.7. Recognize the role of creativity in constructing scientific questions, methods and explanations. ✹	

TABLE 3D

FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: The Nature of Science	
STANDARD 2: The Characteristics of Scientific Knowledge	
SC.912.N.2.1. Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science). ✹	
SC.912.N.2.2. Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion. ✹	
SC.912.N.2.3. Identify examples of pseudoscience (such as astrology, phrenology) in society. ✹	
SC.912.N.2.4. Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability. ✹	
SC.912.N.2.5. Describe instances in which scientists' varied backgrounds, talents, interests, and goals influence the inferences and thus the explanations that they make about observations of natural phenomena and describe that competing interpretations (explanations) of scientists are a strength of science as they are a source of new, testable ideas that have the potential to add new evidence to support one or another of the explanations. ✹	
STANDARD 3: The Role of Theories, Laws, Hypotheses, and Models	
SC.912.N.3.1. Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer. ✹	
SC.912.N.3.2. Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science. ✹	
SC.912.N.3.3. Explain that scientific laws are descriptions of specific relationships under given conditions in nature, but do not offer explanations for those relationships. ✹	
SC.912.N.3.4. Recognize that theories do not become laws, nor do laws become theories; theories are well supported explanations and laws are well supported descriptions. ✹	
SC.912.N.3.5. Describe the function of models in science, and identify the wide range of models used in science. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: The Nature of Science	
STANDARD 4: Science and Society	
SC.912.N.4.1. Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making. ✹	
SC.912.N.4.2. Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Earth and Space Science	
STANDARD 5: Earth in Space and Time	
SC.912.E.5.1. Cite evidence used to develop and verify the scientific theory of the Big Bang (also known as the Big Bang Theory) of the origin of the universe. ✹	
SC.912.E.5.2. Identify patterns in the organization and distribution of matter in the universe and the forces that determine them. ✹	
SC.912.E.5.3. Describe and predict how the initial mass of a star determines its evolution. ✹	
SC.912.E.5.4. Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth. ✹	
SC.912.E.5.5. Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems. ✹	
SC.912.E.5.6. Develop logical connections through physical principles, including Kepler's and Newton's Laws about the relationships and the effects of Earth, Moon, and Sun on each other. ✹	
SC.912.E.5.7. Relate the history of and explain the justification for future space exploration and continuing technology development. ✹	
SC.912.E.5.8. Connect the concepts of radiation and the electromagnetic spectrum to the use of historical and newly-developed observational tools. ✹	
SC.912.E.5.9. Analyze the broad effects of space exploration on the economy and culture of Florida. ✹	
SC.912.E.5.10. Describe and apply the coordinate system used to locate objects in the sky.	
SC.912.E.5.11. Distinguish the various methods of measuring astronomical distances and apply each in appropriate situations.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Earth and Space Science	
STANDARD 6: Earth Structures	
SC.912.E.6.1. Describe and differentiate the layers of Earth and the interactions among them. ✹	
SC.912.E.6.2. Connect surface features to surface processes that are responsible for their formation. ✹	
SC.912.E.6.3. Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates. ✹	
SC.912.E.6.4. Analyze how specific geologic processes and features are expressed in Florida and elsewhere. ✹	
SC.912.E.6.5. Describe the geologic development of the present day oceans and identify commonly found features.	
SC.912.E.6.6. Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies.	
STANDARD 7: Earth Systems and Patterns	
SC.912.E.7.1. Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon. ✹	
SC.912.E.7.2. Analyze the causes of the various kinds of surface and deep water motion within the oceans and their impacts on the transfer of energy between the poles and the equator. ✹	
SC.912.E.7.3. Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. ✹	
SC.912.E.7.4. Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans. ✹	
SC.912.E.7.5. Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertainties of such predictions. ✹	
SC.912.E.7.6. Relate the formation of severe weather to the various physical factors. ✹	
SC.912.E.7.7. Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change. ✹	
SC.912.E.7.8. Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively. ✹	
SC.912.E.7.9. Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Physical Science	
STANDARD 8: Matter	
SC.912.P.8.1. Differentiate among the four states of matter. ✹	
SC.912.P.8.2. Differentiate between physical and chemical properties and physical and chemical changes of matter. ✹	
SC.912.P.8.3. Explore the scientific theory of atoms (also known as atomic theory) by describing changes in the atomic model over time and why those changes were necessitated by experimental evidence. ✹	
SC.912.P.8.4. Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom. ✹	
SC.912.P.8.5. Relate properties of atoms and their position in the periodic table to the arrangement of their electrons. ✹	
SC.912.P.8.6. Distinguish between bonding forces holding compounds together and other attractive forces, including hydrogen bonding and van der Waals forces. ✹	
SC.912.P.8.7. Interpret formula representations of molecules and compounds in terms of composition and structure. ✹	
SC.912.P.8.8. Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions. ✹	
SC.912.P.8.9. Apply the mole concept and the law of conservation of mass to calculate quantities of chemicals participating in reactions. ✹	
SC.912.P.8.10. Describe oxidation-reduction reactions in living and non-living systems. ✹	
SC.912.P.8.11. Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH. ✹	
SC.912.P.8.12. Describe the properties of the carbon atom that make the diversity of carbon compounds possible. ✹	
SC.912.P.8.13. Identify selected functional groups and relate how they contribute to properties of carbon compounds. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Physical Science	
STANDARD 10: Energy	
SC.912.P.10.1. Differentiate among the various forms of energy and recognize that they can be transformed from one form to others. ✹	
SC.912.P.10.2. Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. ✹	
SC.912.P.10.3. Compare and contrast work and power qualitatively and quantitatively. ✹	
SC.912.P.10.4. Describe heat as the energy transferred by convection, conduction, and radiation, and explain the connection of heat to change in temperature or states of matter. ✹	
SC.912.P.10.5. Relate temperature to the average molecular kinetic energy. ✹	
SC.912.P.10.6. Create and interpret potential energy diagrams, for example: chemical reactions, orbits around a central body, motion of a pendulum. ✹	
SC.912.P.10.7. Distinguish between endothermic and exothermic chemical processes. ✹	
SC.912.P.10.8. Explain entropy's role in determining the efficiency of processes that convert energy to work.	
SC.912.P.10.9. Describe the quantization of energy at the atomic level. ✹	
SC.912.P.10.10. Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear). ✹	
SC.912.P.10.11. Explain and compare nuclear reactions (radioactive decay, fission and fusion), the energy changes associated with them and their associated safety issues. ✹	
SC.912.P.10.12. Differentiate between chemical and nuclear reactions. ✹	
SC.912.P.10.13. Relate the configuration of static charges to the electric field, electric force, electric potential, and electric potential energy.	
SC.912.P.10.14. Differentiate among conductors, semiconductors, and insulators. ✹	
SC.912.P.10.15. Investigate and explain the relationships among current, voltage, resistance, and power. ✹	
SC.912.P.10.16. Explain the relationship between moving charges and magnetic fields, as well as changing magnetic fields and electric fields, and their application to modern technologies. ✹	
SC.912.P.10.17. Explore the theory of electromagnetism by explaining electromagnetic waves in terms of oscillating electric and magnetic fields.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Physical Science	
STANDARD 10: Energy	
SC.912.P.10.18. Explore the theory of electromagnetism by comparing and contrasting the different parts of the electro-magnetic spectrum in terms of wavelength, frequency, and energy, and relate them to phenomena and applications. ✹	
SC.912.P.10.19. Explain that all objects emit and absorb electromagnetic radiation and distinguish between objects that are blackbody radiators and those that are not.	
SC.912.P.10.20. Describe the measurable properties of waves and explain the relationships among them and how these properties change when the wave moves from one medium to another. ✹	
SC.912.P.10.21. Qualitatively describe the shift in frequency in sound or electromagnetic waves due to the relative motion of a source or a receiver. ✹	
SC.912.P.10.22. Construct ray diagrams and use thin lens and mirror equations to locate the images formed by lenses and mirrors.	
STANDARD 12: Motion	
SC.912.P.12.1. Distinguish between scalar and vector quantities and assess which should be used to describe an event. ✹	
SC.912.P.12.2. Analyze the motion of an object in terms of its position, velocity, and acceleration (with respect to a frame of reference) as functions of time. ✹	
SC.912.P.12.3. Interpret and apply Newton's three laws of motion. ✹	
SC.912.P.12.4. Describe how the gravitational force between two objects depends on their masses and the distance between them. ✹	
SC.912.P.12.5. Apply the law of conservation of linear momentum to interactions, such as collisions between objects. ✹	
SC.912.P.12.6. Qualitatively apply the concept of angular momentum. ✹	
SC.912.P.12.7. Recognize that nothing travels faster than the speed of light in vacuum which is the same for all observers no matter how they or the light source are moving. ✹	
SC.912.P.12.8. Recognize that Newton's Laws are a limiting case of Einstein's Special Theory of Relativity at speeds that are much smaller than the speed of light.	
SC.912.P.12.9. Recognize that time, length, and energy depend on the frame of reference.	
SC.912.P.12.10. Interpret the behavior of ideal gases in terms of kinetic molecular theory. ✹	
SC.912.P.12.11. Describe phase transitions in terms of kinetic molecular theory.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Physical Science	
STANDARD 12: Motion	
SC.912.P.12.12. Explain how various factors, such as concentration, temperature, and presence of a catalyst affect the rate of a chemical reaction.	
SC.912.P.12.13. Explain the concept of dynamic equilibrium in terms of reversible processes occurring at the same rates.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.1. Describe the scientific theory of cells (cell theory) and relate the history of its discovery to the process of science. ✹	
SC.912.L.14.2. Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport). ✹	
SC.912.L.14.3. Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells. ✹	
SC.912.L.14.4. Compare and contrast structure and function of various types of microscopes.	
SC.912.L.14.5. Explain the evidence supporting the scientific theory of the origin of eukaryotic cells (endosymbiosis). ✹	
SC.912.L.14.6. Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health. ✹	
SC.912.L.14.7. Relate the structure of each of the major plant organs and tissues to physiological processes. ✹	
SC.912.L.14.8. Explain alternation of generations in plants.	
SC.912.L.14.9. Relate the major structure of fungi to their functions.	
SC.912.L.14.10. Discuss the relationship between the evolution of land plants and their anatomy.	
SC.912.L.14.11. Classify and state the defining characteristics of epithelial tissue, connective tissue, muscle tissue, and nervous tissue.	
SC.912.L.14.12. Describe the anatomy and histology of bone tissue.	
SC.912.L.14.13. Distinguish between bones of the axial skeleton and the appendicular skeleton.	
SC.912.L.14.14. Identify the major bones of the axial and appendicular skeleton.	
SC.912.L.14.15. Identify major markings (such as foramina, fossae, tubercles, etc.) on a skeleton. Explain why these markings are important.	
SC.912.L.14.16. Describe the anatomy and histology, including ultrastructure, of muscle tissue.	
SC.912.L.14.17. List the steps involved in the sliding filament of muscle contraction.	
SC.912.L.14.18. Describe signal transmission across a myoneural junction.	
SC.912.L.14.19. Explain the physiology of skeletal muscle.	
SC.912.L.14.20. Identify the major muscles of the human on a model or diagram.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.21. Describe the anatomy, histology, and physiology of the central and peripheral nervous systems and name the major divisions of the nervous system.	
SC.912.L.14.22. Describe the physiology of nerve conduction, including the generator potential, action potential, and the synapse.	
SC.912.L.14.23. Identify the parts of a reflex arc.	
SC.912.L.14.24. Identify the general parts of a synapse and describe the physiology of signal transmission across a synapse.	
SC.912.L.14.25. Identify the major parts of a cross section through the spinal cord.	
SC.912.L.14.26. Identify the major parts of the brain on diagrams or models.	
SC.912.L.14.27. Identify the functions of the major parts of the brain, including the meninges, medulla, pons, midbrain, hypothalamus, thalamus, cerebellum and cerebrum.	
SC.912.L.14.28. Identify the major functions of the spinal cord.	
SC.912.L.14.29. Define the terms endocrine and exocrine.	
SC.912.L.14.30. Compare endocrine and neural controls of physiology.	
SC.912.L.14.31. Describe the physiology of hormones including the different types and the mechanisms of their action.	
SC.912.L.14.32. Describe the anatomy and physiology of the endocrine system.	
SC.912.L.14.33. Describe the basic anatomy and physiology of the reproductive system.	
SC.912.L.14.34. Describe the composition and physiology of blood, including that of the plasma and the formed elements.	
SC.912.L.14.35. Describe the steps in hemostasis, including the mechanism of coagulation. Include the basis for blood typing and transfusion reactions.	
SC.912.L.14.36. Describe the factors affecting blood flow through the cardiovascular system.	
SC.912.L.14.37. Explain the components of an electrocardiogram.	
SC.912.L.14.38. Describe normal heart sounds and what they mean.	
SC.912.L.14.39. Describe hypertension and some of the factors that produce it.	
SC.912.L.14.40. Describe the histology of the major arteries and veins of systemic, pulmonary, hepatic portal, and coronary circulation.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 14: Organization and Development of Living Organisms	
SC.912.L.14.41. Describe fetal circulation and changes that occur to the circulatory system at birth.	
SC.912.L.14.42. Describe the anatomy and the physiology of the lymph system.	
SC.912.L.14.43. Describe the histology of the respiratory system.	
SC.912.L.14.44. Describe the physiology of the respiratory system including the mechanisms of ventilation, gas exchange, gas transport and the mechanisms that control the rate of ventilation.	
SC.912.L.14.45. Describe the histology of the alimentary canal and its associated accessory organs.	
SC.912.L.14.46. Describe the physiology of the digestive system, including mechanical digestion, chemical digestion, absorption and the neural and hormonal mechanisms of control.	
SC.912.L.14.47. Describe the physiology of urine formation by the kidney.	
SC.912.L.14.48. Describe the anatomy, histology, and physiology of the ureters, the urinary bladder and the urethra.	
SC.912.L.14.49. Identify the major functions associated with the sympathetic and parasympathetic nervous systems.	
SC.912.L.14.50. Describe the structure of vertebrate sensory organs. Relate structure to function in vertebrate sensory systems.	
SC.912.L.14.51. Describe the function of the vertebrate integumentary system.	
SC.912.L.14.52. Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.	
SC.912.L.14.53. Discuss basic classification and characteristics of plants. Identify bryophytes, pteridophytes, gymnosperms, and angiosperms.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 15: Diversity and Evolution of Living Organisms	
SC.912.L.15.1. Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change. ✹	
SC.912.L.15.2. Discuss the use of molecular clocks to estimate how long ago various groups of organisms diverged evolutionarily from one another.	
SC.912.L.15.3. Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction.	
SC.912.L.15.4. Describe how and why organisms are hierarchically classified and based on evolutionary relationships. ✹	
SC.912.L.15.5. Explain the reasons for changes in how organisms are classified.	
SC.912.L.15.6. Discuss distinguishing characteristics of the domains and kingdoms of living organisms. ✹	
SC.912.L.15.7. Discuss distinguishing characteristics of vertebrate and representative invertebrate phyla, and chordate classes using typical examples.	
SC.912.L.15.8. Describe the scientific explanations of the origin of life on Earth. ✹	
SC.912.L.15.9. Explain the role of reproductive isolation in the process of speciation.	
SC.912.L.15.10. Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans, including brain size, jaw size, language, and manufacture of tools. ✹	
SC.912.L.15.11. Discuss specific fossil hominids and what they show about human evolution.	
SC.912.L.15.12. List the conditions for Hardy-Weinberg equilibrium in a population and why these conditions are not likely to appear in nature. Use the Hardy-Weinberg equation to predict genotypes in a population from observed phenotypes.	
SC.912.L.15.13. Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success. ✹	
SC.912.L.15.14. Discuss mechanisms of evolutionary change other than natural selection such as genetic drift and gene flow. ✹	
SC.912.L.15.15. Describe how mutation and genetic recombination increase genetic variation. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 16: Heredity and Reproduction	
SC.912.L.16.1. Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance. ✹	
SC.912.L.16.2. Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles. ✹	
SC.912.L.16.3. Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information. ✹	
SC.912.L.16.4. Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring. ✹	
SC.912.L.16.5. Explain the basic processes of transcription and translation, and how they result in the expression of genes. ✹	
SC.912.L.16.6. Discuss the mechanisms for regulation of gene expression in prokaryotes and eukaryotes at transcription and translation level.	
SC.912.L.16.7. Describe how viruses and bacteria transfer genetic material between cells and the role of this process in biotechnology.	
SC.912.L.16.8. Explain the relationship between mutation, cell cycle, and uncontrolled cell growth potentially resulting in cancer. ✹	
SC.912.L.16.9. Explain how and why the genetic code is universal and is common to almost all organisms. ✹	
SC.912.L.16.10. Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues. ✹	
SC.912.L.16.11. Discuss the technologies associated with forensic medicine and DNA identification, including restriction fragment length polymorphism (RFLP) analysis.	
SC.912.L.16.12. Describe how basic DNA technology (restriction digestion by endonucleases, gel electrophoresis, polymerase chain reaction, ligation, and transformation) is used to construct recombinant DNA molecules (DNA cloning).	
SC.912.L.16.13. Describe the basic anatomy and physiology of the human reproductive system. Describe the process of human development from fertilization to birth and major changes that occur in each trimester of pregnancy. ✹	
SC.912.L.16.14. Describe the cell cycle, including the process of mitosis. Explain the role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction. ✹	
SC.912.L.16.15. Compare and contrast binary fission and mitotic cell division.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 12: Motion	
SC.912.L.16.16. Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores. ✹	
SC.912.L.16.17. Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation. ✹	
STANDARD 17: Independence	
SC.912.L.17.1. Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.	
SC.912.L.17.2. Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature. ✹	
SC.912.L.17.3. Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms. ✹	
SC.912.L.17.4. Describe changes in ecosystems resulting from seasonal variations, climate change and succession. ✹	
SC.912.L.17.5. Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity. ✹	
SC.912.L.17.6. Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism. ✹	
SC.912.L.17.7. Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems.	
SC.912.L.17.8. Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species. ✹	
SC.912.L.17.9. Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. ✹	
SC.912.L.17.10. Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle. ✹	
SC.912.L.17.11. Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests. ✹	
SC.912.L.17.12. Discuss the political, social, and environmental consequences of sustainable use of land.	
SC.912.L.17.13. Discuss the need for adequate monitoring of environmental parameters when making policy decisions.	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 17: Independence	
SC.912.L.17.14. Assess the need for adequate waste management strategies.	
SC.912.L.17.15. Discuss the effects of technology on environmental quality.	
SC.912.L.17.16. Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.	
SC.912.L.17.17. Assess the effectiveness of innovative methods of protecting the environment.	
SC.912.L.17.18. Describe how human population size and resource use relate to environmental quality.	
SC.912.L.17.19. Describe how different natural resources are produced and how their rates of use and renewal limit availability.	
SC.912.L.17.20. Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability. ✹	
STANDARD 18: Matter and Energy Transformations	
SC.912.L.18.1. Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules. ✹	
SC.912.L.18.2. Describe the important structural characteristics of monosaccharides, disaccharides, and polysaccharides and explain the functions of carbohydrates in living things.	
SC.912.L.18.3. Describe the structures of fatty acids, triglycerides, phospholipids, and steroids. Explain the functions of lipids in living organisms. Identify some reactions that fatty acids undergo. Relate the structure and function of cell membranes.	
SC.912.L.18.4. Describe the structures of proteins and amino acids. Explain the functions of proteins in living organisms. Identify some reactions that amino acids undergo. Relate the structure and function of enzymes.	
SC.912.L.18.5. Discuss the use of chemiosmotic gradients for ATP production in chloroplasts and mitochondria.	
SC.912.L.18.6. Discuss the role of anaerobic respiration in living things and in human society.	
SC.912.L.18.7. Identify the reactants, products, and basic functions of photosynthesis. ✹	
SC.912.L.18.8. Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration. ✹	
SC.912.L.18.9. Explain the interrelated nature of photosynthesis and cellular respiration. ✹	
SC.912.L.18.10. Connect the role of adenosine triphosphate (ATP) to energy transfers within a cell. ✹	

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FLORIDA Grades 9–12 Science Next Generation Sunshine State Standards	WorkKeys Locating Information Level Skills
Body of Knowledge: Life Science	
STANDARD 18: Matter and Energy Transformations	
SC.912.L.18.11. Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions. Identify factors, such as pH and temperature, and their effect on enzyme activity. ✸	
SC.912.L.18.12. Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent. ✸	