STATE MATCH SUPPLEMENT

Colorado Academic Standards

Reading, Writing, and Communicating; Mathematics; and Science
Grades 8–12

and

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

August 2010

ACT®

List of Supplement Tables

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Preface

This document is a supplement to the *State Match Colorado Academic Standards Reading, Writing, and Communicating; Mathematics; and Science Grades 8–12 and EXPLORE, PLAN, the ACT, and WorkKeys (August 2010)*. This supplement identifies specific ACT College Readiness Standards that correspond to each Colorado Standard in a side-by-side format. The left side of each page presents the Colorado 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 skill(s) that correspond to each Colorado Standard.

Colorado Standards listed here are from the Colorado Academic Standards as presented on the Colorado Department of Education website in June 2010:

Colorado Academic Standards	**Adopted**
Reading, Writing, and Communicating	December 2009
Mathematics	December 2009
Science	December 2009

Supplement
Tables 1A–1K:

Reading, Writing, and Communicating

TABLE 1A

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE College Readiness Standards
Standard 1: Oral Expression and Listening	
• Collaborate effectively as group members or leaders who listen actively and respectfully pose thoughtful questions, acknowledge the ideas of others, and contribute ideas to further the group's attainment of an objective	
• Deliver organized and effective oral presentations for diverse audiences and varied purposes	
• Use language appropriate for purpose and audience	
• Demonstrate skill in inferential and evaluative listening	

TABLE 1A

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
• Interpret how the structure of written English contributes to the pronunciation and meaning of complex vocabulary	
• Demonstrate comprehension of a variety of informational, literary, and persuasive texts	**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

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE Reading College Readiness Standards
	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
• Evaluate how an author uses words to create mental imagery, suggest mood, and set tone	**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

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE Reading College Readiness Standards
	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
• Read a wide range of literature (American and world literature) to understand important universal themes and the human experience	
• Seek feedback, self-assess, and reflect on personal learning while engaging with increasingly more difficult texts	
• Engage in a wide range of nonfiction and real-life reading experiences to solve problems, judge the quality of ideas, or complete daily tasks	

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
• Write with a clear focus, coherent organization, sufficient elaboration, and detail	**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
• Effectively use content-specific language, style, tone, and text structure to compose or adapt writing for different audiences and purposes	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Apply standard English conventions to effectively communicate with written language	**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

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE English College Readiness Standards
	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
	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*
	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

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE English College Readiness Standards
• Implement the writing process successfully to plan, revise, and edit written work	**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”) 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

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE English College Readiness Standards
	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
	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
	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*
	Conventions of Punctuation:
	Delete commas that create basic sense problems (e.g., between verb and direct object)
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	Delete commas that disturb the sentence flow (e.g., between modifier and modified element)
	Use commas to set off simple parenthetical phrases

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• Master the techniques of effective informational, literary, and persuasive writing	

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COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE Reading College Readiness Standards
Standard 4: Research and Reasoning	
• Discriminate and justify a position using traditional lines of rhetorical argument and reasoning	
• Articulate the position of self and others using experiential and material logic	
• Gather information from a variety of sources; analyze and evaluate the quality and relevance of the source; and use it to answer complex questions	
• Use primary, secondary, and tertiary written sources to generate and answer research questions	
• Evaluate explicit and implicit viewpoints, values, attitudes, and assumptions concealed in speech, writing, and illustration	**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 **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 **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

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	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
• Demonstrate the use of a range of strategies, research techniques, and persistence when engaging with difficult texts or examining complex problems or issues	
• Exercise ethical conduct when writing, researching, and documenting sources	

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• Evaluate how an author uses words to create mental imagery, suggest mood, and set tone	**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

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	Conventions of Usage:
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	Recognize inappropriate uses of colons and semicolons

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	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
	Sentence Structure and Formation:
	Use conjunctions or punctuation to join simple clauses
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• Master the techniques of effective informational, literary, and persuasive writing	

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• Gather information from a variety of sources; analyze and evaluate the quality and relevance of the source; and use it to answer complex questions	
• Use primary, secondary, and tertiary written sources to generate and answer research questions	
• Evaluate explicit and implicit viewpoints, values, attitudes, and assumptions concealed in speech, writing, and illustration	**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 **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 **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

TABLE 1A

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	EXPLORE Reading College Readiness Standards
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
• Demonstrate the use of a range of strategies, research techniques, and persistence when engaging with difficult texts or examining complex problems or issues	
• Exercise ethical conduct when writing, researching, and documenting sources	

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN College Readiness Standards
Standard 1: Oral Expression and Listening	
• Collaborate effectively as group members or leaders who listen actively and respectfully pose thoughtful questions, acknowledge the ideas of others, and contribute ideas to further the group's attainment of an objective	
• Deliver organized and effective oral presentations for diverse audiences and varied purposes	
• Use language appropriate for purpose and audience	
• Demonstrate skill in inferential and evaluative listening	

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN Reading College Readiness Standards
Standard 2: Reading for All Purposes	
• Interpret how the structure of written English contributes to the pronunciation and meaning of complex vocabulary	
• Demonstrate comprehension of a variety of informational, literary, and persuasive texts	**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 Summarize events and ideas in virtually any passage Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) 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 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 Use details from different sections of some complex informational passages to support a specific point or argument

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN Reading College Readiness Standards
	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
	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

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN Reading College Readiness Standards
	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
• Evaluate how an author uses words to create mental imagery, suggest mood, and set tone	**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 Use details from different sections of some complex informational passages to support a specific point or argument **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
• Read a wide range of literature (American and world literature) to understand important universal themes and the human experience	
• Seek feedback, self-assess, and reflect on personal learning while engaging with increasingly more difficult texts	
• Engage in a wide range of nonfiction and real-life reading experiences to solve problems, judge the quality of ideas, or complete daily tasks	

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
• Write with a clear focus, coherent organization, sufficient elaboration, and detail	**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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN English College Readiness Standards
• Effectively use content-specific language, style, tone, and text structure to compose or adapt writing for different audiences and purposes	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
• Apply standard English conventions to effectively communicate with written language	**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 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN English College Readiness Standards
	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) **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 Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical) Use an apostrophe to show possession, especially with irregular plural nouns Use a semicolon to indicate a relationship between closely related independent clauses
• Implement the writing process successfully to plan, revise, and edit written work	**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

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN English College Readiness Standards
	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
	Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs
	Rearrange sentences to improve the logic and coherence of a complex paragraph
	Add a sentence to introduce or conclude a fairly complex paragraph
	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

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN English College Readiness Standards
	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
	Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., “an aesthetic viewpoint” versus “the outlook of an aesthetic viewpoint”)
	Correct vague and wordy or clumsy and confusing writing containing sophisticated language
	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

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN English College Readiness Standards
	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* 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) **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 Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical) Use an apostrophe to show possession, especially with irregular plural nouns Use a semicolon to indicate a relationship between closely related independent clauses
• Master the techniques of effective informational, literary, and persuasive writing	

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN Reading College Readiness Standards
Standard 4: Research and Reasoning	
• Discriminate and justify a position using traditional lines of rhetorical argument and reasoning	
• Articulate the position of self and others using experiential and material logic	
• Gather information from a variety of sources; analyze and evaluate the quality and relevance of the source; and use it to answer complex questions	
• Use primary, secondary, and tertiary written sources to generate and answer research questions	
• Evaluate explicit and implicit viewpoints, values, attitudes, and assumptions concealed in speech, writing, and illustration	**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 Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage **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 Use details from different sections of some complex informational passages to support a specific point or argument **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

TABLE 1B

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	PLAN Reading College Readiness Standards
	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
• Demonstrate the use of a range of strategies, research techniques, and persistence when engaging with difficult texts or examining complex problems or issues	
• Exercise ethical conduct when writing, researching, and documenting sources	

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT College Readiness Standards
Standard 1: Oral Expression and Listening	
• Collaborate effectively as group members or leaders who listen actively and respectfully pose thoughtful questions, acknowledge the ideas of others, and contribute ideas to further the group's attainment of an objective	
• Deliver organized and effective oral presentations for diverse audiences and varied purposes	
• Use language appropriate for purpose and audience	
• Demonstrate skill in inferential and evaluative listening	

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
• Interpret how the structure of written English contributes to the pronunciation and meaning of complex vocabulary	
• Demonstrate comprehension of a variety of informational, literary, and persuasive texts	**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 Summarize events and ideas in virtually any passage Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage Identify clear main ideas or purposes of complex 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

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT Reading College Readiness Standards
	Use details from different sections of some complex informational passages to support a specific point or argument
	Locate and interpret details in complex passages
	Understand the function of a part of a passage when the function is subtle or complex
	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
	Order sequences of events in complex passages
	Understand the subtleties in relationships between people, ideas, and so on in virtually any passage
	Understand implied, subtle, or complex cause-effect relationships in virtually any passage
	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

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT Reading College Readiness Standards
	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 Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage **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 Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage Understand and generalize about portions of a complex literary narrative
• Evaluate how an author uses words to create mental imagery, suggest mood, and set tone	**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 Use details from different sections of some complex informational passages to support a specific point or argument Understand the function of a part of a passage when the function is subtle or complex **Meanings of Words:** Understand the implication of a familiar word or phrase and of simple descriptive language Use context to understand basic figurative language

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT Reading College Readiness Standards
	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 Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage
• Read a wide range of literature (American and world literature) to understand important universal themes and the human experience	
• Seek feedback, self-assess, and reflect on personal learning while engaging with increasingly more difficult texts	
• Engage in a wide range of nonfiction and real-life reading experiences to solve problems, judge the quality of ideas, or complete daily tasks	

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
• Write with a clear focus, coherent organization, sufficient elaboration, and detail	**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 Determine whether a complex essay has accomplished a specific purpose Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay **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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay **Writing** College Readiness Standards **Focusing on the Topic:** 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 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, 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
• Effectively use content-specific language, style, tone, and text structure to compose or adapt writing for different audiences and purposes	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Using Language:** 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
• Apply standard English conventions to effectively communicate with written language	**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

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	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
	Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses
	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*
	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)

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb **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 Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical) Use an apostrophe to show possession, especially with irregular plural nouns Use a semicolon to indicate a relationship between closely related independent clauses Use a colon to introduce an example or an elaboration **Writing** College Readiness Standards 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
• Implement the writing process successfully to plan, revise, and edit written work	**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

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	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
	Determine whether a complex essay has accomplished a specific purpose
	Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay
	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
	Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs
	Rearrange sentences to improve the logic and coherence of a complex paragraph
	Add a sentence to introduce or conclude a fairly complex paragraph
	Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	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
	Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., “an aesthetic viewpoint” versus “the outlook of an aesthetic viewpoint”)
	Correct vague and wordy or clumsy and confusing writing containing sophisticated language
	Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole
	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

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	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
	Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses
	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*
	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)
	Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas
	Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb
	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

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT English and Writing College Readiness Standards
	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 Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical) Use an apostrophe to show possession, especially with irregular plural nouns Use a semicolon to indicate a relationship between closely related independent clauses Use a colon to introduce an example or an elaboration
• Master the techniques of effective informational, literary, and persuasive writing	**Writing** College Readiness Standards **Expressing Judgments:** 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

TABLE 1C

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT Reading College Readiness Standards
Standard 4: Research and Reasoning	
• Discriminate and justify a position using traditional lines of rhetorical argument and reasoning	
• Articulate the position of self and others using experiential and material logic	
• Gather information from a variety of sources; analyze and evaluate the quality and relevance of the source; and use it to answer complex questions	
• Use primary, secondary, and tertiary written sources to generate and answer research questions	
• Evaluate explicit and implicit viewpoints, values, attitudes, and assumptions concealed in speech, writing, and illustration	**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 Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage **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 Use details from different sections of some complex informational passages to support a specific point or argument Understand the function of a part of a passage when the function is subtle or complex **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

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	ACT Reading College Readiness Standards
	Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage **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 Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage Understand and generalize about portions of a complex literary narrative
• Demonstrate the use of a range of strategies, research techniques, and persistence when engaging with difficult texts or examining complex problems or issues	
• Exercise ethical conduct when writing, researching, and documenting sources	

TABLE 1D

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	WorkKeys *Reading for Information* Skills
Standard 1: Oral Expression and Listening	
• Collaborate effectively as group members or leaders who listen actively and respectfully pose thoughtful questions, acknowledge the ideas of others, and contribute ideas to further the group's attainment of an objective	
• Deliver organized and effective oral presentations for diverse audiences and varied purposes	
• Use language appropriate for purpose and audience	
• Demonstrate skill in inferential and evaluative listening	
Standard 2: Reading for All Purposes	
• Interpret how the structure of written English contributes to the pronunciation and meaning of complex vocabulary	
• Demonstrate comprehension of a variety of informational, literary, and persuasive texts	Figure out the principles behind policies, rules, and procedures
• Evaluate how an author uses words to create mental imagery, suggest mood, and set tone	
• Read a wide range of literature (American and world literature) to understand important universal themes and the human experience	
• Seek feedback, self-assess, and reflect on personal learning while engaging with increasingly more difficult texts	
• Engage in a wide range of nonfiction and real-life reading experiences to solve problems, judge the quality of ideas, or complete daily tasks	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 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
Standard 3: Writing and Composition	
• Write with a clear focus, coherent organization, sufficient elaboration, and detail	
• Effectively use content-specific language, style, tone, and text structure to compose or adapt writing for different audiences and purposes	
• Apply standard English conventions to effectively communicate with written language	
• Implement the writing process successfully to plan, revise, and edit written work	
• Master the techniques of effective informational, literary, and persuasive writing	

TABLE 1D

COLORADO Reading, Writing, and Communicating Prepared Graduate Competencies	WorkKeys *Reading for Information* Skills
Standard 4: Research and Reasoning	
• Discriminate and justify a position using traditional lines of rhetorical argument and reasoning	
• Articulate the position of self and others using experiential and material logic	
• Gather information from a variety of sources; analyze and evaluate the quality and relevance of the source; and use it to answer complex questions	Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials Apply complicated instructions to new situations Figure out the principles behind policies, rules, and procedures Apply general principles from the materials to similar and new situations Explain the rationale behind a procedure, policy, or communication Identify implied details Use technical terms and jargon in new situations Apply technical terms and jargon and relate them to stated situations Apply straightforward instructions to a new situation that is similar to the one described in the material Apply complex instructions that include conditionals to situations described in the materials Identify important details that may not be clearly stated Identify main ideas and clearly stated details
• Use primary, secondary, and tertiary written sources to generate and answer research questions	
• Evaluate explicit and implicit viewpoints, values, attitudes, and assumptions concealed in speech, writing, and illustration	
• Demonstrate the use of a range of strategies, research techniques, and persistence when engaging with difficult texts or examining complex problems or issues	
• Exercise ethical conduct when writing, researching, and documenting sources	

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE College Readiness Standards
Standard 1: Oral Expression and Listening	
GLE 1. Communication skills and interviewing techniques are required to gather information and to develop and deliver oral presentations	
a. Identify a central idea and prepare and ask relevant interview questions for researching and developing ideas further	
b. Evaluate the effectiveness of the techniques used and information gained from the interview	
c. Give a planned oral presentation to a specific audience for an intended purpose	
d. Demonstrate appropriate verbal and nonverbal delivery techniques (clear enunciation, gesture, volume, pace, use of visuals, and language) for intended effect	
e. Analyze audience engagement and audience response to presentations of self and others	
GLE 2. A variety of response strategies clarifies meaning or messages	
a. Use appropriate nonverbal cues to indicate level of understanding and agreement	
b. Paraphrase speaker's meaning	
c. Ask questions to clarify inferences	

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
GLE 1. Quality comprehension and interpretation of literary texts demand self-monitoring and self-assessment	
a. Explain how exposition, conflict, rising and falling action, climax, and resolution function within the narrative advance the plot	**Sequential, Comparative, and Cause-Effect Relationships:** Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Identify relationships between main characters 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 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
b. Explain and compare the different roles and functions that characters play in a narrative (such as antagonist, protagonist, hero)	
c. Interpret mood, tone, and literary devices (such as symbolism, flashback, foreshadowing, hyperbole), and provide supporting evidence from text	**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 **Generalizations and Conclusions:** 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
d. Identify use of third person, omniscient, and third person limited points of view; explain how each narrative point of view provides different insights in plots, characters and themes	**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 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
e. Use graphic organizers and note-taking formats while reading to map relationships among implied or explicit ideas or viewpoints	
f. Develop and share interpretations of literary works of personal interest	
g. Identify personal attitudes and beliefs about events, ideas, and themes in text, and explain how these shape their comprehension of text	
GLE 2. Quality comprehension and interpretation of informational and persuasive texts demand monitoring and self-assessment	
a. Identify key words that signal a variety of organizational patterns (such as chronology, compare/contrast, problem/solution, cause/effect); explain how various organizational patterns structure information differently; use organizational patterns to guide interpretation of 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
b. Evaluate viewpoints, values, and attitudes (such as detecting bias, word connotations, and incomplete data)	**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 **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 **Generalizations and Conclusions:** Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
	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
c. Make inferences and draw conclusions about relevance and accuracy of information	
d. Interpret and explain informational texts of personal interest	
e. Identify how specific details and larger portions of the text contribute to the meaning of the text	**Main Ideas and Author's Approach:** 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 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 **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
f. Find the gist of an article or factual text	**Main Ideas and Author's Approach:** Summarize basic events and ideas in more challenging passages
GLE 3. Syntax, grammar, and word choice influence the understanding of literary, persuasive, and informational texts	
a. Use knowledge of parts of speech, grammar, sentence structure, and context clues to construct 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

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
	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
	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

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
	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
b. Select and employ strategies to persist when encountering unknown or ambiguous words or difficult passages	
c. Explain how authors use language to influence audience perceptions of events, people, and ideas	**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

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages
d. Explain how word choice and sentence structure are used to achieve specific effects (such as tone, voice, and mood)	**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

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
GLE 1. Stylistic devices and descriptive details in literary and narrative texts are organized for a variety of audiences and purposes and evaluated for quality	
a. Produce literary and narrative texts using stylistic devices and descriptive details	
b. Organize ideas consistent with text structure (chronology, rising action, problem/resolution)	**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
c. Establish and maintain a controlling idea appropriate to audience and purpose	**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
d. Integrate the use of organizing techniques that break up sequential presentation of chronology in a story (use of foreshadowing; starting in the middle of the action, then filling in background information using flashbacks)	
e. Write using poetic techniques (alliteration, onomatopoeia); figurative language (simile, metaphor, personification, hyperbole); and graphic elements (capital letters, line length, word position) for intended effect	

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
f. Express voice and tone and influence readers' perceptions by varying vocabulary, sentence structure, and descriptive details	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
g. Use mentor text/authors to help craft appropriate technique	
GLE 2. Ideas and supporting details in informational and persuasive texts are organized for a variety of audiences and purposes and evaluated for quality	
a. Develop texts that offer a comparison, show cause and effect, or support a point	
b. Write and justify a personal interpretation of literary or informational text that includes a thesis, supporting details from the literature, and a conclusion	
c. Select and use appropriate rhetorical techniques (such as asking questions, using humor, etc.) for a variety of purposes	
d. Use specific details and references to text or relevant citations to support focus or judgment	
e. Use planning strategies to select and narrow topic	
f. Elaborate to give detail, add depth, and continue the flow of an idea	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the central idea or main topic of a straightforward piece of writing 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
g. Explain and imitate emotional and logical appeals used by writers who are trying to persuade an audience	
GLE 3. Editing writing for grammar, usage, mechanics, and clarity is an essential trait of a well-written document	
a. Use punctuation correctly (commas to separate phrases and clauses in a series; commas with nonrestrictive phrases and clauses; and commas to offset appositives)	**Conventions of Punctuation:** Provide appropriate punctuation in straightforward situations (e.g., items in a series) Use commas to set off simple parenthetical phrases Use punctuation to set off complex parenthetical phrases
b. Format and punctuate dialogue correctly	

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
c. Identify main and subordinate clauses and use that knowledge to write varied, strong, correct, complete sentences	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Determine the clearest and most logical conjunction to link clauses **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
d. Use comparative and superlative adjectives and adverbs correctly in sentences	**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
e. Combine sentences with subordinate conjunctions	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Determine the clearest and most logical conjunction to link clauses **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
f. Use subject-verb agreement with intervening phrases and clauses	**Conventions of Usage:** Ensure that a verb agrees with its subject when there is some text between the two

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 4: Research and Reasoning	
GLE 1. Individual research projects begin with information obtained from a variety of sources, and is organized, documented, and presented using logical procedures	
a. Differentiate between primary and secondary source materials	
b. Differentiate between paraphrasing and using direct quotes in a report	
c. Organize and present research appropriately for audience and purpose	
d. Document information and quotations; use a consistent format for footnotes or endnotes; and use standard bibliographic format to document sources	
e. Write reports based on research that include quotations, footnotes or endnotes, and a bibliography or works cited page	
f. Present findings	
GLE 2. Common fallacies and errors occur in reasoning	
a. Analyze the purpose, question at issue, information, points of view, implications and consequences, inferences, assumptions, and concepts inherent in thinking	
b. Determine strengths and weaknesses of their thinking and thinking of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic, and precision	
c. Identify common reasoning fallacies in print and nonprinted sources	**Generalizations and Conclusions:** 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
d. Differentiate between valid and faulty generalizations	**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

TABLE 1E

COLORADO Reading, Writing, and Communicating Grade 8 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 4: Research and Reasoning	
	Draw generalizations and conclusions about people, ideas, and so on in more challenging passages
GLE 3. Quality reasoning relies on supporting evidence in media	
a. Take a position on an issue and support it using quality reasoning	
b. Analyze own or others' appeal for purpose, question at issue, information, points of view, implications and consequences, assumptions, and concepts	
c. Evaluate own or others' appeal for relevance, clarity, accuracy, fairness, significance, depth, breadth, logic, and precision	
d. Use appropriate media to demonstrate reasoning and explain decisions in the creative process	

TABLE 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE College Readiness Standards
Standard 1: Oral Expression and Listening	
GLE 1. Oral presentations require effective preparation strategies	
a. Give formal and informal talks to various audiences for various purposes using appropriate level of formality and rhetorical devices	
b. Use verbal and nonverbal techniques to communicate information	
c. Define a position and select evidence to support that position	
d. Develop a well-organized presentation to defend a position	
e. Use effective audience and oral delivery skills to persuade an audience	
GLE 2. Listening critically to comprehend a speaker's message requires mental and physical strategies to direct and maintain attention	
a. Follow the speaker's arguments as they develop; take notes when appropriate	
b. Give verbal and nonverbal feedback to the speaker	
c. Ask clarifying questions	
d. Evaluate arguments and evidence	
e. Explain how variables such as background knowledge, experiences, values, and beliefs can affect communication	

TABLE 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
GLE 1. Increasingly complex literary elements in traditional and contemporary works of literature require scrutiny and comparison	
a. Analyze character types, including dynamic/round character, static/flat character, stereotype, and caricature	
b. Explain the relationships among elements of literature: characters, plot, setting, tone, point of view, and theme	**Sequential, Comparative, and Cause-Effect Relationships:** Identify clear relationships between people, ideas, and so on 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
c. Identify the characteristics that distinguish literary forms and genres	
d. Examine the ways in which works of literature are related to the issues and themes of their historical periods	
e. Use literary terms to describe and analyze selections	
GLE 2. Increasingly complex informational texts require mature interpretation and study	
a. Identify the intended effects of rhetorical strategies the author uses to influence readers' perspectives	**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 **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
b. Evaluate clarity and accuracy of information through close text study and investigation via other sources	
c. Describe how the organizational structure and text features support the meaning and purpose of the 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 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE Reading College Readiness Standards
Standard 2: Reading for All Purposes	
d. Use flexible reading and note-taking strategies (outlining, mapping systems, skimming, scanning, key word search) to organize information and make connections within and across informational texts	
e. Critique author's choice of expository, narrative, persuasive, or descriptive modes to convey a message	

TABLE 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
GLE 1. Literary and narrative texts develop a controlling idea or theme with descriptive and expressive language	
a. Write well-focused texts with an explicit or implicit theme and details that contribute to a definite point of view and tone	
b. Organize paragraphs or stanzas to present ideas clearly and purposefully for a specific audience	**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*) 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
c. Write literary and narrative texts using a range of poetic techniques, figurative language, and graphic elements to engage or entertain the intended audience	
d. Refine the expression of voice and tone in a text by selecting and using appropriate vocabulary, sentence structure, and sentence organization	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
e. Review and revise ideas and development in substantive ways to improve the depth of ideas and vividness of supporting details	**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

TABLE 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
f. Explain strengths and weaknesses of own writing and the writing of others using criteria (e.g., checklists, scoring guides)	
GLE 2. Informational and persuasive texts develop a topic and establish a controlling idea or thesis with relevant support	
a. Develop texts that define or classify a topic	
b. Use appropriate rhetorical appeals and genre to engage and guide the intended audience	
c. Arrange paragraphs into a logical progression	
d. Anticipate and address readers' biases and expectations	
e. Revise ideas and structure to improve depth of information and logic of organization	**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
f. Explain and imitate emotional, logical, and ethical appeals used by writers who are trying to persuade an audience	

TABLE 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE English College Readiness Standards
Standard 3: Writing and Composition	
GLE 3. Writing for grammar, usage, mechanics, and clarity requires ongoing refinements and revisions	
a. Use punctuation correctly (semicolons with conjunctive adverbs to combine clauses; colons for emphasis and to introduce a list)	**Conventions of Punctuation:** Recognize inappropriate uses of colons and semicolons
b. Identify comma splices and fused sentences in writing and revise to eliminate them	**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
c. Distinguish between phrases and clauses and use this knowledge to write varied, strong, correct, complete sentences	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise sentences to correct awkward and confusing arrangements of sentence elements Determine the clearest and most logical conjunction to link clauses **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
d. Use various reference tools to vary word choice and make sure words are spelled correctly	

TABLE 1F

COLORADO Reading, Writing, and Communicating Grade 9 Academic Standards	EXPLORE College Readiness Standards
Standard 4: Research and Reasoning	
GLE 1. Informational materials, including electronic sources, need to be collected, evaluated, and analyzed for accuracy, relevance, and effectiveness for answering research questions	
a. Integrate information from different sources to research and complete a project	
b. Integrate information from different sources to form conclusions about an author's assumptions, biases, credibility, cultural and social perspectives, or world views	
c. Judge the usefulness of information based on relevance to purpose, source, objectivity, copyright date, cultural and world perspective (such as editorials), and support the decision	
d. Examine materials to determine appropriate primary and secondary sources to use for investigating a question, topic, or issue (e.g., library databases, print and electronic encyclopedia and other reference materials, pamphlets, book excerpts, online and print newspaper and magazine articles, letters to an editor, digital forums, oral records, research summaries, scientific and trade journals)	
GLE 2. Effective problem-solving strategies require high-quality reasoning	
a. Analyze the purpose, question at issue, information, points of view, implications and consequences, inferences, assumptions and concepts inherent in thinking	
b. Assess strengths and weaknesses of their thinking and thinking of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic and precision	
c. Implement a purposeful and articulated process to solve a problem	
d. Monitor and reflect on the rationale for, and effectiveness of, choices made throughout the problem-solving process	

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN College Readiness Standards
Standard 1: Oral Expression and Listening	
GLE 1. Content that is gathered carefully and organized well successfully influences an audience	
a. Organize and deliver a presentation that influences a specific audience	
b. Reflect on the content and approach to a presentation	
c. Select organizational patterns and structures and choose precise vocabulary and rhetorical devices	
d. Make decisions about how to establish credibility and enhance appeal to the audience	
e. Rehearse the presentation to gain fluency, to adjust tone and modulate volume for emphasis, and to develop poise	
f. Use feedback to evaluate and revise the presentation	
GLE 2. Effectively operating in small and large groups to accomplish a goal requires active listening	
a. Listen actively in groups to accomplish a goal	
b. Contribute effectively in both small and large groups to collaboratively accomplish a goal	
c. Choose specific words for intended effect on particular audiences	
d. Facilitate (or lead) a group by developing an agenda designed to accomplish a specified goal	
e. Support others in discussions, activities, and presentations through active listening	
f. Participate in group activities through full engagement in individual roles and responsibilities that support the specified goal of the group	

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN Reading College Readiness Standards
Standard 2: Reading for All Purposes	
GLE 1. Literary and historical influences determine the meaning of traditional and contemporary literary texts	
a. Generalize about universal themes, cultural or historical perspectives from multiple texts	
b. Evaluate the contribution to society made by traditional, classic, and contemporary works of literature that deal with similar topics and problems	
c. Relate a literary work to primary source documents of its literary period or historical setting	
d. Analyze how literary components affect meaning	**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 Use details from different sections of some complex informational passages to support a specific point or argument
e. Explain the relationship between author's style and literary effect	**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 Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage
GLE 2. The development of new ideas and concepts within informational and persuasive manuscripts	
a. Provide a response to text that expresses an insight (such as an author's perspective or the nature of conflict) or use text-based information to solve a problem not identified in the text (for example, use information from a variety of sources to provide a response to text that expresses an insight)	
b. Analyze how a concept is presented and developed in multiple texts	
c. Compare the development of an idea or concept in multiple texts supported by text-based evidence	

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN Reading College Readiness Standards
Standard 2: Reading for All Purposes	
d. Describe how the author's use of persuasive vocabulary influences readers' opinions or actions	**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 Use details from different sections of some complex informational passages to support a specific point or argument **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 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
GLE 1. Literary or narrative genres feature a variety of stylistic devices to engage or entertain an audience	
a. Use conventional structures and expectations of literary genres (such as short story, personal narrative, script, poem, or song) to select content, represent ideas, make connections, generate new insights, and develop an organizational structure for drafting	
b. Write literary and narrative texts using a range of stylistic devices (poetic techniques, figurative language, imagery, graphic elements) to support the presentation of implicit or explicit theme	
c. Enhance the expression of voice, tone, and mood in a text by selecting and using vivid and precise diction, syntax, and punctuation	**Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
d. Use a variety of strategies to evaluate whether the writing is presented in a creative and reflective manner (e.g., reading the draft aloud, seeking feedback from a reviewer, scoring guides)	
e. Revise texts using feedback to enhance the effect on the reader and clarify the presentation of implicit or explicit theme	**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*)

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
	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
	Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs
	Rearrange sentences to improve the logic and coherence of a complex paragraph
	Add a sentence to introduce or conclude a fairly complex paragraph
	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
	Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., “an aesthetic viewpoint” versus “the outlook of an aesthetic viewpoint”)
	Correct vague and wordy or clumsy and confusing writing containing sophisticated language

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
GLE 2. Organizational writing patterns inform or persuade an audience	
a. Devise and adjust a topic, claim, or thesis	
b. Select and apply the organizational pattern best suited to purpose and audience	**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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph
c. Choose and develop an effective appeal	
d. Collect, organize, and evaluate materials to support ideas	
e. Revise writing by evaluating relationship of central idea, evidence, and organizational pattern	**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

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
	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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph
f. Explain how writers use organization and details to communicate their purposes	**Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Identify the central idea or main topic of a straightforward piece of writing 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

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
	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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph
g. Present writing to an authentic audience and gauge effect on audience for intended purpose	
GLE 3. Grammar, language usage, mechanics, and clarity are the basis of ongoing refinements and revisions within the writing process	
a. Apply dashes, colons, and semi-colons to create varied sentences, to emphasize important ideas, and to show relationships among ideas	**Conventions of Punctuation:** Use punctuation to set off complex parenthetical phrases Recognize inappropriate uses of colons and semicolons Use a semicolon to indicate a relationship between closely related independent clauses
b. Identify instances where sentences are not grammatically parallel and revise sentences to establish parallelism	**Sentence Structure and Formation:** 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 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN English College Readiness Standards
Standard 3: Writing and Composition	
c. Identify the various types of clauses and use this knowledge to write varied, strong, correct, complete sentences	
d. Distinguish between the active and passive voice, and write in the active voice	**Sentence Structure and Formation:** Decide the appropriate verb tense and voice by considering the meaning of the entire sentence

TABLE 1G

COLORADO Reading, Writing, and Communicating Grade 10 Academic Standards	PLAN College Readiness Standards
Standard 4: Research and Reasoning	
GLE 1. Collect, analyze, and evaluate information obtained from multiple sources to answer a question, propose solutions, or share findings and conclusions	
a. Define and narrow a topic for research, developing the central idea, focus, or question at issue	
b. Formulate research questions that are clear and precise	
c. Identify and evaluate potential sources of information for accuracy, reliability, validity, and timeliness	
d. Use a variety of strategies (such as search engines, online databases , interview) to collect and organize relevant and significant information	
e. Distinguish between types of evidence (such as expert testimony, analogies, anecdotes, statistics) and use a variety of types to support a particular research purpose	
f. Use in-text parenthetical citations to document sources of quotations, paraphrases and information	
GLE 2. An author's reasoning is the essence of legitimate writing and requires evaluating text for validity and accuracy	
a. Analyze the logic (including assumptions and beliefs) and use of evidence (existing and missing information, primary sources, and secondary sources) used by two or more authors presenting similar or opposing arguments (such as articles by two political columnists that address the same issue)	
b. Evaluate the accuracy of the information in a text, citing text-based evidence, author's use of expert authority, and author's credibility to defend the evaluation	

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT College Readiness Standards
Standard 1: Oral Expression and Listening	
GLE 1. Verbal and nonverbal cues impact the intent of communication	
a. Give informal talks using an appropriate level of formality of verbal language and nonverbal interaction with audience	
b. Deliver formal oral presentations for intended purpose and audience, using effective verbal and nonverbal communication	
c. Deliver oral talks with clear enunciation, vocabulary, and appropriate organization; nonverbal gestures; and tone	
d. Analyze audience responses to evaluate how effectively the talk or presentation met the purpose	
e. Identify, explain, and use content-specific vocabulary, terminology, dialect, or jargon unique to particular groups, perspectives, or contexts (such as social, professional, political, cultural, historical or geographical)	
GLE 2. Validity of a message is determined by its accuracy and relevance	
a. Critique the accuracy, relevance, and organization of evidence of a presentation	
b. Critique the clarity and effectiveness of delivery	
c. Evaluate effectiveness of oral delivery techniques	
d. Listen critically to evaluate the overall effectiveness of the presentation	
e. Analyze the resources cited for validity	

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
GLE 1. Complex literary texts require critical reading approaches to effectively interpret and evaluate meaning	
a. Analyze literary components (e.g., tone, symbolism, irony, extended metaphor, satire, hyperbole) to interpret theme	**Main Ideas and Author's Approach:** Infer the main idea or purpose of more challenging passages or their paragraphs Identify clear main ideas or purposes of complex passages or their paragraphs **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 Use details from different sections of some complex informational passages to support a specific point or argument Understand the function of a part of a passage when the function is subtle or complex
b. Explain the influence of historical context on the form, style, and point of view of a written work	
c. Interpret and synthesize themes across multiple literary texts, providing support for interpretations	
d. Demonstrate knowledge of classical foundational works of American literature	
GLE 2. Ideas synthesized from informational texts serve a specific purpose	
a. Designate a purpose for reading expository texts and use new learning to complete a specific task (such as convince an audience, shape a personal opinion or decision, or perform an activity)	
b. Make generalizations and draw conclusions from persuasive texts, citing text-based evidence as support	**Generalizations and Conclusions:** 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 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 Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
c. Predict the impact an informational text will have on an audience and justify the prediction	
d. Use text features and graphical representations to complement comprehension and enhance critical analysis of a text	
e. Explain nuances and connotations of particular words and sentences, and draw conclusions about author's intent as well as potential impact on an audience	**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 Use details from different sections of some complex informational passages to support a specific point or argument Understand the function of a part of a passage when the function is subtle or complex **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 Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
GLE 1. Stylistic and thematic elements of literary or narrative texts can be refined to engage or entertain an audience	
a. Organize events, details, ideas and reflections or observations strategically to influence the audience's emotions and understanding of the implicit or explicit theme	**English** College Readiness Standards **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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay
b. Write literary and narrative texts using a range of stylistic devices (poetic techniques, figurative language, symbolism, graphic or visual components) to support the presentation of implicit or explicit theme	
c. Enhance the expression of voice, tone, and point of view in a text by strategically using precise diction (considering denotation, connotation, and audience associations); diverse syntax; varied sentence patterns; and punctuation for stylistic effect	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay
d. Use a range of strategies to evaluate whether the writing is presented in a clear and engaging manner (such as reading the text from the perspective of the intended audience, seeking feedback from a reviewer)	

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
e. Evaluate and revise text to eliminate unnecessary details, ineffective stylistic devices, and vague or confusing language	**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 Determine relevancy when presented with a variety of sentence-level details 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 **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 Determine the clearest and most logical conjunction to link clauses Identify and correct ambiguous pronoun references Correct vague and wordy or clumsy and confusing writing containing sophisticated language

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
GLE 2. Elements of informational and persuasive texts can be refined to inform or influence an audience	
a. Articulate a position through a concise and focused claim or thesis statement, and advance it using evidence, examples, and counterarguments	**Writing** College Readiness Standards **Expressing Judgments:** 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 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 several ideas fully, using specific and relevant reasons, details, and examples Show effective movement between general and specific ideas and examples
b. Locate and select appropriate information that clearly supports a definite purpose, topic, or position	
c. Choose, develop, and refine appeals for desired effect on audience	
d. Evaluate and revise own text as needed to eliminate logical fallacies and to enhance credibility of ideas and information	
e. Use vocabulary for intentional development of voice and tone for a specific audience, purpose, or situation	
f. Clarify and order ideas for best possible effect	**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

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	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
	Determine whether a complex essay has accomplished a specific purpose
	Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay
	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
	Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs
	Rearrange sentences to improve the logic and coherence of a complex paragraph
	Add a sentence to introduce or conclude a fairly complex paragraph
	Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay
	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

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	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 Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., "an aesthetic viewpoint" versus "the outlook of an aesthetic viewpoint") Correct vague and wordy or clumsy and confusing writing containing sophisticated language Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole
GLE 3. Writing demands ongoing revisions and refinements for grammar, usage, mechanics, and clarity	
a. Apply punctuation correctly and articulate stylistic choices	**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 Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical)

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	Use an apostrophe to show possession, especially with irregular plural nouns Use a semicolon to indicate a relationship between closely related independent clauses Use a colon to introduce an example or an elaboration **Writing** College Readiness Standards 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
b. Use a variety of phrases (absolute, appositive) accurately and purposefully to improve writing	**Writing** College Readiness Standards 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
c. Use idioms correctly, particularly prepositions that follow verbs	**English** College Readiness Standards **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 Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*) Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas **Writing** College Readiness Standards 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

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
d. Ensure that a verb agrees with its subject in complex constructions (such as inverted subject/verb order, indefinite pronoun as subject, intervening phrases or clauses)	**English** College Readiness Standards **Conventions of Usage:** Ensure that a verb agrees with its subject when there is some text between the two 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) Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb **Writing** College Readiness Standards 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
e. Use a style guide to follow the conventions of Modern Language Association (MLA) or American Psychological Association (APA) format	
f. Use resources (print and electronic) and feedback to edit and enhance writing for purpose and audience	

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT College Readiness Standards
Standard 4: Research and Reasoning	
GLE 1. Self-designed research provides insightful information, conclusions, and possible solutions	
a. Define and narrow a topic for research (thesis statement, hypothesis, research question) to address a specific purpose and audience	
b. Evaluate and revise research questions for precision and clarity	
c. Evaluate quality, accuracy, and completeness of information and the bias, credibility and reliability of the sources	
d. Use a variety of strategies (e.g., technical reading, direct observation, survey development) to collect relevant information to support the thesis/research question and explain why specific strategies were used instead of others	
e. Evaluate and select appropriate types of evidence to support a particular research purpose	
f. Document sources of quotations, paraphrases, and other information, using a style sheet, such as that of the Modern Language Association (MLA) or the American Psychological Association (APA)	
GLE 2. Complex situations require critical thinking across multiple disciplines	
a. Analyze the logic of complex situations by questioning the purpose, question at issue, information, points of view, implications and consequences inferences, assumptions and concepts	
b. Evaluate strengths and weaknesses of their logic and logic of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic and precision	
c. Determine the extent to which they entered empathetically into competing points of view, exercised confidence in reason, recognized the limits of their knowledge on the topic (intellectual humility), explored alternative approaches to solving or addressing complex problems (intellectual flexibility), and were open to constructive critique (intellectual open-mindedness)	
d. Analyze and assess the logic of the interdisciplinary domains inherent in reasoning through complex situations	
e. Monitor and assess the extent to which their own beliefs and biases influenced their reactions to the viewpoints and logic of others	

TABLE 1H

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	ACT College Readiness Standards
Standard 4: Research and Reasoning	
GLE 3. Evaluating quality reasoning includes the value of intellectual character such as humility, empathy, and confidence	
a. Analyze the purpose, question at issue, information, points of view, implications and consequences, inferences, assumptions, and concepts inherent in thinking	
b. Assess strengths and weaknesses of thinking and thinking of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic, and precision	
c. Determine the extent to which they entered empathetically into competing points of view, exercised confidence in reason, recognized the limits of their knowledge on the topic (intellectual humility), explored alternative approaches to solving or addressing complex problems (intellectual flexibility), were open to constructive critique (intellectual open-mindedness)	
d. Evaluate the reasoning of self and others for quality, strong-sense thinking	

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 1: Oral Expression and Listening	
GLE 1. Verbal and nonverbal cues impact the intent of communication	
a. Give informal talks using an appropriate level of formality of verbal language and nonverbal interaction with audience	
b. Deliver formal oral presentations for intended purpose and audience, using effective verbal and nonverbal communication	
c. Deliver oral talks with clear enunciation, vocabulary, and appropriate organization; nonverbal gestures; and tone	
d. Analyze audience responses to evaluate how effectively the talk or presentation met the purpose	
e. Identify, explain, and use content-specific vocabulary, terminology, dialect, or jargon unique to particular groups, perspectives, or contexts (such as social, professional, political, cultural, historical or geographical)	
GLE 2. Validity of a message is determined by its accuracy and relevance	
a. Critique the accuracy, relevance, and organization of evidence of a presentation	
b. Critique the clarity and effectiveness of delivery	
c. Evaluate effectiveness of oral delivery techniques	
d. Listen critically to evaluate the overall effectiveness of the presentation	
e. Analyze the resources cited for validity	

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 2: Reading for All Purposes	
GLE 1. Complex literary texts require critical reading approaches to effectively interpret and evaluate meaning	
a. Analyze literary components (e.g., tone, symbolism, irony, extended metaphor, satire, hyperbole) to interpret theme	
b. Explain the influence of historical context on the form, style, and point of view of a written work	
c. Interpret and synthesize themes across multiple literary texts, providing support for interpretations	
d. Demonstrate knowledge of classical foundational works of American literature	
GLE 2. Ideas synthesized from informational texts serve a specific purpose	
a. Designate a purpose for reading expository texts and use new learning to complete a specific task (such as convince an audience, shape a personal opinion or decision, or perform an activity)	
b. Make generalizations and draw conclusions from persuasive texts, citing text-based evidence as support	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 Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials Identify implied details Figure out the less common meaning of a word based on the context Figure out the principles behind policies, rules, and procedures Explain the rationale behind a procedure, policy, or communication Figure out the correct meaning of a word based on how the word is used 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 important details that may not be clearly stated Use the reading material to figure out the meaning of words that are not defined Identify main ideas and clearly stated details
c. Predict the impact an informational text will have on an audience and justify the prediction	
d. Use text features and graphical representations to complement comprehension and enhance critical analysis of a text	

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 2: Reading for All Purposes	
e. Explain nuances and connotations of particular words and sentences, and draw conclusions about author's intent as well as potential impact on an audience	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 Figure out the less common meaning of a word based on the context Figure out the correct meaning of a word based on how the word is used 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 Use the reading material to figure out the meaning of words that are not defined Choose the correct meaning of a word that is clearly defined in the reading Choose the correct meaning of common, everyday and workplace words

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 3: Writing and Composition	
GLE 1. Stylistic and thematic elements of literary or narrative texts can be refined to engage or entertain an audience	
a. Organize events, details, ideas and reflections or observations strategically to influence the audience's emotions and understanding of the implicit or explicit theme	
b. Write literary and narrative texts using a range of stylistic devices (poetic techniques, figurative language, symbolism, graphic or visual components) to support the presentation of implicit or explicit theme	
c. Enhance the expression of voice, tone, and point of view in a text by strategically using precise diction (considering denotation, connotation, and audience associations); diverse syntax; varied sentence patterns; and punctuation for stylistic effect	
d. Use a range of strategies to evaluate whether the writing is presented in a clear and engaging manner (such as reading the text from the perspective of the intended audience, seeking feedback from a reviewer)	
e. Evaluate and revise text to eliminate unnecessary details, ineffective stylistic devices, and vague or confusing language	
GLE 2. Elements of informational and persuasive texts can be refined to inform or influence an audience	
a. Articulate a position through a concise and focused claim or thesis statement, and advance it using evidence, examples, and counterarguments	
b. Locate and select appropriate information that clearly supports a definite purpose, topic, or position	
c. Choose, develop, and refine appeals for desired effect on audience	
d. Evaluate and revise own text as needed to eliminate logical fallacies and to enhance credibility of ideas and information	
e. Use vocabulary for intentional development of voice and tone for a specific audience, purpose, or situation	
f. Clarify and order ideas for best possible effect	
GLE 3. Writing demands ongoing revisions and refinements for grammar, usage, mechanics, and clarity	
a. Apply punctuation correctly and articulate stylistic choices	
b. Use a variety of phrases (absolute, appositive) accurately and purposefully to improve writing	
c. Use idioms correctly, particularly prepositions that follow verbs	
d. Ensure that a verb agrees with its subject in complex constructions (such as inverted subject/verb order, indefinite pronoun as subject, intervening phrases or clauses)	

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 3: Writing and Composition	
e. Use a style guide to follow the conventions of Modern Language Association (MLA) or American Psychological Association (APA) format	
f. Use resources (print and electronic) and feedback to edit and enhance writing for purpose and audience	

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 4: Research and Reasoning	
GLE 1. Self-designed research provides insightful information, conclusions, and possible solutions	
a. Define and narrow a topic for research (thesis statement, hypothesis, research question) to address a specific purpose and audience	
b. Evaluate and revise research questions for precision and clarity	
c. Evaluate quality, accuracy, and completeness of information and the bias, credibility and reliability of the sources	
d. Use a variety of strategies (e.g., technical reading, direct observation, survey development) to collect relevant information to support the thesis/research question and explain why specific strategies were used instead of others	Apply general principles from the materials to similar and new situations Apply technical terms and jargon and relate them to stated situations Apply instructions to a situation that is the same as the one in the reading materials Apply instructions with several steps to a situation that is the same as the situation in the reading materials Apply straightforward instructions to a new situation that is similar to the one described in the material Apply complicated instructions to new situations Apply complex instructions that include conditionals to situations described in the materials
e. Evaluate and select appropriate types of evidence to support a particular research purpose	Apply general principles from the materials to similar and new situations Apply technical terms and jargon and relate them to stated situations Apply instructions to a situation that is the same as the one in the reading materials Apply instructions with several steps to a situation that is the same as the situation in the reading materials Apply straightforward instructions to a new situation that is similar to the one described in the material Apply complicated instructions to new situations Apply complex instructions that include conditionals to situations described in the materials
f. Document sources of quotations, paraphrases, and other information, using a style sheet, such as that of the Modern Language Association (MLA) or the American Psychological Association (APA)	
GLE 2. Complex situations require critical thinking across multiple disciplines	
a. Analyze the logic of complex situations by questioning the purpose, question at issue, information, points of view, implications and consequences inferences, assumptions and concepts	

TABLE 1I

COLORADO Reading, Writing, and Communicating Grade 11 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 4: Research and Reasoning	
b. Evaluate strengths and weaknesses of their logic and logic of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic and precision	
c. Determine the extent to which they entered empathetically into competing points of view, exercised confidence in reason, recognized the limits of their knowledge on the topic (intellectual humility), explored alternative approaches to solving or addressing complex problems (intellectual flexibility), and were open to constructive critique (intellectual open-mindedness)	
d. Analyze and assess the logic of the interdisciplinary domains inherent in reasoning through complex situations	
e. Monitor and assess the extent to which their own beliefs and biases influenced their reactions to the viewpoints and logic of others	
GLE 3. Evaluating quality reasoning includes the value of intellectual character such as humility, empathy, and confidence	
a. Analyze the purpose, question at issue, information, points of view, implications and consequences, inferences, assumptions, and concepts inherent in thinking	
b. Assess strengths and weaknesses of thinking and thinking of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic, and precision	
c. Determine the extent to which they entered empathetically into competing points of view, exercised confidence in reason, recognized the limits of their knowledge on the topic (intellectual humility), explored alternative approaches to solving or addressing complex problems (intellectual flexibility), were open to constructive critique (intellectual open-mindedness)	
d. Evaluate the reasoning of self and others for quality, strong-sense thinking	

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT College Readiness Standards
Standard 1: Oral Expression and Listening	
GLE 1. Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness	
a. Prepare and deliver a formal presentation for different purposes and audiences (such as expositive, persuasive, entertaining, inspirational, or recognition)	
b. Identify a central idea or thesis, organize ideas, and develop a speech for an intended purpose and audience	
c. Use examples, illustrations, graphics, quotations, analogies, facts, and statistics to focus and support the content of a presentation	
d. Use grammar and vocabulary appropriate for the situation, audience, topic, and purpose	
e. Choose specific words and word order for intended effect and meaning	
f. Select appropriate technical or specialized language	
GLE 2. Effective collaborative groups accomplish goals	
a. Design an effective group effort to accomplish a goal	
b. Implement an effective group effort that achieves a goal	
c. Analyze differences in group perspectives to help bring the group to consensus or to solve a perceived problem	
d. Participate in the preparations of the group activity or product, defining and assuming individual roles and responsibilities	
e. Assume a leadership role in a group that is collaboratively working to accomplish a goal	
f. Self-evaluate roles in the preparation and completion of the group goal	
g. Critique and offer suggestions for improving presentations given by own group and other groups	

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
GLE 1. Literary criticism of complex texts requires the use of analysis, interpretive, and evaluative strategies	
a. Apply understanding of the unique characteristics of literary text (such as literary essay, elegy, sonnet, psalm, short story, history, comedy, or tragedy) to make connections and draw subtle generalizations and conclusions	
b. Describe and contrast characteristics of specific literary movements and perspectives	
c. Evaluate the influence of historical context on the form, style, and point of view of a written work	
d. Analyze and relate a literary work to source documents of its literary period or to critical perspectives	
e. Evaluate how literary components impact meaning (such as tone, symbolism, irony, extended metaphor, satire, hyperbole)	**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 Use details from different sections of some complex informational passages to support a specific point or argument Understand the function of a part of a passage when the function is subtle or complex
f. Demonstrate knowledge of classical foundational works of world literature	
GLE 2. Interpreting and evaluating complex informational texts require the understanding of rhetoric, critical reading, and analysis skills	
a. Use reading and note-taking strategies (outlining, mapping systems, skimming, scanning, key word search) to organize information and make connections within and across informational texts	
b. Use semantic cues, signal words, and transitions to identify text structures (such as critique, proposition/support, inductive/deductive) and to summarize central ideas and supporting details	**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 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 Summarize events and ideas in virtually any passage Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
c. Obtain and use information from text and text features (index, bold or italicized text, subheadings, graphics) to answer questions, perform specific tasks, or identify and solve problems	**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 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 Summarize events and ideas in virtually any passage Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage Identify clear main ideas or purposes of complex 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 Use details from different sections of some complex informational passages to support a specific point or argument Locate and interpret details in complex passages Understand the function of a part of a passage when the function is subtle or complex

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
	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 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 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 Order sequences of events in complex passages Understand the subtleties in relationships between people, ideas, and so on in virtually any passage Understand implied, subtle, or complex cause-effect relationships in virtually any passage **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 Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT Reading College Readiness Standards
Standard 2: Reading for All Purposes	
	Generalizations and Conclusions: 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 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 Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage
d. Explain and interpret the visual components supporting the text (maps, complex tables and diagrams, and transitional devices, such as use of white space)	
e. Identify, analyze, and evaluate rhetorical devices and appeals used to advance an author's purpose and viewpoint.	**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 Use details from different sections of some complex informational passages to support a specific point or argument Understand the function of a part of a passage when the function is subtle or complex

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
GLE 1. Style, detail, expressive language, and genre create a well-crafted statement directed at an intended audience and purpose	
a. Use a range of elaboration techniques (such as questioning, comparing, connecting, interpreting, analyzing, or describing) to establish and express point of view and theme	**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 central idea or main topic of a straightforward piece of writing 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 Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay
b. Create a clear and coherent, logically consistent structure appropriate to the chosen literary genre (biographical account, short story, personal narrative, narrative poem or song, parody of particular narrative style, play script)	**English** College Readiness Standards **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 Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs Rearrange sentences to improve the logic and coherence of a complex paragraph Add a sentence to introduce or conclude a fairly complex paragraph

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay
c. Develop context, character/narrator motivation, problem/conflict and resolution, and descriptive details/examples to support and express theme	**English** College Readiness Standards **Topic Development in Terms of Purpose and Focus:** Identify the basic purpose or role of a specified phrase or sentence Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay
d. Manipulate elements of style, imagery, tone, and point of view to appeal to the senses and emotions of the reader	
e. Critique own writing and the writing of others from the perspective of the intended audience to guide revisions, improve voice and style (word choice, sentence variety, figurative language) and achieve intended purpose and effect	**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 Determine whether a complex essay has accomplished a specific purpose Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay **Organization, Unity, and Coherence:** Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*)

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	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
	Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs
	Rearrange sentences to improve the logic and coherence of a complex paragraph
	Add a sentence to introduce or conclude a fairly complex paragraph
	Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay
	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
	Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., “an aesthetic viewpoint” versus “the outlook of an aesthetic viewpoint”)

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	Correct vague and wordy or clumsy and confusing writing containing sophisticated language Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole
GLE 2. Ideas, evidence, structure, and style create persuasive, academic, and technical texts for particular audiences and specific purposes	
a. Articulate a position through a sophisticated claim or thesis statement and advance it using evidence, examples, and counterarguments	**Writing** College Readiness Standards **Expressing Judgments:** 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
b. Select appropriate and relevant information (excluding extraneous details) to set context	**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 Determine relevancy when presented with a variety of sentence-level details 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 **Writing** College Readiness Standards **Developing a Position:** Develop several ideas fully, using specific and relevant reasons, details, and examples Show effective movement between general and specific ideas and examples

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
c. Address audience needs and anticipate audience questions or misunderstandings	**Writing** College Readiness Standards **Expressing Judgments:** 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
d. Select and build context for language appropriate to content (technical, formal)	**English** College Readiness Standards **Word Choice in Terms of Style, Tone, Clarity, and Economy:** Revise expressions that deviate from the style of an essay Use the word or phrase most consistent with the style and tone of a fairly straightforward essay Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay **Writing** College Readiness Standards **Using Language:** 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
e. Control and enhance the flow of ideas through transitional words or phrases appropriate to text structure	**English** College Readiness Standards **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*) Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore*, *however*, *in addition*) Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs **Writing** College Readiness Standards **Organizing Ideas:** Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
f. Support judgments with substantial evidence and purposeful elaboration	**Writing** College Readiness Standards **Developing a Position:** Develop several ideas fully, using specific and relevant reasons, details, and examples
g. Draw a conclusion by synthesizing information	**English** College Readiness Standards **Organization, Unity, and Coherence:** 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 **Organizing Ideas:** Present a well-developed introduction and conclusion
h. Revise writing using feedback to maximize effect on audience and to calibrate purpose	**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 Determine whether a complex essay has accomplished a specific purpose Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay **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*)

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	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
	Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs
	Rearrange sentences to improve the logic and coherence of a complex paragraph
	Add a sentence to introduce or conclude a fairly complex paragraph
	Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay
	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
	Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., “an aesthetic viewpoint” versus “the outlook of an aesthetic viewpoint”)
	Correct vague and wordy or clumsy and confusing writing containing sophisticated language
	Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
GLE 3. Standard English conventions effectively communicate to targeted audiences and purposes	
a. Follow the conventions of standard English to write varied, strong, correct, complete sentences	**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 Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses **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 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	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)
	Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas
	Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb
	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
	Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical)
	Use an apostrophe to show possession, especially with irregular plural nouns
	Use a semicolon to indicate a relationship between closely related independent clauses
	Use a colon to introduce an example or an elaboration
	Writing College Readiness Standards
	Using Language:
	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 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT English and Writing College Readiness Standards
Standard 3: Writing and Composition	
	• using precise and varied vocabulary • using a variety of kinds of sentence structures to vary pace and to support meaning
b. Deliberately manipulate the conventions of standard English for stylistic effect appropriate to the needs of a particular audience and purpose	**Writing** College Readiness Standards **Using Language:** 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
c. Seek and use an appropriate style guide to govern conventions for a particular audience and purpose	

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT Writing College Readiness Standards
Standard 4: Research and Reasoning	
GLE 1. Independent research designs articulate and defend information, conclusions and solutions that address specific contexts and purposes	
a. Define and narrow a topic for self-designed research for a variety of purposes and audiences	
b. Critique research questions of self and others for bias and underlying assumptions	
c. Critique and defend sources and information based on credibility, relevance and appropriateness relative to context and purpose	
d. Design and defend a set of diverse research strategies (e.g., cross-referencing bibliographies, creating annotated bibliographies, researching source credentials) to identify information appropriate to the needs of a research question, hypothesis, or thesis statement	
e. Critique and defend evidence relative to its use to address a particular context and purpose	
f. Determine and use the appropriate style guide to govern format and documentation of quotations, paraphrases, and other information from a range of research sources	
GLE 2. Logical arguments distinguish facts from opinions, and evidence defines reasoned judgment	
a. Synthesize information to support a logical argument	**Expressing Judgments:** 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 **Organizing Ideas:** Provide unity and coherence throughout the essay, often with a logical progression of ideas
b. Distinguish between evidence and inferences	
c. Identify false premises or assumptions	**Expressing Judgments:** 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
d. Analyze rhetorical devices used in own and others' appeals	

TABLE 1J

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	ACT Writing College Readiness Standards
Standard 4: Research and Reasoning	
e. Summarize ideas that include alternate views, rich detail, well-developed paragraphs, and logical argumentation	**Expressing Judgments:** 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 **Developing a Position:** Develop several ideas fully, using specific and relevant reasons, details, and examples **Organizing Ideas:** 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

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 1: Oral Expression and Listening	
GLE 1. Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness	
a. Prepare and deliver a formal presentation for different purposes and audiences (such as expositive, persuasive, entertaining, inspirational, or recognition)	
b. Identify a central idea or thesis, organize ideas, and develop a speech for an intended purpose and audience	
c. Use examples, illustrations, graphics, quotations, analogies, facts, and statistics to focus and support the content of a presentation	
d. Use grammar and vocabulary appropriate for the situation, audience, topic, and purpose	
e. Choose specific words and word order for intended effect and meaning	
f. Select appropriate technical or specialized language	
GLE 2. Effective collaborative groups accomplish goals	
a. Design an effective group effort to accomplish a goal	
b. Implement an effective group effort that achieves a goal	
c. Analyze differences in group perspectives to help bring the group to consensus or to solve a perceived problem	
d. Participate in the preparations of the group activity or product, defining and assuming individual roles and responsibilities	
e. Assume a leadership role in a group that is collaboratively working to accomplish a goal	
f. Self-evaluate roles in the preparation and completion of the group goal	
g. Critique and offer suggestions for improving presentations given by own group and other groups	

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 2: Reading for All Purposes	
GLE 1. Literary criticism of complex texts requires the use of analysis, interpretive, and evaluative strategies	
a. Apply understanding of the unique characteristics of literary text (such as literary essay, elegy, sonnet, psalm, short story, history, comedy, or tragedy) to make connections and draw subtle generalizations and conclusions	
b. Describe and contrast characteristics of specific literary movements and perspectives	
c. Evaluate the influence of historical context on the form, style, and point of view of a written work	
d. Analyze and relate a literary work to source documents of its literary period or to critical perspectives	
e. Evaluate how literary components impact meaning (such as tone, symbolism, irony, extended metaphor, satire, hyperbole)	
f. Demonstrate knowledge of classical foundational works of world literature	
GLE 2. Interpreting and evaluating complex informational texts require the understanding of rhetoric, critical reading, and analysis skills	
a. Use reading and note-taking strategies (outlining, mapping systems, skimming, scanning, key word search) to organize information and make connections within and across informational texts	

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 2: Reading for All Purposes	
b. Use semantic cues, signal words, and transitions to identify text structures (such as critique, proposition/support, inductive/deductive) and to summarize central ideas and supporting details	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 Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials Identify implied details Figure out the less common meaning of a word based on the context Figure out the principles behind policies, rules, and procedures Explain the rationale behind a procedure, policy, or communication Figure out the correct meaning of a word based on how the word is used 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 important details that may not be clearly stated Use the reading material to figure out the meaning of words that are not defined Identify main ideas and clearly stated details
c. Obtain and use information from text and text features (index, bold or italicized text, subheadings, graphics) to answer questions, perform specific tasks, or identify and solve problems	
d. Explain and interpret the visual components supporting the text (maps, complex tables and diagrams, and transitional devices, such as use of white space)	
e. Identify, analyze, and evaluate rhetorical devices and appeals used to advance an author's purpose and viewpoint.	

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 3: Writing and Composition	
GLE 1. Style, detail, expressive language, and genre create a well-crafted statement directed at an intended audience and purpose	
a. Use a range of elaboration techniques (such as questioning, comparing, connecting, interpreting, analyzing, or describing) to establish and express point of view and theme	
b. Create a clear and coherent, logically consistent structure appropriate to the chosen literary genre (biographical account, short story, personal narrative, narrative poem or song, parody of particular narrative style, play script)	
c. Develop context, character/narrator motivation, problem/conflict and resolution, and descriptive details/examples to support and express theme	
d. Manipulate elements of style, imagery, tone, and point of view to appeal to the senses and emotions of the reader	
e. Critique own writing and the writing of others from the perspective of the intended audience to guide revisions, improve voice and style (word choice, sentence variety, figurative language) and achieve intended purpose and effect	
GLE 2. Ideas, evidence, structure, and style create persuasive, academic, and technical texts for particular audiences and specific purposes	
a. Articulate a position through a sophisticated claim or thesis statement and advance it using evidence, examples, and counterarguments	
b. Select appropriate and relevant information (excluding extraneous details) to set context	
c. Address audience needs and anticipate audience questions or misunderstandings	
d. Select and build context for language appropriate to content (technical, formal)	
e. Control and enhance the flow of ideas through transitional words or phrases appropriate to text structure	
f. Support judgments with substantial evidence and purposeful elaboration	
g. Draw a conclusion by synthesizing information	
h. Revise writing using feedback to maximize effect on audience and to calibrate purpose	
GLE 3. Standard English conventions effectively communicate to targeted audiences and purposes	
a. Follow the conventions of standard English to write varied, strong, correct, complete sentences	
b. Deliberately manipulate the conventions of standard English for stylistic effect appropriate to the needs of a particular audience and purpose	

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 3: Writing and Composition	
c. Seek and use an appropriate style guide to govern conventions for a particular audience and purpose	

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 4: Research and Reasoning	
GLE 1. Independent research designs articulate and defend information, conclusions and solutions that address specific contexts and purposes	
a. Define and narrow a topic for self-designed research for a variety of purposes and audiences	
b. Critique research questions of self and others for bias and underlying assumptions	
c. Critique and defend sources and information based on credibility, relevance and appropriateness relative to context and purpose	
d. Design and defend a set of diverse research strategies (e.g., cross-referencing bibliographies, creating annotated bibliographies, researching source credentials) to identify information appropriate to the needs of a research question, hypothesis, or thesis statement	
e. Critique and defend evidence relative to its use to address a particular context and purpose	
f. Determine and use the appropriate style guide to govern format and documentation of quotations, paraphrases, and other information from a range of research sources	
GLE 2. Logical arguments distinguish facts from opinions, and evidence defines reasoned judgment	
a. Synthesize information to support a logical argument	Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials Apply complicated instructions to new situations Figure out the principles behind policies, rules, and procedures Apply general principles from the materials to similar and new situations Explain the rationale behind a procedure, policy, or communication Identify implied details Use technical terms and jargon in new situations Apply technical terms and jargon and relate them to stated situations Apply straightforward instructions to a new situation that is similar to the one described in the material Apply complex instructions that include conditionals to situations described in the materials Identify important details that may not be clearly stated Identify main ideas and clearly stated details
b. Distinguish between evidence and inferences	
c. Identify false premises or assumptions	
d. Analyze rhetorical devices used in own and others' appeals	

TABLE 1K

COLORADO Reading, Writing, and Communicating Grade 12 Academic Standards	WorkKeys *Reading for Information* Skills
Standard 4: Research and Reasoning	
e. Summarize ideas that include alternate views, rich detail, well-developed paragraphs, and logical argumentation	

SUPPLEMENT
TABLES 2A–2I:
MATHEMATICS

TABLE 2A

COLORADO Mathematics Prepared Graduate Competencies	EXPLORE Mathematics College Readiness Standards
• Understand the structure and properties of our number system. At the most basic level numbers are abstract symbols that represent real-world quantities	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Understand quantity through estimation, precision, order of magnitude, and comparison. The reasonableness of answers relies on the ability to judge appropriateness, compare, estimate, and analyze error	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Are fluent with basic numerical and symbolic facts and algorithms, and are able to select and use appropriate (mental math, paper and pencil, and technology) methods based on an understanding of their efficiency, precision, and transparency	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)
• Make both relative (multiplicative) and absolute (arithmetic) comparisons between quantities. Multiplicative thinking underlies proportional reasoning	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Recognize and make sense of the many ways that variability, chance, and randomness appear in a variety of contexts	
• Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data	
• Understand that equivalence is a foundation of mathematics represented in numbers, shapes, measures, expressions, and equations	
• Make sound predictions and generalizations based on patterns and relationships that arise from numbers, shapes, symbols, and data	
• Apply transformation to numbers, shapes, functional representations, and data	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
• Make claims about relationships among numbers, shapes, symbols, and data and defend those claims by relying on the properties that are the structure of mathematics	
• Communicate effective logical arguments using mathematical justification and proof. Mathematical argumentation involves making and testing conjectures, drawing valid conclusions, and justifying thinking	
• Use critical thinking to recognize problematic aspects of situations, create mathematical models, and present and defend solutions	

TABLE 2B

COLORADO Mathematics Prepared Graduate Competencies	PLAN Mathematics College Readiness Standards
• Understand the structure and properties of our number system. At the most basic level numbers are abstract symbols that represent real-world quantities	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Understand quantity through estimation, precision, order of magnitude, and comparison. The reasonableness of answers relies on the ability to judge appropriateness, compare, estimate, and analyze error	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Are fluent with basic numerical and symbolic facts and algorithms, and are able to select and use appropriate (mental math, paper and pencil, and technology) methods based on an understanding of their efficiency, precision, and transparency	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)
• Make both relative (multiplicative) and absolute (arithmetic) comparisons between quantities. Multiplicative thinking underlies proportional reasoning	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Recognize and make sense of the many ways that variability, chance, and randomness appear in a variety of contexts	
• Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data	
• Understand that equivalence is a foundation of mathematics represented in numbers, shapes, measures, expressions, and equations	
• Make sound predictions and generalizations based on patterns and relationships that arise from numbers, shapes, symbols, and data	
• Apply transformation to numbers, shapes, functional representations, and data	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
• Make claims about relationships among numbers, shapes, symbols, and data and defend those claims by relying on the properties that are the structure of mathematics	
• Communicate effective logical arguments using mathematical justification and proof. Mathematical argumentation involves making and testing conjectures, drawing valid conclusions, and justifying thinking	
• Use critical thinking to recognize problematic aspects of situations, create mathematical models, and present and defend solutions	

TABLE 2C

COLORADO Mathematics Prepared Graduate Competencies	ACT Mathematics College Readiness Standards
• Understand the structure and properties of our number system. At the most basic level numbers are abstract symbols that represent real-world quantities	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Understand quantity through estimation, precision, order of magnitude, and comparison. The reasonableness of answers relies on the ability to judge appropriateness, compare, estimate, and analyze error	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Are fluent with basic numerical and symbolic facts and algorithms, and are able to select and use appropriate (mental math, paper and pencil, and technology) methods based on an understanding of their efficiency, precision, and transparency	**Expressions, Equations, & Inequalities:** Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)
• Make both relative (multiplicative) and absolute (arithmetic) comparisons between quantities. Multiplicative thinking underlies proportional reasoning	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
• Recognize and make sense of the many ways that variability, chance, and randomness appear in a variety of contexts	
• Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data	
• Understand that equivalence is a foundation of mathematics represented in numbers, shapes, measures, expressions, and equations	
• Make sound predictions and generalizations based on patterns and relationships that arise from numbers, shapes, symbols, and data	
• Apply transformation to numbers, shapes, functional representations, and data	**Probability, Statistics, & Data Analysis:** Translate from one representation of data to another (e.g., a bar graph to a circle graph)
• Make claims about relationships among numbers, shapes, symbols, and data and defend those claims by relying on the properties that are the structure of mathematics	
• Communicate effective logical arguments using mathematical justification and proof. Mathematical argumentation involves making and testing conjectures, drawing valid conclusions, and justifying thinking	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
• Use critical thinking to recognize problematic aspects of situations, create mathematical models, and present and defend solutions	**Expressions, Equations, & Inequalities:** Write expressions that require planning and/or manipulating to accurately model a situation

TABLE 2D

COLORADO Mathematics Prepared Graduate Competencies	WorkKeys *Applied Mathematics* Skills
• Understand the structure and properties of our number system. At the most basic level numbers are abstract symbols that represent real-world quantities	Change numbers from one form to another using whole numbers, fractions, decimals, or percentages
• Understand quantity through estimation, precision, order of magnitude, and comparison. The reasonableness of answers relies on the ability to judge appropriateness, compare, estimate, and analyze error	
• Are fluent with basic numerical and symbolic facts and algorithms, and are able to select and use appropriate (mental math, paper and pencil, and technology) methods based on an understanding of their efficiency, precision, and transparency	Solve problems that require a single type of mathematics operation (addition, subtraction, multiplication, and division) using whole numbers Add or subtract negative numbers Solve problems that require one or two operations Multiply negative numbers Put the information in the right order before performing calculations Decide what information, calculations, or unit conversions to use to solve the problem Divide negative numbers
• Make both relative (multiplicative) and absolute (arithmetic) comparisons between quantities. Multiplicative thinking underlies proportional reasoning	Change numbers from one form to another using whole numbers, fractions, decimals, or percentages Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Find the best deal using one- and two-step calculations and then comparing results Set up and manipulate complex ratios or proportions Find the best deal when there are several choices
• Recognize and make sense of the many ways that variability, chance, and randomness appear in a variety of contexts	Apply basic statistical concepts
• Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data	Apply basic statistical concepts

TABLE 2D

COLORADO Mathematics Prepared Graduate Competencies	WorkKeys *Applied Mathematics* Skills
• Understand that equivalence is a foundation of mathematics represented in numbers, shapes, measures, expressions, and equations	Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Look up a formula and perform single-step conversions within or between systems of measurement Rearrange a formula before solving a problem Use two formulas to change from one unit to another within the same system of measurement Use two formulas to change from one unit in one system of measurement to a unit in another system of measurement Calculate perimeters and areas of basic shapes (rectangles and circles) 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 Find the volume of rectangular solids Solve problems that include nonlinear functions and/or that involve more than one unknown Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages Calculate multiple areas and volumes of spheres, cylinders, or cones
• Make sound predictions and generalizations based on patterns and relationships that arise from numbers, shapes, symbols, and data	
• Apply transformation to numbers, shapes, functional representations, and data	
• Make claims about relationships among numbers, shapes, symbols, and data and defend those claims by relying on the properties that are the structure of mathematics	Change numbers from one form to another using whole numbers, fractions, decimals, or percentages Convert simple money and time units (e.g., hours to minutes) Look up a formula and perform single-step conversions within or between systems of measurement Use two formulas to change from one unit to another within the same system of measurement Use two formulas to change from one unit in one system of measurement to a unit in another system of measurement Calculate perimeters and areas of basic shapes (rectangles and circles) 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 Find the volume of rectangular solids Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages Calculate multiple areas and volumes of spheres, cylinders, or cones
• Communicate effective logical arguments using mathematical justification and proof. Mathematical argumentation involves making and testing conjectures, drawing valid conclusions, and justifying thinking	

TABLE 2D

COLORADO Mathematics Prepared Graduate Competencies	WorkKeys *Applied Mathematics* Skills
• Use critical thinking to recognize problematic aspects of situations, create mathematical models, and present and defend solutions	

TABLE 2E

COLORADO Mathematics Grade 8 Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Number Sense, Properties, and Operations	
GLE 1. In the real number system, rational and irrational numbers are in one to one correspondence to points on the number line	
a. Compare and order sets of integers and rational numbers that are expressed as fractions, decimals, or percents	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions
b. Given a whole number from 0–100, determine whether it is a perfect square or find the two consecutive whole numbers between which its square root lies	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers
c. Approximate the location of square roots between two whole numbers on a number line	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers **Graphical Representations:** Locate points on the number line and in the first quadrant
GLE 2. Formulate, represent, and use algorithms with rational numbers flexibly, accurately, and efficiently	
a. Add, subtract, multiply and divide rational numbers including integers, positive and negative fractions and decimals	**Basic Operations & Applications:** Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent
b. Apply computational methods to solve multi-step application problems involving percents and rational numbers	**Basic Operations & Applications:** Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent 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
c. Analyze how credit and debt impact personal financial goals	

TABLE 2E

COLORADO Mathematics Grade 8 Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 1. Linear functions model situations with a constant rate of change and can be represented algebraically, graphically, and using tables	
a. Convert from one representation of a linear function to another, including situations, tables, equations (slope-intercept form), 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) **Graphical Representations:** Match linear graphs with their equations
b. Use representations of linear functions to analyze situations and solve problems	**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)
c. Identify the dependent and independent variable in real-world situations	
d. Identify and interpret the slope (rate of change) and y-intercept in graphs, in tables, and from equations in slope-intercept form	
e. Model and graph two linear equations in slope-intercept form on the same coordinate plane and interpret the point of intersection as the solution to the system of equations	**Graphical Representations:** Match linear graphs with their equations
GLE 2. Properties of algebra, equality, and inequality are used to solve linear equations and inequalities	
a. Use the distributive, associative, and commutative properties to simplify algebraic expressions	**Expressions, Equations, & Inequalities:** Combine like terms (e.g., $2x + 5x$)
b. Solve one-variable equations including those involving multiple steps, rational numbers, variables on both sides, and the distributive property	**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 Solve real-world problems using first-degree equations
c. Solve inequalities in one variable including negative coefficients and graph the solution on a number line	**Expressions, Equations, & Inequalities:** Solve first-degree inequalities that do not require reversing the inequality sign **Graphical Representations:** Identify the graph of a linear inequality on the number line
d. Represent the distributive property in a variety of ways including numerically, geometrically, and algebraically	

TABLE 2E

COLORADO Mathematics Grade 8 Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 3. Graphs and tables can be used to distinguish between linear and nonlinear functions	
a. Given a table or graph determine if the function is linear	**Graphical Representations:** Exhibit knowledge of slope Determine the slope of a line from points or equations
b. Explain the properties of linear functions in tables and graphs	

TABLE 2E

COLORADO Mathematics Grade 8 Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 1. Visual displays and summary statistics of two-variable data condense the information in data sets into usable knowledge	
a. Given a scatter plot, calculate quadrant count ratio to quantify the magnitude and strength of the association between two variables for numeric data as positive, negative, or no correlation	**Graphical Representations:** Exhibit knowledge of slope
b. Given a scatter plot suggesting a linear relationship, draw a line of fit to make predictions	
c. Use time series plots (line graphs) to analyze the trend of a set of data over time	

TABLE 2E

COLORADO Mathematics Grade 8 Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
GLE 1. Objects in the plane and their parts and attributes can be analyzed	
a. Classify quadrilaterals and apply angle and side properties, including the sum of the interior angles	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
b. Apply properties of complementary, supplementary, and vertical angle relationships	**Properties of Plane Figures:** Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
c. Apply properties of parallel lines including corresponding angles and alternate interior angles	**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
GLE 2. Direct and indirect measurements can be used to describe and make comparisons	
a. Use properties of similar triangles to find unknown lengths	
b. Use the Pythagorean Theorem to find unknown lengths in right triangles	**Properties of Plane Figures:** Recognize Pythagorean triples
c. Use proportional reasoning to estimate distance, weight, and capacity	**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)
d. Use proportional reasoning to convert among measures including dimensional analysis	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Number Sense, Properties, and Operations	
GLE 1. The complex number system includes real numbers and imaginary numbers	
a. Show that between any two rational numbers there are an infinite number of rational numbers, and that between any two irrational numbers there are also an infinite number of irrational numbers	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
b. Express the square root of a negative number using imaginary numbers	
GLE 2. Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently	
a. Use appropriate computation methods that encompass estimation and calculation	
b. Use technology to perform operations (addition, subtraction, multiplication, and division) on numbers written in scientific notation	**Numbers: Concepts & Properties:** Work with scientific notation
c. Describe factors affecting take-home pay and calculate the impact	**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
d. Design and use a budget, including income (net take-home pay) and expenses (mortgage, car loans, and living expenses) to demonstrate how living within your means is essential for a secure financial future	**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 **Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Manipulate data from tables and graphs
GLE 3. Systematic counting techniques are used to describe and solve problems	
a. Use combinatorics (Fundamental Counting Principle, permutations and combinations) to solve problems in real-world contexts	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 1. Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables	
a. Determine* when a relation is a function using a table, a graph, or an equation	
b. Demonstrate the relationship between all forms of linear functions using point-slope, slope-intercept, and standard form of a line	
c. Represent* linear, quadratic, absolute value, power, exponential, logarithmic, rational, trigonometric (sine and cosine), and step functions in a table, graph, and equation and convert from one representation to another	**Probability, Statistics, & Data Analysis:** 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) **Graphical Representations:** Match linear graphs with their equations
d. Determine the inverse (expressed graphically or in tabular form) of a function from a graph or table	
e. Categorize sequences as arithmetic, geometric, or neither and develop formulas for the general terms related to arithmetic and geometric sequences	**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)
GLE 2. Graphs and tables are used to describe the qualitative behavior of common types of functions	
a. Evaluate* a function at a given point in its domain given an equation (including function notation), a table, and a graph	
b. Identify* the domain and range of a function given an equation (including function notation), a table, and a graph	
c. Identify* intercepts, zeros (or roots), maxima, minima, and intervals of increase and decrease, and asymptotes of a function given an equation (including function notation), a table, and a graph	
d. Make qualitative statements about the rate of change of a function, based on its graph or table	
GLE 3. Parameters influence the shape of the graphs of functions	
a. Apply* transformations (translation, reflection, dilation) to a parent function, f(x)	
b. Interpret the results of these transformations verbally, graphically, and symbolically	

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 4. Expressions , equations, and inequalities can be expressed in multiple, equivalent forms	
a. Perform and justify steps in generating equivalent expressions by identifying properties used including the commutative, associative, inverse, identity, and distributive properties	
b. Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions including those involving nth roots	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents
c. Solve equations for one variable in terms of the others	
GLE 5. Solutions to equations, inequalities and systems of equations are found using a variety of tools	
a. Find* solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
b. Find* solutions to equations involving power, exponential, rational and radical functions	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers
c. Solve* systems of linear equations and inequalities with two variables	
GLE 6. Quantitative relationships in the real world can be modeled and solved using functions	
a. Represent, solve*, and interpret problems in various contexts using linear, quadratic, and exponential functions	**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)
b. Represent, solve*, and interpret problems involving direct and inverse variations and a combination of direct and inverse variation	**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)
c. Analyze* the impact of interest rates on a personal financial plan	**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
d. Evaluate* the costs and benefits of credit	
e. Analyze various lending sources, services, and financial institutions	

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 1. Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions	
a. Formulate appropriate research questions that can be answered with statistical analysis	
b. Determine appropriate data collection methods to answer a research question	
c. Explain how data might be analyzed to provide answers to a research question	
GLE 2. The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions	
a. Identify the characteristics of a well-designed and well-conducted survey	
b. Identify the characteristics of a well-designed and well-conducted experiment	
c. Differentiate between the inferences that can be drawn in experiments versus observational studies	
GLE 3. Visual displays and summary statistics condense the information in data sets into usable knowledge	
a. Identify and choose appropriate ways to summarize numerical or categorical data using tables, graphical displays, and numerical summary statistics (describing shape, center and spread) and accounting for outliers when appropriate	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of numbers Translate from one representation of data to another (e.g., a bar graph to a circle graph)
b. Define and explain how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics	
c. Describe the relationship between two categorical variables using percents	**Probability, Statistics, & Data Analysis:** Manipulate data from tables and graphs
d. When the relationship between two numerical variables is reasonably linear, apply* the least-squares criterion for line fitting, use Pearson's correlation coefficient as a measure of strength, and interpret the slope and y-intercept in the context of the problem	
GLE 4. Randomness is the foundation for using statistics to draw conclusions when testing a claim or estimating plausible values for a population characteristic	
a. Define and explain the meaning of significance (both practical and statistical)	
b. Explain the role of p-values in determining statistical significance	
c. Determine the margin of error associated with an estimate of a population characteristic	

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 5. Probability models outcomes for situations in which there is inherent randomness, quantifying the degree of certainty in terms of relative frequency of occurrence	
a. Develop* simulations that demonstrate probability as a long-run relative frequency	
b. Apply and solve problems using the concepts of independence and conditional probability	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations
c. Apply and solve problems using the concept of mutually exclusive properties when combining probabilities	
d. Evaluate* and interpret probabilities using a normal distribution	
e. Find* and interpret the expected value and standard deviation of a discrete random variable X	
f. Analyze* the cost of insurance as a method to offset the risk of a situation	

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
GLE 1. Attributes of two- and three-dimensional objects are measurable and can be quantified	
a. Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the perimeter of simple composite geometric figures with unknown side lengths
b. Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations	**Measurement:** Use geometric formulas when all necessary information is given
c. Solve for unknown quantities in relationships involving perimeter, area, surface area, and volume	
d. Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
GLE 2. Objects in the plane and their parts, attributes, and measurements can be analyzed deductively	
a. Classify polygons according to their similarities and differences	
b. Solve for unknown attributes of geometric shapes based on their congruence, similarity, or symmetry	
c. Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
d. Develop conjectures and solve problems about geometric figures including definitions and properties (congruence, similarity, and symmetry). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, or illustrations	
GLE 3. Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically	
a. Make conjectures involving two-dimensional objects represented with Cartesian coordinates. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
b. Represent transformations (reflection, translation, rotation, and dilation) using Cartesian coordinates	

TABLE 2F

COLORADO Mathematics High School Academic Standards	EXPLORE Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
c. Develop arguments to establish what remains invariant and what changes after a transformation (reflection, translation, rotation, and dilations). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
d. Using construction tools, including technology, make conjectures about relationships among properties of shapes in the plane including those formed through transformation. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
GLE 4. Right triangles are central to geometry and its applications	
a. Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles	
b. Apply the Pythagorean theorem and its converse to solve real-world problems	**Properties of Plane Figures:** Recognize Pythagorean triples
c. Determine the midpoint of a line segment and the distance between two points in the Cartesian coordinate plane	**Graphical Representations:** Find the midpoint of a line segment

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Number Sense, Properties, and Operations	
GLE 1. The complex number system includes real numbers and imaginary numbers	
a. Show that between any two rational numbers there are an infinite number of rational numbers, and that between any two irrational numbers there are also an infinite number of irrational numbers	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
b. Express the square root of a negative number using imaginary numbers	
GLE 2. Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently	
a. Use appropriate computation methods that encompass estimation and calculation	
b. Use technology to perform operations (addition, subtraction, multiplication, and division) on numbers written in scientific notation	**Numbers: Concepts & Properties:** Work with scientific notation
c. Describe factors affecting take-home pay and calculate the impact	**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
d. Design and use a budget, including income (net take-home pay) and expenses (mortgage, car loans, and living expenses) to demonstrate how living within your means is essential for a secure financial future	**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 **Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Manipulate data from tables and graphs
GLE 3. Systematic counting techniques are used to describe and solve problems	
a. Use combinatorics (Fundamental Counting Principle, permutations and combinations) to solve problems in real-world contexts	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 1. Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables	
a. Determine* when a relation is a function using a table, a graph, or an equation	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
b. Demonstrate the relationship between all forms of linear functions using point-slope, slope-intercept, and standard form of a line	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
c. Represent* linear, quadratic, absolute value, power, exponential, logarithmic, rational, trigonometric (sine and cosine), and step functions in a table, graph, and equation and convert from one representation to another	**Probability, Statistics, & Data Analysis:** Manipulate data from tables and graphs 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) Manipulate expressions and equations Write expressions, equations, and inequalities for common algebra settings **Graphical Representations:** Match linear graphs with their equations Interpret and use information from graphs in the coordinate plane
d. Determine the inverse (expressed graphically or in tabular form) of a function from a graph or table	
e. Categorize sequences as arithmetic, geometric, or neither and develop formulas for the general terms related to arithmetic and geometric sequences	**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
GLE 2. Graphs and tables are used to describe the qualitative behavior of common types of functions	
a. Evaluate* a function at a given point in its domain given an equation (including function notation), a table, and a graph	
b. Identify* the domain and range of a function given an equation (including function notation), a table, and a graph	
c. Identify* intercepts, zeros (or roots), maxima, minima, and intervals of increase and decrease, and asymptotes of a function given an equation (including function notation), a table, and a graph	**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 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
d. Make qualitative statements about the rate of change of a function, based on its graph or table	
GLE 3. Parameters influence the shape of the graphs of functions	
a. Apply* transformations (translation, reflection, dilation) to a parent function, f(x)	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
b. Interpret the results of these transformations verbally, graphically, and symbolically	
GLE 4. Expressions , equations, and inequalities can be expressed in multiple, equivalent forms	
a. Perform and justify steps in generating equivalent expressions by identifying properties used including the commutative, associative, inverse, identity, and distributive properties	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
b. Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions including those involving nth roots	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
c. Solve equations for one variable in terms of the others	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
GLE 5. Solutions to equations, inequalities and systems of equations are found using a variety of tools	
a. Find* solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Solve quadratic equations
b. Find* solutions to equations involving power, exponential, rational and radical functions	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers
c. Solve* systems of linear equations and inequalities with two variables	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
GLE 6. Quantitative relationships in the real world can be modeled and solved using functions	
a. Represent, solve*, and interpret problems in various contexts using linear, quadratic, and exponential functions	**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
b. Represent, solve*, and interpret problems involving direct and inverse variations and a combination of direct and inverse variation	**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)

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
c. Analyze* the impact of interest rates on a personal financial plan	**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
d. Evaluate* the costs and benefits of credit	
e. Analyze various lending sources, services, and financial institutions	

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 1. Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions	
a. Formulate appropriate research questions that can be answered with statistical analysis	
b. Determine appropriate data collection methods to answer a research question	
c. Explain how data might be analyzed to provide answers to a research question	
GLE 2. The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions	
a. Identify the characteristics of a well-designed and well-conducted survey	
b. Identify the characteristics of a well-designed and well-conducted experiment	
c. Differentiate between the inferences that can be drawn in experiments versus observational studies	
GLE 3. Visual displays and summary statistics condense the information in data sets into usable knowledge	
a. Identify and choose appropriate ways to summarize numerical or categorical data using tables, graphical displays, and numerical summary statistics (describing shape, center and spread) and accounting for outliers when appropriate	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of numbers Translate from one representation of data to another (e.g., a bar graph to a circle graph)
b. Define and explain how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics	
c. Describe the relationship between two categorical variables using percents	**Probability, Statistics, & Data Analysis:** Manipulate data from tables and graphs
d. When the relationship between two numerical variables is reasonably linear, apply* the least-squares criterion for line fitting, use Pearson's correlation coefficient as a measure of strength, and interpret the slope and y-intercept in the context of the problem	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
GLE 4. Randomness is the foundation for using statistics to draw conclusions when testing a claim or estimating plausible values for a population characteristic	
a. Define and explain the meaning of significance (both practical and statistical)	
b. Explain the role of p-values in determining statistical significance	
c. Determine the margin of error associated with an estimate of a population characteristic	

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 5. Probability models outcomes for situations in which there is inherent randomness, quantifying the degree of certainty in terms of relative frequency of occurrence	
a. Develop* simulations that demonstrate probability as a long-run relative frequency	
b. Apply and solve problems using the concepts of independence and conditional probability	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations Compute a probability when the event and/or sample space are not given or obvious
c. Apply and solve problems using the concept of mutually exclusive properties when combining probabilities	**Probability, Statistics, & Data Analysis:** Compute a probability when the event and/or sample space are not given or obvious
d. Evaluate* and interpret probabilities using a normal distribution	
e. Find* and interpret the expected value and standard deviation of a discrete random variable X	
f. Analyze* the cost of insurance as a method to offset the risk of a situation	

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
GLE 1. Attributes of two- and three-dimensional objects are measurable and can be quantified	
a. Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the perimeter of simple composite geometric figures with unknown side lengths
b. Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations	**Measurement:** Use geometric formulas when all necessary information is given
c. Solve for unknown quantities in relationships involving perimeter, area, surface area, and volume	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
d. Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
GLE 2. Objects in the plane and their parts, attributes, and measurements can be analyzed deductively	
a. Classify polygons according to their similarities and differences	
b. Solve for unknown attributes of geometric shapes based on their congruence, similarity, or symmetry	**Properties of Plane Figures:** Use properties of isosceles triangles Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
c. Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
d. Develop conjectures and solve problems about geometric figures including definitions and properties (congruence, similarity, and symmetry). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, or illustrations	**Properties of Plane Figures:** Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
GLE 3. Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically	
a. Make conjectures involving two-dimensional objects represented with Cartesian coordinates. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
b. Represent transformations (reflection, translation, rotation, and dilation) using Cartesian coordinates	

TABLE 2G

COLORADO Mathematics High School Academic Standards	PLAN Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
c. Develop arguments to establish what remains invariant and what changes after a transformation (reflection, translation, rotation, and dilations). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
d. Using construction tools, including technology, make conjectures about relationships among properties of shapes in the plane including those formed through transformation. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
GLE 4. Right triangles are central to geometry and its applications	
a. Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles	
b. Apply the Pythagorean theorem and its converse to solve real-world problems	**Properties of Plane Figures:** Recognize Pythagorean triples Use the Pythagorean theorem
c. Determine the midpoint of a line segment and the distance between two points in the Cartesian coordinate plane	**Graphical Representations:** Find the midpoint of a line segment

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Number Sense, Properties, and Operations	
GLE 1. The complex number system includes real numbers and imaginary numbers	
a. Show that between any two rational numbers there are an infinite number of rational numbers, and that between any two irrational numbers there are also an infinite number of irrational numbers	**Numbers: Concepts & Properties:** Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
b. Express the square root of a negative number using imaginary numbers	**Numbers: Concepts & Properties:** Exhibit some knowledge of the complex numbers
GLE 2. Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently	
a. Use appropriate computation methods that encompass estimation and calculation	
b. Use technology to perform operations (addition, subtraction, multiplication, and division) on numbers written in scientific notation	**Numbers: Concepts & Properties:** Work with scientific notation
c. Describe factors affecting take-home pay and calculate the impact	**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
d. Design and use a budget, including income (net take-home pay) and expenses (mortgage, car loans, and living expenses) to demonstrate how living within your means is essential for a secure financial future	**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 **Probability, Statistics, & Data Analysis:** Read tables and graphs Perform computations on data from tables and graphs Manipulate data from tables and graphs
GLE 3. Systematic counting techniques are used to describe and solve problems	
a. Use combinatorics (Fundamental Counting Principle, permutations and combinations) to solve problems in real-world contexts	**Probability, Statistics, & Data Analysis:** Exhibit knowledge of simple counting techniques Apply counting techniques

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 1. Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables	
a. Determine* when a relation is a function using a table, a graph, or an equation	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
b. Demonstrate the relationship between all forms of linear functions using point-slope, slope-intercept, and standard form of a line	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
c. Represent* linear, quadratic, absolute value, power, exponential, logarithmic, rational, trigonometric (sine and cosine), and step functions in a table, graph, and equation and convert from one representation to another	**Probability, Statistics, & Data Analysis:** Manipulate data from tables and graphs Interpret and use information from figures, tables, and graphs **Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **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) Manipulate expressions and equations Write expressions, equations, and inequalities for common algebra settings **Graphical Representations:** Match linear graphs with their equations Interpret and use information from graphs in the coordinate plane **Functions:** Match graphs of basic trigonometric functions with their equations
d. Determine the inverse (expressed graphically or in tabular form) of a function from a graph or table	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations Write equations and inequalities that require planning, manipulating, and/or solving
e. Categorize sequences as arithmetic, geometric, or neither and develop formulas for the general terms related to arithmetic and geometric sequences	**Numbers: Concepts & Properties:** Exhibit knowledge of logarithms and geometric sequences **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

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 2. Graphs and tables are used to describe the qualitative behavior of common types of functions	
a. Evaluate* a function at a given point in its domain given an equation (including function notation), a table, and a graph	**Functions:** Evaluate quadratic functions, expressed in function notation, at integer values Evaluate polynomial functions, expressed in function notation, at integer values
b. Identify* the domain and range of a function given an equation (including function notation), a table, and a graph	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts Analyze and draw conclusions based on information from graphs in the coordinate plane
c. Identify* intercepts, zeros (or roots), maxima, minima, and intervals of increase and decrease, and asymptotes of a function given an equation (including function notation), a table, and a graph	**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 $y = ax^2 + c$ Solve problems integrating multiple algebraic and/or geometric concepts Analyze and draw conclusions based on information from graphs in the coordinate plane
d. Make qualitative statements about the rate of change of a function, based on its graph or table	
GLE 3. Parameters influence the shape of the graphs of functions	
a. Apply* transformations (translation, reflection, dilation) to a parent function, f(x)	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
b. Interpret the results of these transformations verbally, graphically, and symbolically	
GLE 4. Expressions , equations, and inequalities can be expressed in multiple, equivalent forms	
a. Perform and justify steps in generating equivalent expressions by identifying properties used including the commutative, associative, inverse, identity, and distributive properties	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations
b. Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions including those involving nth roots	**Numbers: Concepts & Properties:** Work problems involving positive integer exponents Apply rules of exponents
c. Solve equations for one variable in terms of the others	**Expressions, Equations, & Inequalities:** Manipulate expressions and equations

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Patterns, Functions, and Algebraic Structures	
GLE 5. Solutions to equations, inequalities and systems of equations are found using a variety of tools	
a. Find* solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula	**Expressions, Equations, & Inequalities:** Identify solutions to simple quadratic equations Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Solve quadratic equations **Graphical Representations:** Match number line graphs with solution sets of simple quadratic inequalities
b. Find* solutions to equations involving power, exponential, rational and radical functions	**Numbers: Concepts & Properties:** Work with squares and square roots of numbers Work with cubes and cube roots of numbers
c. Solve* systems of linear equations and inequalities with two variables	**Expressions, Equations, & Inequalities:** Find solutions to systems of linear equations
GLE 6. Quantitative relationships in the real world can be modeled and solved using functions	
a. Represent, solve*, and interpret problems in various contexts using linear, quadratic, and exponential functions	**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
b. Represent, solve*, and interpret problems involving direct and inverse variations and a combination of direct and inverse variation	**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)
c. Analyze* the impact of interest rates on a personal financial plan	**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
d. Evaluate* the costs and benefits of credit	
e. Analyze various lending sources, services, and financial institutions	

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 1. Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions	
a. Formulate appropriate research questions that can be answered with statistical analysis	
b. Determine appropriate data collection methods to answer a research question	
c. Explain how data might be analyzed to provide answers to a research question	
GLE 2. The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions	
a. Identify the characteristics of a well-designed and well-conducted survey	
b. Identify the characteristics of a well-designed and well-conducted experiment	
c. Differentiate between the inferences that can be drawn in experiments versus observational studies	
GLE 3. Visual displays and summary statistics condense the information in data sets into usable knowledge	
a. Identify and choose appropriate ways to summarize numerical or categorical data using tables, graphical displays, and numerical summary statistics (describing shape, center and spread) and accounting for outliers when appropriate	**Probability, Statistics, & Data Analysis:** Calculate the average of a list of numbers Translate from one representation of data to another (e.g., a bar graph to a circle graph) Distinguish between mean, median, and mode for a list of numbers
b. Define and explain how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics	
c. Describe the relationship between two categorical variables using percents	**Probability, Statistics, & Data Analysis:** Manipulate data from tables and graphs
d. When the relationship between two numerical variables is reasonably linear, apply* the least-squares criterion for line fitting, use Pearson's correlation coefficient as a measure of strength, and interpret the slope and y-intercept in the context of the problem	**Graphical Representations:** Interpret and use information from graphs in the coordinate plane
GLE 4. Randomness is the foundation for using statistics to draw conclusions when testing a claim or estimating plausible values for a population characteristic	
a. Define and explain the meaning of significance (both practical and statistical)	
b. Explain the role of p-values in determining statistical significance	
c. Determine the margin of error associated with an estimate of a population characteristic	

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Data Analysis, Statistics, and Probability	
GLE 5. Probability models outcomes for situations in which there is inherent randomness, quantifying the degree of certainty in terms of relative frequency of occurrence	
a. Develop* simulations that demonstrate probability as a long-run relative frequency	
b. Apply and solve problems using the concepts of independence and conditional probability	**Probability, Statistics, & Data Analysis:** Compute straightforward probabilities for common situations Compute a probability when the event and/or sample space are not given or obvious Exhibit knowledge of conditional and joint probability
c. Apply and solve problems using the concept of mutually exclusive properties when combining probabilities	**Probability, Statistics, & Data Analysis:** Compute a probability when the event and/or sample space are not given or obvious Exhibit knowledge of conditional and joint probability
d. Evaluate* and interpret probabilities using a normal distribution	
e. Find* and interpret the expected value and standard deviation of a discrete random variable X	
f. Analyze* the cost of insurance as a method to offset the risk of a situation	

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
GLE 1. Attributes of two- and three-dimensional objects are measurable and can be quantified	
a. Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape	**Measurement:** Compute the perimeter of polygons when all side lengths are given Compute the perimeter of simple composite geometric figures with unknown side lengths Compute the area of composite geometric figures when planning or visualization is required
b. Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations	**Measurement:** Use geometric formulas when all necessary information is given
c. Solve for unknown quantities in relationships involving perimeter, area, surface area, and volume	**Measurement:** Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
d. Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume	**Basic Operations & Applications:** Perform common conversions (e.g., inches to feet or hours to minutes) Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
GLE 2. Objects in the plane and their parts, attributes, and measurements can be analyzed deductively	
a. Classify polygons according to their similarities and differences	
b. Solve for unknown attributes of geometric shapes based on their congruence, similarity, or symmetry	**Properties of Plane Figures:** Use properties of isosceles triangles Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
c. Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations	**Properties of Plane Figures:** Exhibit some knowledge of the angles associated with parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) Draw conclusions based on a set of conditions
d. Develop conjectures and solve problems about geometric figures including definitions and properties (congruence, similarity, and symmetry). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, or illustrations	**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

TABLE 2H

COLORADO Mathematics High School Academic Standards	ACT Mathematics College Readiness Standards
Standard: Shape, Dimension, and Geometric Relationships	
GLE 3. Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically	
a. Make conjectures involving two-dimensional objects represented with Cartesian coordinates. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	**Graphical Representations:** Analyze and draw conclusions based on information from graphs in the coordinate plane
b. Represent transformations (reflection, translation, rotation, and dilation) using Cartesian coordinates	**Graphical Representations:** Solve problems integrating multiple algebraic and/or geometric concepts
c. Develop arguments to establish what remains invariant and what changes after a transformation (reflection, translation, rotation, and dilations). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	**Graphical Representations:** 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:** Draw conclusions based on a set of conditions
d. Using construction tools, including technology, make conjectures about relationships among properties of shapes in the plane including those formed through transformation. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	**Properties of Plane Figures:** Draw conclusions based on a set of conditions
GLE 4. Right triangles are central to geometry and its applications	
a. Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles	**Functions:** Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths Apply basic trigonometric ratios to solve right-triangle problems
b. Apply the Pythagorean theorem and its converse to solve real-world problems	**Properties of Plane Figures:** Recognize Pythagorean triples Use the Pythagorean theorem
c. Determine the midpoint of a line segment and the distance between two points in the Cartesian coordinate plane	**Graphical Representations:** Find the midpoint of a line segment

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Number Sense, Properties, and Operations	
GLE 1. The complex number system includes real numbers and imaginary numbers	
a. Show that between any two rational numbers there are an infinite number of rational numbers, and that between any two irrational numbers there are also an infinite number of irrational numbers	
b. Express the square root of a negative number using imaginary numbers	
GLE 2. Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently	
a. Use appropriate computation methods that encompass estimation and calculation	Solve problems that require a single type of mathematics operation (addition, subtraction, multiplication, and division) using whole numbers Add or subtract negative numbers Change numbers from one form to another using whole numbers, fractions, decimals, or percentages Convert simple money and time units (e.g., hours to minutes) Solve problems that require one or two operations Multiply negative numbers Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Add commonly known fractions, decimals, or percentages (e.g., ½, .75, 25%) Add three fractions that share a common denominator Multiply a mixed number by a whole number or decimal Put the information in the right order before performing calculations Decide what information, calculations, or unit conversions to use to solve the problem Look up a formula and perform single-step conversions within or between systems of measurement Calculate using mixed units (e.g., 3.5 hours and 4 hours 30 minutes) Divide negative numbers Find the best deal using one- and two-step calculations and then comparing results Calculate perimeters and areas of basic shapes (rectangles and circles) Calculate percentage discounts or markups Use fractions, negative numbers, ratios, percentages, or mixed numbers Rearrange a formula before solving a problem Use two formulas to change from one unit to another within the same system of measurement Use two formulas to change from one unit in one system of

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Number Sense, Properties, and Operations	
	measurement to a unit in another system of measurement Find the best deal and use the result for another calculation 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 Find the volume of rectangular solids Calculate multiple rates Solve problems that include nonlinear functions and/or that involve more than one unknown Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages Calculate multiple areas and volumes of spheres, cylinders, or cones Set up and manipulate complex ratios or proportions Find the best deal when there are several choices Apply basic statistical concepts
b. Use technology to perform operations (addition, subtraction, multiplication, and division) on numbers written in scientific notation	
c. Describe factors affecting take-home pay and calculate the impact	Decide what information, calculations, or unit conversions to use to solve the problem Calculate percentage discounts or markups
d. Design and use a budget, including income (net take-home pay) and expenses (mortgage, car loans, and living expenses) to demonstrate how living within your means is essential for a secure financial future	Solve problems that require one or two operations Decide what information, calculations, or unit conversions to use to solve the problem Calculate percentage discounts or markups
GLE 3. Systematic counting techniques are used to describe and solve problems	
a. Use combinatorics (Fundamental Counting Principle, permutations and combinations) to solve problems in real-world contexts	Apply basic statistical concepts

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Patterns, Functions, and Algebraic Structures	
GLE 1. Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables	
a. Determine* when a relation is a function using a table, a graph, or an equation	
b. Demonstrate the relationship between all forms of linear functions using point-slope, slope-intercept, and standard form of a line	
c. Represent* linear, quadratic, absolute value, power, exponential, logarithmic, rational, trigonometric (sine and cosine), and step functions in a table, graph, and equation and convert from one representation to another	
d. Determine the inverse (expressed graphically or in tabular form) of a function from a graph or table	
e. Categorize sequences as arithmetic, geometric, or neither and develop formulas for the general terms related to arithmetic and geometric sequences	
GLE 2. Graphs and tables are used to describe the qualitative behavior of common types of functions	
a. Evaluate* a function at a given point in its domain given an equation (including function notation), a table, and a graph	
b. Identify* the domain and range of a function given an equation (including function notation), a table, and a graph	
c. Identify* intercepts, zeros (or roots), maxima, minima, and intervals of increase and decrease, and asymptotes of a function given an equation (including function notation), a table, and a graph	
d. Make qualitative statements about the rate of change of a function, based on its graph or table	
GLE 3. Parameters influence the shape of the graphs of functions	
a. Apply* transformations (translation, reflection, dilation) to a parent function, f(x)	
b. Interpret the results of these transformations verbally, graphically, and symbolically	
GLE 4. Expressions , equations, and inequalities can be expressed in multiple, equivalent forms	
a. Perform and justify steps in generating equivalent expressions by identifying properties used including the commutative, associative, inverse, identity, and distributive properties	Rearrange a formula before solving a problem
b. Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions including those involving nth roots	
c. Solve equations for one variable in terms of the others	Rearrange a formula before solving a problem

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Patterns, Functions, and Algebraic Structures	
GLE 5. Solutions to equations, inequalities and systems of equations are found using a variety of tools	
a. Find* solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula	
b. Find* solutions to equations involving power, exponential, rational and radical functions	
c. Solve* systems of linear equations and inequalities with two variables	Solve problems that include nonlinear functions and/or that involve more than one unknown
GLE 6. Quantitative relationships in the real world can be modeled and solved using functions	
a. Represent, solve*, and interpret problems in various contexts using linear, quadratic, and exponential functions	
b. Represent, solve*, and interpret problems involving direct and inverse variations and a combination of direct and inverse variation	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 Look up a formula and perform single-step conversions within or between systems of measurement Rearrange a formula before solving a problem Use two formulas to change from one unit to another within the same system of measurement Use two formulas to change from one unit in one system of measurement to a unit in another system of measurement Solve problems that include nonlinear functions and/or that involve more than one unknown Calculate multiple rates Set up and manipulate complex ratios or proportions
c. Analyze* the impact of interest rates on a personal financial plan	Calculate percentage discounts or markups
d. Evaluate* the costs and benefits of credit	
e. Analyze various lending sources, services, and financial institutions	Calculate percentage discounts or markups 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

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Data Analysis, Statistics, and Probability	
GLE 1. Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions	
a. Formulate appropriate research questions that can be answered with statistical analysis	
b. Determine appropriate data collection methods to answer a research question	
c. Explain how data might be analyzed to provide answers to a research question	
GLE 2. The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions	
a. Identify the characteristics of a well-designed and well-conducted survey	
b. Identify the characteristics of a well-designed and well-conducted experiment	
c. Differentiate between the inferences that can be drawn in experiments versus observational studies	
GLE 3. Visual displays and summary statistics condense the information in data sets into usable knowledge	
a. Identify and choose appropriate ways to summarize numerical or categorical data using tables, graphical displays, and numerical summary statistics (describing shape, center and spread) and accounting for outliers when appropriate	Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Apply basic statistical concepts
b. Define and explain how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics	
c. Describe the relationship between two categorical variables using percents	
d. When the relationship between two numerical variables is reasonably linear, apply* the least-squares criterion for line fitting, use Pearson's correlation coefficient as a measure of strength, and interpret the slope and y-intercept in the context of the problem	
GLE 4. Randomness is the foundation for using statistics to draw conclusions when testing a claim or estimating plausible values for a population characteristic	
a. Define and explain the meaning of significance (both practical and statistical)	
b. Explain the role of p-values in determining statistical significance	
c. Determine the margin of error associated with an estimate of a population characteristic	

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Data Analysis, Statistics, and Probability	
GLE 5. Probability models outcomes for situations in which there is inherent randomness, quantifying the degree of certainty in terms of relative frequency of occurrence	
a. Develop* simulations that demonstrate probability as a long-run relative frequency	
b. Apply and solve problems using the concepts of independence and conditional probability	
c. Apply and solve problems using the concept of mutually exclusive properties when combining probabilities	
d. Evaluate* and interpret probabilities using a normal distribution	
e. Find* and interpret the expected value and standard deviation of a discrete random variable X	
f. Analyze* the cost of insurance as a method to offset the risk of a situation	

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Shape, Dimension, and Geometric Relationships	
GLE 1. Attributes of two- and three-dimensional objects are measurable and can be quantified	
a. Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape	Calculate perimeters and areas of basic shapes (rectangles and circles) 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 Calculate multiple areas and volumes of spheres, cylinders, or cones
b. Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations	Decide what information, calculations, or unit conversions to use to solve the problem Look up a formula and perform single-step conversions within or between systems of measurement Rearrange a formula before solving a problem Calculate multiple areas and volumes of spheres, cylinders, or cones
c. Solve for unknown quantities in relationships involving perimeter, area, surface area, and volume	Calculate perimeters and areas of basic shapes (rectangles and circles) 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 Find the volume of rectangular solids Calculate multiple areas and volumes of spheres, cylinders, or cones
d. Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume	Calculate perimeters and areas of basic shapes (rectangles and circles) 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 Find the volume of rectangular solids Calculate multiple areas and volumes of spheres, cylinders, or cones Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals Set up and manipulate complex ratios or proportions
GLE 2. Objects in the plane and their parts, attributes, and measurements can be analyzed deductively	
a. Classify polygons according to their similarities and differences	
b. Solve for unknown attributes of geometric shapes based on their congruence, similarity, or symmetry	
c. Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations	

TABLE 2I

COLORADO Mathematics High School Academic Standards	WorkKeys *Applied Mathematics* Skills
Standard: Shape, Dimension, and Geometric Relationships	
d. Develop conjectures and solve problems about geometric figures including definitions and properties (congruence, similarity, and symmetry). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, or illustrations	
GLE 3. Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically	
a. Make conjectures involving two-dimensional objects represented with Cartesian coordinates. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
b. Represent transformations (reflection, translation, rotation, and dilation) using Cartesian coordinates	
c. Develop arguments to establish what remains invariant and what changes after a transformation (reflection, translation, rotation, and dilations). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
d. Using construction tools, including technology, make conjectures about relationships among properties of shapes in the plane including those formed through transformation. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations	
GLE 4. Right triangles are central to geometry and its applications	
a. Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles	
b. Apply the Pythagorean theorem and its converse to solve real-world problems	
c. Determine the midpoint of a line segment and the distance between two points in the Cartesian coordinate plane	

SUPPLEMENT
TABLES 3A–3E:

SCIENCE

TABLE 3A

COLORADO Science Prepared Graduate Competencies	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
• Observe, explain, and predict natural phenomena governed by Newton's laws of motion, acknowledging the limitations of their application to very small or very fast objects	**Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
• Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions	
• Apply an understanding that energy exists in various forms, and its transformation and conservation occur in processes that are predictable and measurable	
Standard 2: Life Science	
• Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection	
• Explain and illustrate with examples how living systems interact with the biotic and abiotic environment	
• Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment	
• Explain how biological evolution accounts for the unity and diversity of living organisms	
Standard 3: Earth Systems Science	
• Describe and interpret how Earth's geologic history and place in space are relevant to our understanding of the processes that have shaped our planet	
• Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model

= Measured by EXPLORE, PLAN, and ACT Science Test

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TABLE 3A

COLORADO Science Prepared Graduate Competencies	EXPLORE, PLAN, and ACT Science College Readiness Standards
	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
• Describe how humans are dependent on the diversity of resources provided by Earth and Sun	

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= Content sampled by EXPLORE, PLAN, and ACT Science Test

TABLE 3B

COLORADO Science Prepared Graduate Competencies	WorkKeys *Locating Information* Skills
Standard 1: Physical Science	
• Observe, explain, and predict natural phenomena governed by Newton's laws of motion, acknowledging the limitations of their application to very small or very fast objects	Find one or two pieces of information in a graphic Identify trends shown in one or two straightforward graphics Compare information and trends shown in one or two straightforward graphics Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or two straightforward graphics
• Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions	Find one or two pieces of information in a graphic Identify trends shown in one or two straightforward graphics Understand how graphics are related to each other Compare information and trends shown in one or two straightforward graphics Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or more detailed graphics
• Apply an understanding that energy exists in various forms, and its transformation and conservation occur in processes that are predictable and measurable	
Standard 2: Life Science	
• Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection	
• Explain and illustrate with examples how living systems interact with the biotic and abiotic environment	
• Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment	
• Explain how biological evolution accounts for the unity and diversity of living organisms	

TABLE 3B

COLORADO Science Prepared Graduate Competencies	**WorkKeys *Locating Information* Skills**
Standard 3: Earth Systems Science	
• Describe and interpret how Earth's geologic history and place in space are relevant to our understanding of the processes that have shaped our planet	
• Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system	Find one or two pieces of information in a graphic Identify trends shown in one or two straightforward graphics Compare information and trends shown in one or two straightforward graphics Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or two straightforward graphics
• Describe how humans are dependent on the diversity of resources provided by Earth and Sun	

TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 1: Physical Science	
GLE 1. Identify and calculate the direction and magnitude of forces that act on an object, and explain the results in the object's change of motion	
a. Predict and evaluate the movement of an object by examining the forces applied to it	**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 **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
b. Use mathematical expressions to describe the movement of an object	**Interpretation of Data:** Identify and/or use a simple (e.g., linear) mathematical relationship between data
c. Develop and design a scientific investigation to collect and analyze speed and acceleration data to determine the net forces acting on a moving object	**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 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 1: Physical 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
GLE 2. There are different forms of energy, and those forms of energy can be changed from one form to another—but total energy is conserved	
a. Gather, analyze, and interpret data to describe the different forms of energy and energy transfer	**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
b. Develop a research-based analysis of different forms of energy and energy transfer	

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 1: Physical Science	
c. Use research-based models to describe energy transfer mechanisms, and predict amounts of energy transferred	**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 Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models Identify strengths and weaknesses in one or more models
GLE 3. Distinguish between physical and chemical changes, noting that mass is conserved during any change	
a. Identify the distinguishing characteristics between a chemical and a physical change	
b. Gather, analyze, and interpret data on physical and chemical changes	**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
c. Gather, analyze, and interpret data that show mass is conserved in a given chemical or physical change	**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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 1: Physical Science	
	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
d. Identify evidence that suggests that matter is always conserved in physical and chemical changes	
e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate physical and chemical changes	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 1: Physical Science	
GLE 4. Recognize that waves such as electromagnetic, sound, seismic, and water have common characteristics and unique properties	
a. Compare and contrast different types of waves	
b. Describe for various waves the amplitude, frequency, wavelength, and speed	
c. Describe the relationship between pitch and frequency in sound	
d. Develop and design a scientific investigation regarding absorption, reflection, and refraction of light	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design Identify a control in an experiment

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 2: Life Science	
GLE 1. Human activities can deliberately or inadvertently alter ecosystems and their resiliency	
a. Develop, communicate, and justify an evidence-based scientific example of how humans can alter ecosystems	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data about human impact on local ecosystems	**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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 2: Life Science	
	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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Recognize and infer bias in print and digital resources while researching an environmental issue	
d. Use technology resources such as online encyclopedias, online databases, and credible websites to locate, organize, analyze, evaluate, and synthesize information about human impact on local ecosystems	
e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate an environmental issue	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 2: Life Science	
GLE 2. Organisms reproduce and transmit genetic information (genes) to offspring, which influences individuals' traits in the next generation	
a. Develop, communicate, and justify an evidence-based scientific explanation for how genetic information is passed to the next generation	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Use direct and indirect observations, evidence, and data to support claims about genetic reproduction and traits of individuals	**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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 2: Life Science	
	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
c. Gather, analyze, and interpret data on transmitting genetic information	**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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 2: Life Science	
d. Use models and diagrams to predict the phenotype and genotype of offspring based on the genotype of the parents	**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 Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models Identify strengths and weaknesses in one or more models
e. Use computer simulations to model and predict phenotype and genotype of offspring based on the genotype of the parents	

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 3: Earth Systems Science	
GLE 1. Weather is a result of complex interactions of Earth's atmosphere, land and water, that are driven by energy from the sun, and can be predicted and described through complex models	
a. Differentiate between basic and severe weather conditions, and develop an appropriate action plan for personal safety and the safety of others	
b. Observe and gather data for various weather conditions and compare to historical data for that date and location	**Scientific Investigation:** Understand the methods and tools used in a simple experiment Understand a simple experimental design
c. Use models to develop and communicate a weather prediction	**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 Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models Identify strengths and weaknesses in one or more models
GLE 2. Earth has a variety of climates defined by average temperature, precipitation, humidity, air pressure, and wind that have changed over time in a particular location	
a. Develop, communicate and justify an evidence-based scientific explanation to account for Earth's different climates	**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

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 3: Earth Systems Science	
	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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Research and evaluate direct and indirect evidence to explain how climates vary from one location to another on Earth	**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 **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
c. Examine, evaluate, and question information from a variety of sources and media to investigate how climates vary from one location to another on Earth	**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 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 3: Earth Systems Science	
	Evaluation of Models, Inferences, and Experimental Results: Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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
GLE 3. The solar system is comprised of various objects that orbit the Sun and are classified based on their characteristics	
a. Construct a scale model of the solar system, and use it to explain the motion of objects in the system such a planets, Sun, Moons, asteroids, comets, and dwarf planets	
b. Describe methods and equipment used to explore the solar system and beyond	
c. Design an investigation that involves direct observation of objects in the sky, and analyze and explain results	**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
d. Research, critique, and communicate scientific theories that explain how the solar system was formed	

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 3: Earth Systems Science	
e. Use computer data sets and simulations to explore objects in the solar system	
f. Recognize that mathematical models are used to predict orbital paths and events	**Interpretation of Data:** Identify and/or use a simple (e.g., linear) mathematical relationship between data
GLE 4. The relative positions and motions of Earth, Moon, and Sun can be used to explain observable effects such as seasons, eclipses, and Moon phases	
a. Develop, communicate, and justify an evidence-based explanation using relative positions of Earth, Moon, and Sun to explain the following natural phenomenon: 1. Tides 2. Eclipses of the Sun and Moon 3. Different shapes of the Moon as viewed from Earth	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion

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TABLE 3C

COLORADO Science Grade 8 Academic Standards	EXPLORE Science College Readiness Standards
Standard 3: Earth Systems Science	
b. Analyze and interpret data to explain why we have seasons	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Use models to explain the relative motions of Earth, Moon, and Sun over time	**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 Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models Identify strengths and weaknesses in one or more models

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
GLE 1. Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion—but have limitations	
a. Gather, analyze and interpret data and create graphs regarding position, velocity and acceleration of moving objects	**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
b. Develop, communicate and justify an evidence-based analysis of the forces acting on an object and the resultant acceleration produced by a net force	**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 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical 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 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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
c. Develop, communicate and justify an evidence-based scientific prediction regarding the effects of the action-reaction force pairs on the motion of two interacting objects	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
d. Examine the effect of changing masses and distance when applying Newton's law of universal gravitation to a system of two bodies	
e. Identify the limitations of Newton's laws in extreme situations	
GLE 2. Matter has definite structure that determines characteristic physical and chemical properties	
a. Develop, communicate, and justify an evidence-based scientific explanation supporting the current model of an atom	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Gather, analyze and interpret data on chemical and physical properties of elements such as density, melting point, boiling point, and conductivity	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
	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
c. Use characteristic physical and chemical properties to develop predictions and supporting claims about elements' positions on the periodic table	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
	Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
d. Develop a model that differentiates atoms and molecules, elements and compounds, and pure substances and mixtures	**Evaluation of Models, Inferences, and Experimental Results:** Identify key issues or assumptions in a model
GLE 3. Matter can change form through chemical or nuclear reactions abiding by the laws of conservation of mass and energy	
a. Recognize, analyze, interpret, and balance chemical equations (synthesis, decomposition, combustion, and replacement) or nuclear equations (fusion and fission)	
b. Predict reactants and products for different types of chemical and nuclear reactions	
c. Predict and calculate the amount of products produced in a chemical reaction based on the amount of reactants	
d. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the conservation of mass and energy	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
GLE 4. Atoms bond in different ways to form molecules and compounds that have definite properties	
a. Develop, communicate, and justify an evidence-based scientific explanation supporting the current models of chemical bonding	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Gather, analyze, and interpret data on chemical and physical properties of different compounds such as density, melting point, boiling point, pH, and conductivity	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
	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
c. Use characteristic physical and chemical properties to develop predictions and supporting claims about compounds' classification as ionic, polar or covalent	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
d. Describe the role electrons play in atomic bonding	
e. Predict the type of bonding that will occur among elements based on their position in the periodic table	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
GLE 5. Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined	
a. Develop, communicate, and justify an evidence-based scientific explanation regarding the potential and kinetic nature of mechanical energy	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
b. Use appropriate measurements, equations and graphs to gather, analyze, and interpret data on the quantity of energy in a system or an object	**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 Identify and/or use a simple (e.g., linear) mathematical relationship between data **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
c. Use direct and indirect evidence to develop predictions of the types of energy associated with objects	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
	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
d. Identify different energy forms, and calculate their amounts by measuring their defining characteristics	
GLE 6. When energy changes form, it is neither created not destroyed; however, because some is necessarily lost as heat, the amount of energy available to do work decreases	
a. Use direct and indirect evidence to develop and support claims about the conservation of energy in a variety of systems, including transformations to heat	**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
b. Evaluate the energy conversion efficiency of a variety of energy transformations	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 1: Physical Science	
c. Describe energy transformations both quantitatively and qualitatively	
d. Differentiate among the characteristics of mechanical and electromagnetic waves that determine their energy	
e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate energy conservation and loss	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
GLE 1. Matter tends to be cycled within an ecosystem, while energy is transformed and eventually exits an ecosystem	
a. Analyze how energy flows through trophic levels	
b. Evaluate the potential ecological impacts of a plant-based or meat-based diet	
c. Analyze and interpret data from experiments on ecosystems where matter such as fertilizer has been added or withdrawn such as through drought	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
d. Develop, communicate, and justify an evidence-based scientific explanation showing how ecosystems follow the laws of conservation of matter and energy	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
	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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
e. Define and distinguish between matter and energy, and how they are cycled or lost through life processes	
f. Describe how carbon, nitrogen, phosphorus, and water cycles work	
g. Use computer simulations to analyze how energy flows through trophic levels	
GLE 2. The size and persistence of populations depend on their interactions with each other and on the abiotic factors in an ecosystem	
a. Analyze and interpret data about the impact of removing keystone species from an ecosystem or introducing non-native species into an ecosystem	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
b. Describe or evaluate communities in terms of primary and secondary succession as they progress over time	
c. Evaluate data and assumptions regarding different scenarios for future human population growth and their projected consequences	**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)

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
	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 **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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
d. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate ecosystem interactions	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
GLE 3. Cellular metabolic activities are carried out by biomolecules produced by organisms	
a. Identify biomolecules and their precursors/building blocks	
b. Develop, communicate, and justify an evidence-based explanation that biomolecules follow the same rules of chemistry as any other molecule	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
c. Develop, communicate, and justify an evidence-based explanation regarding the optimal conditions required for enzyme activity	**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

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
	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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
d. Infer the consequences to organisms of suboptimal enzyme function—such as altered blood pH or high fever—using direct and indirect evidence	
e. Analyze and interpret data on the body's utilization of carbohydrates, lipids, and proteins	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
GLE 4. The energy for life primarily derives from the interrelated processes of photosynthesis and cellular respiration. Photosynthesis transforms the sun's light energy into the chemical energy of molecular bonds. Cellular respiration allows cells to utilize chemical energy when these bonds are broken.	
a. Develop, communicate, and justify an evidence-based scientific explanation the optimal environment for photosynthetic activity	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Discuss the interdependence of autotrophic and heterotrophic life forms such as depicting the flow of a carbon atom from the atmosphere, to a leaf, through the food chain, and back to the atmosphere	
c. Explain how carbon compounds are gradually oxidized to provide energy in the form of adenosine triphosphate (ATP), which drives many chemical reactions in the cell	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
GLE 5. Cells use passive and active transport of substances across membranes to maintain relatively stable intracellular environments	
a. Analyze and interpret data to determine the energy requirements and/or rates of substance transport across cell membranes	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
b. Compare organisms that live in freshwater and marine environments, and identify the challenges of osmotic regulation for these organisms	
c. Diagram the cell membrane schematically, and highlight receptor proteins as targets of hormones, neurotransmitters, or drugs that serve as active links between intra and extracellular environments	
d. Use tools to gather, view, analyze, and interpret data produced during scientific investigations that involve passive and active transport	**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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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life 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
e. Use computer simulations and models to analyze cell transport mechanisms	
GLE 6. Cells, tissues, organs, and organ systems maintain relatively stable internal environments, even in the face of changing external environments	
a. Discuss how two or more body systems interact to promote health for the whole organism	
b. Analyze and interpret data on homeostatic mechanisms using direct and indirect evidence to develop and support claims about the effectiveness of feedback loops to maintain homeostasis	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Distinguish between causation and correlation in epidemiological data, such as examining scientifically valid evidence regarding disrupted homeostasis in particular diseases	
d. Use computer simulations and models of homeostatic mechanisms	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
GLE 7. Physical and behavioral characteristics of an organism are influenced to varying degrees by heritable genes, many of which encode instructions for the production of proteins	
a. Analyze and interpret data that genes are expressed portions of DNA	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
b. Analyze and interpret data on the processes of DNA replication, transcription, translation, and gene regulation, and show how these processes are the same in all organisms	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Recognize that proteins carry out most cell activities and mediate the effect of genes on physical and behavioral traits in an organism	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
d. Evaluate data showing that offspring are not clones of their parents or siblings due to the meiotic processes of independent assortment of chromosomes, crossing over, and mutations	**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 **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
e. Explain using examples how genetic mutations can benefit, harm, or have neutral effects on an organism	
GLE 8. Multicellularity makes possible a division of labor at the cellular level through the expression of select genes, but not the entire genome	
a. Develop, communicate, and justify an evidence-based scientific explanation of how cells form specialized tissues due to the expression of some genes and not 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

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life 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 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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data that show most eukaryotic deoxyribonucleic acid (DNA) does not actively code for proteins within cells	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Develop, communicate, and justify an evidence-based scientific explanation for how a whole organism can be cloned from a differentiated—or adult—cell	**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

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
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d. Analyze and interpret data on medical problems using direct and indirect evidence in developing and supporting claims that genetic mutations and cancer are brought about by exposure to environmental toxins, radiation, or smoking	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
GLE 9. Evolution occurs as the heritable characteristics of populations change across generations and can lead populations to become better adapted to their environment	
a. Develop, communicate, and justify an evidence-based scientific explanation for how Earth's diverse life forms today evolved from common ancestors	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret multiple lines of evidence supporting the idea that all species are related by common ancestry such as molecular studies, comparative anatomy, biogeography, fossil record and embryology	**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

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
	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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Analyze and interpret data suggesting that over geologic time, discrete bursts of rapid genetic changes and gradual changes have resulted in speciation	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
d. Analyze and interpret data on how evolution can be driven by three key components of natural selection—heritability, genetic variation, and differential survival and reproduction	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 2: Life Science	
e. Generate a model—an evolutionary tree—showing how a group of organisms is most likely diverged from common ancestry	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
GLE 1. The history of the universe, solar system and Earth can be inferred from evidence left from past events	
a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions about Earth's history	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data regarding Earth's history using direct and indirect evidence	**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

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
	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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Analyze and interpret data regarding the history of the universe using direct and indirect evidence	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
d. Seek, evaluate, and use a variety of specialized resources available from libraries, the Internet, and the community to find scientific information on Earth's history	
e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the history of the universe, solar system and Earth	**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 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
	Evaluation of Models, Inferences, and Experimental Results: Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models 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
GLE 2. As part of the solar system, Earth interacts with various extraterrestrial forces and energies such as gravity, solar phenomena, electromagnetic radiation, and impact events that influence the planet's geosphere, atmosphere, and biosphere in a variety of ways	
a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions around the extraterrestrial forces and energies that influence Earth	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
b. Analyze and interpret data regarding extraterrestrial forces and energies	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Clearly identify assumptions behind conclusions regarding extraterrestrial forces and energies and provide feedback on the validity of alternative explanations	**Evaluation of Models, Inferences, and Experimental Results:** Identify key issues or assumptions in a model
d. Use specific equipment, technology, and resources such as satellite imagery, global positioning systems (GPS), global information systems (GIS), telescopes, video and image libraries, and computers to explore the universe)	
GLE 3. The theory of plate tectonics helps explain geological, physical, and geographical features of Earth	
a. Develop, communicate, and justify an evidence-based scientific explanation about the theory of plate tectonics and how it can be used to understand geological, physical, and geographical features of Earth	**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 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems 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 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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data on plate tectonics and the geological, physical, and geographical features of Earth	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Understand the role plate tectonics has had with respect to long-term global changes in Earth's systems such as continental buildup, glaciations, sea-level fluctuations, and climate change	
d. Investigate and explain how new conceptual interpretations of data and innovative geophysical technologies led to the current theory of plate tectonics	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
GLE 4. Climate is the result of energy transfer among interactions of the atmosphere, hydrosphere, geosphere, and biosphere	
a. Develop, communicate, and justify an evidence-based scientific explanation that shows climate is a result of energy transfer among the atmosphere, hydrosphere, geosphere and biosphere	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data on Earth's climate	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
	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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Explain how a combination of factors such as Earth's tilt, seasons, geophysical location, proximity to oceans, landmass location, latitude, and elevation determine a location's climate	
d. Identify mechanisms in the past and present that have changed Earth's climate	
e. Analyze the evidence and assumptions regarding climate change	**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 **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
f. Interpret evidence from weather stations, buoys, satellites, radars, ice and ocean sediment cores, tree rings, cave deposits, native knowledge, and other sources in relation to climate change	**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

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COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
	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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
GLE 5. There are costs, benefits, and consequences of exploration, development, and consumption of renewable and nonrenewable resources	
a. Develop, communicate, and justify an evidence-based scientific explanation regarding the costs and benefits of exploration, development, and consumption of renewable and nonrenewable resources	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Evaluate positive and negative impacts on the geosphere, atmosphere, hydrosphere, and biosphere in regards to resource use	
c. Create a plan to reduce environmental impacts due to resource consumption	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
d. Analyze and interpret data about the effect of resource consumption and development on resource reserves to draw conclusions about sustainable use	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
GLE 6. The interaction of Earth's surface with water, air, gravity, and biological activity causes physical and chemical changes	
a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions regarding the interaction of Earth's surface with water, air, gravity, and biological activity	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
	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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data, maps, and models concerning the direct and indirect evidence produced by physical and chemical changes that water, air, gravity, and biological activity create	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Evaluate negative and positive consequences of physical and chemical changes on the geosphere	
d. Use remote sensing and geographic information systems (GIS) data to interpret landforms and landform impact on human activity	

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
GLE 7. Natural hazards have local, national and global impacts such as volcanoes, earthquakes, tsunamis, hurricanes, and thunderstorms	
a. Develop, communicate, and justify an evidence-based scientific explanation regarding natural hazards, and explain their potential local and global impacts	**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 Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
b. Analyze and interpret data about natural hazards using direct and indirect evidence	**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

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TABLE 3D

COLORADO Science High School Academic Standards	EXPLORE, PLAN, and ACT Science College Readiness Standards
Standard 3: Earth Systems Science	
	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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model
c. Make predictions and draw conclusions about the impact of natural hazards on human activity—locally and globally	**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 **Evaluation of Models, Inferences, and Experimental Results:** Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model

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TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 1: Physical Science	
GLE 1. Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion—but have limitations	
a. Gather, analyze and interpret data and create graphs regarding position, velocity and acceleration of moving objects	Find several pieces of information in one or two graphics Fill in one or two pieces of information that are missing from a graphic Identify trends shown in one or two straightforward graphics Compare information and trends shown in one or two straightforward graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or two straightforward graphics
b. Develop, communicate and justify an evidence-based analysis of the forces acting on an object and the resultant acceleration produced by a net force	Fill in one or two pieces of information that are missing from a graphic Identify trends shown in one or two straightforward graphics Summarize information from one or more detailed graphics Apply information from one or more complicated graphics to specific situations Use the information to make decisions
c. Develop, communicate and justify an evidence-based scientific prediction regarding the effects of the action-reaction force pairs on the motion of two interacting objects	Fill in one or two pieces of information that are missing from a graphic 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 Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
d. Examine the effect of changing masses and distance when applying Newton's law of universal gravitation to a system of two bodies	
e. Identify the limitations of Newton's laws in extreme situations	
GLE 2. Matter has definite structure that determines characteristic physical and chemical properties	
a. Develop, communicate, and justify an evidence-based scientific explanation supporting the current model of an atom	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 1: Physical Science	
b. Gather, analyze and interpret data on chemical and physical properties of elements such as density, melting point, boiling point, and conductivity	Find several pieces of information in one or two graphics Fill in one or two pieces of information that are missing from a graphic Identify trends shown in one or two straightforward graphics Draw conclusions based on one complicated graphic or several related graphics
c. Use characteristic physical and chemical properties to develop predictions and supporting claims about elements' positions on the periodic table	
d. Develop a model that differentiates atoms and molecules, elements and compounds, and pure substances and mixtures	
GLE 3. Matter can change form through chemical or nuclear reactions abiding by the laws of conservation of mass and energy	
a. Recognize, analyze, interpret, and balance chemical equations (synthesis, decomposition, combustion, and replacement) or nuclear equations (fusion and fission)	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Draw conclusions based on one complicated graphic or several related graphics
b. Predict reactants and products for different types of chemical and nuclear reactions	
c. Predict and calculate the amount of products produced in a chemical reaction based on the amount of reactants	
d. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the conservation of mass and energy	
GLE 4. Atoms bond in different ways to form molecules and compounds that have definite properties	
a. Develop, communicate, and justify an evidence-based scientific explanation supporting the current models of chemical bonding	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Gather, analyze, and interpret data on chemical and physical properties of different compounds such as density, melting point, boiling point, pH, and conductivity	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or more detailed graphics

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 1: Physical Science	
c. Use characteristic physical and chemical properties to develop predictions and supporting claims about compounds' classification as ionic, polar or covalent	Find one or two pieces of information in a graphic Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
d. Describe the role electrons play in atomic bonding	
e. Predict the type of bonding that will occur among elements based on their position in the periodic table	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Draw conclusions based on one complicated graphic or several related graphics
GLE 5. Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined	
a. Develop, communicate, and justify an evidence-based scientific explanation regarding the potential and kinetic nature of mechanical energy	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Use appropriate measurements, equations and graphs to gather, analyze, and interpret data on the quantity of energy in a system or an object	Find several pieces of information in one or two graphics Fill in one or two pieces of information that are missing from a graphic Identify trends shown in one or more detailed or complicated graphics Draw conclusions based on one complicated graphic or several related graphics
c. Use direct and indirect evidence to develop predictions of the types of energy associated with objects	Find one or two pieces of information in a graphic Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
d. Identify different energy forms, and calculate their amounts by measuring their defining characteristics	
GLE 6. When energy changes form, it is neither created not destroyed; however, because some is necessarily lost as heat, the amount of energy available to do work decreases	
a. Use direct and indirect evidence to develop and support claims about the conservation of energy in a variety of systems, including transformations to heat	Find one or two pieces of information in a graphic Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	**WorkKeys *Locating Information* Skills**
Standard 1: Physical Science	
b. Evaluate the energy conversion efficiency of a variety of energy transformations	
c. Describe energy transformations both quantitatively and qualitatively	
d. Differentiate among the characteristics of mechanical and electromagnetic waves that determine their energy	
e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate energy conservation and loss	

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
GLE 1. Matter tends to be cycled within an ecosystem, while energy is transformed and eventually exits an ecosystem	
a. Analyze how energy flows through trophic levels	
b. Evaluate the potential ecological impacts of a plant-based or meat-based diet	
c. Analyze and interpret data from experiments on ecosystems where matter such as fertilizer has been added or withdrawn such as through drought	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
d. Develop, communicate, and justify an evidence-based scientific explanation showing how ecosystems follow the laws of conservation of matter and energy	
e. Define and distinguish between matter and energy, and how they are cycled or lost through life processes	
f. Describe how carbon, nitrogen, phosphorus, and water cycles work	
g. Use computer simulations to analyze how energy flows through trophic levels	
GLE 2. The size and persistence of populations depend on their interactions with each other and on the abiotic factors in an ecosystem	
a. Analyze and interpret data about the impact of removing keystone species from an ecosystem or introducing non-native species into an ecosystem	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
b. Describe or evaluate communities in terms of primary and secondary succession as they progress over time	
c. Evaluate data and assumptions regarding different scenarios for future human population growth and their projected consequences	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
d. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate ecosystem interactions	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics
GLE 3. Cellular metabolic activities are carried out by biomolecules produced by organisms	
a. Identify biomolecules and their precursors/building blocks	
b. Develop, communicate, and justify an evidence-based explanation that biomolecules follow the same rules of chemistry as any other molecule	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
c. Develop, communicate, and justify an evidence-based explanation regarding the optimal conditions required for enzyme activity	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
d. Infer the consequences to organisms of suboptimal enzyme function—such as altered blood pH or high fever—using direct and indirect evidence	Find several pieces of information in one or two graphics Sort through distracting information Identify trends shown in one or more detailed or complicated graphics Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics
e. Analyze and interpret data on the body's utilization of carbohydrates, lipids, and proteins	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
GLE 4. The energy for life primarily derives from the interrelated processes of photosynthesis and cellular respiration. Photosynthesis transforms the sun's light energy into the chemical energy of molecular bonds. Cellular respiration allows cells to utilize chemical energy when these bonds are broken.	
a. Develop, communicate, and justify an evidence-based scientific explanation the optimal environment for photosynthetic activity	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Discuss the interdependence of autotrophic and heterotrophic life forms such as depicting the flow of a carbon atom from the atmosphere, to a leaf, through the food chain, and back to the atmosphere	
c. Explain how carbon compounds are gradually oxidized to provide energy in the form of adenosine triphosphate (ATP), which drives many chemical reactions in the cell	
GLE 5. Cells use passive and active transport of substances across membranes to maintain relatively stable intracellular environments	
a. Analyze and interpret data to determine the energy requirements and/or rates of substance transport across cell membranes	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
b. Compare organisms that live in freshwater and marine environments, and identify the challenges of osmotic regulation for these organisms	
c. Diagram the cell membrane schematically, and highlight receptor proteins as targets of hormones, neurotransmitters, or drugs that serve as active links between intra and extracellular environments	
d. Use tools to gather, view, analyze, and interpret data produced during scientific investigations that involve passive and active transport	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or more detailed graphics

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
e. Use computer simulations and models to analyze cell transport mechanisms	
GLE 6. Cells, tissues, organs, and organ systems maintain relatively stable internal environments, even in the face of changing external environments	
a. Discuss how two or more body systems interact to promote health for the whole organism	
b. Analyze and interpret data on homeostatic mechanisms using direct and indirect evidence to develop and support claims about the effectiveness of feedback loops to maintain homeostasis	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or more detailed graphics
c. Distinguish between causation and correlation in epidemiological data, such as examining scientifically valid evidence regarding disrupted homeostasis in particular diseases	
d. Use computer simulations and models of homeostatic mechanisms	
GLE 7. Physical and behavioral characteristics of an organism are influenced to varying degrees by heritable genes, many of which encode instructions for the production of proteins	
a. Analyze and interpret data that genes are expressed portions of DNA	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
b. Analyze and interpret data on the processes of DNA replication, transcription, translation, and gene regulation, and show how these processes are the same in all organisms	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
c. Recognize that proteins carry out most cell activities and mediate the effect of genes on physical and behavioral traits in an organism	
d. Evaluate data showing that offspring are not clones of their parents or siblings due to the meiotic processes of independent assortment of chromosomes, crossing over, and mutations	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics
e. Explain using examples how genetic mutations can benefit, harm, or have neutral effects on an organism	
GLE 8. Multicellularity makes possible a division of labor at the cellular level through the expression of select genes, but not the entire genome	
a. Develop, communicate, and justify an evidence-based scientific explanation of how cells form specialized tissues due to the expression of some genes and not others	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Analyze and interpret data that show most eukaryotic deoxyribonucleic acid (DNA) does not actively code for proteins within cells	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Develop, communicate, and justify an evidence-based scientific explanation for how a whole organism can be cloned from a differentiated—or adult—cell	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
d. Analyze and interpret data on medical problems using direct and indirect evidence in developing and supporting claims that genetic mutations and cancer are brought about by exposure to environmental toxins, radiation, or smoking	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or more detailed graphics
GLE 9. Evolution occurs as the heritable characteristics of populations change across generations and can lead populations to become better adapted to their environment	
a. Develop, communicate, and justify an evidence-based scientific explanation for how Earth's diverse life forms today evolved from common ancestors	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Analyze and interpret multiple lines of evidence supporting the idea that all species are related by common ancestry such as molecular studies, comparative anatomy, biogeography, fossil record and embryology	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Analyze and interpret data suggesting that over geologic time, discrete bursts of rapid genetic changes and gradual changes have resulted in speciation	Find one or two pieces of information in a graphic Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 2: Life Science	
d. Analyze and interpret data on how evolution can be driven by three key components of natural selection—heritability, genetic variation, and differential survival and reproduction	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
e. Generate a model—an evolutionary tree—showing how a group of organisms is most likely diverged from common ancestry	

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 3: Earth Systems Science	
GLE 1. The history of the universe, solar system and Earth can be inferred from evidence left from past events	
a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions about Earth's history	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Analyze and interpret data regarding Earth's history using direct and indirect evidence	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Analyze and interpret data regarding the history of the universe using direct and indirect evidence	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
d. Seek, evaluate, and use a variety of specialized resources available from libraries, the Internet, and the community to find scientific information on Earth's history	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the history of the universe, solar system and Earth	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 3: Earth Systems Science	
GLE 2. As part of the solar system, Earth interacts with various extraterrestrial forces and energies such as gravity, solar phenomena, electromagnetic radiation, and impact events that influence the planet's geosphere, atmosphere, and biosphere in a variety of ways	
a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions around the extraterrestrial forces and energies that influence Earth	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Analyze and interpret data regarding extraterrestrial forces and energies	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Clearly identify assumptions behind conclusions regarding extraterrestrial forces and energies and provide feedback on the validity of alternative explanations	Find several pieces of information in one or two graphics Identify trends shown in one or two straightforward graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions Summarize information from one or more detailed graphics
d. Use specific equipment, technology, and resources such as satellite imagery, global positioning systems (GPS), global information systems (GIS), telescopes, video and image libraries, and computers to explore the universe)	
GLE 3. The theory of plate tectonics helps explain geological, physical, and geographical features of Earth	
a. Develop, communicate, and justify an evidence-based scientific explanation about the theory of plate tectonics and how it can be used to understand geological, physical, and geographical features of Earth	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 3: Earth Systems Science	
b. Analyze and interpret data on plate tectonics and the geological, physical, and geographical features of Earth	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Understand the role plate tectonics has had with respect to long-term global changes in Earth's systems such as continental buildup, glaciations, sea-level fluctuations, and climate change	
d. Investigate and explain how new conceptual interpretations of data and innovative geophysical technologies led to the current theory of plate tectonics	
GLE 4. Climate is the result of energy transfer among interactions of the atmosphere, hydrosphere, geosphere, and biosphere	
a. Develop, communicate, and justify an evidence-based scientific explanation that shows climate is a result of energy transfer among the atmosphere, hydrosphere, geosphere and biosphere	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Analyze and interpret data on Earth's climate	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Explain how a combination of factors such as Earth's tilt, seasons, geophysical location, proximity to oceans, landmass location, latitude, and elevation determine a location's climate	
d. Identify mechanisms in the past and present that have changed Earth's climate	
e. Analyze the evidence and assumptions regarding climate change	Find several pieces of information in one or two 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

TABLE 3E

COLORADO Science High School Academic Standards	WorkKeys *Locating Information* Skills
Standard 3: Earth Systems Science	
f. Interpret evidence from weather stations, buoys, satellites, radars, ice and ocean sediment cores, tree rings, cave deposits, native knowledge, and other sources in relation to climate change	Find several pieces of information in one or two 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
GLE 5. There are costs, benefits, and consequences of exploration, development, and consumption of renewable and nonrenewable resources	
a. Develop, communicate, and justify an evidence-based scientific explanation regarding the costs and benefits of exploration, development, and consumption of renewable and nonrenewable resources	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Evaluate positive and negative impacts on the geosphere, atmosphere, hydrosphere, and biosphere in regards to resource use	
c. Create a plan to reduce environmental impacts due to resource consumption	
d. Analyze and interpret data about the effect of resource consumption and development on resource reserves to draw conclusions about sustainable use	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
GLE 6. The interaction of Earth's surface with water, air, gravity, and biological activity causes physical and chemical changes	
a. Develop, communicate, and justify an evidence-based scientific explanation addressing questions regarding the interaction of Earth's surface with water, air, gravity, and biological activity	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions

TABLE 3E

COLORADO Science High School Academic Standards	**WorkKeys *Locating Information* Skills**
Standard 3: Earth Systems Science	
b. Analyze and interpret data, maps, and models concerning the direct and indirect evidence produced by physical and chemical changes that water, air, gravity, and biological activity create	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Evaluate negative and positive consequences of physical and chemical changes on the geosphere	
d. Use remote sensing and geographic information systems (GIS) data to interpret landforms and landform impact on human activity	
GLE 7. Natural hazards have local, national and global impacts such as volcanoes, earthquakes, tsunamis, hurricanes, and thunderstorms	
a. Develop, communicate, and justify an evidence-based scientific explanation regarding natural hazards, and explain their potential local and global impacts	Apply information from one or more complicated graphics to specific situations Draw conclusions based on one complicated graphic or several related graphics Summarize information from one or more detailed graphics Use the information to make decisions
b. Analyze and interpret data about natural hazards using direct and indirect evidence	Find several pieces of information in one or two graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics Understand how graphics are related to each other Draw conclusions based on one complicated graphic or several related graphics Use the information to make decisions
c. Make predictions and draw conclusions about the impact of natural hazards on human activity—locally and globally	Apply information from one or more complicated graphics to specific situations Use the information to make decisions Draw conclusions based on one complicated graphic or several related graphics