STATE MATCH

New Mexico Content Standards

Language Arts, Mathematics, and Science
Grades 8–12

and

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

May 2009

©2009 by ACT, Inc.
All rights reserved.

ACT®

About This Report

EXECUTIVE SUMMARY

(pp. 1–5)

This portion summarizes the findings of the alignment between New Mexico's Content Standards and ACT's Educational Planning and Assessment System (EPAS™) tests—EXPLORE® (8th and 9th grades), PLAN® (10th grade), and the ACT® (11th and 12th grades)—and ACT's WorkKeys® assessments (Reading for Information and Applied Mathematics). It also presents ACT's involvement in meeting NCLB requirements and includes additional information about the unique programs and services ACT can provide to New Mexico.

SECTION A

(pp. 6–10)

This section provides tables by content area (Language Arts, Mathematics, and Science), listing the precise number of New Mexico Content Standards measured by ACT's EPAS tests and/or WorkKeys assessments by grade level.

SECTION B

(pp. 11–52)

All New Mexico Content Standards are listed here; each one highlighted is measured by ACT's EPAS tests and/or WorkKeys assessments. Underlined science content indicates that the content topics are included in, but not directly measured by, ACT's EPAS Science tests. New Mexico Standards listed here are from the New Mexico Content Standards as presented on the New Mexico Department of Education's website in April 2009:

New Mexico Content Standards	Document Dated
Language Arts, Grade 8	2000
Grades 9–12	2008
Mathematics	2008
Science	2003

SECTION C

(pp. 53–64)

ACT's College Readiness Standards™ appear here. Highlighting indicates that a statement reflects one or more statements in the New Mexico Content Standards. College Readiness Standards not highlighted are not addressed in the New Mexico Content Standards.

SECTION D
(pp. 65–66)

WorkKeys skills appear here. Highlighting indicates that a statement reflects one or more statements in the New Mexico Content Standards. Skills not highlighted are not addressed in the New Mexico Content Standards.

A supplement that identifies the specific ACT College Readiness Standard(s) and WorkKeys Skill(s) corresponding to each New Mexico Content Standard in a side-by-side format is available at **www.act.org/education/statematch**.

ACT

Executive Summary

We at ACT believe our programs offer many advantages to New Mexico students and educators, and this report offers strong evidence for this belief. This alignment analysis clearly answers four critical questions:

1. To what extent do ACT's Educational Planning and Assessment System (EPAS™) tests—EXPLORE® (8th and 9th grades), PLAN® (10th grade), and the ACT® (11th and 12th grades)—and ACT's WorkKeys® assessments (Reading for Information and Applied Mathematics) measure New Mexico's Content Standards? (NOTE: WorkKeys Locating Information assessment, though outside the scope of this alignment, measures many important skills regarding a student's ability to interpret and analyze graphic material in all areas of the curriculum.)
2. Can the results from ACT's testing programs be used to meet New Mexico's NCLB requirement?
3. Why should New Mexico choose EPAS?
4. Why choose to include WorkKeys assessments?

ACT'S TESTS MEASURE MANY IMPORTANT NEW MEXICO CONTENT STANDARDS IN LANGUAGE ARTS, MATHEMATICS, AND SCIENCE.

1. Match Results: Comparisons conducted by our content specialists show that ACT's English, Reading, Writing, Mathematics, and Science tests and WorkKeys Reading for Information and Applied Mathematics assessments measure most New Mexico Language Arts, Mathematics, and Science Content Standards:

- Language Arts Grade 8: 3 out of 3 Strands
  High School: 6 out of 9 Strands

  Most New Mexico Language Arts Content Standards are covered by ACT's English, Reading, and Writing tests and WorkKeys Reading for Information (RI) assessment.

- Mathematics Grade 8: 5 out of 5 Strands
  High School: 3 out of 3 Strands

  Almost all New Mexico Mathematics Content Standards are covered by ACT's Mathematics tests and WorkKeys Applied Mathematics (AM) assessment.

- Science: Process Strands: 1 out of 1
  (Content Strands: 3 out of 3)

  Almost all New Mexico Science Content Standards are covered by ACT's Science tests.

  (A note about science content: ACT's Science tests present content from biology, chemistry, physics, and Earth/space sciences. Although content knowledge in these content areas is needed to answer some of the test questions, the test questions emphasize scientific reasoning and are based in experimental science contexts. Factual content knowledge, although needed to answer some of the test questions, is not systematically sampled from the full content knowledge domain. Therefore, each ACT Science Test covers some, but not all, of

the discrete science content knowledge specifically described in the New Mexico Science Content Standards.

To emphasize the point that content is included, but not necessarily covered in its entirety on every test form, science content match results appear in parentheses in Section A of this document (which describes the number of New Mexico standards measured by ACT's tests), and are underlined rather than highlighted in Section B. Our goal here is to clearly communicate that science content will be included, but each specific content topic will not be covered consistently enough for inferences to be made about student proficiency in all areas.)

Most exceptions to a match between ACT's tests and the New Mexico Content Standards arise from standards not being assessable in group settings, standards that are personal in nature, and standards requiring measurement over extended time. If additional testing is deemed necessary, ACT would be interested in working with New Mexico on developing any necessary augmentation.

2. NCLB requirement? Yes; states such as Illinois and Michigan use ACT's tests as integral components of their statewide academic assessment systems under NCLB for Grade 11 students and submit evidence of compliance with NCLB to the U.S. Department of Education (ED) for approval. Through the peer review process, the ED determines whether such evidence demonstrates that a given state's assessment system meets NCLB requirements. The more closely a state's standards align with its assessments, the more likely it is that the outcome of the NCLB peer review will be favorable. With so much at stake, states must be rigorous both in developing their academic standards and in choosing assessment instruments that will help achieve the common goal of preparing students for life after high school.

3. Why implement EXPLORE, PLAN and the ACT? ACT's EPAS tests provide a longitudinal, systematic approach to educational and career planning, assessment, instructional support, and evaluation. The system focuses on the integrated, higher-order thinking skills students develop in grades K–12 that are important for success both during and after high school.

Unlike many other large-scale assessments of academic ability, EXPLORE, PLAN, and the ACT are first and foremost achievement tests. They are measures whose tasks correspond to recognized high school learning experiences, but which at the same time do not precisely duplicate the high school curriculum. EXPLORE, PLAN, and the ACT measure not an abstract quality, such as intelligence or aptitude, but rather what students are able to do with what they have learned in school.

States and school districts choose the EPAS system because student motivation is high, and EPAS is the *only curriculum-based assessment system that measures student readiness along a continuum of empirically derived college readiness benchmarks*. ACT's College Readiness Standards are precise descriptors of the essential skills and knowledge that students need to become ready for college and career, beginning in grade 8 and continuing through grade 12. Various groups claim to describe what students truly need to know and be able to do

STATES CHOOSE ACT BECAUSE:

- **STUDENT MOTIVATION IS HIGH.**
- **ACT'S IS THE ONLY CURRICULUM-BASED ASSESSMENT SYSTEM THAT MEASURES STUDENT READINESS ALONG A CONTINUUM OF EMPIRICALLY DERIVED COLLEGE READINESS BENCHMARKS.**
- **EPAS DATA PROVIDE HELPFUL FEEDBACK FOR TEACHERS, STUDENTS, AND POLICYMAKERS TO MAKE EDUCATIONAL DECISIONS AND IDENTIFY WAYS TO IMPROVE.**

for college and/or workplace readiness. Such groups typically ask individual experts in education to gather and discuss what they feel is important for students to understand. Not surprisingly, the answers vary. In contrast, ACT defines college readiness through a unique and rigorous empirical process:

ACT BUILDS ITS DEFINITION OF COLLEGE READINESS ON A SOUND EMPIRICAL BASE:

1. **THE ACT NATIONAL CURRICULUM SURVEY**
2. **ACT'S COLLEGE READINESS BENCHMARK SCORES**
3. **ACT'S COLLEGE READINESS STANDARDS**

- **The knowledge and skills necessary for students to be ready for college-level work are empirically identified via the ACT National Curriculum Survey®.**

  ACT surveys thousands of secondary and postsecondary instructors across the nation to determine which skills and knowledge are most important at each course level and for college and work readiness. The responses drive the test specifications for EXPLORE, PLAN, and the ACT.

- **The empirically derived performance levels necessary for students to be ready to succeed in college-level work are defined in ACT's College Readiness Benchmark Scores.**

  ACT analyzed thousands of student records to identify the ACT scores associated with success in postsecondary coursework (i.e., a 50% chance of earning a B or better in credit-bearing first-year college courses): 18 for English, 22 for Math, 21 for Reading, and 24 for Science.

- **Skills and knowledge a student currently has and areas for improvement can be identified by the empirically derived ACT College Readiness Standards.**

  Using thousands of student records and responses, content and measurement experts at ACT have developed detailed statements that describe what students typically know and are able to do at different levels of test performance. These data-driven, empirically derived score descriptors articulate student achievement within various score ranges on the English, Reading, Writing, Mathematics, and Science tests on EXPLORE, PLAN, and the ACT. These statements provide specific details about students' college readiness and can be used to identify next steps for improvement.

ACT research has shown that, whether planning to enter college or workforce training programs after graduation, high school students need to be educated to a comparable level of readiness in reading and mathematics. Graduates need this level of readiness if they are to succeed in college-level courses without remediation and to enter workforce training programs ready to learn job-specific skills.

Early planning based on sound information is a key factor in helping students reach their academic and career goals. **EXPLORE** provides baseline information on the academic preparation of students that can be used to plan high school coursework. ACT's research has shown that eighth-grade academic achievement is the best predictor of college and career readiness by high school graduation. Further, improvement in eighth-grade academic achievement and being on target

ACT

for college and career readiness in eighth grade are more beneficial than any high school-level achievement enhancement.

PLAN helps tenth-grade students build a foundation for future academic and career success and provides information needed to address school districts' high-priority issues. It is a comprehensive guidance resource that helps students measure their current academic development, explore career/training options, and make plans for the remaining years of high school and post-graduation years. PLAN provides a midpoint review of students' progress toward their education and career goals while there is still time to make necessary interventions.

The ACT test assesses high school students' general educational development and provides unparalleled information about a student's readiness for entry-level college coursework and ability to make successful transitions to college and work after high school.

Each test in ACT's EPAS system also includes noncognitive measures and surveys that allow students to build relationships between their academic development, their backgrounds, and their plans.

4. Why choose to include WorkKeys assessments? Students can use WorkKeys to help determine the skill levels and education required for various jobs. Educators can use WorkKeys to ensure that students enter the work world with the foundational skills needed in any field they choose.

Further, the WorkKeys scores offer a clear way for students to demonstrate their knowledge and skills to prospective employers. WorkKeys is at the center of the nationwide Career Readiness System that links qualified individuals with employers who recognize the value of skilled job applicants. ACT's National Career Readiness Certificate (NCRC) ensures that an individual has certain foundational skills that are important across a range of positions. The NCRC is a portable credential that employees can use anywhere in the nation. Individuals seeking employment gain a competitive edge with an NCRC because they are able to provide prospective employers with clear evidence that their knowledge and skills align with the requirements of the job they are applying for. The NCRC offers job seekers, employers, and educators an easily understood, conveniently attained, and universally valued credential.

Test takers are most commonly certified in the skills areas of Applied Mathematics and Reading for Information. Higher scores qualify students for more jobs than do lower scores. New Mexico, New Jersey, Virginia, Louisiana, Kentucky, and North Carolina have already initiated certificate programs, and many other states are in the process of developing similar programs.

If the goal of high school education is to prepare students for college and career readiness, then we should be educating all high school students according to a common academic expectation, one that prepares them for both postsecondary education and the workforce. Only then—whether they are among the two-thirds

who enter college directly after graduation or those who enter workforce training programs—will they be ready for life after high school.

ACT's EPAS system and WorkKeys would not only provide important information regarding students' academic achievement relative to the New Mexico Content Standards, but EPAS offers what no other testing program can: an empirically based, time-honored measure of college and career readiness that can help New Mexico students reach their educational and career goals and help provide New Mexico High Schools with the information they need to prepare their students for college and career.

Section A: Number of New Mexico Content Standards Measured by EXPLORE, PLAN, the ACT, and WorkKeys

Table A-1a. Number of New Mexico Grade 8 Language Arts Standards Measured by EXPLORE

New Mexico Strands*	Number of New Mexico Benchmarks Measured by EXPLORE	Aspects of New Mexico Standards that are Not Measured
Reading and Listening for Comprehension	Gr 8: 2 out of 4	Listen and react to information read, heard, and viewed Gather and use information for research and other purposes
Writing and Speaking for Expression	Gr 8: 2 out of 3	Use speaking as an interpersonal communi-cation tool
Literature and Media	Gr 8: 1 out of 2	Use language, literature, and media to under-stand various social and cultural perspectives
TOTALS 3 out of 3 Strands	Gr 8: 5 out of 9	

Table A-1b. Number of New Mexico Grades 9–12 Language Arts Standards Measured by EXPLORE, PLAN, the ACT, and WorkKeys

New Mexico Strands*	Number of New Mexico Standards Measured by ACT's tests	Aspects of New Mexico Standards that are Not Measured
A: Reading	Gr 9: 3 out of 4 Gr 10: 3 out of 4 Gr 11: 3 out of 4 Gr 12: 3 out of 4	Know how to use meta-cognitive strategies
AA: Language	Gr 9: 3 out of 3 Gr 10: 3 out of 3 Gr 11: 3 out of 3 Gr 12: 3 out of 3	
B: Communication	Gr 9: 0 out of 8 Gr 10: 0 out of 8 Gr 11: 0 out of 8 Gr 12: 0 out of 8	Give spoken instructions Make oral presentations Follow spoken instructions Summarize and paraphrase information presented orally by others Participate productively in self-directed work teams for a particular purpose
C: Writing	Gr 9: 4 out of 9 Gr 10: 4 out of 9 Gr 11: 5 out of 9 Gr 12: 5 out of 9	Plan writing Cite sources properly Present written material using basic software programs Produce work-related texts

Table A-1b. Number of New Mexico Grades 9–12 Language Arts Standards Measured by EXPLORE, PLAN, the ACT, and WorkKeys		
New Mexico Strands*	**Number of New Mexico Standards Measured by ACT's tests**	**Aspects of New Mexico Standards that are Not Measured**
D: Research	Gr 9: 0 out of 5 Gr 10: 0 out of 5 Gr 11: 0 out of 5 Gr 12: 0 out of 5	Define a research topic Gather relevant information for a research topic Report research findings Write an extended research essay
E: Logic	Gr 9: 3 out of 9 Gr 10: 3 out of 9 Gr 11: 6 out of 9 Gr 12: 6 out of 9	Recognize common logical fallacies Understand the distinction between a deductive argument and an inductive argument
F: Informational Text	Gr 9: 7 out of 11 Gr 10: 7 out of 11 Gr 11: 8 out of 11 Gr 12: 8 out of 11	Synthesize information from multiple texts
G: Media	Gr 9: 0 out of 3 Gr 10: 0 out of 3 Gr 11: 0 out of 3 Gr 12: 0 out of 3	Evaluate images and other special effects used in television Evaluate the effectiveness of a particular medium Create coherent media productions
H: Literature	Gr 9: 2 out of 7 Gr 10: 2 out of 7 Gr 11: 2 out of 7 Gr 12: 2 out of 7	Demonstrate knowledge of foundational literary works Analyze foundational U.S. documents Demonstrate knowledge of the common elements of poetry Identify how elements of dramatic literature articulate a playwright's vision Analyze works of literature for what they suggest about the time period and social or cultural context in which they were written
TOTALS 6 out of 9 Strands	Gr 9: 22 out of 59 Gr 10: 22 out of 59 Gr 11: 27 out of 59 Gr 12: 27 out of 59	

*Refer to New Mexico's Language Arts Content Standards on pages 11–35

Table A-2a. Number of New Mexico Grade 8 Mathematics Standards Measured by EXPLORE		
New Mexico Grade 8 Strands*	**Number of New Mexico Standards/Benchmarks Measured by EXPLORE**	**Aspects of New Mexico Standards that are Not Measured**
Process Standards	Gr 8: 4 out of 5	Organize and consolidate their thinking through communication Communicate their mathematical thinking coherently and clearly to peers, teachers, and others Describe mathematical concepts using developmentally appropriate definitions
Content Standards		
Number and Operations	Gr 8: 3 out of 3	
Algebra	Gr 8: 4 out of 4	
Geometry	Gr 8: 4 out of 4	
Measurement	Gr 8: 2 out of 2	
Data Analysis and Probability	Gr 8: 4 out of 4	
TOTALS 5 out of 5 Content Strands	Gr 8: 17 out of 17	

Table A-2b. Number of New Mexico Grades 9–12 Mathematics Standards Measured by EXPLORE, PLAN, the ACT, and WorkKeys		
New Mexico Grades 9–12 Strands*	**Number of New Mexico Standards/Benchmarks Measured by ACT's tests**	**Aspects of New Mexico Standards that are Not Measured**
Process Standards	Gr 9–12: 4 out of 5	Organize and consolidate their thinking through communication Communicate their mathematical thinking coherently and clearly to peers, teachers, and others Describe mathematical concepts using developmentally appropriate definitions
Content Standards		
Algebra, Functions, and Graphs	Gr 9–12: 3 out of 3	
Geometry and Trigonometry	Gr 9–12: 4 out of 4	
Data Analysis and Probability	Gr 9–12: 2 out of 3	Explain the differences between various methods of data collection Describe the characteristics of well-designed and well-conducted surveys and experiments Explain the role of randomization in well-designed surveys and experiments
TOTALS 3 out of 3 Content Strands	Gr 9–12: 9 out of 10	

*Refer to New Mexico's Mathematics Content Standards on pages 36–43

	New Mexico Strands*	Number of New Mexico Benchmarks Measured by ACT's tests	Aspects of New Mexico Standards that are Not Measured
I. Scientific Thinking and Practice		Gr 8: 3 out of 3 Gr 9–12: 2 out of 3	Understand that scientific processes produce scientific knowledge that is continually evaluated, validated, revised, and rejected
	TOTALS 1 out of 1 Process Strands	Gr 8: 3 out of 3 Gr 9–12: 2 out of 3	
II. Content of Science	Physical Science	Gr 8: (3) out of (3) Gr 9–12: (3) out of (3)	
	Life Science	Gr 8: (3) out of (3) Gr 9–12: (3) out of (3)	
	Earth and Space Science	Gr 8: (2) out of (2) Gr 9–12: (2) out of (2)	
III. Science and Society		Gr 8: (0) out of (1) Gr 9–12: (0) out of (1)	Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies
	TOTALS 3 out of 3 Content Strands	Gr 8: (8) out of (9) Gr 9–12: (8) out of (9)	

Table A-3. Number of New Mexico Grades 8–12 Science Standards Measured by EXPLORE, PLAN, the ACT, and WorkKeys

*Refer to New Mexico's Science Content Standards on pages 44–52

Language Arts

New Mexico Grade 8 Language Arts
Content Standards

Strand: Reading and Listening for Comprehension

Standard I: Students will apply strategies and skills to comprehend information that is read, heard, and viewed.

Benchmark A. Listen to, read, react to, and interpret information

1. Narrate a personal account that:
   - establishes a point of view and sharpens focus
   - uses remembered feelings
   - selects details that best illuminate the topic
   - connects events to self and society
2. Interact in group activities and/or seminars to:
   - share personal reactions to questions raised
   - give reasons and cite examples from texts to support opinions
   - clarify, illustrate, or expand on a response
   - ask classmates for similar expansion
3. Compare, contrast, and evaluate for details, main ideas, themes, actions, and main character from oral selections.

Benchmark B. Gather and use information for research and other purposes

1. Use information for specific tasks by:
   - analyzing and evaluating information to extend ideas
   - analyzing and evaluating themes and central ideas in relation to personal and societal issues
   - creating a research product in both written and presentation form
2. Use images, videos, and visual representations as informational research tools.

Benchmark C. Apply critical thinking skills to analyze information

1. Create a research product in both written and presentation form by:
   - determining purpose, audience, and context
   - choosing a relevant topic
   - selecting a presentation format (e.g., video, essay, interactive technology)
   - evaluating information for extraneous detail, inconsistencies, relevant facts, and organization
   - researching and organizing information to achieve purpose using notes and memory aides to structure information
   - supporting ideas with examples, definitions, analogies, and direct references to primary and secondary sources
   - citing sources used
   - employing graphics, charts, diagrams, and graphs to enhance communication
2. Analyze the inferences and conclusions from fictional and non-fictional contexts, events, characters, settings, and themes.

Benchmark D. Demonstrate competence in the skills and strategies of the reading process

1. Analyze the purpose of the author or creator and the impact of that purpose by evaluating biases, messages, and underlying assumptions of a variety of texts and media.
2. Analyze and evaluate themes and central ideas in literary and other texts in relation to personal and societal issues.
3. Recognize when information presented in a text is new knowledge and describe how it can be used.
4. Use the various parts of a text to locate specific information (index, table of contents, glossary).
5. Identify the topic sentence in a reading selection.
6. Independently apply the reading process and strategies to a variety of literary and informational texts and use the defining features and structures of those works to understand main elements, perspective, and style.

Strand: Writing and Speaking for Expression

Standard II: Students will communicate effectively through speaking and writing.

Benchmark A. Use speaking as an interpersonal communication tool

1. Present similar content for various purposes and to different audiences showing appropriate changes in delivery.
2. Create and present arguments that persuade by:
   - engaging the audience by establishing a context, creating a persona, and developing interest
   - developing an idea that makes a clear and informed conclusion
   - arranging details, reasons, and examples persuasively
   - anticipating and addressing reader/listener concerns and counter-arguments

3. Identify formal and informal speaking contexts that are reflected in slang, jargon, and different language styles.

Benchmark B. Apply grammatical and language conventions to communicate

1. Use correct and varied sentence types and sentence openings.
2. Identify and use parallelism to present ideas in a series.
3. Juxtapose items for emphasis.
4. Use subordination, coordination, apposition, and other devices to indicate the relationship between ideas.
5. Evaluate the use of dialects in standard and non-standard English.
6. Prepare an outline based upon a chosen pattern of organization to include an introduction; transitions, previews, summaries; a logically developed body; and an effective conclusion.
7. Revise writing for word choice, appropriate organization, consistent point of view, and transitions between paragraphs, passages and ideas.

Benchmark C. Demonstrate competence in the skills and strategies of the writing process

1. Describe the significance of the subject to the author.
2. Demonstrate competence in writing by using specific strategies (e.g., tension, suspense, eliminating extraneous details, inconsistencies).
3. Create written arguments to persuade by:
   - establishing context
   - creating a persona
   - developing interest
   - developing a controlling idea that makes a clear and knowledgeable judgment
   - arranging details, reasons, and examples effectively
   - anticipating and addressing reader/listener concerns

Strand: Literature and Media

Standard III: Students will use literature and media to develop an understanding of people, societies, and the self.

Benchmark A. Use language, literature, and media to understand various social and cultural perspectives

1. Demonstrate familiarity with selected:
   - classic literature
   - mythology
   - classic fiction and non-fiction
   - drama
2. Use literature and media to reflect on learning experiences by:
   - evaluating personal perspectives and how they are influenced by society, cultural differences, and historical issues
   - appraising learning as change in perspective
   - evaluating personal circumstances and background that shape interaction with literature and media
3. Analyze a work of literature showing how it reflects the heritage, traditions, attitudes, and beliefs of its author.

Benchmark B. Identify ideas and make connections among literary works

1. Identify conflict, rising action, and resolution of conflict in a literary work.
2. Describe how tone and meaning is conveyed in poetry and expository writing through word choice, figurative language, sentence structure, line length, punctuation, rhythm, repetition, and rhyme.
3. Identify significant literary devices (e.g., metaphor, symbolism, dialect, irony) to understand the author's meaning and perspective.
4. Identify the defining characteristics of classic literature and themes.

New Mexico Grade 9 Language Arts
Content Standards

Strand A: Reading

Standard A1: Know how to use comprehension strategies for unfamiliar vocabulary.

- Know roots, prefixes, suffixes (Greek/Latin), and etymology to determine the meaning of unfamiliar vocabulary:
  1. know word families and word suffixes to assist understanding (*educate=education=educational= educationally*);
  2. develop one's knowledge of common prefixes and root words;
  3. use general and specialized dictionaries, thesauri, and glossaries (print and electronic) to determine the definition and pronunciation of unfamiliar words;
  4. understand etymology, principles behind spelling, and usage of words;
  5. differentiate shades of meaning and multiple meanings of words, including the significance of both connotation and denotation.

Standard A2: Know how to comprehend the message or meaning of a text.

- Identify the author's main purpose.
- Recognize and recall main ideas by selecting topic sentences, identifying thesis statements, selecting key words and phrases, and summarizing the material.
- Recognize and recall specific and important details—who, what, where, when, why, how—narrational or chronological sequences and cause-effect relationships.

Standard A3: Know how to infer, analyze, and synthesize.

- Interpret information from graphs, charts, diagrams and the like.
- Evaluate texts according to text-specific standards (book reports according to a book report rubric for example.)

Standard A4: Know how to use meta-cognitive strategies.

- Use multiple strategies to monitor one's pace and comprehension.

Strand AA: Language

Standard AA1: Demonstrate control of Standard English through the correct understanding and use of syntax.

- Differentiate between SV and SVDO patterns with transitive and intransitive verbs.
- Differentiate between SLVPA and SLVPN sentences with predicate adjectives and predicate nouns.
- Master knowledge of conjunctions and coordination to create parallel structures and balanced and compound sentences.
- Eliminate run-ons, fused sentences, and inappropriate fragments.

Standard AA2: Demonstrate control of Standard English through the correct understanding and use of grammar and usage.

- Master prepositional phrases and their functions as adjectives and adverbs.
- Master the use of appositives to rename and define nouns.
- Differentiate among multiple meanings of words that sound the same but have different meanings such as *their*, *there*, *they're*.
- Master the multiple characteristics of parts of speech, especially nouns, verbs, adjectives, adverbs, and prepositional phrases that act as adjectives or adverbs.
- Demonstrate correct subject/verb and pronoun/antecedent agreement.

Standard AA3: Demonstrate control of Standard English through the correct understanding and use of punctuation, capitalization, and spelling.

- Develop legible manuscript forms such as paragraphs and text structures, especially for open-ended academic responses or requirements of the workforce.
- Correctly capitalize proper nouns and appropriate words in sentences, titles, and elsewhere.
- Correctly apply basic rules of spelling in all forms of writing.
- Correctly use end marks, apostrophes, and quotation marks with direct quotes.
- Correctly use commas for the following purposes: items in a series, date/year, city/state, direct address, appositives, direct quotes, and compound sentences.

Strand B: Communication

Standard B1: Give spoken instructions to perform specific tasks, to answer questions, or to solve problems.

- Identify purposes and audience to determine the important information to communicate and the language needed to convey it.
- Master strategies to develop this skill such as repeating the instructions to ensure recall, following a process, emphasizing key points, and employing appropriate diction.

Standard B2: Make oral presentations that exhibit a logical structure appropriate to the audience, context, and purpose; group related ideas and maintain a consistent focus; include smooth transitions; support judgments with sound evidence and well-chosen details; make skillful use of rhetorical devices; provide a coherent conclusion; employ proper eye contact, speaking rate, volume, enunciation, inflection, and gestures to communicate ideas effectively.

[There is no performance indicator listed for Grade 9 for this content standard.]

Standard B3: Select precise vocabulary to appeal to an intended audience.

- Improve one's language by the strategic use of vivid, compelling verbs.

Standard B4: Follow spoken instructions to perform specific tasks, to answer questions, or to solve problems.

- Consider the purpose and the speaker in order to understand what is being communicated and the language being used to convey the message.
- Master strategies to develop this skill such as repeating the instructions to ensure recall, following a process, and identifying key points.
- Practice listening skills to enhance the ability to complete a task from oral instructions.

Standard B5: Summarize and paraphrase information presented orally by others.

- Use a variety of strategies to enhance comprehension of complex literal messages in order to summarize information presented orally such as: listening for contextual clues to infer meaning of unknown words; interpreting figurative language; interpreting nonverbal clues; listening to distinguish between main ideas and details; listening for transitions; noting sequence and organization of ideas; extending the speaker's ideas based on prior knowledge and personal experience; determining the need for further information or research; visualizing using mnemonic devices; summarizing and synthesizing; and determining significance, value, and possible uses of information.
- Evaluate effectiveness of selected strategies.

Standard B6: Identify the thesis of a speech and determine the essential elements that elaborate it.

[There is no performance indicator listed for Grade 9 for this content standard.]

Standard B7: Analyze the ways in which the internal and contextual variables of a speech support or confound its meaning or purpose.

[There is no performance indicator listed for Grade 9 for this content standard.]

Standard B8: Participate productively in self-directed work teams for a particular purpose (for example, to interpret literature, write or critique a proposal, solve a problem or make a decision) including posing relevant questions; listening with civility to the ideas of others; extracting essential information from others' input; building on the ideas of others and contributing relevant information and ideas in group discussion; consulting texts as a source of ideas; gaining the floor in a respectful way; defining individuals' roles and responsibilities and setting clear goals; acknowledging the ideas and contributions of individuals in the group; understanding the purpose of the team project and the ground rules for decision-making; maintaining independence of judgment, offering dissent courteously, ensuring a hearing for the range of positions on an issue and avoiding premature consensus; tolerating ambiguity and a lack of consensus; and selecting leaders or spokespersons when necessary.

[There is no performance indicator listed for Grade 9 for this content standard.]

Strand C: Writing

Standard C1: Demonstrate proficiency in producing a variety of compositions.

- Demonstrate mastery in the creation of narrative texts such as biography, autobiography, history, personal anecdote, or short story that (1) engage the reader by establishing a context and point of view; (2) establish plot and setting, (3) develop characters, (4) employ concrete sensory details; and (5) conclude effectively.
- Produce imaginative and expressive texts such as poetry, drama, screenplay, monologue, and song lyrics, that (1) engage the reader by establishing a context and point of view; (2) develop characters and plot; (3) creatively employ figurative language; and (4) conclude effectively.

Standard C2: Plan writing by taking notes, writing informal outlines, and researching.

- Use a variety of pre-writing strategies to guide the generation of content by activating prior knowledge such as brainstorming, idea-mapping, free-writing, outlining, keeping a journal, asking journalist's questions—who, what, when, where, why, and how.
- Select major ideas and develop them with relevant reasons, supporting examples and details.

Standard C3: Select and use formal or informal literary or technical language appropriate for the purpose, audience, and context of the communication.

- Use vivid descriptive language to create sensory images in the mind of the audience.
- Use language to stimulate the emotions of the reader.

Standard C4: Organize ideas in writing with a thesis statement in the introduction, well-constructed paragraphs, a conclusion, and transition sentences that connect paragraphs into a coherent whole.

- Organize and deliver an argument by (1) wording the claim clearly; (2) specifying convincing reasons to support the claim, and (3) adopting a stance and appropriate tone toward the issue.

- Select and use appropriate structures and organizational patterns such as problem-solution, compare-contrast, cause-effect to (1) select content; (2) represent ideas; (3) make connections; (4) generate new insights; and (5) develop an organizational structure.
- Construct focused paragraphs with topic sentences leading toward a logical conclusion.
- Provide supporting evidence from texts and other outside sources such as direct quotations, paraphrasing, and examples.
- Draw a reasonable conclusion connected to the topic sentence and supporting evidence.

Standard C5: Drawing on readers' comments on working drafts, revise documents to develop or support ideas more clearly, address potential objections, ensure effective transitions between paragraphs, and correct errors in logic.

- Use a rubric, outline, or organizational map to check the development of the draft to see if paragraph focus is clear, transitions are apparent, and organizational patterns are clear and well-signaled.
- Analyze whether claims and opinions are supported by evidence in the form of reasons, examples, or facts.
- Analyze whether counter arguments are anticipated and addressed.
- Delete material that disturbs the flow and development of a paragraph.
- Analyze overall effectiveness of one's own writing.
- Analyze and revise one's own work and the work of others for consistency of facts and ideas and development of argument or plot.

Standard C6: Edit one's own work for grammar, style, and tone appropriate to audience, purpose and context.

- Correct errors in spelling, grammatical conventions, format, and structure.
- Evaluate for audience, purpose, and readability (word choice, vocabulary, sentence construction for example).
- Consult resources like handbooks, style manuals, spell check, dictionaries, thesauri, and style sheets to correct errors.

Standard C7: Cite sources properly when paraphrasing or summarizing information, quoting, or using graphics.

- Beginning in 9th grade, use appropriate publication manuals to cite source materials and to prepare bibliographies, lists of works cited, and quoted passages: textbook appendices, *MLA Handbook for Writers of Research Papers*, *The Chicago Manual of Style*, the *Publication Manual of the American Psychological Association*, and *The Associated Press Stylebook*.

Standard C8: Present written material using basic software programs such as Word, Excel, and PowerPoint so that graphics can be incorporated to present information and ideas best understood visually (charts, ratios, and tables).

- Select production elements based on an analysis of one's purpose and the available media production resources.
- Incorporate into the final draft of written reports graphic materials appropriate for the particular communication such as graphs, charts, tables, maps, and photographs.

Standard C9: Produce effective work-related texts such as business letters, resumes, biographies, job applications, work procedures, work orders, and briefs.

- Address audience needs and state purpose and context in an efficient manner.
- Demonstrate proficiency in accessing and sending information electronically.
- Follow conventions of work-place writing with business letter and memo formats.
- Make use of appropriate writing strategies, such as creating a visual hierarchy, using white space and graphics as appropriate, and providing smooth transitions between sections or steps of the text.
- Include relevant information and exclude extraneous information.
- Anticipate problems, mistakes, and misunderstandings that might arise for the reader.
- Include necessary dates and other essential identifying information.

Strand D: Research

Standard D1: Define and narrow a problem or research topic.

- Form and refine a question for investigation using a topic of personal choice.

Standard D2: Gather relevant information for a research topic from a variety of print and electronic sources, as well as from direct observation, interviews, or surveys.

- Preview reading selections to determine whether a text contains relevant information.
- Use multiple resources to gather information for evaluating particular problems and exploring solutions.
- Use credible news sources for researching topics.

Standard D3: Make distinctions about the credibility, reliability, consistency, strengths and limitations of various resources, including information gathered from websites.

- Read critically and independently from different sources to draw conclusions.

Standard D4: Report research findings in an effective manner appropriate to a designated audience.

- Identify audience to whom researched findings might be meaningful.
- Develop written or oral presentations of appropriate length that effectively report one's research findings.

Standard D5: Write an extended research essay of medium length.

- Use primary and secondary sources to develop a researched topic.
- Use evidence in support of a clear thesis statement and related claims.
- Write a researched essay that examines a focused topic (1–5 pages).

- Paraphrase and summarize with accuracy the range of arguments and evidence supporting or refuting the thesis, as appropriate.
- Cite sources correctly and document quotations, paraphrases, and other information, employing an accepted academic manuscript style such as MLA or APA.
- Employ various modes as appropriate: cause and effect, comparison/contrast, process analysis.

Strand E: Logic

Standard E1: Distinguish among facts and opinions, evidence and inference.

- Identify relevant reasons and evidence used as a basis for argument in texts in order to support conclusions.
- Identify logical, authoritative, and emotional arguments and evaluate their effectiveness, noting logical fallacies and propaganda devices.
- Distinguish between evidence that is directly stated and evidence that is inferred from or implied within an argument.

Standard E2: Identify false premises in an argument.

- Identify stylistic and rhetorical devices used to persuade in written and oral communication.
- Examine texts for arguments and develop informed opinions by noting the progression of ideas that substantiate the proposal.

Standard E3: Describe the structure of a given argument; identify its claims and evidence; and evaluate connections among evidence, inferences, and claims.

- Identify the structure of a multi-faceted argument.
- Examine texts for multi-faceted arguments, citing a stated main claim or conclusion and explicit or inferred evidence.
- In a multifaceted argument, cite a main claim and explicit or inferred evidence that supports it.

Standard E4: Evaluate the range and quality of evidence used to support or oppose an argument.

- Develop and use standardized criteria to evaluate the quality and effectiveness of evidence used in oral or written communication.
- Support informed opinions by providing relevant and convincing reasons.

Standard E5: Recognize common logical fallacies such as the appeal to pity (*argumentum ad misericordiam*), the personal attack (*argumentum ad hominem*), the appeal to general opinion (*argumentum ad populum*) and the false dilemma (assuming only two options when there are more available); and understand why these fallacies do not prove the point being argued.

- Establish and defend a particular perspective.
- Respond respectfully to the viewpoints and biases of others.
- Recognize propaganda as a purposeful technique.

Standard E6: Analyze written and oral communication for false assumptions, errors, loaded terms, caricature, sarcasm, leading questions, and faulty reasoning.

- Recognize logical fallacies in written or oral communication such as loaded terms, false assumptions, and faulty reasoning.

Standard E7: Understand the distinction between a deductive argument in which, if all the premises are true and the argument's form is valid, the conclusion is inescapably true; and an inductive argument, in which the conclusion provides the best or most probable explanation of the truth of the premise, but is not necessarily true.

- Identify deductive arguments in oral and written communication.
- Identify inductive arguments in oral and written communication.

Standard E8: Analyze two or more texts addressing the same topic to determine how authors reach similar or different conclusions.

- Use a variety of resources to gather information in order to critically analyze texts for meaning.
- Analyze themes, main ideas, and supporting ideas across multiple complex texts.
- Generate different types of questions to clarify and extend comprehension of texts.

Standard E9: Construct oral and written arguments that demonstrate clear and knowledgeable judgment by:

  - structuring ideas in a sustained and logical fashion;
  - using a range of strategies to elaborate and persuade including anecdotes, case studies, analogies, and illustrations;
  - clarifying and defending positions with precise and relevant evidence including facts, expert opinions, expressions of commonly accepted beliefs, and logical reasoning;
  - anticipating and addressing a reader's concerns and counterclaims; and
  - providing clear and effective conclusions.
- Demonstrate the ability to expound upon ideas comprehensively, concretely and concisely.
- Select a logical organizational pattern.
- Develop main ideas based on an audience's prior knowledge and interests.
- Draft a clear and substantive thesis claim.
- Develop coherent and smooth progression of ideas strategically including supporting ideas.
- Identify areas needing supporting evidence and support claims and opinions with evidence.
- Draw a persuasive conclusion.
- Demonstrate an awareness of possible questions, concerns, and counter arguments.
- Recognize strategies that employ personal experience and narrative as evidentiary support in persuasive argument.

Strand F: Informational Text

Standard F1: Follow instructions in informational or technical texts to perform specific tasks, answer questions, or solve problems.

- Identify a wide variety of resources used to acquire informational and technical information.
- Evaluate the accuracy of a sequence of instructions or tasks.

Standard F2: Identify the main ideas of informational text and determine the essential elements that elaborate them.

- Examine informational sources for ideas and concepts.
- Accurately interpret information from and detect inconsistencies in informational sources.

Standard F3: Summarize informational and technical texts and explain the visual components that support them.

- Examine various types of charts, graphs, and other types of visual representations in different texts.

Standard F4: Distinguish between a summary and a critique.

- Distinguish between a summary (fact) and a critique (opinion).

Standard F5: Interpret and use information in maps, charts, graphs, timelines, tables, and diagrams.

- Identify types of graphical representations in complex texts: photographs, captions, maps, tables, and timelines.

Standard F6: Identify interrelationships between and among ideas and concepts within a text, such as cause and effect relationships.

- Recognize clear cause-effect relationships within informational text.
- Order sequences of events in complex processes.
- Utilize transitions effectively as ideas develop.

Standard F7: Synthesize information from multiple informational and technical sources or texts.

- Demonstrate proficiency in accessing and sending information electronically.
- Gather and synthesize information from primary and secondary informational sources.

Standard F8: Draw conclusions based on evidence from informational and technical texts or sources.

- Generalize and draw conclusions in technical and informational text using details that support the main points.

Standard F9: Analyze the ways in which a text's organizational structure supports or confounds its meaning or purpose.

- Analyze textual features (table of contents, organization, structure, and graphics) to evaluate the importance of information.

Standard F10: Recognize the use or abuse of ambiguity, contradiction, incongruities, overstatement, and understatement in texts and explain their effect on the reader.

- Analyze theme, key idea, main ideas, and supporting ideas across complex texts.

Standard F11: Evaluate informational and technical texts for their clarity, simplicity and coherence and for the appropriateness of their graphic and visual appeal.

- Analyze a variety of graphical representations and evaluate the relevance of that information to the information presented textually.

Strand G: Media

Standard G1: Evaluate the aural, visual, and written images and other special effects used in television, radio, film, and the Internet for their ability to inform, persuade, and entertain.

- Express reflections and personal reactions to aural and visual media.
- Identify characteristics of types of media such as radio, film, Internet, magazine, newspaper, and television.
- Identify target audience and persuasive elements used in print, radio, and film advertising such as propaganda, hidden messages, bandwagon, testimonial, glittering generalities, and other advertising techniques.
- Identify target audiences of specific media.
- Identify elements of media productions designed to appeal to particular audiences.
- Identify types of media bias as it targets specific audiences.

Standard G2: Evaluate the effectiveness of a particular medium such as verbal, visual, photographic, television, and the Internet in achieving a particular purpose.

- Recognize how perceptions of fact and opinion are affected by the use of fallacies, false dilemmas, propaganda, emotional appeals, and by presentation in different media (print, image, multimedia).

Standard G3: Create coherent media productions using effective images, text, graphics, music, and/or sound effects to present a distinctive point of view on a topic whether through PowerPoint presentations or videos.

- Select appropriate media format such as radio, film, Internet, magazine, newspaper, or television for a specific task.
- Use effective images, text, graphics, and sound to present a distinctive point of view on a topic.

Strand H: Literature

Standard H1: Demonstrate knowledge of foundational literary works.

- Recognize characteristics of significant 18th, 19th, and 20th century foundational works of American literature.
- Recognize characteristics of the following:
  1. Hispanic & Native American oral & written literatures

2. multi-cultural and cross-cultural literary works

Standard H2: Analyze foundational U.S. documents and indigenous cultural narratives for their historical and literary significance.

- Recognize key foundational U.S. documents and literary movements.
- Recognize key forms and characteristics of cultural narratives from around the world and within the United States.

Standard H3: Interpret significant literary elements across all forms of literature; use understanding of genre characteristics to allow deeper and subtler interpretations of texts.

- Analyze an author's manipulation of time and sequence to create effects such as suspense. Recognize complex literary devices such as foreshadowing, flashback, and stream-of-consciousness writing.
- Identify and distinguish between the mood and tone of literary works.
- Recognize an author's use of wit and humor.

Standard H4: Analyze setting, plot, theme, characterization, and narration in literary prose, particularly classic and contemporary short stories and novels.

- Discover personal connections to prose writing.
- Demonstrate an understanding of why certain works might be considered classics. Define common attributes of classic literature through the creation and application of personal rubrics.
- Explain the various effects of common narrative points of view (first person, third person limited, third person omniscient, objective) on the reader's understanding of a literary work.
- Assess the reliability of various narrators in literary works.
- Identify the defining characteristics of common cultural narratives, such as myth, legend, folk tale, fairy tale/magic tale, beast tale, fable, tall tale, and epic.
- Identify various types of characters in prose (antagonist/ protagonist, hero/heroine, tragic hero, archetype, stock character, flat character/round character, static character/dynamic character, foil).

Standard H5: Demonstrate knowledge of the common elements of poetry: metrics, rhyme scheme, rhythm, alliteration, and other conventions.

- Discover personal connections to poetry.
- Analyze elements of poetry including:
  1. style: poetic voice and diction
  2. meter and rhythm: stressed and unstressed syllables
  3. sound devices: end rhyme, rhyme scheme
  4. poetic forms: haiku, narrative poem, lyric poem
  5. poetic structures: stanzas as units of organization (regular and irregular)
  6. poetic device: hyperbole, simile, metaphor, personification
  7. theme: identifying speaker, situation, and purpose (to tell a story, to persuade, to express a feeling).

Standard H6: Identify how elements of dramatic literature articulate a playwright's vision.

- Discover personal connections to dramatic literature.
- Identify characteristics of dramatic forms such as extended monologue, one-act, three-act, and five-act plays.
- Identify elements of tragedy and tragic form in drama.
- Identify examples of colloquial language in dramatic literature.
- Identify theme in drama, supported by examples from the plot and from dramatic conventions such as stage directions.

Standard H7: Analyze works of literature for what they suggest about the time period and social or cultural context in which they were written.

- Identify a particular cultural perspective in a literary work from the past or present, including Native American and Hispanic oral traditions.

New Mexico Grade 10 Language Arts
Content Standards

Strand A: Reading

Standard A1: Know how to use comprehension strategies for unfamiliar vocabulary.

- Know roots, prefixes, suffixes (Greek/Latin), and etymology to determine the meaning of unfamiliar vocabulary:
  1. know word families and word suffixes to assist understanding (*educate=education=educational= educationally*);
  2. develop one's knowledge of common prefixes and root words;
  3. use general and specialized dictionaries, thesauri, and glossaries (print and electronic) to determine the definition and pronunciation of unfamiliar words;
  4. understand etymology, principles behind spelling, and usage of words;
  5. differentiate shades of meaning and multiple meanings of words, including the significance of both connotation and denotation.

Standard A2: Know how to comprehend the message or meaning of a text.

- Use prior knowledge in understanding text.
- Recognize primary organizing structures: narrative, descriptive, expository, persuasive.

Standard A3: Know how to infer, analyze, and synthesize.

- Recognize the presence and effect of a specific point of view.
- Recognize the sources of information in a text whether primary or secondary.

Standard A4: Know how to use meta-cognitive strategies.

- Draw conclusions from information in texts to arrive at new knowledge.

Strand AA: Language

Standard AA1: Demonstrate control of Standard English through the correct understanding and use of syntax.

- Differentiate between SVDO patterns with indirect objects and object complements.
- Master knowledge of contradictory elements and conjunctions to create balanced sentences that express contrast.
- Eliminate comma splices and dangling or misplaced modifiers.

Standard AA2: Demonstrate control of Standard English through the correct understanding and use of grammar and usage.

- Master the use of participles as adjectives. Master the use of essential and nonessential adjective clauses. Master absolute phrases and clauses to modify entire thoughts.
- Use all forms of words correctly such as verb tenses, degrees of adjectives, possessives and plural forms of nouns and pronouns, first/second/third person, and compound sentence parts.

Standard AA3: Demonstrate control of Standard English through the correct understanding and use of punctuation, capitalization, and spelling.

- Correctly use commas for the following purposes: initial adverb phrases and clauses, nonessential adjective phrases and clauses, coordinate adjectives, contradictory elements, tag questions, commentary, and interjections.

Strand B: Communication

Standard B1: Give spoken instructions to perform specific tasks, to answer questions, or to solve problems.

[There is no performance indicator listed for Grade 10 for this content standard.]

Standard B2: Make oral presentations that exhibit a logical structure appropriate to the audience, context, and purpose; group related ideas and maintain a consistent focus; include smooth transitions; support judgments with sound evidence and well-chosen details; make skillful use of rhetorical devices; provide a coherent conclusion; employ proper eye contact, speaking rate, volume, enunciation, inflection, and gestures to communicate ideas effectively.

- Consider purpose and context e.g., time limit and setting; research and analyze characteristics of the audience such as prior knowledge and experiences related to the topic, needs, interests, values, beliefs, culture, age, and gender; and use these characteristics to select and adapt the topic or literary passage to the audience, develop a thesis or literary theme, guide language choices, and plan the presentation or performance.
- Select an organizational pattern: topical, spatial, chronological, sequential, problem-solutions, compare-and-contrast, cause-and-effect, or claim-evidence.
- Develop main ideas based on audience prior knowledge and interests; use signposts and transitions to highlight important ideas and signal clear connections among ideas; develop an introduction that engages audience attention and previews presentation content; and develop a conclusion that summarizes main ideas, restates thesis, and leaves a strong impression on the audience.
- Select from among a variety of presentational aids or performance props to enhance ideas and achieve greater audience response.
- Rehearse the presentation orally to gain fluency, build confidence, and develop poise. Use feedback from others to evaluate whether the presentation leaves a strong impression on the audience and whether the presentation appeals to the audience and achieves its purpose and goals.
- Review and respond selectively to feedback to revise the presentation.

Standard B3: Select precise vocabulary to appeal to an intended audience.

- Employ non-standard or standard words & regionalisms as appropriate to the occasion.
- Employ a formal or informal tone, as appropriate to the occasion.
- Select precise vocabulary to develop credibility & support findings.

Standard B4: Follow spoken instructions to perform specific tasks, to answer questions, or to solve problems.

[There is no performance indicator listed for Grade 10 for this content standard.]

Standard B5: Summarize and paraphrase information presented orally by others.

- Use a variety of response strategies to clarify, elaborate, and synthesize explicit and implicit meanings of mesages such as integrating new learning with prior knowedge; asking questions to guide and clarify inferences, understanding, and interpretations; asking the speaker to extend or elaborate his or her meaning; paraphrasing meaning back to the speaker; and predicting ways in which speaker's content may be used.

Standard B6: Identify the thesis of a speech and determine the essential elements that elaborate it.

- Use a model of the communication process to analyze the components of a communication event and to critique the communication's effectiveness in achieving its intended goals.

Standard B7: Analyze the ways in which the internal and contextual variables of a speech support or confound its meaning or purpose.

- Analyze the internal variables that affect a communication event, such as the speaker's and listener's background knowledge, experiences, culture, opinions, values, beliefs, emotional states, and familiarity with the language, and critique the communication in light of intended goals.

Standard B8: Participate productively in self-directed work teams for a particular purpose (for example, to interpret literature, write or critique a proposal, solve a problem or make a decision) including posing relevant questions; listening with civility to the ideas of others; extracting essential information from others' input; building on the ideas of others and contributing relevant information and ideas in group discussion; consulting texts as a source of ideas; gaining the floor in a respectful way; defining individuals' roles and responsibilities and setting clear goals; acknowledging the ideas and contributions of individuals in the group; understanding the purpose of the team project and the ground rules for decision-making; maintaining independence of judgment, offering dissent courteously, ensuring a hearing for the range of positions on an issue and avoiding premature consensus; tolerating ambiguity and a lack of consensus; and selecting leaders or spokespersons when necessary.

[There is no performance indicator listed for Grade 10 for this content standard.]

Strand C: Writing

Standard C1: Demonstrate proficiency in producing a variety of compositions.

- Demonstrate mastery in the creation of expository and process essays that (1) introduce the situation, provide necessary background knowledge, and clearly state the thesis or purpose; (2) follow an organizational pattern particular to type; (3) offer evidence for the validity of the descriptions or proposed solutions including direct quotes, indirect quotes, and paraphrases from supporting material when necessary; and (4) make effective use of factual descriptions, concrete images, shifting perspectives and vantage points, and sensory detail.

Standard C2: Plan writing by taking notes, writing informal outlines, and researching.

- Use a variety of pre-writing strategies to guide the generation of content by activating prior knowledge such as brainstorming, idea-mapping, free-writing, outlining, keeping a journal, asking journalist's questions—who, what, when, where, why, and how.
- Select major ideas and develop them with relevant reasons, supporting examples and details.

Standard C3: Select and use formal or informal literary or technical language appropriate for the purpose, audience, and context of the communication.

- Use vivid descriptive language to create sensory images in the mind of the audience.
- Use language to stimulate the emotions of the reader.

Standard C4: Organize ideas in writing with a thesis statement in the introduction, well-constructed paragraphs, a conclusion, and transition sentences that connect paragraphs into a coherent whole.

- Organize and deliver an argument by (1) wording the claim clearly; (2) specifying convincing reasons to support the claim, and (3) adopting a stance and appropriate tone toward the issue.
- Select and use appropriate structures and organizational patterns such as problem-solution, compare-contrast, cause-effect to (1) select content; (2) represent ideas; (3) make connections; (4) generate new insights; and (5) develop an organizational structure.
- Construct focused paragraphs with topic sentences leading toward a logical conclusion.
- Provide supporting evidence from texts and other outside sources such as direct quotations, paraphrasing, and examples.
- Draw a reasonable conclusion connected to the topic sentence and supporting evidence.

Standard C5: Drawing on readers' comments on working drafts, revise documents to develop or support ideas more clearly, address potential objections, ensure effective transitions between paragraphs, and correct errors in logic.

- Use a rubric, outline, or organizational map to check the development of the draft to see if paragraph focus is

clear, transitions are apparent, and organizational patterns are clear and well-signaled.

- Analyze whether claims and opinions are supported by evidence in the form of reasons, examples, or facts.
- Analyze whether counter arguments are anticipated and addressed.
- Delete material that disturbs the flow and development of a paragraph.
- Analyze overall effectiveness of one's own writing.
- Analyze and revise one's own work and the work of others for consistency of facts and ideas and development of argument or plot.

Standard C6: Edit one's own work for grammar, style, and tone appropriate to audience, purpose and context.

- Correct errors in spelling, grammatical conventions, format, and structure.
- Evaluate for audience, purpose, and readability (word choice, vocabulary, sentence construction for example).
- Consult resources like handbooks, style manuals, spell check, dictionaries, thesauri, and style sheets to correct errors.

Standard C7: Cite sources properly when paraphrasing or summarizing information, quoting, or using graphics.

- Beginning in 9th grade, use appropriate publication manuals to cite source materials and to prepare bibliographies, lists of works cited, and quoted passages: textbook appendices, *MLA Handbook for Writers of Research Papers*, *The Chicago Manual of Style*, the *Publication Manual of the American Psychological Association*, and *The Associated Press Stylebook*.

Standard C8: Present written material using basic software programs such as Word, Excel, and PowerPoint so that graphics can be incorporated to present information and ideas best understood visually (charts, ratios, and tables).

- Select production elements based on an analysis of one's purpose and the available media production resources.
- Incorporate into the final draft of written reports graphic materials appropriate for the particular communication such as graphs, charts, tables, maps, and photographs.

Standard C9: Produce effective work-related texts such as business letters, resumes, biographies, job applications, work procedures, work orders, and briefs.

- Address audience needs and state purpose and context in an efficient manner.
- Demonstrate proficiency in accessing and sending information electronically.
- Follow conventions of work-place writing with business letter and memo formats.
- Make use of appropriate writing strategies, such as creating a visual hierarchy, using white space and graphics as appropriate, and providing smooth transitions between sections or steps of the text.
- Include relevant information and exclude extraneous information.
- Anticipate problems, mistakes, and misunderstandings that might arise for the reader.
- Include necessary dates and other essential identifying information.

Strand D: Research

Standard D1: Define and narrow a problem or research topic.

- Form and refine a question for investigation based on a topic prompted by a text or texts.

Standard D2: Gather relevant information for a research topic from a variety of print and electronic sources, as well as from direct observation, interviews, or surveys.

- Preview reading selections to determine whether a text contains relevant information.
- Use multiple resources to gather information for evaluating particular problems and exploring solutions.
- Use credible news sources for researching topics.

Standard D3: Make distinctions about the credibility, reliability, consistency, strengths and limitations of various resources, including information gathered from websites.

- Read critically and independently from different sources to draw conclusions.

Standard D4: Report research findings in an effective manner appropriate to a designated audience.

- Identify audience to whom researched findings might be meaningful.
- Develop written or oral presentations of appropriate length that effectively report one's research findings.

Standard D5: Write an extended research essay of medium length.

- Use primary and secondary sources to develop a researched topic.
- Use evidence in support of a clear thesis statement and related claims.
- Write a researched essay that examines a focused topic (1–5 pages).
- Paraphrase and summarize with accuracy the range of arguments and evidence supporting or refuting the thesis, as appropriate.
- Cite sources correctly and document quotations, paraphrases, and other information, employing an accepted academic manuscript style such as MLA or APA.
- Employ various modes as appropriate: cause and effect, comparison/contrast, process analysis.

Strand E: Logic

Standard E1: Distinguish among facts and opinions, evidence and inference.

- Critically interpret and evaluate experiences, literature, language, and ideas by distinguishing fact from fiction and recognizing personal bias.
- Describe the structure of a multi-faceted argument with a stated main claim and conclusion.

Standard E2: Identify false premises in an argument.

- Critique an argument by evaluating the connections between claims and supporting evidence.

Standard E3: Describe the structure of a given argument; identify its claims and evidence; and evaluate connections among evidence, inferences, and claims.

- Analyze elements of deductive and inductive arguments.
- Explain the different ways premises support conclusions in deductive and inductive arguments.
- Create responses to arguments that evaluate problems and offer solutions or alternative recommendations.

Standard E4: Evaluate the range and quality of evidence used to support or oppose an argument.

- Identify, evaluate, and analyze a variety of primary and secondary sources of information such as student-generated data, interviews with experts, observations, surveys, appropriate Internet sources, professional journals, periodicals, documentaries, research bibliographies, electronic databases, and books in order to prepare for all sides of an argument.
- Demonstrate an awareness of possible questions, concerns, or counter-arguments to an informed opinion.

Standard E5: Recognize common logical fallacies such as the appeal to pity (*argumentum ad misericordiam*), the personal attack (*argumentum ad hominem*), the appeal to general opinion (*argumentum ad populum*) and the false dilemma (assuming only two options when there are more available); and understand why these fallacies do not prove the point being argued.

- Persuade others regarding a particular issue by finding and interpreting information effectively.

Standard E6: Analyze written and oral communication for false assumptions, errors, loaded terms, caricature, sarcasm, leading questions, and faulty reasoning.

- Analyze written or oral communications for false assumptions, errors, loaded terms, caricature, sarcasm, leading questions, and faulty reasoning.

Standard E7: Understand the distinction between a deductive argument in which, if all the premises are true and the argument's form is valid, the conclusion is inescapably true; and an inductive argument, in which the conclusion provides the best or most probable explanation of the truth of the premise, but is not necessarily true.

- Select the appropriate type of argument (deductive or inductive) to produce an informed opinion.

Standard E8: Analyze two or more texts addressing the same topic to determine how authors reach similar or different conclusions.

- Analyze and evaluate the various relationships among evidence, inference, and claims in argumentative texts.
- Analyze how argumentative texts relate to their social, cultural, and historical contexts.

Standard E9: Construct oral and written arguments that demonstrate clear and knowledgeable judgment by:

  - structuring ideas in a sustained and logical fashion;
  - using a range of strategies to elaborate and persuade including anecdotes, case studies, analogies, and illustrations;
  - clarifying and defending positions with precise and relevant evidence including facts, expert opinions, expressions of commonly accepted beliefs, and logical reasoning;
  - anticipating and addressing a reader's concerns and counterclaims; and
  - providing clear and effective conclusions.
- Create responses that evaluate problems and offer solutions by clearly articulating a position through a thesis statement and by anticipating counterarguments.
- Develop arguments to support informed opinions by stating a progression of ideas; selecting appropriate style, tone and use of language for a particular effect; and describing and analyzing persona, social, historical, or cultural influences.
- Use a variety of strategies to guide generation of content by activating prior knowledge, self-questioning, and selection and development of major ideas.
- Support informed opinions by providing relevant and convincing reasons, using types of evidence, language, and organizational structure.
- Anticipate an audience's questions and expectations and determine need for additional research.
- Use signposts and transitions to highlight important ideas and signal clear connections among ideas.

Strand F: Informational Text

Standard F1: Follow instructions in informational or technical texts to perform specific tasks, answer questions, or solve problems.

- Read a wide variety of informational and technical texts and selections to inform an audience.
- Read critically and independently in order to follow instructions, perform specific tasks, answer questions, and solve problems.

Standard F2: Identify the main ideas of informational text and determine the essential elements that elaborate them.

- Read informational and technical texts critically and independently.
- Analyze the validity of source information.

Standard F3: Summarize informational and technical texts and explain the visual components that support them.

- Develop concise, well-organized mental, oral, and written summaries of texts.
- Identify the validity of supporting visual components in informational resources.

Standard F4: Distinguish between a summary and a critique.

- Identify clear, reasonable criteria in order to analyze the appropriateness of a summary or critique.

Standard F5: Interpret and use information in maps, charts, graphs, timelines, tables, and diagrams.

- Accurately interpret information presented in a technical format that is, charts, diagrams, tables.

Standard F6: Identify interrelationships between and among ideas and concepts within a text, such as cause and effect relationships.

- Analyze and explain organizational patterns within the text, (chronological, compare-contrast, problem-solution, cause-effect).
- Organize and relate multiple levels of ideas in informational and technical texts.

Standard F7: Synthesize information from multiple informational and technical sources or texts.

- Identify and select appropriate informational text using an array of advanced technologies such as web resources, interactive media, software, e-mail, and networks.

Standard F8: Draw conclusions based on evidence from informational and technical texts or sources.

- Read critically and independently to draw conclusions from technical texts.
- Identify critical questions that lead to understanding of informational sources.

Standard F9: Analyze the ways in which a text's organizational structure supports or confounds its meaning or purpose.

- Identify hierarchic structures in informational texts and relationships between the concepts and details in those structures.

Standard F10: Recognize the use or abuse of ambiguity, contradiction, incongruities, overstatement, and understatement in texts and explain their effect on the reader.

- Identify and analyze the use of ambiguity, contradiction, incongruity, overstatement, and understatement.

Standard F11: Evaluate informational and technical texts for their clarity, simplicity and coherence and for the appropriateness of their graphic and visual appeal.

- Evaluate the relevance and effectiveness of graphical representations to information presented orally.

Strand G: Media

Standard G1: Evaluate the aural, visual, and written images and other special effects used in television, radio, film, and the Internet for their ability to inform, persuade, and entertain.

- Recognize how visual and sound techniques and design such as special effects, camera angles, and music convey or influence messages in various media.

Standard G2: Evaluate the effectiveness of a particular medium such as verbal, visual, photographic, television, and the Internet in achieving a particular purpose.

- Recognize how perceptions of fact and opinion are affected by the use of fallacies, false dilemmas, propaganda, emotional appeals, and by presentation in different media (print, image, multimedia).

Standard G3: Create coherent media productions using effective images, text, graphics, music, and/or sound effects to present a distinctive point of view on a topic whether through PowerPoint presentations or videos.

- Use an array of technology and media—web resources, interactive media, software, storyboards, PowerPoint, videos—to complete one task or a variety of tasks.

Strand H: Literature

Standard H1: Demonstrate knowledge of foundational literary works.

- Demonstrate basic knowledge of the following:
  1. 18th , 19th , and 20th century foundational works of American literature.
  2. Hispanic & Native American oral and written literatures
  3. multi-cultural and cross-cultural literary works.

Standard H2: Analyze foundational U.S. documents and indigenous cultural narratives for their historical and literary significance.

- Analyze the cultural, historical, and literary features of foundational U.S. documents.
- Analyze the cultural, historical, and literary features of cultural narratives from around the world and within the United States.

Standard H3: Interpret significant literary elements across all forms of literature; use understanding of genre characteristics to allow deeper and subtler interpretations of texts.

- Recognize ambiguities, contradictions, and ironies in literary works.
- Explore a range of works that relate to a single issue or theme. Identify differences and similarities among the works and formulate a thesis explaining the interrelationships.

Standard H4: Analyze setting, plot, theme, characterization, and narration in literary prose, particularly classic and contemporary short stories and novels.

- Identify symbol, allegory, analogy, and extended metaphor in literary works.
- Using appropriate terminology, analyze various forms of characterization (antagonist/protagonist, hero/heroine, tragic hero, archetype, stock character, flat character/ round character, static character/dynamic character, foil).
- In various prose forms, analyze elements of plot (setting, exposition, conflict, rising action, climax, denouement), analyze the effects of flashback, foreshadowing, and subplot.
- Identify the characteristics of common genre fiction, such as science fiction, fantasy, magical realism, mystery/suspense, Western, horror, romance, Gothic literature, and Manga.

Standard H5: Demonstrate knowledge of the common elements of poetry: metrics, rhyme scheme, rhythm, alliteration, and other conventions.

- Analyze elements of poetry including:
  1. style: end-stopped line or enjambment
  2. meter and rhythm: blank verse, free verse
  3. sound devices: internal rhyme, slant rhyme, alliteration, onomatopoeia
  4. poetic forms: sonnet, ballad, ode, dramatic poem
  5. poetic structures: ballads, concrete poems, acrostic poems
  6. poetic device: hyperbole, understatement
  7. theme: analyzing how the speaker, situation, and poetic structure correspond to the poet's purpose.

Standard H6: Identify how elements of dramatic literature articulate a playwright's vision.

- Identify examples of the following acting conventions in dramatic literature: dramatic monologue, soliloquy, and aside.
- Analyze characterization and plot in drama by interpreting the use of stage directions, divisions between and length of scenes and acts, dialogue between characters, internal and external conflicts, and characters used as foils.
- Identify the intended audience of the playwright (the play's social, political, and/or historical context), and identify elements of the dramatic production designed to reach the intended audience.

Standard H7: Analyze works of literature for what they suggest about the time period and social or cultural context in which they were written.

- Analyze how theme in literature is related to the historical and social/cultural issues of the time period in which it is written.

New Mexico Grade 11 Language Arts
Content Standards

Strand A: Reading

Standard A1: Know how to use comprehension strategies for unfamiliar vocabulary.

- Analyze the context of sentences and larger sections of text to clarify the meaning of unknown or ambiguous words, detect nuances, make inferences, and differentiate among possible meanings of words.

Standard A2: Know how to comprehend the message or meaning of a text.

- Recognize the use of literary devices.

Standard A3: Know how to infer, analyze, and synthesize.

- Make reasonable inferences from implied ideas. That is, to predict outcomes, derive reasonable generalizations, differentiate fact from opinion, and differentiate literal from figurative meanings.
- Recognize how history and culture influence text.
- Recognize the presence of stereotypes.
- Recognize the types of claims made in a text (factual, value judgment for example).

Standard A4: Know how to use meta-cognitive strategies.

- Evaluate texts by determining the value to oneself.

Strand AA: Language

Standard AA1: Demonstrate control of Standard English through the correct understanding and use of syntax.

- Synthesize knowledge of sentence patterns to identify patterns within clauses of complex sentences.
- Master knowledge of subordinating elements such as relative pronouns and conjunctive adverbs to express complex ideas in writing.
- Eliminate faulty subordination from one's writing.

Standard AA2: Demonstrate control of Standard English through the correct understanding and use of grammar and usage.

- Master the use of gerunds as nouns. Master infinitives as nouns, adjectives, and adverbs.
- Use active and passive voice correctly.
- Avoid missing or incorrect relative and indefinite pronouns.

Standard AA3: Demonstrate control of Standard English through the correct understanding and use of punctuation, capitalization, and spelling.

- Correctly use semicolons and colons, italics (or underlining) and quotation marks with titles, hyphens, and dashes.

Strand B: Communication

Standard B1: Give spoken instructions to perform specific tasks, to answer questions, or to solve problems.

[There is no performance indicator listed for Grade 11 for this content standard.]

Standard B2: Make oral presentations that exhibit a logical structure appropriate to the audience, context, and purpose; group related ideas and maintain a consistent focus; include smooth transitions; support judgments with sound evidence and well-chosen details; make skillful use of rhetorical devices; provide a coherent conclusion; employ proper eye contact, speaking rate, volume, enunciation, inflection, and gestures to communicate ideas effectively.

- Evaluate and adapt strategies for developing credibility such as demonstrating knowledge, appearing confident, and speaking truthfully.
- Create logical messages using appropriate reasoning patterns, supporting ideas with evidence, avoiding fallacies, and making emotional appeals, to fear and affection for example.
- Monitor audience feedback in real time and make inferences about audience engagement, understanding, and agreement; and adjust delivery and content to achieve purposes and goals. Subsequently reflect on the presentation and feedback to determine effectiveness and what changes to make in future presentations.

Standard B3: Select precise vocabulary to appeal to an intended audience.

- Strategically employ figurative language such as metaphor, irony, personification, hyperbole, symbolism, wordplay, puns to achieve specific effects.

Standard B4: Follow spoken instructions to perform specific tasks, to answer questions, or to solve problems.

[There is no performance indicator listed for Grade 11 for this content standard.]

Standard B5: Summarize and paraphrase information presented orally by others.

[There is no performance indicator listed for Grade 11 for this content standard.]

Standard B6: Identify the thesis of a speech and determine the essential elements that elaborate it.

- Use a variety of strategies to enhance comprehension of literal and implied information and recall of complex messages.
- Make evaluations by focusing attention on the speaker's argument and purposes; mentally anticipating direction and significance of arguments; attending to the entirety of the message before forming conclusive judgments; taking notes when appropriate; reviewing standards of evidence and reasoning; and asking oneself questions about the speaker's implicit and explicit messages, relating speaker's message to personal beliefs, values, and experiences. Determine personal significance of speaker's message.

Standard B7: Analyze the ways in which the internal and contextual variables of a speech support or confound its meaning or purpose.

[There is no performance indicator listed for Grade 11 for this content standard.]

Standard B8: Participate productively in self-directed work teams for a particular purpose (for example, to interpret literature, write or critique a proposal, solve a problem or make a decision) including posing relevant questions; listening with civility to the ideas of others; extracting essential information from others' input; building on the ideas of others and contributing relevant information and ideas in group discussion; consulting texts as a source of ideas; gaining the floor in a respectful way; defining individuals' roles and responsibilities and setting clear goals; acknowledging the ideas and contributions of individuals in the group; understanding the purpose of the team project and the ground rules for decision-making; maintaining independence of judgment, offering dissent courteously, ensuring a hearing for the range of positions on an issue and avoiding premature consensus; tolerating ambiguity and a lack of consensus; and selecting leaders or spokespersons when necessary.

- Analyze internal variables such as prior knowledge, experiences, interests, opinions, values, beliefs, needs, feelings, and personal emotional state to plan, participate in, reflect on, evaluate, and modify group discussion processes to achieve group goals.
- Elicit feedback and analyze others' internal variables that affect the discussion, including the others' knowledge, experiences, culture, interests, values, beliefs, needs, and emotional state, to make ongoing communication choices that enhance group effectiveness. Use this feedback and analysis to frame and adapt messages, build group cohesion, and achieve group goals.
- Analyze contextual variables, such as the type of group, its purposes and goals, progress toward those goals, roles and relationships within the group, group norms and discussion conventions, previous communication, and setting. Monitor and adjust use of discussion strategies such as agenda setting, responding to questions, building consensus, checking for understanding, and encouraging participation to achieve group goals.
- Analyze and refine personal and group purposes and goals. That is, clarify ideas, change group members' opinions, build relationships and adapt strategies for developing credibility such as demonstrating knowledge, appearing confident, speaking truthfully, and creating logical messages. Use appropriate reasoning patterns, support ideas with evidence, avoid fallacies, and make emotional appeals. Critique effectiveness in achieving intended goals.
- Use a variety of response strategies to clarify, elaborate, and synthesize explicit and implicit meanings of messages. For example, integrate new learning with prior knowledge; ask questions to guide and clarify inferences, understanding, and interpretations; ask the speaker to extend or elaborate his or her meaning integrating new learning with prior knowledge; paraphrase meaning back to the speaker; and predict ways in which speaker's content may be used.
- Evaluate personal effectiveness in self-directed work teams and make corrections as necessary depending on the purpose of the collaborative activity.

Strand C: Writing

Standard C1: Demonstrate proficiency in producing a variety of compositions.

- Demonstrate mastery in the creation of critical response essays to fiction and nonfiction that (1) engage the reader by establishing a context; (2) demonstrate a strong grasp of the main idea of the text; (3) make a meaningful personal connection to the text; (4) make a clear critical judgment about the text; (5) support key ideas and judgments through accurate and detailed references to the text and to other credible sources; and (6) demonstrate awareness of how the author of the text uses rhetorical strategies.
- Demonstrate mastery in the creation of persuasive essays that (1) engage the reader by establishing a context and a point of view, (2) structure ideas and arguments in a sustained and logical fashion, (3) clarify and defend positions with precise and relevant evidence, including facts, expert opinions, quotations, illustrations, commonly accepted beliefs, and logical reasoning, (4) use specific rhetorical devices to back up assertions, and (5) anticipate and address the reader's concerns and counterclaims.

Standard C2: Plan writing by taking notes, writing informal outlines, and researching.

- Identify, evaluate, and analyze a variety of primary and secondary sources of information for credibility and usefulness.
- Analyze strengths and weaknesses in one's research findings such as coherence, validity or gaps, misinformation, and fallacies.
- Anticipate and address varying interpretations of one's findings.

Standard C3: Select and use formal or informal literary or technical language appropriate for the purpose, audience, and context of the communication.

- Make informed and sophisticated decisions about audiences appropriate to the writing task.
- Use language persuasively in addressing a particular issue.
- Use grammatical, metaphorical, or rhetorical devices to inform or persuade others.

Standard C4: Organize ideas in writing with a thesis statement in the introduction, well-constructed paragraphs, a conclusion, and transition sentences that connect paragraphs into a coherent whole.

- Organize and compose complex arguments.
- Select and use appropriate structures and organizational patterns (such as problem-solution, compare-contrast, cause-effect) to (1) select content, (2) represent ideas, (3) make connections, (4) generate new insights, and (5) develop an organizational structure.
- Develop multi-paragraph compositions that use complex organizational patterns, including a well-developed thesis statement with supporting paragraphs,

appropriate transitions, and a logical ending that does not merely repeat the thesis.

Standard C5: Drawing on readers' comments on working drafts, revise documents to develop or support ideas more clearly, address potential objections, ensure effective transitions between paragraphs, and correct errors in logic.

- Analyze whether opinion or use of sources displays bias.
- Analyze whether the conclusion is appropriate, persuasive, and compelling.
- Identify areas requiring further investigation and research.

Standard C6: Edit one's own work for grammar, style, and tone appropriate to audience, purpose and context.

- Use a variety of strategies—reading draft aloud, seeking feedback from a reviewer, and reading the draft from the audience's perspective—to evaluate diction, figurative language, tone, sentence length and complexity, active and passive voice, and use of verbals.
- Edit work for consistency of tone and voice, clarity and conciseness.

Standard C7: Cite sources properly when paraphrasing or summarizing information, quoting, or using graphics.

- Beginning in 9th grade, use appropriate publication manuals to cite source materials and to prepare bibliographies, lists of works cited, and quoted passages: textbook appendices, *MLA Handbook for Writers of Research Papers*, *The Chicago Manual of Style*, the *Publication Manual of the American Psychological Association*, and *The Associated Press Stylebook*.

Standard C8: Present written material using basic software programs such as Word, Excel, and PowerPoint so that graphics can be incorporated to present information and ideas best understood visually (charts, ratios, and tables).

- Select production elements based on an analysis of one's purpose and the available media production resources.
- Incorporate into the final draft of written reports graphic materials appropriate for the particular communication such as graphs, charts, tables, maps, and photographs.

Standard C9: Produce effective work-related texts such as business letters, resumes, biographies, job applications, work procedures, work orders, and briefs.

- Address audience needs and state purpose and context in an efficient manner.
- Demonstrate proficiency in accessing and sending information electronically.
- Follow conventions of work-place writing with business letter and memo formats.
- Make use of appropriate writing strategies, such as creating a visual hierarchy, using white space and graphics as appropriate, and providing smooth transitions between sections or steps of the text.
- Include relevant information and exclude extraneous information.
- Anticipate problems, mistakes, and misunderstandings that might arise for the reader.
- Include necessary dates and other essential identifying information.

Strand D: Research

Standard D1: Define and narrow a problem or research topic.

- Form and refine a question for investigation based on American literary, historical, or cultural movements.

Standard D2: Gather relevant information for a research topic from a variety of print and electronic sources, as well as from direct observation, interviews, or surveys.

- Use creative or critical research strategies such as field studies, oral histories, interviews, and experiments.
- Use a variety of techniques for researching topics, including cross-referencing while gathering information.
- Synthesize a variety of types of visual information including pictures and symbols.

Standard D3: Make distinctions about the credibility, reliability, consistency, strengths and limitations of various resources, including information gathered from websites.

- Make extensive use of primary sources when researching a topic and make in-depth analyses of the validity and reliability of primary source information.

Standard D4: Report research findings in an effective manner appropriate to a designated audience.

- Identify audience to whom researched findings might be meaningful.
- Develop written or oral presentations of appropriate length that effectively report one's research findings.

Standard D5: Write an extended research essay of medium length.

- Synthesize information from multiple research studies to draw conclusions that go beyond those found in any one of the individual studies.
- Write a comprehensive research paper (6–10 pages).
- Examine complex issues by sharing and evaluating personal response, researching and summarizing data, and developing a framework in which to discuss the issue prior to writing the final draft.

Strand E: Logic

Standard E1: Distinguish among facts and opinions, evidence and inference.

- Evaluate the ideas of others by identifying clear, reasonable criteria for evaluation and applying those criteria using reasoning.
- Analyze similarities and differences in false statements and the role they play in specific types of persuasive arguments.

Standard E2: Identify false premises in an argument.

- Identify and evaluate logical fallacies and propaganda devices in written and oral communication products.

Standard E3: Describe the structure of a given argument; identify its claims and evidence; and evaluate connections among evidence, inferences, and claims.

- Identify and analyze personal, social, historical, or cultural influences, contexts, or biases.
- Identify and analyze rhetorical strategies that support proposals.
- Evaluate connections between claims, supporting evidence, and the development of an argument.
- Evaluate evidence for timeliness, relevance, and believability.

Standard E4: Evaluate the range and quality of evidence used to support or oppose an argument.

- Create a rubric to evaluate the quality and effectiveness of evidence used in oral or written arguments.
- Analyze multiple perspectives on issues and independently use a systematic method for tracking sources.
- Use a variety of strategies—reading the draft aloud, seeking feedback from a reviewer, capturing and evaluating the organization of the draft in an outline or organization map, and reading the draft from the perspective of the intended audience—to evaluate whether:
  - one's progression of ideas is coherent and smooth,
  - the thesis claim is clear and substantive,
  - claims and opinions are supported by evidence,
  - the sources display bias,
  - organization patterns are clear and developed, and
  - the conclusion is appropriate.

Standard E5: Recognize common logical fallacies such as the appeal to pity (*argumentum ad misericordiam*), the personal attack (*argumentum ad hominem*), the appeal to general opinion (*argumentum ad populum*) and the false dilemma (assuming only two options when there are more available); and understand why these fallacies do not prove the point being argued.

- Recognize how the type of information used (fact, opinion) can affect perception (fallacies, false dilemmas, emotional responses).
- Recognize how the medium of the presentation (print, visual) can affect perception.
- Identify complex logical fallacies and propaganda devices.

Standard E6: Analyze written and oral communication for false assumptions, errors, loaded terms, caricature, sarcasm, leading questions, and faulty reasoning.

- Distinguish and evaluate ways a writer or speaker may be trying to influence an intended audience by using false assumptions, errors, loaded terms, caricature, sarcasm, leading questions, and faulty reasoning.
- Evaluate connections among claims, supporting evidence, and the development of an argument.
- Predict consequences of a speaker's arguments, conclusions, and proposals.

Standard E7: Understand the distinction between a deductive argument in which, if all the premises are true and the argument's form is valid, the conclusion is inescapably true; and an inductive argument, in which the conclusion provides the best or most probable explanation of the truth of the premise, but is not necessarily true.

- Use argument to interpret researched information, and to establish and defend a point of view.
- Address concerns of the opposition within an argument, using logical strategies (deduction, inductive reasoning, syllogisms, analogies).

Standard E8: Analyze two or more texts addressing the same topic to determine how authors reach similar or different conclusions.

- Evaluate and critique the coherence, validity, and relevance of ideas, evidence, and arguments.
- Evaluate texts that present opposing viewpoints to determine effective use of primary and secondary evidence, anecdotal or personal experience, and testimonial.
- Develop thematic connections and synthesize ideas.

Standard E9: Construct oral and written arguments that demonstrate clear and knowledgeable judgment by:

  - structuring ideas in a sustained and logical fashion;
  - using a range of strategies to elaborate and persuade including anecdotes, case studies, analogies, and illustrations;
  - clarifying and defending positions with precise and relevant evidence including facts, expert opinions, expressions of commonly accepted beliefs, and logical reasoning;
  - anticipating and addressing a reader's concerns and counterclaims; and
  - providing clear and effective conclusions.
- Anticipate and counter arguments through the use of a variety of methods such as examples and details, commonly accepted beliefs, expert opinions, quotations and citations, cause and effect, and compare and contrast reasoning.

Strand F: Informational Text

Standard F1: Follow instructions in informational or technical texts to perform specific tasks, answer questions, or solve problems.

- Synthesize ideas and concepts from informational sources to generate new understanding or to increase one's knowledge base of a given subject.
- Apply technical information in order to follow multi-step instructions, perform complex tasks, or solve problems.

Standard F2: Identify the main ideas of informational text and determine the essential elements that elaborate them.

- Develop informed opinions by evaluating coherence and relevance of ideas, evidence and arguments.

Standard F3: Summarize informational and technical texts and explain the visual components that support them.

- Delineate complex relationships among ideas.

- Describe the advantages and disadvantages of alternative methods of presenting information.

Standard F4: Distinguish between a summary and a critique.

- Use reasoning and substantiation to evaluate summaries and critiques and to determine their validity.

Standard F5: Interpret and use information in maps, charts, graphs, timelines, tables, and diagrams.

- Evaluate relevance of graphic information to information presented textually.

Standard F6: Identify interrelationships between and among ideas and concepts within a text, such as cause and effect relationships.

- Understand implied or subtly stated cause-effect relationships in simple to complex informational and technical texts.

Standard F7: Synthesize information from multiple informational and technical sources or texts.

- Make connections across sources to develop new insights and determine need for further research.

Standard F8: Draw conclusions based on evidence from informational and technical texts or sources.

- Evaluate credibility and quality of sources.
- Differentiate between credible evidence and logical fallacies.

Standard F9: Analyze the ways in which a text's organizational structure supports or confounds its meaning or purpose.

- Pose questions prompted by informational/technical text by prioritizing and organizing information resulting in a complete and reasonable explanation.

Standard F10: Recognize the use or abuse of ambiguity, contradiction, incongruities, overstatement, and understatement in texts and explain their effect on the reader.

- Use critical analysis to explain how and why a writer of an informational selection used ambiguity, contradiction, incongruities, overstatement, and understatement in order to influence the reader.

Standard F11: Evaluate informational and technical texts for their clarity, simplicity and coherence and for the appropriateness of their graphic and visual appeal.

- Evaluate content, format, structure, and visual appeal used in informational/technical print, non-print and oral presentations.

Strand G: Media

Standard G1: Evaluate the aural, visual, and written images and other special effects used in television, radio, film, and the Internet for their ability to inform, persuade, and entertain.

- Identify conventional and unconventional uses of production elements such as layout, pictures and typeface in newspapers, magazines and print advertisements; camera shots, lighting, editing, dialog, setting, and sound in television; sound, dialog, and programming in radio; layout, navigation, and dynamic and interactive elements on the Web.
- Evaluate the effectiveness of conventional and unconventional uses of production elements to achieve special effects.
- Describe how production elements—camera shots, montage, camera movements, sound, lighting, editing, casting, and acting—establish narrative in media productions.
- Establish criteria to evaluate how well elements of media productions inform, persuade, or entertain.

Standard G2: Evaluate the effectiveness of a particular medium such as verbal, visual, photographic, television, and the Internet in achieving a particular purpose.

- Evaluate how effectively communication goals, aesthetic goals, and usability goals (such as ease of access to the communication, ease of navigation of Internet sites, diction and layout as they affect accessibility for audiences) for the media communication have been achieved.

Standard G3: Create coherent media productions using effective images, text, graphics, music, and/or sound effects to present a distinctive point of view on a topic whether through PowerPoint presentations or videos.

- Select credible sources and present multiple points of view, when appropriate, within a media production.

Strand H: Literature

Standard H1: Demonstrate knowledge of foundational literary works.

- Interpret the significance of literary works and movements as indicators of evolving societal perspectives, including 20th and pre-20th century foundational works of American literature, Hispanic and Native American literary works, and multicultural and crosscultural literary works.

Standard H2: Analyze foundational U.S. documents and indigenous cultural narratives for their historical and literary significance.

- Interpret the cultural, historical, and literary significance of indigenous narratives and foundational U.S. documents on U.S. culture throughout our nation's history.

Standard H3: Interpret significant literary elements across all forms of literature; use understanding of genre characteristics to allow deeper and subtler interpretations of texts.

- Recognize and explain culturally specific customs, traditions, and symbols in literary works.
- Analyze ways in which writers use lingual patterns such as repetition, dialect, slang, and formality, in dialog and narration.
- Analyze ways in which writers play with language, including the use of pun, euphemism, oxymoron, verbal irony, hyperbole, and understatement.
- Analyze ways in which writers manipulate ideas using dramatic irony, situational irony, and paradox.

- Explain the ways in which writers utilize narrative forms and features such as chronological narratives, framed narratives, episodic (picaresque) plots, character or situation driven plots, and multiple narrators.

Standard H4: Analyze setting, plot, theme, characterization, and narration in literary prose, particularly classic and contemporary short stories and novels.

- Identify the characteristics of common nonfiction forms such as memoir, essay, biography, autobiography, documentary, and history.
- Analyze the overall style of prose works (including narration, imagery, diction, dialogue, plot, and characterization).

Standard H5: Demonstrate knowledge of the common elements of poetry: metrics, rhyme scheme, rhythm, alliteration, and other conventions.

- Analyze elements of poetry including:
  1. style: humor, symbolism, use of figurative or literal language
  2. meter and rhythm: basic forms of meter such as iambic pentameter
  3. sound devices: assonance, consonance, euphony, cacophony
  4. poetic forms: epic poems (heroic couplets), sestina
  5. poetic structures: the use of formal section breaks or unconventional capitalization and punctuation
  6. poetic device: extended metaphor, allusion, allegory
  7. theme: analyzing how poetic structure and style pertain to the poem's meaning(s) and the poet's purpose.

Standard H6: Identify how elements of dramatic literature articulate a playwright's vision.

- Analyze the relationship among set/setting, costume, lighting (and other production elements) and the theme or intended meaning of a particular drama.
- Identify elements of comedy and comic form in drama (including farce, situational comedy, high and low comedy, absurdism/surrealism, and slapstick).
- Evaluate a live performance (or a live recording) of drama for its correspondence with the playwright's vision.
- Evaluate a live performance (or a live recording) of drama for its effectiveness at conveying a particular theme through directorial decisions.

Standard H7: Analyze works of literature for what they suggest about the time period and social or cultural context in which they were written.

- Analyze how a particular piece of literature has changed societal and cultural attitudes.

New Mexico Grade 12 Language Arts
Content Standards

Strand A: Reading

Standard A1: Know how to use comprehension strategies for unfamiliar vocabulary.

- Comprehend quantitative, technical, and mathematical terms.

Standard A2: Know how to comprehend the message or meaning of a text.

- Recognize and recall rhetorical modes such as illustration, classification, persuasion, comparison/ contrast, cause/effect.

Standard A3: Know how to infer, analyze, and synthesize.

- Recognize limitations in a text such as logical fallacies, rhetorical flaws, and lack of support.
- Recognize the types of evidence offered in a text such as experiment, expert testimony, statistics, case study, and common sense.
- Evaluate information in a text for specificity, relevance, importance, sufficiency of evidence, soundness of reasoning, internal consistency, persuasive techniques, and credibility.
- Evaluate texts using various critical lenses such as multicultural or disciplinary perspectives.

Standard A4: Know how to use meta-cognitive strategies.

- Analyze texts to determine how much prior and specialized knowledge is needed.

Strand AA: Language

Standard AA1: Demonstrate control of Standard English through the correct understanding and use of syntax.

- Synthesize knowledge of the various phrase and clause forms in the construction of complex sentences.
- Synthesize knowledge of all basic sentence patterns in English in order to develop greater variety and to demonstrate that there are multiple ways to express the same idea.
- Synthesize knowledge of parallel structure, subordination, and coordination to construct grammatically sound writing that expresses complex ideas.
- Synthesize knowledge of sentence construction to write well-constructed prose.

Standard AA2: Demonstrate control of Standard English through the correct understanding and use of grammar and usage.

- Control diction to create appropriate levels of language for different audiences.

Standard AA3: Demonstrate control of Standard English through the correct understanding and use of punctuation, capitalization, and spelling.

- Correctly use ellipses and order of operations with brackets and parentheses.
- Correctly format and incorporate quotations, citations, and references, including works cited.

Strand B: Communication

Standard B1: Give spoken instructions to perform specific tasks, to answer questions, or to solve problems.

[There is no performance indicator listed for Grade 11 for this content standard.]

Standard B2: Make oral presentations that exhibit a logical structure appropriate to the audience, context, and purpose; group related ideas and maintain a consistent focus; include smooth transitions; support judgments with sound evidence and well-chosen details; make skillful use of rhetorical devices; provide a coherent conclusion; employ proper eye contact, speaking rate, volume, enunciation, inflection, and gestures to communicate ideas effectively.

- Make oral presentations that exhibit a logical structure appropriate to the audience, context, and purpose; group related ideas and maintain a consistent focus; include smooth transitions; support judgments with sound evidence and well-chosen details; make skillful use of rhetorical devices; provide a coherent conclusion; and employ proper eye contact, speaking rate, volume, enunciation, inflection and gestures to communicate ideas effectively.

Standard B3: Select precise vocabulary to appeal to an intended audience.

- Employ language and diction to establish credibility and authority, create a mood, suggest a specific attitude toward a subject, and appeal to a specific audience.

Standard B4: Follow spoken instructions to perform specific tasks, to answer questions, or to solve problems.

[There is no performance indicator listed for Grade 12 for this content standard.]

Standard B5: Summarize and paraphrase information presented orally by others.

[There is no performance indicator listed for Grade 12 for this content standard.]

Standard B6: Identify the thesis of a speech and determine the essential elements that elaborate it.

- Analyze the speaker's motivation and explicit and implicit purposes for speaking, draw on one's prior knowledge and experience to make connections with the speaker's message, and analyze the speaker's values and beliefs to guide interpretation. Use information from prior communication to interpret the speaker's current perspectives on the topic and the listener. Continually use new information to reassess perceptions of the speaker.

Standard B7: Analyze the ways in which the internal and contextual variables of a speech support or confound its meaning or purpose.

[There is no performance indicator listed for Grade 12 for this content standard.]

Standard B8: Participate productively in self-directed work teams for a particular purpose (for example, to interpret literature, write or critique a proposal, solve a problem or make a decision) including posing relevant questions;

listening with civility to the ideas of others; extracting essential information from others' input; building on the ideas of others and contributing relevant information and ideas in group discussion; consulting texts as a source of ideas; gaining the floor in a respectful way; defining individuals' roles and responsibilities and setting clear goals; acknowledging the ideas and contributions of individuals in the group; understanding the purpose of the team project and the ground rules for decision-making; maintaining independence of judgment, offering dissent courteously, ensuring a hearing for the range of positions on an issue and avoiding premature consensus; tolerating ambiguity and a lack of consensus; and selecting leaders or spokespersons when necessary.

- Participate productively in self-directed work teams for a particular purpose such as to interpret literature, write or critique a proposal, solve a problem or make a decision. This participation involves such practices as posing relevant questions; listening with civility to the ideas of other; extracting essential information from others' input; building on the ideas of others and contributing relevant information or ideas in group discussion; consulting texts as a source of ideas; gaining the floor in respectful way; defining individuals' roles and responsibilities and setting clear goals; acknowledging the ideas and contributions of individuals in the group; understanding the purpose of the team project and the ground rules for decision-making; maintaining independence of judgment, offering dissent courteously, ensuring a hearing for the range of positions on an issue and avoiding premature consensus; tolerating ambiguity and a lack of consensus; and selecting leaders/spokespersons when necessary.

Strand C: Writing

Standard C1: Demonstrate proficiency in producing a variety of compositions.

- Demonstrate mastery in the creation of a research paper.

Standard C2: Plan writing by taking notes, writing informal outlines, and researching.

- Identify, evaluate, and analyze a variety of primary and secondary sources of information for credibility and usefulness.
- Analyze strengths and weaknesses in one's research findings such as coherence, validity or gaps, misinformation, and fallacies.
- Anticipate and address varying interpretations of one's findings.

Standard C3: Select and use formal or informal literary or technical language appropriate for the purpose, audience, and context of the communication.

- Make informed and sophisticated decisions about audiences appropriate to the writing task.
- Use language persuasively in addressing a particular issue.
- Use grammatical, metaphorical, or rhetorical devices to inform or persuade others.

Standard C4: Organize ideas in writing with a thesis statement in the introduction, well-constructed paragraphs, a conclusion, and transition sentences that connect paragraphs into a coherent whole.

- Organize and compose complex arguments.
- Select and use appropriate structures and organizational patterns (such as problem-solution, compare-contrast, cause-effect) to (1) select content, (2) represent ideas, (3) make connections, (4) generate new insights, and (5) develop an organizational structure.
- Develop multi-paragraph compositions that use complex organizational patterns, including a well-developed thesis statement with supporting paragraphs, appropriate transitions, and a logical ending that does not merely repeat the thesis.

Standard C5: Drawing on readers' comments on working drafts, revise documents to develop or support ideas more clearly, address potential objections, ensure effective transitions between paragraphs, and correct errors in logic.

- Analyze whether opinion or use of sources displays bias.
- Analyze whether the conclusion is appropriate, persuasive, and compelling.
- Identify areas requiring further investigation and research.

Standard C6: Edit one's own work for grammar, style, and tone appropriate to audience, purpose and context.

- Use a variety of strategies—reading draft aloud, seeking feedback from a reviewer, and reading the draft from the audience's perspective—to evaluate diction, figurative language, tone, sentence length and complexity, active and passive voice, and use of verbals.
- Edit work for consistency of tone and voice, clarity and conciseness.

Standard C7: Cite sources properly when paraphrasing or summarizing information, quoting, or using graphics.

- Beginning in 9th grade, use appropriate publication manuals to cite source materials and to prepare bibliographies, lists of works cited, and quoted passages: textbook appendices, *MLA Handbook for Writers of Research Papers*, *The Chicago Manual of Style*, the *Publication Manual of the American Psychological Association*, and *The Associated Press Stylebook*.

Standard C8: Present written material using basic software programs such as Word, Excel, and PowerPoint so that graphics can be incorporated to present information and ideas best understood visually (charts, ratios, and tables).

- Select production elements based on an analysis of one's purpose and the available media production resources.
- Incorporate into the final draft of written reports graphic materials appropriate for the particular communication such as graphs, charts, tables, maps, and photographs.

Standard C9: Produce effective work-related texts such as business letters, resumes, biographies, job applications, work procedures, work orders, and briefs.

- Address audience needs and state purpose and context in an efficient manner.
- Demonstrate proficiency in accessing and sending information electronically.
- Follow conventions of work-place writing with business letter and memo formats.
- Make use of appropriate writing strategies, such as creating a visual hierarchy, using white space and graphics as appropriate, and providing smooth transitions between sections or steps of the text.
- Include relevant information and exclude extraneous information.
- Anticipate problems, mistakes, and misunderstandings that might arise for the reader.
- Include necessary dates and other essential identifying information.

Strand D: Research

Standard D1: Define and narrow a problem or research topic.

- Form and refine a question for investigation based on a complex contemporary issue.

Standard D2: Gather relevant information for a research topic from a variety of print and electronic sources, as well as from direct observation, interviews, or surveys.

- Use creative or critical research strategies such as field studies, oral histories, interviews, and experiments.
- Use a variety of techniques for researching topics, including cross-referencing while gathering information.
- Synthesize a variety of types of visual information including pictures and symbols.

Standard D3: Make distinctions about the credibility, reliability, consistency, strengths and limitations of various resources, including information gathered from websites.

- Make extensive use of primary sources when researching a topic and make in-depth analyses of the validity and reliability of primary source information.

Standard D4: Report research findings in an effective manner appropriate to a designated audience.

- Identify audience to whom researched findings might be meaningful.
- Develop written or oral presentations of appropriate length that effectively report one's research findings.

Standard D5: Write an extended research essay of medium length.

- Synthesize information from multiple research studies to draw conclusions that go beyond those found in any one of the individual studies.
- Write a comprehensive research paper (6–10 pages).
- Examine complex issues by sharing and evaluating personal response, researching and summarizing data, and developing a framework in which to discuss the issue prior to writing the final draft.

Strand E: Logic

Standard E1: Distinguish among facts and opinions, evidence and inference.

- Apply established methods used to distinguish between factual claims and opinions.

Standard E2: Identify false premises in an argument.

- Recognize personal bias in an argument based on social, historical, or cultural influences.

Standard E3: Describe the structure of a given argument; identify its claims and evidence; and evaluate connections among evidence, inferences, and claims.

- Determine the significance and predict the possible consequences of a speaker's arguments, conclusions, and proposals.

Standard E4: Evaluate the range and quality of evidence used to support or oppose an argument.

- Adapt strategies for developing credibility by using appropriate reasoning patterns and supporting ideas with evidence and making emotional appeals through persuasive language.
- Use a variety of resources to gather information to gain meaning, to develop thematic connections, and to synthesize ideas.

Standard E5: Recognize common logical fallacies such as the appeal to pity (*argumentum ad misericordiam*), the personal attack (*argumentum ad hominem*), the appeal to general opinion (*argumentum ad populum*) and the false dilemma (assuming only two options when there are more available); and understand why these fallacies do not prove the point being argued.

- Analyze uses of fallacies and propaganda devices to determine why they are not effective, logical strategies.

Standard E6: Analyze written and oral communication for false assumptions, errors, loaded terms, caricature, sarcasm, leading questions, and faulty reasoning.

- Create and utilize criteria for critiquing one's own work and the work of others for unintended logical fallacies.

Standard E7: Understand the distinction between a deductive argument in which, if all the premises are true and the argument's form is valid, the conclusion is inescapably true; and an inductive argument, in which the conclusion provides the best or most probable explanation of the truth of the premise, but is not necessarily true.

- Analyze how stylistic and rhetorical devices support an argument by comparing the argument to the evidence.

Standard E8: Analyze two or more texts addressing the same topic to determine how authors reach similar or different conclusions.

- Analyze elements of increasingly complex texts addressing the same topic.

Standard E9: Construct oral and written arguments that demonstrate clear and knowledgeable judgment by:

- structuring ideas in a sustained and logical fashion;

- using a range of strategies to elaborate and persuade including anecdotes, case studies, analogies, and illustrations;
- clarifying and defending positions with precise and relevant evidence including facts, expert opinions, expressions of commonly accepted beliefs, and logical reasoning;
- anticipating and addressing a reader's concerns and counterclaims; and
- providing clear and effective conclusions.

- Use a variety of strategies to generate notes and content through reading primary and secondary sources. These strategies include defining key terms, setting up comparisons, analyzing relationships such as cause and effect, analyzing connections to past events, predicting future outcomes, analyzing multiple points of view, listing strengths and weaknesses, identifying bias, and anticipating and refuting counterarguments.
- Use a variety of strategies—reading the draft aloud, seeking feedback from a reviewer, capturing and evaluating the organization of the draft in an outline or organization map, reading the draft from the perspective of the intended audience—to evaluate whether the thesis claim is clear and substantive; whether the progression of ideas is coherent and smooth; whether claims and opinions are supported by evidence (reasons, examples and facts); whether opinions and/or use of sources display bias; whether counterarguments are anticipated and addressed; whether audience "pressure points" (interests, values, opinion, background knowledge, norms, and attitudes) are appealed to; whether organization patterns are clear and developed; and whether the conclusion is appropriate, persuasive, and compelling, in order to guide ongoing drafting, including identification of areas requiring further invention and research.

Strand F: Informational Text

Standard F1: Follow instructions in informational or technical texts to perform specific tasks, answer questions, or solve problems.

- Make in-depth analyses of technical information.
- Utilize informational and technical sources to evaluate and modify instructional tasks.

Standard F2: Identify the main ideas of informational text and determine the essential elements that elaborate them.

- Create an informational product by utilizing the essential elements of appropriate technical knowledge.

Standard F3: Summarize informational and technical texts and explain the visual components that support them.

- Reorganize the technical concepts and details in informational texts in new ways and identify appropriate supporting visual components.

Standard F4: Distinguish between a summary and a critique.

- Produce accurate summaries and effective critiques.

Standard F5: Interpret and use information in maps, charts, graphs, timelines, tables, and diagrams.

- Utilize appropriate graphic representations to accompany technical presentation.

Standard F6: Identify interrelationships between and among ideas and concepts within a text, such as cause and effect relationships.

- Identify and analyze how a writer of an informational or technical text achieves a sense of completeness and closure through the interrelationships of ideas and concepts.

Standard F7: Synthesize information from multiple informational and technical sources or texts.

- Utilize technical sources as both primary and secondary support in a comprehensive project.

Standard F8: Draw conclusions based on evidence from informational and technical texts or sources.

- Synthesize information from technical sources to draw complex and subtle generalizations and conclusions.

Standard F9: Analyze the ways in which a text's organizational structure supports or confounds its meaning or purpose.

- Create an effective informational/technical text that exhibits completeness and closure, combining a variety of informational/technical sources.

Standard F10: Recognize the use or abuse of ambiguity, contradiction, incongruities, overstatement, and understatement in texts and explain their effect on the reader.

- Evaluate and critique the coherence, validity, and relevance of ideas, evidence, and arguments in informational/technical selections that use ambiguity, contradiction, incongruities, overstatement or understatement.

Standard F11: Evaluate informational and technical texts for their clarity, simplicity and coherence and for the appropriateness of their graphic and visual appeal.

- Demonstrate an understanding of the use of appropriate informational and technical devices such as structure, organization, graphics, format, by creating a clear, simple, and coherent oral or written presentation.

Strand G: Media

Standard G1: Evaluate the aural, visual, and written images and other special effects used in television, radio, film, and the Internet for their ability to inform, persuade, and entertain.

- Critique the credibility of a media communication by evaluating relevance, timeliness, accuracy, fairness, and the inclusion of multiple viewpoints in light of media producers' purposes and goals.

Standard G2: Evaluate the effectiveness of a particular medium such as verbal, visual, photographic, television, and the Internet in achieving a particular purpose.

- Evaluate how effectively communication goals, aesthetic goals, and usability goals (such as ease of access to the communication, ease of navigation of

Internet sites, diction and layout as they affect accessibility for audiences) for the media communication have been achieved.

Standard G3: Create coherent media productions using effective images, text, graphics, music, and/or sound effects to present a distinctive point of view on a topic whether through PowerPoint presentations or videos.

- Use media to report research and represent data visually through graphs, charts, or statistics.

Strand H: Literature

Standard H1: Demonstrate knowledge of foundational literary works.

- Interpret the significance of literary works and movements as indicators of evolving societal perspectives, including 20th and pre-20th century foundational works of world literature.

Standard H2: Analyze foundational U.S. documents and indigenous cultural narratives for their historical and literary significance.

- Interpret the cultural, historical, and literary significance of indigenous narratives and foundational U.S. documents on U.S. culture throughout our nation's history.

Standard H3: Interpret significant literary elements across all forms of literature; use understanding of genre characteristics to allow deeper and subtler interpretations of texts.

- Develop thematic connections within and among literary works; and interpret allusions, symbols, and motifs.
- Analyze the use of humor, including satire and parody, in literary works.
- Analyze the use of tragic elements in literary works.
- Analyze moral dilemmas in works of literature, as revealed by characters' motivation and behavior.
- Compare and contrast the presentation of similar themes across genres to explain how the genre affects the reader's interpretation.

Standard H4: Analyze setting, plot, theme, characterization, and narration in literary prose, particularly classic and contemporary short stories and novels.

- Analyze the style of prose works from different eras or cultures (structural form, archaic diction, variations of syntax and sentence structure, dialog, and figurative/ literal language).

Standard H5: Demonstrate knowledge of the common elements of poetry: metrics, rhyme scheme, rhythm, alliteration, and other conventions.

- Analyze elements of poetry including:
  1. style: denotation and connotation in relation to diction
  2. meter and rhythm: the use of deliberately unconventional rhythms
  3. sound devices: manipulation of mood through sound devices
  4. poetic forms: particular forms for particular purposes; forms as they relate to historical/literary movements (jazz and Harlem Renaissance)
  5. figurative language and poetic devices: antithesis, motif
  6. theme: analyzing how the structure/form of a poem relates to its content and how this relationship reveals meaning or reinforces atheme.

Standard H6: Identify how elements of dramatic literature articulate a playwright's vision.

- Evaluate the ways in which tension is created, maintained, and resolved in a drama (catharsis, conflict, suspense, resolution)—including through the playwright's text, through the director's decisions, and through the actors' performances.
- Articulate a playwright's vision by participating in a dramatic reading and explaining one's choices regarding tone of voice, body language, facial expression, and interaction with other characters, and other components of drama.
- Analyze the philosophical assumptions and beliefs that underlie a playwright's work.
- Evaluate the success of dramas that have been made into films for example, *Romeo and Juliet*, by comparing elements in the play and in the film, including:
  1. the way in which the theme is developed and conveyed
  2. the way in which tension and conflict are presented
  3. the way in which transitions are made between scenes/settings, and the way in which transitions are made in terms of techniques such as time progression and flashback.
  4. the way in which the playwright/director establishes a style via mood, tone, irony, humor, suspense, dialogue, stage direction/actors' interaction, special effects, or elements such as monologue, soliloquy, and aside.
  5. the advantages of one form (traditional staging/live audience) versus another form (film).

Standard H7: Analyze works of literature for what they suggest about the time period and social or cultural context in which they were written.

- Analyze a recurring theme or pattern within a major literary movement.
- Analyze recurring themes and patterns in the oral traditions of various cultures, including Native American and Hispanic cultures.

Mathematics

New Mexico Grade 8 Mathematics
Process Standards

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and other contexts
- Apply and adapt a variety of appropriate strategies to solve problems, and
- Monitor and reflect on the process of problem solving.

Reasoning and Proof

- Recognize reasoning and proof as fundamental aspects of mathematics,
- Make and investigate mathematical conjectures,
- Develop and evaluate mathematical arguments and proofs, and
- Select and use various types of reasoning and methods of proof.

Communication

- Organize and consolidate their thinking through communication,
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others,
- Analyze and evaluate the mathematical thinking and strategies of others,
- Use the language of mathematics to express mathematical ideas precisely, and
- Describe mathematical concepts using developmentally appropriate definitions.

Connections

- Recognize and use connections among mathematical ideas,
- Understand how mathematical ideas interconnect and build on one another to produce a coherent whole, and
- Recognize and apply mathematics in contexts outside of mathematics.

Representation

- Create and use representations to organize, record, and communicate mathematical ideas,
- Select, apply, and translate among mathematical representations to solve problems, and
- Use representations to model and interpret physical, social, and mathematical phenomena.

New Mexico Grade 8 Mathematics
Content Standards

Strand: Number and Operations

Standard: Students will understand numerical concepts and mathematical operations.

Benchmark N.1: Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

8.N.1.1. Sort numbers by their properties (e.g., prime, composite, square, square root).

8.N.1.2. Demonstrate the magnitude of rational numbers (e.g., trillions to millions).

Benchmark N.2: Understand the meaning of operations and how they relate to one another.

8.N.2.1. Use real number properties (e.g., commutative, associative, distributive) to perform various computational procedures.

8.N.2.2. Perform arithmetic operations and their inverses (e.g., addition/subtraction, multiplication/division, square roots of perfect squares, cube roots of perfect cubes) on real numbers.

8.N.2.3. Find roots of real numbers using calculators.

Benchmark N.3: Compute fluently and make reasonable estimates.

8.N.3.1. Formulate algebraic expressions that include real numbers to describe and solve real-world problems.

8.N.3.2. Use a variety of computational methods to estimate quantities involving real numbers.

8.N.3.3. Differentiate between rational and irrational numbers.

8.N.3.4. Use real number properties to perform various computational procedures and explain how they were used.

8.N.3.5. Perform and explain computations with rational numbers, pi, and first-degree algebraic expressions in one variable in a variety of situations.

8.N.3.6. Select and use appropriate forms of rational numbers to solve real-world problems including those involving proportional relationships.

8.N.3.7. Approximate, mentally and with calculators, the value of irrational numbers as they arise from problem situations.

8.N.3.8. Express numbers in scientific notation (including negative exponents) in appropriate problem situations using a calculator.

8.N.3.9. Estimate answers and use formulas to solve application problems involving surface area and volume.

Strand: Algebra

Standard: Students will understand algebraic concepts and applications.

Benchmark A.1: Understand patterns, relations, and functions.

8.A.1.1. Move between numerical, tabular, and graphical representations of linear relationships.

8.A.1.2. Use variables to generalize patterns and information presented in tables, charts, and graphs:

a. graph linear functions noting that the vertical change per unit of horizontal change (the slope of the graph) is always the same

b. plot the values of quantities whose ratios are always the same, fit a line to the plot, and understand that the slope of the line equals the quantities

Benchmark A.2: Represent and analyze mathematical situations and structures using algebraic symbols.

8.A.2.1. Demonstrate the difference between an equation and an expression.

8.A.2.2. Solve two-step linear equations and inequalities in one variable with rational solutions.

8.A.2.3. Evaluate formulas using substitution.

8.A.2.4. Demonstrate understanding of the relationships between ratios, proportions, and percents and solve for a missing term in a proportion.

8.A.2.5. Graph solution sets of linear equations in two variables on the coordinate plane.

8.A.2.6. Formulate and solve problems involving simple linear relationships, find percents of a given number, variable situations, and unknown quantities.

8.A.2.7. Use symbols, variables, expressions, inequalities, equations, and simple systems of equations to represent problem situations that involve variables or unknown quantities.

Benchmark A.3: Use mathematical models to represent and understand quantitative relationships.

8.A.3.1. Generate different representations to model a specific numerical relationship given one representation of data (e.g., a table, a graph, an equation, a verbal description).

Benchmark A.4: Analyze changes in various contexts.

8.A.4.1. Use graphs, tables, and algebraic representations to make predictions and solve problems that involve change.

8.A.4.2. Estimate, find, and justify solutions to problems that involve change using tables, graphs, and algebraic expressions.

8.A.4.3. Use appropriate problem-solving strategies (e.g., drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table or graph, working a simpler problem, writing an algebraic expression or working backward) to solve problems that involve change.

8.A.4.4. Solve multi-step problems that involve changes in rate, average speed, distance, and time.

8.A.4.5. Analyze problems that involve change by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing, and observing patterns.

8.A.4.6. Generalize a pattern of change using algebra and show the relationship among the equation, graph, and table of values.

8.A.4.7. Recognize the same general pattern of change presented in different representations.

Strand: Geometry

Standard: Students will understand geometric concepts and applications.

Benchmark G.1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.

8.G.1.1. Recognize, classify, and discuss properties of all geometric figures including point, line, and plane.

8.G.1.2. Identify arc, chord, and semicircle and explain their attributes.

8.G.1.3. Use the Pythagorean theorem and its converse to find the missing side of a right triangle and the lengths of the other line segments.

Benchmark G.2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems.

8.G.2.1. Represent, formulate, and solve distance and geometry problems using the language and symbols of algebra and the coordinate plane and space (e.g., ordered triplets).

Benchmark G.3: Apply transformations and use symmetry to analyze mathematical situations.

8.G.3.1. Describe the symmetry of three-dimensional figures.

8.G.3.2. Describe and perform single and multiple transformations that include rotation, reflection, translation, and dilation (i.e., shrink or magnify) to two-dimensional figures.

Benchmark G.4: Use visualization, spatial reasoning, and geometric modeling to solve problems.

8.G.4.1. Understand angle relationships formed by parallel lines cut by a transversal.

8.G.4.2. Recognize and apply properties of corresponding parts of similar and congruent triangles and quadrilaterals.

8.G.4.3. Represent and solve problems relating to size, shape, area, and volume using geometric models.

8.G.4.4. Develop and use formulas for area, perimeter, circumference, and volume.

8.G.4.5. Construct two-dimensional patterns for three-dimensional models (e.g., cylinders, prisms, cones).

Strand: Measurement

Standard: Students will understand measurement systems and applications.

Benchmark M.1: Understand measurable attributes of objects and the units, systems, and processes of measurement.

8.M.1.1. Understand the concept of volume and use the appropriate units in common measuring systems (e.g., cubic centimeter, cubic inch, cubic yard) to compute the volume of rectangular solids.

8.M.1.2. Use changes in measurement units (e.g., square inches, cubic feet) to perform conversions from one-, two-, and three-dimensional shapes.

Benchmark M.2: Apply appropriate techniques, tools, and formulas to determine measurements.

8.M.2.1. Use ratios and proportions to measure hard-to-measure objects.

8.M.2.2. Use estimation to solve problems.

8.M.2.3. Use proportional relationships in similar shapes to find missing measurements.

8.M.2.4. Apply strategies to determine the surface area and volume of prisms, pyramids, and cylinders.

8.M.2.5. Perform conversions with multiple terms between metric and U.S. standard measurement systems.

8.M.2.6. Estimate volume in cubic units.

8.M.2.7. Solve simple problems involving rates and derived measurements for such properties as velocity and density.

Strand: Data Analysis and Probability

Standard: Students will understand how to formulate questions, analyze data, and determine probabilities.

Benchmark D.1: Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

8.D.1.1. Represent two numerical variables on a plot, describe how the data points are distributed, and identify relationships that exist between the two variables.

8.D.1.2. Generate, organize, and interpret real numbers in a variety of situations.

8.D.1.3. Organize, analyze, and display appropriate quantitative and qualitative data to address specific questions including:

a. frequency distributions
b. plots
c. histograms
d. bar, line, and pie graphs
e. diagram and pictorial displays
f. charts and tables

8.D.1.4. Select the appropriate measure of central tendency to describe a set of data for a particular problem situation.

8.D.1.5. Simulate an event selecting and using different models.

8.D.1.6. Develop an appropriate strategy using a variety of data from surveys, samplings, estimations, and inferences to address a specific problem.

Benchmark D.2: Select and use appropriate statistical methods to analyze data.

8.D.2.1. Use changes in scales, intervals, or categories to help support a particular interpretation of data.

8.D.2.2. Generate, organize, and interpret real number and other data in a variety of situations.

8.D.2.3. Analyze data to make decisions and to develop convincing arguments from data displayed in a variety of formats including:

a. plots
b. distributions
c. graphs
d. scatter plots
e. diagrams
f. pictorial displays
g. charts and tables
h. Venn diagrams

8.D.2.4. Interpret and analyze data from graphical representations and draw simple conclusions (e.g., line of best fit).

8.D.2.5. Evaluate and defend the reasonableness of conclusions drawn from data analysis.

8.D.2.6. Use appropriate central tendency and spread as a means for effective decision-making in analyzing data and outliers.

8.D.2.7. Identify simple graphic misrepresentations and distortions of sets of data (e.g., unequal interval sizes, omission of parts of axis range, scaling).

8.D.2.8. Use appropriate technology to display data as lists, tables, matrices, graphs, and plots and to analyze the relationships of variables in the data displayed.

Benchmark D.3: Develop and evaluate inferences and predictions that are based on data.

8.D.3.1. Describe how changes in scale, intervals, or categories influence arguments for a particular interpretation of the data.

8.D.3.2. Describe how reader bias, measurement errors, and display distortion can affect the interpretation of data, predictions, and inferences based on data.

8.D.3.3. Conduct simple experiments and/or simulations, record results in charts, tables, or graphs, and use the results to draw conclusions and make predictions.

8.D.3.4. Compare expected results with experimental results and information used in predictions and inferences.

Benchmark D.4: Understand and apply basic concepts of probability.

8.D.4.1. Calculate the odds of a desired outcome in a simple experiment.

8.D.4.2. Design and use an appropriate simulation to estimate the probability of a real-world event (e.g., disk toss, cube toss).

8.D.4.3. Explain the relationship between probability and odds and calculate the odds of a desired outcome in a simple experiment.

8.D.4.4. Use theoretical or experimental probability to make predictions about real-world events.

8.D.4.5. Use probability to generate convincing arguments, draw conclusions, and make decisions in a variety of situations.

8.D.4.6. Understand that the probability of two unrelated events occurring is the sum of the two individual possibilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.

New Mexico Grades 9–12 Mathematics
Process Standards

Problem Solving

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and other contexts
- Apply and adapt a variety of appropriate strategies to solve problems, and
- Monitor and reflect on the process of problem solving.

Reasoning and Proof

- Recognize reasoning and proof as fundamental aspects of mathematics,
- Make and investigate mathematical conjectures,
- Develop and evaluate mathematical arguments and proofs, and
- Select and use various types of reasoning and methods of proof.

Communication

- Organize and consolidate their thinking through communication,
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others,
- Analyze and evaluate the mathematical thinking and strategies of others,
- Use the language of mathematics to express mathematical ideas precisely, and
- Describe mathematical concepts using developmentally appropriate definitions.

Connections

- Recognize and use connections among mathematical ideas,
- Understand how mathematical ideas interconnect and build on one another to produce a coherent whole, and
- Recognize and apply mathematics in contexts outside of mathematics.

Representation

- Create and use representations to organize, record, and communicate mathematical ideas,
- Select, apply, and translate among mathematical representations to solve problems, and
- Use representations to model and interpret physical, social, and mathematical phenomena.

New Mexico Grades 9–12 Mathematics
Content Standards

Strand: Algebra, Functions, and Graphs

Standard: Students will understand algebraic concepts and applications.

Benchmark A.1: Represent and analyze mathematical situations and structures using algebraic symbols.

9–12.A.1.1. Use the special symbols of mathematics correctly and precisely.

9–12.A.1.2. Classify and use equivalent representations of natural, whole, integer, rational, irrational numbers and complex numbers, and choose which type of number is appropriate in a given context.

9–12.A.1.3. Determine the relative position on the number line and the relative magnitude of integers, decimals, rationals, irrationals, and numbers in scientific notation.

9–12.A.1.4. Explain that the distance between two numbers on the number line is the absolute value of their difference.

9–12.A.1.5. Use a variety of computational methods, recognize when an estimate or approximation is more appropriate than an exact answer, and understand the limits on precision of approximations.

9–12.A.1.6. Simplify numerical expressions using the order of operations, including integer exponents.

9–12.A.1.7. Translate verbal statements into algebraic expressions or equations.

9–12.A.1.8. Solve formulas for specified variables.

9–12.A.1.9. Solve quadratic equations in one variable.

9–12.A.1.10. Solve radical equations involving one radical.

9–12.A.1.11. Describe the properties of rational exponents and apply these properties to simplify algebraic expressions.

9–12.A.1.12. Explain and use equivalent representations for algebraic expressions (e.g., simplify using the distributive property).

9–12.A.1.13. Simplify rational expressions by factoring and reducing to lowest terms.

9–12.A.1.14. Evaluate polynomial, rational, radical, and absolute value expressions for one or more variables.

9–12.A.1.15. Compare and order polynomial expressions by degree.

9–12.A.1.16. Factor polynomials of various types (e.g., difference of squares, perfect square trinomials, sum and difference of cubes).

9–12.A.1.17. Solve linear equations and inequalities in one variable including those involving the absolute value of a linear function.

9–12.A.1.18. Use the four basic operations (+, –, ×, ÷) with linear, polynomial, and rational expressions in contextual situations.

9–12.A.1.19. Use the four basic operations (+, –, ×, ÷) in contextual situations with numbers in scientific notation, and express the results with the appropriate number of significant figures.

Benchmark A.2: Understand patterns, relations, functions, and graphs.

9–12.A.2.1. Distinguish between the concept of a relation and a function.

9–12.A.2.2. Determine whether a relation defined by a graph, a set of ordered pairs, a table of values, an equation, or a rule is a function.

9–12.A.2.3. Translate among tabular, symbolic, and graphical representations of functions and relations.

9–12.A.2.4. Construct a linear function that represents a given graph.

9–12.A.2.5. Explain and use function notation in both abstract and contextual situations and evaluate a function at a specific point in its domain.

9–12.A.2.6. Graph a linear equation and demonstrate that it has a constant rate of change.

9–12.A.2.7. Graph a linear inequality in two variables.

9–12.A.2.8. Graph a quadratic function and understand the relationship between its real zeros and the *x*-intercepts of its graph.

9–12.A.2.9. Graph exponential functions and identify their key characteristics as related to contextual situations.

9–12.A.2.10. Identify and describe symmetries of graphs.

9–12.A.2.11. Use the quadratic formula and factoring techniques to determine whether the graph of a quadratic function will intersect the *x*-axis in zero, one, or two points (include quadratic functions that represent real phenomena).

9–12.A.2.12. Explain the meaning of the real and complex roots of quadratic functions in contextual situations.

9–12.A.2.13. Read information and draw conclusions from graphs, and identify properties of a graph that provide useful information about the original problem.

9–12.A.2.14. Understand the relationship between the coefficients of a linear equation and the slope and *x*- and *y*-intercepts of its graphs.

9–12.A.2.15. Evaluate estimated rate of change in a contextual situations.

Benchmark A.3: Use mathematical models to represent and understand quantitative relationships.

9–12.A.3.1. Model real-world phenomena using linear equations and linear inequalities interpret resulting solutions, and use estimation to detect errors.

9–12.A.3.2. Model real-world phenomena using quadratic equations, interpret resulting solutions, and use estimation to detect errors.

9–12.A.3.3. Model real-world phenomena using exponential equations, interpret resulting solutions, and use estimation to detect errors.

9–12.A.3.4. Solve systems of linear equations in two variables algebraically and graphically.

9–12.A.3.5. Solve applications involving systems of two equations in two variables.

9–12.A.3.6. Write an equation of the line that passes through two given points.

9–12.A.3.7. Verify that a point lies on a line, given an equation of the line, and be able to derive linear equations given a point and a slope.

9–12.A.3.8. Determine whether the graphs of two given linear equations are parallel, perpendicular, coincide or none of these.

Strand: Geometry and Trigonometry

Standard: Students will understand geometric concepts and applications.

Benchmark G.1: Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

9–12.G.1.1. Understand that numerical values associated with measurements of physical quantities must be assigned units of measurement or dimensions; apply such units correctly in expressions, equations and problem solutions that involve measurements; and convert a measurement using one unit of measurement to another unit of measurement.

9–12.G.1.2. Find the area and perimeter of a geometric figure composed of a combination of two or more rectangles, triangles, and/or semicircles with just edges in common.

9–12.G.1.3. Draw three-dimensional objects and calculate the surface areas and volumes of these figures (e.g. prisms, cylinders, pyramids, cones, spheres) as well as figures constructed from unions of prisms with faces in common, given the formulas for these figures.

9–12.G.1.4. Identify the hypothesis and conclusion in examples of conditional statements.

9–12.G.1.5. Use definitions in making logical arguments.

9–12.G.1.6. Use counterexamples to show that an assertion is false and recognize that a single counterexample is sufficient to refute a universal statement.

9–12.G.1.7. Explain the difference between inductive and deductive reasoning and provide examples of each.

9–12.G.1.8. Explain why, for inductive reasoning, showing a statement is true for a finite number of examples does not show it is true for all cases unless the cases verified are all possible cases.

9–12.G.1.9. Write geometric proofs, including proofs by contradiction, and perform and explain basic geometric constructions related to: theorems involving the properties of parallel and perpendicular lines, circles, and polygons; theorems involving complementary, supplementary, and congruent angles; theorems involving congruence and similarity; and the Pythagorean theorem.

9–12.G.1.10. Recognize that there are geometries, other than Euclidean geometry, in which the parallel postulate is not true.

Benchmark G.2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems.

9–12.G.2.1. Identify the origin, coordinate axes, and four quadrants on the Cartesian coordinate plane, and draw and label them correctly.

9–12.G.2.2. Determine the midpoint and distance between two points within a coordinate system and relate these ideas to geometric figures in the plane (e.g., find the center of a circle given the two points of a diameter of the circle).

9–12.G.2.3. Use basic geometric ideas (e.g., the Pythagorean theorem, area and perimeter) in the context of the Cartesian coordinate plane (e.g., calculate the perimeter of a rectangle with integer coordinates and with sides parallel to the coordinate axes, and of a rectangle with sides not parallel).

Benchmark G.3: Apply transformations and use symmetry to analyze mathematical situations.

9–12.G.3.1. Use rigid motions (compositions of reflections, translations and rotations) to determine whether two geometric figures are congruent in a coordinate plane.

9–12.G.3.2. Sketch a planar figure that is the result of given transformations (i.e., translation, reflection, rotation, and/or dilation).

9–12.G.3.3. Identify similarity in terms of transformations.

9–12.G.3.4. Determine the effects of transformations on linear and area measurements of the original planar figure.

Benchmark G.4: Use visualization, spatial reasoning, and geometric modeling to solve problems.

9–12.G.4.1. Solve contextual problems using congruence and similarity relationships of triangles (e.g., find the height of a pole given the length of its shadow).

9–12.G.4.2. Solve problems involving complementary, supplementary, and congruent angles.

9–12.G.4.3. Know that the effect of a scale factor k on length, area and volume is to multiply each by k, k^2 and k^3, respectively.

9–12.G.4.4. Solve problems using the Pythagorean theorem.

9–12.G.4.5. Understand how similarity of right triangles allows the trigonometric functions sine, cosine and tangent to be defined as ratios of sides and be able to use these functions to solve problems.

9–12.G.4.6. Apply basic trigonometric functions to solve right-triangle problems.

9–12.G.4.7. Use angle and side relationships in problems with special right triangles (e.g., 30-, 60-, 90-, and 45-, 45-, 90-degree triangles).

9–12.G.4.8. Describe the intersections of a line and a plane, intersections of lines in the plane and in space, or of two planes in space.

Strand: Data Analysis and Probability

Standard: Students will understand how to formulate questions, analyze data, and determine probabilities.

Benchmark D.1: Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

9–12.D.1.1. Explain the differences between various methods of data collection.

9–12.D.1.2. Describe the characteristics of a well-designed and well-conducted survey by differentiating between sampling and census, and a biased and unbiased sample.

9–12.D.1.3. Describe the characteristics of a well-designed and well-conducted experiment by differentiating between experiments and observational studies, and recognizing the sources of bias in poorly designed experiments.

9–12.D.1.4. Explain the role of randomization in well-designed surveys and experiments.

Benchmark D.2: Select and use appropriate statistical methods to analyze data and make predictions.

9–12.D.2.1. Distinguish measurement data from categorical data, and define the term *variable*.

9–12.D.2.2. Explain the meaning of *univariate* and *bivariate* data.

9–12.D.2.3. Display the distribution of univariate data, describe its shape using appropriate summary statistics, and understand the distinction between a statistic and a parameter.

9–12.D.2.4. Calculate and apply measures of variability (e.g., standard deviation).

9–12.D.2.5. Compare distributions of univariate data using back-to-back stem and leaf plots and parallel box and whisker plots.

9–12.D.2.6. Describe the characteristics of a normal distribution.

9–12.D.2.7. Compare and draw conclusions between two or more sets of univariate data using basic data analysis techniques and summary statistics.

9–12.D.2.8. Describe the shape of a scatterplot.

9–12.D.2.9. Use linear patterns in data to make predictions.

9–12.D.2.10. Use technological tools to find the line of best fit.

9–12.D.2.11. Describe the relationship between two variables and determine its strength with and without technological tools.

9–12.D.2.12. Explain why correlation does not imply a cause-and-effect relationship.

9–12.D.2.13. Use the results of simulations to explore the variability of sample statistics from a known population and construct sampling distributions.

9–12.D.2.14. Describe how sample statistics, including the law of large numbers, reflect the values of population parameters and use sampling distributions as the basis for informal inference.

9–12.D.2.15. Evaluate published reports that are based on data by examining the design of the study, the appropriateness of the data analysis, and the validity of conclusions.

Benchmark D.3: Understand and apply basic concepts of probability.

9–12.D.3.1. Explain the concept of a random variable.

9–12.D.3.2. Explain how the relative frequency of a specified outcome of an event can be used to estimate the probability of the outcome.

9–12.D.3.3. Use the results of simulations to compute the expected value and probabilities of random variables in simple cases.

9–12.D.3.4. Compute the probability of an event using the complement rule, addition rule for disjoint and joint events, multiplication rule for independent events, and rules for conditional probability.

Science

New Mexico Grade 8 Science
Content Standards

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.

1. Evaluate the accuracy and reproducibility of data and observations.
2. Use a variety of technologies to gather, analyze and interpret scientific data.
3. Know how to recognize and explain anomalous data.

Benchmark II: Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.

1. Examine alternative explanations for observations.
2. Describe ways in which science differs from other ways of knowing and from other bodies of knowledge (e.g., experimentation, logical arguments, skepticism).
3. Know that scientific knowledge is built on questions posed as testable hypotheses, which are tested until the results are accepted by peers.

Benchmark III: Use mathematical ideas, tools, and techniques to understand scientific knowledge.

1. Use mathematical expressions and techniques to explain data and observations and to communicate findings (e.g., formulas and equations, significant figures, graphing, sampling, estimation, mean).
2. Create models to describe phenomena.

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark I: Know the forms and properties of matter and how matter interacts.

Properties of Matter

1. Know how to use density, boiling point, freezing point, conductivity, and color to identify various substances.
2. Distinguish between metals and non-metals.
3. Understand the differences among elements, compounds, and mixtures by:
   - classification of materials as elements, compounds, or mixtures
   - interpretation of chemical formulas
   - separation of mixtures into compounds by methods including evaporation, filtration, screening, magnetism.

Structure of Matter

4. Identify the protons, neutrons, and electrons within an atom and describe their locations (i.e., in the nucleus or in motion outside the nucleus).
5. Explain that elements are organized in the periodic table according to their properties.
6. Know that compounds are made of two or more elements, but not all sets of elements can combine to form compounds.

Changes in Matter

7. Know that phase changes are physical changes that can be reversed (e.g., evaporation, condensation, melting).
8. Describe various familiar physical and chemical changes that occur naturally (e.g., snow melting, photosynthesis, rusting, burning).
9. Identify factors that influence the rate at which chemical reactions occur (e.g., temperature, concentration).
10. Know that chemical reactions can absorb energy (endothermic reactions) or release energy (exothermic reactions).

Benchmark II: Explain the physical processes involved in the transfer, change, and conservation of energy.

Energy Transformation

1. Know that energy exists in many forms and that when energy is transformed some energy is usually converted to heat.
2. Know that kinetic energy is a measure of the energy of an object in motion and potential energy is a measure of an object's position or composition, including:
   - transformation of gravitational potential energy of position into kinetic energy of motion by a falling object.
3. Distinguish between renewable and nonrenewable sources of energy.
4. Know that electrical energy is the flow of electrons through electrical conductors that connect sources of electrical energy to points of use, including:
   - electrical current paths through parallel and series circuits

= Measured by EXPLORE Science Test
_____ = Content sampled by EXPLORE Science Test

- production of electricity by fossil-fueled and nuclear power plants, wind generators, geothermal plants, and solar cells
- use of electricity by appliances and equipment (e.g., calculators, hair dryers, light bulbs, motors).

Waves

5. Understand how light and radio waves carry energy through vacuum or matter by:
   - straight-line travel unless an object is encountered
   - reflection by a mirror, refraction by a lens, absorption by a dark object
   - separation of white light into different wavelengths by prisms
   - visibility of objects due to light emission or scattering.
6. Understand that vibrations of matter (e.g., sound, earthquakes, water waves) carry wave energy, including:
   - sound transmission through solids, liquids, and gases
   - relationship of pitch and loudness of sound to rate and distance (amplitude) of vibration
   - ripples made by objects dropped in water.

Benchmark III: Describe and explain forces that produce motion in objects.

Forces

1. Know that there are fundamental forces in nature (e.g., gravity, electromagnetic forces, nuclear forces).
2. Know that a force has both magnitude and direction.
3. Analyze the separate forces acting on an object at rest or in motion (e.g., gravity, elastic forces, friction), including how multiple forces reinforce or cancel one another to result in a net force that acts on an object.
4. Know that electric charge produces electrical fields and magnets produce magnetic fields.
5. Know how a moving magnetic field can produce an electric current (generator) and how an electric current can produce a magnetic field (electromagnet).
6. Know that Earth has a magnetic field.

Motion

7. Know that an object's motion is always described relative to some other object or point (i.e., frame of reference).
8. Understand and apply Newton's Laws of Motion:
   - Objects in motion will continue in motion and objects at rest will remain at rest unless acted upon by an unbalanced force (inertia).
   - If a greater force is applied to an object a proportionally greater acceleration will occur.
   - If an object has more mass the effect of an applied force is proportionally less.

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.

1. Describe how matter moves through ecosystems (e.g., water cycle, carbon cycle).
2. Describe how energy flows through ecosystems (e.g., sunlight, green plants, food for animals).
3. Explain how a change in the flow of energy can impact an ecosystem (e.g., the amount of sunlight available for plant growth, global climate change).

Benchmark II: Understand how traits are passed from one generation to the next and how species evolve.

1. Understand that living organisms are made mostly of molecules consisting of a limited number of elements (e.g., carbon, hydrogen, nitrogen, oxygen).
2. Identify DNA as the chemical compound involved in heredity in living organisms.
3. Describe the widespread role of carbon in the chemistry of living systems.

Benchmark III: Understand the structure of organisms and the function of cells in living systems.

1. Describe how cells use chemical energy obtained from food to conduct cellular functions (i.e., respiration).
2. Explain that photosynthesis in green plants captures the energy from the sun and stores it chemically.
3. Describe how chemical substances can influence cellular activity (e.g., pH).

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark I: Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.

1. Understand how energy from the sun and other stars, in the form of light, travels long distances to reach Earth.
2. Explain how the properties of light (e.g., emission, reflection, refraction) emitted from the sun and stars are used to learn about the universe, including:
   - distances in the solar system and the universe
   - temperatures of different stars.
3. Understand how gravitational force acts on objects in the solar system and the universe, including:
   - similar action on masses on Earth and on other objects in the solar system

= Measured by EXPLORE Science Test
_____ = Content sampled by EXPLORE Science Test

- explanation of the orbits of the planets around the sun.

Benchmark II: Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.

1. Describe the role of pressure (and heat) in the rock cycle.
2. Understand the unique role water plays on Earth, including:
   - ability to remain liquid at most Earth temperatures
   - properties of water related to processes in the water cycle: evaporation, condensation, precipitation, surface run-off, percolation
   - dissolving of minerals and gases and transport to the oceans
   - fresh and salt water in oceans, rivers, lakes, and glaciers
   - reactant in photosynthesis.
3. Understand the geologic conditions that have resulted in energy resources (e.g., oil, coal, natural gas) available in New Mexico.

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark I: Explain how scientific discoveries and inventions have changed individuals and societies.

1. Analyze the interrelationship between science and technology (e.g., germ theory, vaccines).
2. Describe how scientific information can help to explain environmental phenomena (e.g., floods, earthquakes, volcanoes, fire, extreme weather).
3. Describe how technological revolutions have significantly influenced societies (e.g., energy production, warfare, space exploration).
4. Critically analyze risks and benefits associated with technologies related to energy production.

= Measured by EXPLORE Science Test
_____ = Content sampled by EXPLORE Science Test

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark I: Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.

1. Describe the essential components of an investigation, including appropriate methodologies, proper equipment, and safety precautions.
2. Design and conduct scientific investigations that include:
   - testable hypotheses
   - controls and variables
   - methods to collect, analyze, and interpret data
   - results that address hypotheses being investigated
   - predictions based on results
   - re-evaluation of hypotheses and additional experimentation as necessary
   - error analysis.
3. Use appropriate technologies to collect, analyze, and communicate scientific data (e.g., computers, calculators, balances, microscopes).
4. Convey results of investigations using scientific concepts, methodologies, and expressions, including:
   - scientific language and symbols
   - diagrams, charts, and other data displays
   - mathematical expressions and processes (e.g., mean, median, slope, proportionality)
   - clear, logical, and concise communication
   - reasoned arguments.
5. Understand how scientific theories are used to explain and predict natural phenomena (e.g., plate tectonics, ocean currents, structure of atom).

Benchmark II: Understand that scientific processes produce scientific knowledge that is continually evaluated, validated, revised, or rejected.

1. Understand how scientific processes produce valid, reliable results, including:
   - consistency of explanations with data and observations
   - openness to peer review
   - full disclosure and examination of assumptions
   - testability of hypotheses
   - repeatability of experiments and reproducibility of results.
2. Use scientific reasoning and valid logic to recognize:
   - faulty logic
   - cause and effect
   - the difference between observation and unsubstantiated inferences and conclusions
   - potential bias.
3. Understand how new data and observations can result in new scientific knowledge.
4. Critically analyze an accepted explanation by reviewing current scientific knowledge.
5. Examine investigations of current interest in science (e.g., superconductivity, molecular machines, age of the universe).
6. Examine the scientific processes and logic used in investigations of past events (e.g., using data from crime scenes, fossils), investigations that can be planned in advance but are only done once (e.g., expensive or time-consuming experiments such as medical clinical trials), and investigations of phenomena that can be repeated easily and frequently.

Benchmark III: Use mathematical concepts, principles, and expressions to analyze data, develop models, understand patterns and relationships, evaluate findings, and draw conclusions.

1. Create multiple displays of data to analyze and explain the relationships in scientific investigations.
2. Use mathematical models to describe, explain, and predict natural phenomena.
3. Use technologies to quantify relationships in scientific hypotheses (e.g., calculators, computer spreadsheets and databases, graphing software, simulations, modeling).
4. Identify and apply measurement techniques and consider possible effects of measurement errors.
5. Use mathematics to express and establish scientific relationships (e.g., scientific notation, vectors, dimensional analysis).

Strand II: The Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark I: Understand the properties, underlying structure, and reactions of matter.

Properties of Matter

1. Classify matter in a variety of ways (e.g., element, compound, mixture; solid, liquid, gas; acidic, basic, neutral).
2. Identify, measure, and use a variety of physical and chemical properties (e.g., electrical conductivity, density, viscosity, chemical reactivity, pH, melting point).
3. Know how to use properties to separate mixtures into pure substances (e.g., distillation, chromatography, solubility).

= Measured by EXPLORE, PLAN, and/or ACT Science tests
_____ = Content sampled by EXPLORE, PLAN, and/or ACT Science tests

4. Describe trends in properties (e.g., ionization energy or reactivity as a function of location on the periodic table, boiling point of organic liquids as a function of molecular weight).

Structure of Matter

5. Understand that matter is made of atoms and that atoms are made of subatomic particles.
6. Understand atomic structure, including:
   - most space occupied by electrons
   - nucleus made of protons and neutrons
   - isotopes of an element
   - masses of proton and neutron 2000 times greater than mass of electron
   - atom held together by proton-electron electrical forces.
7. Explain how electrons determine the properties of substances by:
   - interactions between atoms through transferring or sharing valence electrons
   - ionic and covalent bonds
   - the ability of carbon to form a diverse array of organic structures.
8. Make predictions about elements using the periodic table (e.g., number of valence electrons, metallic character, reactivity, conductivity, type of bond between elements).
9. Understand how the type and arrangement of atoms and their bonds determine macroscopic properties (e.g., boiling point, electrical conductivity, hardness of minerals).
10. Know that states of matter (i.e., solid, liquid, gas) depend on the arrangement of atoms and molecules and on their freedom of motion.
11. Know that some atomic nuclei can change, including:
    - spontaneous decay
    - half-life of isotopes
    - fission
    - fusion (e.g., the sun)
    - alpha, beta, and gamma radiation.

Chemical Reactions

12. Know that chemical reactions involve the rearrangement of atoms, and that they occur on many timescales (e.g., picoseconds to millennia).
13. Understand types of chemical reactions (e.g., synthesis, decomposition, combustion, redox, neutralization) and identify them as exothermic or endothermic.
14. Know how to express chemical reactions with balanced equations that show:
    - conservation of mass
    - products of common reactions.
15. Describe how the rate of chemical reactions depends on many factors that include temperature, concentration, and the presence of catalysts.

Benchmark II: Understand the transformation and transmission of energy and how energy and matter interact.

Energy Transformation and Transfer

1. Identify different forms of energy, including kinetic, gravitational (potential), chemical, thermal, nuclear, and electromagnetic.
2. Explain how thermal energy (heat) consists of the random motion and vibrations of atoms and molecules and is measured by temperature.
3. Understand that energy can change from one form to another (e.g., changes in kinetic and potential energy in a gravitational field, heats of reaction, hydroelectric dams) and know that energy is conserved in these changes.
4. Understand how heat can be transferred by conduction, convection, and radiation, and how heat conduction differs in conductors and insulators.
5. Explain how heat flows in terms of the transfer of vibrational motion of atoms and molecules from hotter to colder regions.
6. Understand that the ability of energy to do something useful (work) tends to decrease (and never increases) as energy is converted from one form to another.

Interactions of Energy and Matter

7. Understand that electromagnetic waves carry energy that can be transferred when they interact with matter.
8. Describe the characteristics of electromagnetic waves (e.g., visible light, radio, microwave, X-ray, ultraviolet, gamma) and other waves (e.g., sound, seismic waves, water waves), including:
   - origin and potential hazards of various forms of electromagnetic radiation
   - energy of electromagnetic waves carried in discrete energy packets (photons) whose energy is inversely proportional to wavelength.
9. Know that each kind of atom or molecule can gain or lose energy only in discrete amounts.
10. Explain how wavelengths of electromagnetic radiation can be used to identify atoms, molecules, and the composition of stars.
11. Understand the concept of equilibrium (i.e., thermal, mechanical, and chemical).

Benchmark III: Understand the motion of objects and waves, and the forces that cause them.

Forces

1. Know that there are four fundamental forces in nature: gravitation, electromagnetism, weak nuclear force, and strong nuclear force.
2. Know that every object exerts gravitational force on every other object, and how this force depends on the masses of the objects and the distance between them.

= Measured by EXPLORE, PLAN, and/or ACT Science tests
= Content sampled by EXPLORE, PLAN, and/or ACT Science tests

3. Know that materials containing equal amounts of positive and negative charges are electrically neutral, but that a small excess or deficit of negative charges produces significant electrical forces.
4. Understand the relationship between force and pressure, and how the pressure of a volume of gas depends on the temperature and the amount of gas.
5. Explain how electric currents cause magnetism and how changing magnetic fields produce electricity (e.g., electric motors, generators).
6. Represent the magnitude and direction of forces by vector diagrams.
7. Know that when one object exerts a force on a second object, the second object exerts a force of equal magnitude and in the opposite direction on the first object (i.e., Newton's Third Law).

Motion

8. Apply Newton's Laws to describe and analyze the behavior of moving objects, including:
   - displacement, velocity, and acceleration of a moving object
   - Newton's Second Law, $F = ma$ (e.g., momentum and its conservation, the motion of an object falling under gravity, the independence of a falling object's motion on mass)
   - circular motion and centripetal force.
9. Describe relative motion using frames of reference.
10. Describe wave propagation using amplitude, wavelength, frequency, and speed.
11. Explain how the interactions of waves can result in interference, reflection, and refraction.
12. Describe how waves are used for practical purposes (e.g., seismic data, acoustic effects, Doppler effect).

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark I: Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.

Ecosystems

1. Know that an ecosystem is complex and may exhibit fluctuations around a steady state or may evolve over time.
2. Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).
3. Understand and describe how available resources limit the amount of life an ecosystem can support (e.g., energy, water, oxygen, nutrients).
4. Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).

Energy Flow in the Environment

5. Explain how matter and energy flow through biological systems (e.g., organisms, communities, ecosystems), and how the total amount of matter and energy is conserved but some energy is always released as heat to the environment.
6. Describe how energy flows from the sun through plants to herbivores to carnivores and decomposers.
7. Understand and explain the principles of photosynthesis (i.e., chloroplasts in plants convert light energy, carbon dioxide, and water into chemical energy).

Biodiversity

8. Understand and explain the hierarchical classification scheme (i.e., domain, kingdom, phylum, class, order, family, genus, species), including:
   - classification of an organism into a category
   - similarity inferred from molecular structure (DNA) closely matching classification based on anatomical similarities
   - similarities of organisms reflecting evolutionary relationships.
9. Understand variation within and among species, including:
   - mutations and genetic drift
   - factors affecting the survival of an organism
   - natural selection.

Benchmark II: Understand the genetic basis for inheritance and the basic concepts of biological evolution.

Genetics

1. Know how DNA carries all genetic information in the units of heredity called genes, including:
   - the structure of DNA (e.g., subunits A, G, C, T)
   - information-preserving replication of DNA
   - alteration of genes by inserting, deleting, or substituting parts of DNA.
2. Use appropriate vocabulary to describe inheritable traits (i.e., genotype, phenotype).
3. Explain the concepts of segregation, independent assortment, and dominant/recessive alleles.
4. Identify traits that can and cannot be inherited.
5. Know how genetic variability results from the recombination and mutation of genes, including:
   - sorting and recombination of genes in sexual reproduction result in a change in DNA that is passed on to offspring
   - radiation or chemical substances can cause mutations in cells, resulting in a permanent change in DNA.

= Measured by EXPLORE, PLAN, and/or ACT Science tests
= Content sampled by EXPLORE, PLAN, and/or ACT Science tests

6. Understand the principles of sexual and asexual reproduction, including meiosis and mitosis.
7. Know that most cells in the human body contain 23 pairs of chromosomes including one pair that determines sex, and that human females have two X chromosomes and human males have an X and a Y chromosome.

Biological Evolution

8. Describe the evidence for the first appearance of life on Earth as one-celled organisms, over 3.5 billion years ago, and for the later appearance of a diversity of multicellular organisms over millions of years.
9. Critically analyze the data and observations supporting the conclusion that the species living on Earth today are related by descent from the ancestral one-celled organisms.
10. Understand the data, observations, and logic supporting the conclusion that species today evolved from earlier, distinctly different species, originating from the ancestral one-celled organisms.
11. Understand that evolution is a consequence of many factors, including the ability of organisms to reproduce, genetic variability, the effect of limited resources, and natural selection.
12. Explain how natural selection favors individuals who are better able to survive, reproduce, and leave offspring.
13. Analyze how evolution by natural selection and other mechanisms explains many phenomena including the fossil record of ancient life forms and similarities (both physical and molecular) among different species.

Benchmark III: Understand the characteristics, structures, and functions of cells.

Structure and Function

1. Know that cells are made of proteins composed of combinations of amino acids.
2. Know that specialized structures inside cells in most organisms carry out different functions, including:
   - parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria)
   - storage of genetic material in DNA
   - similarities and differences between plant and animal cells
   - prokaryotic and eukaryotic cells.
3. Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).
4. Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).
5. Explain how cells differentiate and specialize during the growth of an organism, including:
   - differentiation, regulated through the selected expression of different genes
   - specialized cells, response to stimuli (e.g., nerve cells, sense organs).
6. Know that DNA directs protein building (e.g., role of RNA).

Biochemical Mechanisms

7. Describe how most cell functions involve chemical reactions, including:
   - promotion or inhibition of biochemical reactions by enzymes
   - processes of respiration (e.g., energy production, ATP)
   - communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark I: Examine the scientific theories of the origin, structure, contents, and evolution of the solar system and the universe, and their interconnections.

1. Understand the scale and contents of the universe, including:
   - range of structures from atoms through astronomical objects to the universe
   - objects in the universe such as planets, stars, galaxies, and nebulae.
2. Predict changes in the positions and appearances of objects in the sky (e.g., moon, sun) based on knowledge of current positions and patterns of movements (e.g., lunar cycles, seasons).
3. Understand how knowledge about the universe comes from evidence collected from advanced technology (e.g., telescopes, satellites, images, computer models).
4. Describe the key observations that led to the acceptance of the Big Bang theory and that the age of the universe is over 10 billion years.
5. Explain how objects in the universe emit different electromagnetic radiation and how this information is used.
6. Describe how stars are powered by nuclear fusion, how luminosity and temperature indicate their age, and how stellar processes create heavier and stable elements that are found throughout the universe.
7. Examine the role that New Mexico research facilities play in current space exploration (e.g., Very Large Array, Goddard Space Center).

Benchmark II: Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.

= Measured by EXPLORE, PLAN, and/or ACT Science tests
= Content sampled by EXPLORE, PLAN, and/or ACT Science tests

Characteristics and Evolution of Earth

1. Describe the characteristics and the evolution of Earth in terms of the geosphere, the hydrosphere, the atmosphere, and the biosphere.
2. Recognize that radiometric data indicate that Earth is at least 4 billion years old and that Earth has changed during that period.
3. Describe the internal structure of Earth (e.g., core, mantle, crust) and the structure of Earth's plates.
4. Understand the changes in Earth's past and the investigative methods used to determine geologic time, including:
   - rock sequences, relative dating, fossil correlation, and radiometric dating
   - geologic time scales, historic changes in life forms, and the evidence for absolute ages (e.g., radiometric methods, tree rings, paleomagnetism).
5. Explain plate tectonic theory and understand the evidence that supports it.

Energy in Earth's System

6. Know that Earth's systems are driven by internal (i.e., radioactive decay and gravitational energy) and external (i.e., the sun) sources of energy.
7. Describe convection as the mechanism for moving heat energy from deep within Earth to the surface and discuss how this process results in plate tectonics, including:
   - geological manifestations (e.g., earthquakes, volcanoes, mountain building) that occur at plate boundaries
   - impact of plate motions on societies and the environment (e.g., earthquakes, volcanoes).
8. Describe the patterns and relationships in the circulation of air and water driven by the sun's radiant energy, including:
   - patterns in weather systems related to the transfer of energy
   - differences between climate and weather
   - global climate, global warming, and the greenhouse effect
   - El Niño, La Niña, and other climatic trends.

Geochemical Cycles

9. Know that Earth's system contains a fixed amount of natural resources that cycle among land, water, the atmosphere, and living things (e.g., carbon and nitrogen cycles, rock cycle, water cycle, ground water, aquifers).
10. Describe the composition and structure of Earth's materials, including:
    - the major rock types (i.e., sedimentary, igneous, metamorphic) and their formation
    - natural resources (e.g., minerals, petroleum) and their formation.
11. Explain how layers of the atmosphere (e.g., ozone, ionosphere) change naturally and artificially.
12. Explain how the availability of ground water through aquifers can fluctuate based on multiple factors (i.e., rate of use, rate of replenishment, surface changes, and changes in temperature).

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark I: Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.

Science and Technology

1. Know how science enables technology but also constrains it, and recognize the difference between real technology and science fiction (e.g., rockets vs. antigravity machines; nuclear reactors vs. perpetual-motion machines; medical X-rays vs. Star-Trek tricorders).
2. Understand how advances in technology enable further advances in science (e.g., microscopes and cellular structure; telescopes and understanding of the universe).
3. Evaluate the influences of technology on society (e.g., communications, petroleum, transportation, nuclear energy, computers, medicine, genetic engineering) including both desired and undesired effects, and including some historical examples (e.g., the wheel, the plow, the printing press, the lightning rod).
4. Understand the scientific foundations of common technologies (e.g., kitchen appliances, radio, television, aircraft, rockets, computers, medical X-rays, selective breeding, fertilizers and pesticides, agricultural equipment).
5. Understand that applications of genetics can meet human needs and can create new problems (e.g., agriculture, medicine, cloning).
6. Analyze the impact of digital technologies on the availability, creation, and dissemination of information.
7. Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.
8. Describe uses of radioactivity (e.g., nuclear power, nuclear medicine, radiometric dating).

Science and Society

9. Describe how scientific knowledge helps decision makers with local, national, and global challenges (e.g., Waste Isolation Pilot Project [WIPP], mining, drought, population growth, alternative energy, climate change).
10. Describe major historical changes in scientific perspectives (e.g., atomic theory, germs, cosmology, relativity, plate tectonics, evolution) and the experimental observations that triggered them.

= Measured by EXPLORE, PLAN, and/or ACT Science tests
_____ = Content sampled by EXPLORE, PLAN, and/or ACT Science tests

11. Know that societal factors can promote or constrain scientific discovery (e.g., government funding, laws and regulations about human cloning and genetically modified organisms, gender and ethnic bias, AIDS research, alternative-energy research).
12. Explain how societies can change ecosystems and how these changes can be reversible or irreversible.
13. Describe how environmental, economic, and political interests impact resource management and use in New Mexico.
14. Describe New Mexico's role in nuclear science (e.g., Manhattan Project, WIPP, national laboratories).

Science and Individuals

15. Identify how science has produced knowledge that is relevant to individual health and material prosperity.
16. Understand that reasonable people may disagree about some issues that are of interest to both science and religion (e.g., the origin of life on Earth, the cause of the Big Bang, the future of Earth).
17. Identify important questions that science cannot answer (e.g., questions that are beyond today's science, decisions that science can only help to make, questions that are inherently outside of the realm of science).
18. Understand that scientists have characteristics in common with other individuals (e.g., employment and career needs, curiosity, desire to perform public service, greed, preconceptions and biases, temptation to be unethical, core values including honesty and openness).
19. Know that science plays a role in many different kinds of careers and activities (e.g., public service, volunteers, public office holders, researchers, teachers, doctors, nurses, technicians, farmers, ranchers).

= Measured by EXPLORE, PLAN, and/or ACT Science tests
= Content sampled by EXPLORE, PLAN, and/or ACT Science tests

Section C: ACT's College Readiness Standards Included in New Mexico's Grade 8–12 Content Standards

In recent years ACT has brought a distinctive voice to the debate on what it means to be truly ready for college. Using a wealth of longitudinal data—data that no one else possesses—ACT has pioneered empirical approaches to assessing students' college readiness. Using thousands of student records and responses, content and measurement experts at ACT have developed detailed statements that describe what students typically know and are able to do at different levels of test performance. These data-driven, empirically derived score descriptors, known as ACT's College Readiness Standards, describe student achievement within various score ranges on the English, Reading, Writing, Mathematics, and Science tests on EXPLORE, PLAN, and the ACT.

How ACT College Readiness Standards Work with ACT College Readiness Benchmarks

The ACT College Readiness Benchmarks are the minimum ACT test scores required for students to have a high probability of success in first-year, credit-bearing college courses—English Composition, Algebra, social sciences courses, or Biology. EXPLORE and PLAN Benchmarks provided minimum score targets for eighth- and tenth-grade students to gauge their progress in becoming college ready by the time they graduate from high school.

ACT's College Readiness Benchmarks				
Test	**College Course**	**ACT Test Score**	**PLAN Test Score**	**EXPLORE Test Score**
English	English Composition	18	15	13
Mathematics	College Algebra	22	19	17
Reading	College Social Studies/Humanities	21	17	15
Science	College Biology	24	21	20

Students who meet a Benchmark on the ACT have approximately a 50 percent chance of earning a B or better and approximately a 75 percent chance or better of earning a C or better in the corresponding entry-level college course or courses. Students who meet a Benchmark on EXPLORE or PLAN have a high chance of meeting the College Readiness Benchmarks for the ACT and of being ready for the corresponding college course(s) by the time they graduate from high school.

The knowledge and skills in the score ranges that include these Benchmark scores are shown in the tables on the following pages. Students who master these standards are more likely than those who do not to persist to the second year at the same institution; achieve a grade of B or higher in first-year college courses; achieve a first-year college GPA of 2.5 or higher; progress toward a college degree; and complete a college degree.

Research shows that the academic quality and intensity of the high school curriculum is a key determinant of success in postsecondary education. *States should ensure that high school coursework be of sufficient rigor to prepare their graduates for postsecondary education and workforce training.*

This section (Section C) provides information about the New Mexico Content Standards as they relate to ACT's College Readiness Standards. The ACT College Readiness Standards included in the New Mexico Content Standards are highlighted. College Readiness Standards not highlighted are those that include specific content, complexity, and/or proficiency level descriptors that ACT content experts determined were not included in the New Mexico Content Standards.

Score Ranges	Table C-1. ACT's College Readiness Standards — English		
Bench-marks	**Topic Development in Terms of Purpose and Focus**	**Organization, Unity, and Coherence**	**Word Choice in Terms of Style, Tone, Clarity, and Economy**
13–15 ***EXPL: 13*** ***PLAN: 15***		Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., *then*, *this time*)	Revise sentences to correct awkward and confusing arrangements of sentence elements Revise vague nouns and pronouns that create obvious logic problems
16–19 ***ACT: 18***	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	Select the most logical place to add a sentence in a paragraph	Delete obviously synonymous and wordy material in a sentence Revise expressions that deviate from the style of an essay
20–23	Identify the central idea or main topic of a straightforward piece of writing Determine relevancy when presented with a variety of sentence-level details	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	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
24–27	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	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	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
28–32*	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	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	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
33–36†	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	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	Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole

*** Statements apply to PLAN & ACT only**

† Statements apply to the ACT only

Score Ranges	Table C-1. ACT's College Readiness Standards — English (continued)		
Bench-marks	**Sentence Structure and Formation**	**Conventions of Usage**	**Conventions of Punctuation**
13–15 ***EXPL: 13*** ***PLAN: 15***	Use conjunctions or punctuation to join simple clauses Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences	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	Delete commas that create basic sense problems (e.g., between verb and direct object)
16–19 ***ACT: 18***	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	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*	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)
20–23	Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers)	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	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)
24–27	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	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*	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
28–32*	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	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)	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
33–36†	Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses	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	Use a colon to introduce an example or an elaboration

*** Statements apply to PLAN & ACT only**

† Statements apply to the ACT only

Score Ranges	Table C-2. ACT's College Readiness Standards — Reading	
Bench-marks	**Main Ideas and Author's Approach**	**Supporting Details**
13–15 *EXPL: 15*	Recognize a clear intent of an author or narrator in uncomplicated literary narratives	Locate basic facts (e.g., names, dates, events) clearly stated in a passage
16–19 *PLAN: 17*	Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives	Locate simple details at the sentence and paragraph level in uncomplicated passages Recognize a clear function of a part of an uncomplicated passage
20–23 *ACT: 21*	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	Locate important details in uncomplicated passages Make simple inferences about how details are used in passages
24–27	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	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
28–32*	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	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
33–36†	Identify clear main ideas or purposes of complex passages or their paragraphs	Locate and interpret details in complex passages Understand the function of a part of a passage when the function is subtle or complex

*** Statements apply to PLAN & ACT only** **† Statements apply to the ACT only**

Descriptions of the ACT Reading Passages

Uncomplicated Literary Narratives refers to excerpts from essays, short stories, and novels that tend to use simple language and structure, have a clear purpose and a familiar style, present straightforward interactions between characters, and employ only a limited number of literary devices such as metaphor, simile, or hyperbole.

More Challenging Literary Narratives refers to excerpts from essays, short stories, and novels that tend to make moderate use of figurative language, have a more intricate structure and messages conveyed with some subtlety, and may feature somewhat complex interactions between characters.

Complex Literary Narratives refers to excerpts from essays, short stories, and novels that tend to make generous use of ambiguous language and literary devices, feature complex and subtle interactions between characters, often contain challenging context-dependent vocabulary, and typically contain messages and/or meanings that are not explicit but are embedded in the passage.

Score Ranges	Table C-2. ACT's College Readiness Standards — Reading (continued)		
Bench-marks	**Sequential, Comparative, and Cause-Effect Relationships**	**Meanings of Words**	**Generalizations and Conclusions**
13–15 *EXPL: 15*	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	Understand the implication of a familiar word or phrase and of simple descriptive language	Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives
16–19 *PLAN: 17*	Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives	Use context to understand basic figurative language	Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages
20–23 *ACT: 21*	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	Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements 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
24–27	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	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	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
28–32*	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	Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts	Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on
33–36†	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	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	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

*** Statements apply to PLAN & ACT only**

† Statements apply to the ACT only

Uncomplicated Informational Passages refers to materials that tend to contain a limited amount of data, address basic concepts using familiar language and conventional organizational patterns, have a clear purpose, and are written to be accessible.

More Challenging Informational Passages refers to materials that tend to present concepts that are not always stated explicitly and that are accompanied or illustrated by more—and more detailed—supporting data, include some difficult context-dependent words, and are written in a somewhat more demanding and less accessible style.

Complex Informational Passages refers to materials that tend to include a sizable amount of data, present difficult concepts that are embedded (not explicit) in the text, use demanding words and phrases whose meaning must be determined from context, and are likely to include intricate explanations of processes or events.

	Table C-3. ACT's College Readiness Standards — Writing*		
	Expressing Judgments	**Focusing on the Topic**	**Developing a Position**
3–4	Show a little understanding of the persuasive purpose of the task but neglect to take or to maintain a position on the issue in the prompt Show limited recognition of the complexity of the issue in the prompt	Maintain a focus on the general topic in the prompt through most of the essay	Offer a little development, with one or two ideas; if examples are given, they are general and may not be clearly relevant; resort often to merely repeating ideas Show little or no movement between general and specific ideas and examples
5–6	Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt but may not maintain that position Show a little recognition of the complexity of the issue in the prompt by acknowledging, but only briefly describing, a counterargument to the writer's position	Maintain a focus on the general topic in the prompt throughout the essay	Offer limited development of ideas using a few general examples; resort sometimes to merely repeating ideas Show little movement between general and specific ideas and examples
7–8	Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt Show some recognition of the complexity of the issue in the prompt by • acknowledging counterarguments to the writer's position • providing some response to counter-arguments to the writer's position	Maintain a focus on the general topic in the prompt throughout the essay and attempt a focus on the specific issue in the prompt Present a thesis that establishes focus on the topic	Develop ideas by using some specific reasons, details, and examples Show some movement between general and specific ideas and examples
9–10	Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion Show recognition of the complexity of the issue in the prompt by • partially evaluating implications and/or complications of the issue, and/or • posing and partially responding to counter-arguments to the writer's position	Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay Present a thesis that establishes a focus on the writer's position on the issue	Develop most ideas fully, using some specific and relevant reasons, details, and examples Show clear movement between general and specific ideas and examples
11–12	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 counter-arguments to the writer's position	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	Develop several ideas fully, using specific and relevant reasons, details, and examples Show effective movement between general and specific ideas and examples

*The shaded row in this table shows the minimum level of writing skills needed by students to be ready for college-level writing assignments.

	Table C-3. ACT's College Readiness Standards — Writing* (continued)	
	Organizing Ideas	**Using Language**
3–4	Provide a discernible organization with some logical grouping of ideas in parts of the essay Use a few simple and obvious transitions Present a discernible, though minimally developed, introduction and conclusion	Show limited control of language by • correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes significantly impede understanding • using simple vocabulary • using simple sentence structure
5–6	Provide a simple organization with logical grouping of ideas in parts of the essay Use some simple and obvious transitional words, though they may at times be inappropriate or misleading Present a discernible, though underdeveloped, introduction and conclusion	Show a basic control of language by • correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes impede understanding • using simple but appropriate vocabulary • using a little sentence variety, though most sentences are simple in structure
7–8	Provide an adequate but simple organization with logical grouping of ideas in parts of the essay but with little evidence of logical progression of ideas Use some simple and obvious, but appropriate, transitional words and phrases Present a discernible introduction and conclusion with a little development	Show adequate use of language to communicate by • correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding • using appropriate vocabulary • using some varied kinds of sentence structures to vary pace
9–10	Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas Present a somewhat developed introduction and conclusion	Show competent use of language to communicate ideas by • correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding • using some precise and varied vocabulary • using several kinds of sentence structures to vary pace and to support meaning
11–12	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	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

Score Ranges *Bench-marks*	Table C-4. ACT's College Readiness Standards — Mathematics			
	Basic Operations & Applications	**Probability, Statistics, & Data Analysis**	**Numbers: Concepts & Properties**	**Expressions, Equations, & Inequalities**
13–15	Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers Perform common conversions (e.g., inches to feet or hours to minutes)	Calculate the average of a list of positive whole numbers Perform a single computation using information from a table or chart	Recognize equivalent fractions and fractions in lowest terms	Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals
16–19 ***EXPL: 17*** ***PLAN: 19***	Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems	Calculate the average of a list of numbers Calculate the average, given the number of data values and the sum of the data values Read tables and graphs Perform computations on data from tables and graphs Use the relationship between the probability of an event and the probability of its complement	Recognize one-digit factors of a number Identify a digit's place value	Substitute whole numbers for unknown quantities to evaluate expressions Solve one-step equations having integer or decimal answers Combine like terms (e.g., $2x + 5x$)
20–23 ***ACT: 22***	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	Calculate the missing data value, given the average and all data values but one Translate from one representation of data to another (e.g., a bar graph to a circle graph) Determine the probability of a simple event Exhibit knowledge of simple counting techniques*	Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor	Evaluate algebraic expressions by substituting integers for unknown quantities Add and subtract simple algebraic expressions Solve routine first-degree equations Perform straightforward word-to-symbol translations Multiply two binomials*
24–27	Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)	Calculate the average, given the frequency counts of all the data values Manipulate data from tables and graphs Compute straightforward probabilities for common situations Use Venn diagrams in counting*	Find and use the least common multiple Order fractions Work with numerical factors Work with scientific notation Work with squares and square roots of numbers Work problems involving positive integer exponents* Work with cubes and cube roots of numbers* Determine when an expression is undefined* Exhibit some knowledge of the complex numbers†	Solve real-world problems using first-degree equations Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) Identify solutions to simple quadratic equations Add, subtract, and multiply polynomials* Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)* Solve first-degree inequalities that do not require reversing the inequality sign*
28–32*	Solve word problems containing several rates, proportions, or percentages	Calculate or use a weighted average Interpret and use information from figures, tables, and graphs Apply counting techniques Compute a probability when the event and/or sample space are not given or obvious	Apply number properties involving prime factorization Apply number properties involving even/odd numbers and factors/multiples Apply number properties involving positive/negative numbers Apply rules of exponents Multiply two complex numbers†	Manipulate expressions and equations Write expressions, equations, and inequalities for common algebra settings Solve linear inequalities that require reversing the inequality sign Solve absolute value equations Solve quadratic equations Find solutions to systems of linear equations
33–36†	Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)	Distinguish between mean, median, and mode for a list of numbers Analyze and draw conclusions based on information from figures, tables, and graphs Exhibit knowledge of conditional and joint probability	Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers Exhibit knowledge of logarithms and geometric sequences Apply properties of complex numbers	Write expressions that require planning and/or manipulating to accurately model a situation Write equations and inequalities that require planning, manipulating, and/or solving Solve simple absolute value inequalities

*** Statements apply to PLAN & ACT only**

† Statements apply to the ACT only

= Included in New Mexico Standards

Score Ranges *Bench-marks*	Table C-4. ACT's College Readiness Standards — Mathematics (continued)			
	Graphical Representations	**Properties of Plane Figures**	**Measurement**	**Functions†**
13–15	Identify the location of a point with a positive coordinate on the number line		Estimate or calculate the length of a line segment based on other lengths given on a geometric figure	
16–19 ***EXPL: 17*** ***PLAN: 19***	Locate points on the number line and in the first quadrant	Exhibit some knowledge of the angles associated with parallel lines	Compute the perimeter of polygons when all side lengths are given Compute the area of rectangles when whole number dimensions are given	
20–23 ***ACT: 22***	Locate points in the coordinate plane Comprehend the concept of length on the number line* Exhibit knowledge of slope*	Find the measure of an angle using properties of parallel lines Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)	Compute the area and perimeter of triangles and rectangles in simple problems Use geometric formulas when all necessary information is given	Evaluate quadratic functions, expressed in function notation, at integer values
24–27	Identify the graph of a linear inequality on the number line* Determine the slope of a line from points or equations* Match linear graphs with their equations* Find the midpoint of a line segment*	Use several angle properties to find an unknown angle measure Recognize Pythagorean triples* Use properties of isosceles triangles*	Compute the area of triangles and rectangles when one or more additional simple steps are required Compute the area and circumference of circles after identifying necessary information Compute the perimeter of simple composite geometric figures with unknown side lengths*	Evaluate polynomial functions, expressed in function notation, at integer values Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
28–32*	Interpret and use information from graphs in the coordinate plane Match number line graphs with solution sets of linear inequalities Use the distance formula Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)†	Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles Use the Pythagorean theorem	Use relationships involving area, perimeter, and volume of geometric figures to compute another measure	Evaluate composite functions at integer values Apply basic trigonometric ratios to solve right-triangle problems
33–36†	Match number line graphs with solution sets of simple quadratic inequalities 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	Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas Use relationships among angles, arcs, and distances in a circle	Use scale factors to determine the magnitude of a size change Compute the area of composite geometric figures when planning or visualization is required	Write an expression for the composite of two simple functions Use trigonometric concepts and basic identities to solve problems Exhibit knowledge of unit circle trigonometry Match graphs of basic trigonometric functions with their equations

*** Statements apply to PLAN & ACT only**

† Statements apply to the ACT only

= Included in New Mexico Standards

Score Ranges	Table C-5. ACT's College Readiness Standards — Science		
Bench-marks	**Interpretation of Data**	**Scientific Investigation**	**Evaluation of Models, Inferences, and Experimental Results**
13–15	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)		
16–19	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	Understand the methods and tools used in a simple experiment	
20–23 *EXPL: 20* *PLAN: 21*	Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram) 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	Understand the methods and tools used in a moderately complex experiment Understand a simple experimental design Identify a control in an experiment Identify similarities and differences between experiments	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
24–27 *ACT: 24*	Compare or combine data from two or more simple data presentations (e.g., categorize data from a table using a scale from another table) Compare or combine data from a complex data presentation Interpolate between data points in a table or graph Determine how the value of one variable changes as the value of another variable changes in a complex data presentation Identify and/or use a simple (e.g., linear) mathematical relationship between data Analyze given information when presented with new, simple information	Understand the methods and tools used in a complex experiment Understand a complex experimental design Predict the results of an additional trial or measurement in an experiment Determine the experimental conditions that would produce specified results	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 Identify strengths and weaknesses in one or more models Identify similarities and differences between models Determine which model(s) is(are) supported or weakened by new information Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion
28–32*	Compare or combine data from a simple data presentation with data from a complex data presentation Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data Extrapolate from data points in a table or graph	Determine the hypothesis for an experiment Identify an alternate method for testing a hypothesis	Select a complex hypothesis, prediction, or conclusion that is supported by a data presentation or model Determine whether new information supports or weakens a model, and why Use new information to make a prediction based on a model
33–36†	Compare or combine data from two or more complex data presentations Analyze given information when presented with new, complex information	Understand precision and accuracy issues Predict how modifying the design or methods of an experiment will affect results Identify an additional trial or experiment that could be performed to enhance or evaluate experimental results	Select a complex hypothesis, prediction, or conclusion that is supported by two or more data presentations or models Determine whether given information supports or contradicts a complex hypothesis or conclusion, and why

*** Statements apply to PLAN & ACT only**

† Statements apply to the ACT only

Science College Readiness Standards are measured in the context of science topics students encounter in science courses. These topics may include:

Life Science/Biology	Physical Science/Chemistry, Physics	Earth & Space Science
• Animal behavior • Animal development and growth • Body systems • Cell structure and processes • Ecology • Evolution • Genetics • Homeostasis • Life cycles • Molecular basis of heredity • Origin of life • Photosynthesis • Plant development, growth, structure • Populations • Taxonomy	• Atomic structure • Chemical bonding, equations, nomenclature, reactions • Electrical circuits • Elements, compounds, mixtures • Force and motions • Gravitation • Heat and work • Kinetic and potential energy • Magnetism • Momentum • The Periodic Table • Properties of solutions • Sound and light • States, classes, and properties of matter • Waves	• Earthquakes and volcanoes • Earth's atmosphere • Earth's resources • Fossils and geological time • Geochemical cycles • Groundwater • Lakes, rivers, oceans • Mass movements • Plate tectonics • Rocks, minerals • Solar system • Stars, galaxies, and the universe • Water cycle • Weather and climate • Weathering and erosion

Section D: ACT's WorkKeys Skills Included in New Mexico's Content Standards

Working with Charter States, national education organizations, educators, employers, and experts in employment and training requirements, ACT identified workplace skills that help individuals successfully perform a wide range of jobs. These skills form the basis of the WorkKeys assessments.

In this section (Section D), the WorkKeys Skills that are highlighted are those that are included in New Mexico's Content Standards. WorkKeys Skills not highlighted are those statements that include specific content, complexity and/or proficiency level descriptions that were not described in New Mexico's Content Standards.

Because New Mexico educators are the experts on the New Mexico Content Standards, we would strongly encourage them to examine this document and offer their interpretations.

WorkKeys Skills

Level	Reading for Information	Applied Mathematics	Locating Information*
3	Identify main ideas and clearly stated details Choose the correct meaning of a word that is clearly defined in the reading Choose the correct meaning of common, everyday and workplace words Choose when to perform each step in a short series of steps Apply instructions to a situation that is the same as the one in the reading materials	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)	Find one or two pieces of information in a graphic Fill in one or two pieces of information that are missing from a graphic
4	Identify important details that may not be clearly stated Use the reading material to figure out the meaning of words that are not defined Apply instructions with several steps to a situation that is the same as the situation in the reading materials Choose what to do when changing conditions call for a different action (follow directions that include "if-then" statements)	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	Find several pieces of information in one or two graphics Understand how graphics are related to each other Summarize information from one or two straightforward graphics Identify trends shown in one or two straightforward graphics Compare information and trends shown in one or two straightforward graphics
5	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 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	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	Sort through distracting information Summarize information from one or more detailed graphics Identify trends shown in one or more detailed or complicated graphics Compare information and trends from one or more complicated graphics
6	Identify implied details Use technical terms and jargon in new situations Figure out the less common meaning of a word based on the context 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	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 measurement to a unit in another system of measurement Find mistakes in items that belong at Levels 3, 4, and 5 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	Draw conclusions based on one complicated graphic or several related graphics Apply information from one or more complicated graphics to specific situations Use the information to make decisions
7	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	Solve problems that include nonlinear functions and/or that involve more than one unknown Find mistakes in Level 6 items 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	

*WorkKeys Locating Information assessment, though outside the scope of this alignment, measures many important skills regarding a student's ability to interpret and analyze graphic material in all areas of the curriculum.