



## STATE MATCH

### Arkansas Curriculum Framework

English Language Arts,  
Mathematics, and Science  
Grades 7–12

and

**ACT<sup>®</sup>**

EXPLORE, PLAN,  
and ACT

December 2005

©2005 by ACT, Inc.  
All rights reserved.

# About This Report

## EXECUTIVE SUMMARY

(pp. 1–2)

This portion summarizes the findings of the alignment between EXPLORE® (8th and 9th grades); PLAN® (10th grade); and the ACT (11th and 12th grades) and Arkansas’s Curriculum Framework. It also presents ACT’s involvement in meeting NCLB requirements and describes additional critical information that ACT could provide to Arkansas.

## SECTION A

(pp. 3–6)

This section provides tables by content area (English language arts, Mathematics, and Science) listing the precise number of Arkansas Content Standards and Student Learner Expectations measured by ACT’s tests by grade level.

## SECTION B

(pp. 7–51)

All Arkansas Content Standards and Student Learner Expectations are listed here; each one highlighted is measured by ACT’s EPAS tests. Underlined science content indicates that the content topics are included, but are not directly measured by ACT’s EPAS Science Tests.

## SECTION C

(pp. 53–62)

ACT’s College Readiness Standards appear here. Highlighting indicates that a statement reflects one or more statements in the Arkansas Content Standards and Student Learner Expectations. College Readiness Standards not highlighted are not addressed in Arkansas Curriculum Framework.

A supplement is available that identifies the specific ACT College Readiness Standard(s) corresponding to each Arkansas Content Standard or Student Learner Expectation, in a side-by-side format. To request this supplement for any grade or content level, please e-mail ACT at [statematch@act.org](mailto:statematch@act.org).



# Executive Summary

We at ACT believe our programs offer many advantages to Arkansas students and educators, and this report offers strong evidence for this belief. This alignment analysis is designed to clearly answer these three 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)—measure Arkansas's Content Standards and Student Learner Expectations?
2. Can ACT's EPAS test results be used to meet Arkansas's NCLB requirement?
3. Why should Arkansas choose ACT?

ACT'S TESTS MEASURE  
MANY IMPORTANT  
ARKANSAS CONTENT  
STANDARDS AND  
STUDENT LEARNER  
EXPECTATIONS IN  
ENGLISH LANGUAGE  
ARTS, MATHEMATICS,  
AND SCIENCE.

**1. Match Results:** Comparisons conducted by our content specialists show that ACT's Reading, English, Writing, Mathematics and Science Tests measure many of Arkansas's English Language Arts, Mathematics, and Science Content Standards (with Student Learner Expectations match totals appearing in Section B):

- English Language Arts: 8 out of 12 standards  
Many important Language Arts Content Standards and Student Learner Expectations are covered by ACT's English, Reading, and Writing Tests.
- Mathematics: 54 out of 58 standards  
Nearly all of Arkansas's Mathematics Content Standards and Student Learner Expectations are covered by ACT's Mathematics Tests.
- Science:  
7th & 8th: 17 out of 36 process standards (& 38 out of 38 content topics)  
9th–12th: 28 out of 51 process standards (& 58 out of 60 content topics)  
Many important Science Content Standards and Student Learner Expectations 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 Science Content Standards and Student Learner Expectations.

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 Content Standards and Student Learner Expectations measured by ACT 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 Arkansas's Content Standards and Student Learner Expectations arise from standards not being assessable in group settings, standards that are personal in nature, and



**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.**

**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**

standards requiring measurement over extended time. If additional testing is deemed necessary, ACT would be interested in working with Arkansas on developing any necessary augmentation.

**2. NCLB requirement?** Yes; states like Illinois intend to use ACT EPAS components as part of testing that will be submitted to the U.S. Department of Education for NCLB approval.

**3. Why choose ACT?** States and school districts choose ACT's EPAS programs 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*. Various groups claim to describe what students truly need to know and be able to do 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:

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

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 worked backwards to develop data-driven, empirically derived statements of what students typically know and are able to do in various score ranges on ACT's English, Reading, Writing, Mathematics, and Science Tests. These statements provide specific details about students' college readiness and can be used to identify next steps for improvement.

In sum, ACT's EPAS programs provide abundant data relevant to Arkansas's Curriculum Framework and to Arkansas students' readiness for college and work.



Section A: **Number of Arkansas  
Content Standards and Student Learner Expectations  
Measured by EXPLORE, PLAN, and the ACT**

**Table A-1. Number of English Language Arts Content Standards and Student Learner Expectations Measured by EXPLORE, PLAN, and the ACT**

	Arkansas Content Standard*	Number of Arkansas's Student Learner Expectations Measured by ACT's tests	Aspects of Not-Measured Arkansas Curriculum Framework
<b>Oral and Visual Communication</b>	Standard 1: Speaking	7th: 0 out of 10 8th: 0 out of 10 9th: 0 out of 4 10th: 0 out of 4 11th: 0 out of 3 12th: 0 out of 3	Speaking
	Standard 2: Listening	7th: 0 out of 5 8th: 0 out of 5 9th: 0 out of 4 10th: 0 out of 4 11th: 0 out of 5 12th: 0 out of 6	Listening
	Standard 3: Media Literacy	7th: 0 out of 3 8th: 0 out of 3 9th: 0 out of 3 10th: 0 out of 3 11th: 0 out of 2 12th: 0 out of 2	Use of different media
<b>Writing</b>	Standard 4: Process	7th: 3 out of 14 8th: 3 out of 13 9th: 10 out of 15 10th: 10 out of 14 11th: 12 out of 15 12th: 12 out of 15	Prewriting Publishing
	Standard 5: Purpose, Topics, Forms and Audiences	7th: 0 out of 10 8th: 0 out of 10 9th: 1 out of 9 10th: 1 out of 9 11th: 4 out of 9 12th: 4 out of 9	Write on demand (create original written products) Write responses to literature Write across curriculum
	Standard 6: Conventions	7th: 7 out of 12 8th: 6 out of 10 9th: 9 out of 12 10th: 3 out of 6 11th: 5 out of 5 12th: 5 out of 5	Capitalization Spelling Use variety of sentence structures for effect in writing
	Standard 7: Craftsmanship	7th: 3 out of 12 8th: 4 out of 11 9th: 4 out of 9 10th: 4 out of 9 11th: 7 out of 10 12th: 8 out of 11	Use figurative language, dialogue, humor Vary sentence types Self-evaluate writing Personalize writing Critique professional and peer edit for consistency of style



**Table A-1. Number of English Language Arts Content Standards and Student Learner Expectations Measured by EXPLORE, PLAN, and the ACT**

	<b>Arkansas Content Standard*</b>	<b>Number of Arkansas's Student Learner Expectations Measured by ACT's tests</b>	<b>Aspects of Not-Measured Arkansas Curriculum Framework</b>
<b>Reading</b>	Standard 8: Foundations of Reading		[Applies only to lower grades]
	Standard 9: Comprehension	7th: 8 out of 19 8th: 10 out of 22 9th: 10 out of 14 10th: 12 out of 13 11th: 9 out of 13 12th: 5 out of 14	Use previewing, prior knowledge Defend questions Monitor reading strategies Connect own background knowledge Use outlining Synthesize information from multiple texts Connect background knowledge to examine author's purpose Challenge/defend author choices
	Standard 10: Variety of Text	7th: 2 out of 10 8th: 2 out of 13 9th: 3 out of 23 10th: 4 out of 25 11th: 3 out of 26 12th: 4 out of 25	Read variety of literature, myths, poetry Analyze advertisements for bias ["Literary and Content Prose" only] Practical texts Poetry Drama
	Standard 11: Vocabulary, Word Study, and Fluency	7th: 3 out of 12 8th: 3 out of 12 9th: 1 out of 4 10th: 1 out of 4 11th: 2 out of 4 12th: 2 out of 4	Use knowledge of root words to determine meaning Read grade-level text at ___ words/minute Use glossary, dictionary, thesaurus
	Standard 12: Research/Inquiry Process	7th: 0 out of 9 8th: 0 out of 9 9th: 0 out of 12 10th: 0 out of 12 11th: 0 out of 11 12th: 0 out of 10	Conduct research, produce research product
<b>Inquiring/ Research- ing</b>	<b>TOTALS</b>	7th: 26 out of 116 8th: 28 out of 118 9th: 38 out of 109 10th: 35 out of 103 11th: 42 out of 103 12th: 40 out of 104	

\*Refer to Arkansas's English Language Arts Content Standards and Student Learner Expectations on pages 7–34



**Table A-2. Number of Mathematics Content Standards Measured by EXPLORE, PLAN, and the ACT**

Arkansas Mathematics Course Content Standard*	Number of Arkansas's Standards Measured by ACT's tests	Not-Measured Arkansas Standards
Grade 7	15 out of 17	Standard 9: Transformation of Shapes Standard 11: Visualization and Geometric Models
Grade 8	15 out of 17	Standard 9: Transformation of Shapes Standard 11: Visualization and Geometric Models
Algebra I	5 out of 5	
Geometry	5 out of 5	
Algebra II	6 out of 6	
Precalculus-Trigonometry	8 out of 8	
<b>TOTALS</b>	54 out of 58	

\*Refer to Arkansas's Mathematics Content Standards and Student Learner Expectations on pages 35–45



**Table A-3. Number of Science Content Standards and Student Learner Expectations Measured by EXPLORE, PLAN, and the ACT**

	<b>Arkansas Content Standard*</b>	<b>Number of Arkansas's Student Learner Expectations Measured by ACT's tests</b>	<b>Aspects of Not-Measured Arkansas Curriculum Framework</b>
<b>Strand 1:</b> Physical Systems	<b>Standard 1:</b> Demonstrate an understanding of physical systems as a process of inquiry.	7–8: 2 out of 4 9–12: 7 out of 10	Understand science is a process that leads to deeper meaning Recognize new theories may be revised
	<b>Standard 2:</b> Explore, demonstrate, communicate, apply, and evaluate the knowledge of physical systems.	7–8: (12) out of 12 9–12:(25) out of 25	
	<b>Standard 3:</b> Demonstrate an understanding of the connections and applications of physical science	7–8: 4 out of 7 9–12: 3 out of 7	Analyze the role of science in everyday life Assess current world issues
<b>Strand 2:</b> Life Systems	<b>Standard 1:</b> Demonstrate an understanding of life systems as a process of inquiry.	7–8: 3 out of 4 9–12: 7 out of 10	Understand science is a process that leads to deeper meaning Recognize new theories may be revised
	<b>Standard 2:</b> Explore, demonstrate, communicate, apply, and evaluate the knowledge of life systems.	7–8: (12) out of 12 9–12:(17) out of 18	
	<b>Standard 3:</b> Demonstrate an understanding of the connections and applications of life science	7–8: 3 out of 5 9–12: 2 out of 7	Analyze the role of science in everyday life Assess current world issues
<b>Strand 3:</b> Earth/Space Systems	<b>Standard 1:</b> Demonstrate an understanding of Earth/space systems as a process of inquiry.	7–8: 2 out of 6 9–12: 7 out of 10	Understand science is a process that leads to deeper meaning Recognize new theories may be revised
	<b>Standard 2:</b> Explore, demonstrate, communicate, apply, and evaluate the knowledge of Earth/space systems.	7–8: (14) out of 14 9–12:(16) out of 17	
	<b>Standard 3:</b> Demonstrate an understanding of the connections and applications of Earth/space science	7–8: 3 out of 10 9–12: 2 out of 7	Analyze the role of science in everyday life Assess current world issues
<b>TOTALS</b>		7–8: 17 out of 36 9–12: 28 out of 51	<b>Science Process</b>
		7–8: (38) out of 38 9–12:(58) out of 60	<b>Content Topics</b>

\*Refer to Arkansas's Science Content Standards and Student Learner Expectations on pages 46–51





**Section B: Arkansas's Grades 7–12 Curriculum Framework  
Measured by EXPLORE, PLAN, and the ACT**

**English Language Arts**

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Strand:</b> Oral and Visual Communication						
<b>Standard 1:</b> Speaking						
Students shall demonstrate effective oral communication skills to express ideas and to present information.						
<b>Speaking Vocabulary</b>	<b>OV.1.7.1.</b> Use vocabulary from content area texts and personal reading	<b>OV.1.8.1.</b> Use vocabulary from content area texts and reading/literature				
	<b>OV.1.7.2.</b> Use standard English in classroom discussion and presentations	<b>OV.1.8.2.</b> Use standard English in classroom discussion and presentations				
<b>Speaking Behaviors</b>	<b>OV.1.7.3.</b> Speak for and to various purposes and audiences	<b>OV.1.8.3.</b> Speak for and to various purposes and audiences				
	<b>OV.1.7.4.</b> Demonstrate appropriate eye contact, posture, and volume	<b>OV.1.8.4.</b> Demonstrate appropriate eye contact, posture, volume, and physical gestures				
	<b>OV.1.7.5.</b> Use correct pronunciation and inflection/modulation to communicate ideas and information	<b>OV.1.8.5.</b> Use correct pronunciation and inflection/modulation to communicate ideas and information				
<b>Speaking to Share Understanding and Information</b>	<b>OV.1.7.6.</b> Contribute appropriately to class discussion	<b>OV.1.8.6.</b> Contribute appropriately to class discussion	<b>OV.1.9.1.</b> Adjust oral language to audience and appropriately apply the rules of standard English	<b>OV.1.10.1.</b> Adjust oral language to audience and appropriately apply the rules of standard English	<b>OV.1.11.1.</b> Prepare and participate in structured discussions, such as Socratic discussions	<b>OV.1.12.1.</b> Prepare and participate in such structured discussions as mock trials and other discussions or presentations outside the classroom
	<b>OV.1.7.7.</b> Deliver oral presentations using standard English, appropriate vocabulary, examples and/or analogies	<b>OV.1.8.7.</b> Deliver oral presentations using available technology	<b>OV.1.9.2.</b> Prepare and participate in structured discussions, such as panel discussions	<b>OV.1.10.2.</b> Prepare and participate in structured discussions, such as panel discussions	<b>OV.1.11.2.</b> Present a formal multi-media presentation	<b>OV.1.12.2.</b> Present a formal multi-media presentation
	<b>OV.1.7.8.</b> Use a variety of visual aids in oral presentations across the curriculum	<b>OV.1.8.8.</b> Report results of interviews, research, etc.	<b>OV.1.9.3.</b> Use appropriate visual aids in presentations	<b>OV.1.10.3.</b> Use appropriate visual aids in presentations		

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Speaking for Literary Response and Expression</b>	<b>OV.1.7.9.</b> Participate in a variety of speaking activities, including oral interpretations of poems, stories and monologues	<b>OV.1.8.9.</b> Participate in a variety of speaking activities taken from literature or research				
<b>Speaking for Critical Analysis and Evaluation</b>	<b>OV.1.7.10.</b> Evaluate self and peers' performance as an interviewer based on preset criteria	<b>OV.1.8.10.</b> Critique oral presentations of self and peers based on preset criteria				
<b>Speaking for Literary Response, Expression, and Analysis</b>			<b>OV.1.9.4.</b> Participate in a variety of such speaking activities as scenes from a play, oral book reports, monologues, memorization of lines, character analysis, and literary reviews	<b>OV.1.10.4.</b> Participate in a variety of such speaking activities as scenes from a play, oral book reports, monologues, memorization of lines, character analysis, literary reviews, and excerpts from famous speeches	<b>OV.1.11.3.</b> Participate in a variety of such speaking activities as scenes from a play, monologues, memorization of lines, character analysis, literary reviews, excerpts from famous speeches, and comparison of genre across eras	<b>OV.1.12.3.</b> Participate in a variety of such speaking activities as scenes from a play, monologues, memorization of lines, character analysis, literary reviews, excerpts from famous speeches, and comparison of genre across eras
<b>Standard 2: Listening</b>						
Students shall demonstrate effective listening skills in formal and informal settings to facilitate communication.						
<b>Listening for Information and Understanding</b>	<b>OV.2.7.1.</b> Demonstrate effective listening skills by exhibiting appropriate body language	<b>OV.2.8.1.</b> Demonstrate effective listening skills by exhibiting appropriate body language				
	<b>OV.2.7.2.</b> Establish purpose for listening	<b>OV.2.8.2.</b> Establish purpose for listening				
	<b>OV.2.7.3.</b> Listen attentively for main ideas, details, and organization	<b>OV.2.8.3.</b> Listen attentively to summarize				
	<b>OV.2.7.4.</b> Demonstrate attentive listening skills to respond to and interpret speaker's message	<b>OV.2.8.4.</b> Demonstrate attentive and reflective listening skills to respond to and interpret speaker's message				
<b>Listening for Critical Analysis and Evaluation</b>	<b>OV.2.7.5.</b> Evaluate presentations using established criteria/rubrics (e.g., purpose, content, organization, and delivery)	<b>OV.2.8.5.</b> Evaluate presentations using established criteria/rubrics (e.g., purpose, content, organization, and delivery)				

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Listening for Information, Interpretation, Critical Analysis, and Evaluation</b>			<b>OV.2.9.1.</b> Analyze how the conventions of English affect oral expressions	<b>OV.2.10.1.</b> Interpret oral readings from literary and informational texts	<b>OV.2.11.1.</b> Demonstrate critical, empathetic, and reflective listening to interpret, respond to, and evaluate speakers' messages	<b>OV.2.12.1.</b> Demonstrate critical, empathetic, and reflective listening to interpret, respond to, and evaluate speakers' messages
			<b>OV.2.9.2.</b> Establish a purpose for listening and identify relevant information	<b>OV.2.10.2.</b> Identify barriers to listening and generate methods to overcome them	<b>OV.2.11.2.</b> Identify organizational patterns appropriate to diverse situations, such as interviews, debates, and conversations	<b>OV.2.11.2.</b> Identify organizational patterns appropriate to diverse situations, such as interviews, debates, and conversations
			<b>OV.2.9.3.</b> Identify barriers to listening and generate methods to overcome them	<b>OV.2.10.3.</b> Critique presentations	<b>OV.2.11.3.</b> Identify barriers to listening and generate methods to overcome them	<b>OV.2.11.3.</b> Identify barriers to listening and generate methods to overcome them
			<b>OV.2.9.4.</b> Demonstrate attentive, reflective, and critical listening skills to respond to and interpret speaker's message	<b>OV.2.10.4.</b> Demonstrate attentive, reflective, and critical listening skills to respond to and interpret speaker's message	<b>OV.2.11.4.</b> Critique the clarity, accuracy, relevance, organization of evidence, and effectiveness of delivery of a presentation	<b>OV.2.11.4.</b> Critique the clarity, accuracy, relevance, organization of evidence, and effectiveness of delivery of a presentation
					<b>OV.2.11.5.</b> Demonstrate attentive, reflective, and critical listening skills to respond to, interpret, and evaluate speaker's message	<b>OV.2.11.5.</b> Critique relationships among purpose, audience, and content of presentations
						<b>OV.2.11.6.</b> Demonstrate attentive, reflective, critical, and empathetic listening skills to respond to and interpret speaker's message
<b>Standard 3: Media Literacy</b>						
Students shall demonstrate knowledge and understanding of media as a mode of communication.						
<b>Utilizing Media for Information and Understanding</b>	<b>OV.3.7.1.</b> View a variety of visually presented materials for understanding of a specific topic	<b>OV.3.8.1.</b> View a variety of visually presented materials for understanding of a specific topic				
<b>Utilizing Media for Critical Analysis and Evaluation</b>	<b>OV.3.7.2.</b> Use appropriate criteria to evaluate media for bias and propaganda	<b>OV.3.8.2.</b> Evaluate a media source for bias, propaganda, and censorship				

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Utilizing a Variety of Resources to Produce Visuals that Communicate Through Print and Non-print Media</b>	<b>OV.3.7.3.</b> Design presentations that incorporate media visuals	<b>OV.3.8.3.</b> Design presentations that incorporate media visuals				
<b>Analyzing Media</b>			<b>OV.3.9.1.</b> Compare the advantages and disadvantages of various types of media	<b>OV.3.10.1.</b> Identify features and techniques used by specific media (print and electronic) to inform, such as infographics, sequencing, headlining, and placement	<b>OV.3.11.1.</b> Describe the possible cause-effect relationships between mass media coverage and public opinion trends	<b>OV.3.12.1.</b> Analyze techniques used in political and product ads
			<b>OV.3.9.2.</b> Articulate personal response to such media as editorials, news stories, and advertisements	<b>OV.3.10.2.</b> Demonstrate an understanding of features and techniques used by media for specific effect		
<b>Evaluating Media Credibility</b>			<b>OV.3.9.3.</b> Identify and evaluate a media source for bias and point of view	<b>OV.3.10.3.</b> Identify and evaluate propaganda, disinformation, and censorship within a given medium	<b>OV.3.11.2.</b> Use appropriate criteria to evaluate media with emphasis on prejudice, censorship, and disinformation	<b>OV.3.12.2.</b> Use appropriate criteria to evaluate the impact of media on public opinion, trends, and beliefs
<b>Strand:</b> Writing						
<b>Standard 4:</b> Process						
Students shall employ a wide range of strategies as they write and use different writing process elements appropriately.						
<b>Prewriting</b>	<b>W.4.7.1.</b> Generate ideas by selecting and applying appropriate prewriting strategies which shall include reading, discussing, observing, brainstorming, focused and unfocused free-writing, and reading/learning logs	<b>W.4.8.1.</b> Self select and apply an appropriate prewriting strategy for a variety of writing purposes across the curriculum, with emphasis on interviewing, note-taking, and gathering data	<b>W.4.9.1.</b> Generate, gather, and organize ideas for writing	<b>W.4.10.1.</b> Apply appropriate prewriting strategies to address purpose and audience with emphasis on description	<b>W.4.11.1.</b> Apply appropriate prewriting strategies to address purpose and audience with emphasis on exposition	<b>W.4.12.1.</b> Apply appropriate prewriting strategies to address purpose and audience with emphasis on persuasion
	<b>W.4.7.2.</b> Organize ideas by using such graphic organizers as webbing, mapping charts/graphs, Venn diagrams, and formal outlining with main topics and sub-topics	<b>W.4.8.2.</b> Organize ideas by using such graphic organizers as charts/graphs, and formal outlining with main topics, sub-topics, and details	<b>W.4.9.2.</b> Plan and organize writing to address a specific audience and purpose with emphasis on narration			

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>W.4.7.3.</b> Determine a focus and an organizational structure based on purpose, audience, length, and required format for expository, narrative, and descriptive writing	<b>W.4.8.3.</b> Select a focus and an organizational structure based on purpose, audience, length, and required format for expository, narrative, descriptive, and persuasive writing				
	<b>W.4.7.4.</b> Use available technology to access information by using a card catalog and multiple Internet sources	<b>W.4.8.4.</b> Use available technology to access information and to document interviews				
<b>Drafting</b>	<b>W.4.7.5.</b> Create a draft for expository writing with emphasis on organization by paragraphs—introduction, main points with elaboration, and conclusion—	<b>W.4.8.5.</b> Create a draft with emphasis on persuasive and expository organization	<b>W.4.9.3.</b> Communicate clearly the purpose of the writing	<b>W.4.10.2.</b> Communicate clearly the purpose of the writing	<b>W.4.11.2.</b> Communicate clearly the purpose of the writing	<b>W.4.12.2.</b> Communicate clearly the purpose of the writing
	<b>W.4.7.6.</b> Create a draft for narrative writing that includes dialogue	<b>W.4.8.6.</b> Create an effective lead paragraph by using quotes, description, or questions with the last sentence as a thesis statement	<b>W.4.9.4.</b> Write clear and varied sentences	<b>W.4.10.3.</b> Write clear and varied sentences	<b>W.4.11.3.</b> Write clear and varied sentences	<b>W.4.12.3.</b> Write clear and varied sentences
	<b>W.4.7.7.</b> Create an effective lead paragraph by using dialogue or a description of a character or setting		<b>W.4.9.5.</b> Elaborate ideas clearly and accurately through word choice, vivid description, and selected information	<b>W.4.10.4.</b> Elaborate ideas clearly and accurately through word choice, vivid description, and selected information	<b>W.4.11.4.</b> Elaborate ideas clearly and accurately through word choice, vivid description, and selected information	<b>W.4.12.4.</b> Elaborate ideas clearly and accurately through word choice, vivid description, and selected information
			<b>W.4.9.6.</b> Adapt content vocabulary, voice, and tone to audience, purpose, and situation	<b>W.4.10.5.</b> Adapt content vocabulary, voice and tone to audience, purpose, and situation	<b>W.4.11.5.</b> Adapt content vocabulary, voice, and tone to audience, purpose, and situation	<b>W.4.12.5.</b> Adapt content vocabulary, voice, and tone to audience, purpose, and situation
			<b>W.4.9.7.</b> Arrange paragraphs into a logical progression with appropriate transition	<b>W.4.10.6.</b> Arrange paragraphs into a logical progression with appropriate transition	<b>W.4.11.6.</b> Arrange paragraphs into a logical progression with appropriate transition	<b>W.4.12.6.</b> Arrange paragraphs into a logical progression with appropriate transition

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
<b>Revising</b>	<p><b>W.4.7.8. Revise content for</b></p> <ul style="list-style-type: none"> <li>• <b>Central Idea</b></li> <li>• <b>Organization</b></li> <li>• <b>Unity</b></li> <li>• <b>Elaboration</b> (e.g., explanation, examples, description, etc.)</li> <li>• <b>Clarity</b></li> </ul>	<p><b>W.4.8.7. Revise content for</b></p> <ul style="list-style-type: none"> <li>• <b>Central Idea</b></li> <li>• <b>Organization</b></li> <li>• <b>Unity</b></li> <li>• <b>Elaboration</b> (e.g., explanation, examples, description, etc.)</li> <li>• <b>Clarity</b></li> </ul>	<p><b>W.4.9.8. Revise content of writing for central idea, elaboration, unity, and organization</b></p>	<p><b>W.4.10.7. Revise content of writing for central idea, elaboration, unity, and organization</b></p>	<p><b>W.4.11.7. Revise content of writing for central idea, elaboration, unity, and organization</b></p>	<p><b>W.4.12.7. Revise content of writing for central idea, elaboration, unity, and organization</b></p>
	<p><b>W.4.7.9. Revise style for</b></p> <ul style="list-style-type: none"> <li>• Sentence variety</li> <li>• <b>Tone</b></li> <li>• Voice</li> <li>• Selected vocabulary</li> <li>• Selected information</li> </ul>	<p><b>W.4.8.8. Revise style for</b></p> <ul style="list-style-type: none"> <li>• Sentence variety</li> <li>• <b>Tone</b> (e.g., sense of audience, etc.)</li> <li>• Voice (e.g., specificity, vividness, rhythm of piece, writer's attitude and presence, etc.)</li> <li>• Selected vocabulary</li> <li>• Selected information</li> </ul>	<p><b>W.4.9.9. Revise style of writing for selected vocabulary, selected information, sentence variety, tone and voice</b></p>	<p><b>W.4.10.8. Revise style of writing for selected vocabulary, selected information, sentence variety, tone, and voice</b></p>	<p><b>W.4.11.8. Revise style of writing for selected vocabulary, selected information, sentence variety, tone, and voice</b></p>	<p><b>W.4.12.8. Revise style of writing for selected vocabulary, selected information, sentence variety, tone, and voice</b></p>
	<p><b>W.4.7.10. Revise writing using various tools/methods, such as peer and/or teacher collaboration, a revision checklist rubric, and/or reference materials (e.g., dictionary, thesaurus, etc.)</b></p>	<p><b>W.4.8.9. Revise writing using various tools/methods, such as peer and/or teacher collaboration, a revision checklist rubric, and/or reference materials (e.g., dictionary, thesaurus, etc.)</b></p>	<p><b>W.4.9.10. Revise sentence formation in writing for completeness, coordination, subordination, standard word order, and absence of fused sentences</b></p>	<p><b>W.4.10.9. Revise sentence formation in writing for completeness, coordination, subordination, standard word order, and absence of fused sentences</b></p>	<p><b>W.4.11.9. Revise sentence formation in writing for completeness, coordination, subordination, standard word order, and absence of fused sentences</b></p>	<p><b>W.4.12.9. Revise sentence formation in writing for completeness, coordination, subordination, standard word order, and absence of fused sentences</b></p>
					<p><b>W.4.11.10. Evaluate how well questions of purpose, audience, and genre have been addressed</b></p>	<p><b>W.4.12.10. Evaluate how well questions of purpose, audience, and genre have been addressed</b></p>

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
<b>Editing</b>	<p><b>W.4.7.11. Edit</b> individually or in groups for appropriate grade-level conventions, within the following features:</p> <ul style="list-style-type: none"> <li>• Sentence formation                             <ul style="list-style-type: none"> <li>• Completeness</li> <li>• Absence of fused sentences</li> <li>• Expansion through standard coordination and modifiers</li> <li>• Embedding through standard subordination and modifiers</li> </ul> </li> <li>• Standard word order</li> <li>• Usage                             <ul style="list-style-type: none"> <li>• Standard inflections</li> <li>• Agreement</li> <li>• Word meaning</li> <li>• Conventions</li> </ul> </li> <li>• Mechanics                             <ul style="list-style-type: none"> <li>• Capitalization</li> <li>• Punctuation</li> <li>• Formatting</li> <li>• Spelling</li> </ul> </li> </ul>	<p><b>W.4.8.10. Edit</b> individually or in groups for appropriate grade-level conventions, within the following features:</p> <ul style="list-style-type: none"> <li>• Sentence formation                             <ul style="list-style-type: none"> <li>• Completeness</li> <li>• Absence of fused sentences</li> <li>• Expansion through standard coordination and modifiers</li> <li>• Embedding through standard subordination and modifiers</li> </ul> </li> <li>• Standard word order</li> <li>• Usage                             <ul style="list-style-type: none"> <li>• Standard inflections</li> <li>• Agreement</li> <li>• Word meaning</li> <li>• Conventions</li> </ul> </li> <li>• Mechanics                             <ul style="list-style-type: none"> <li>• Capitalization</li> <li>• Punctuation</li> <li>• Formatting</li> <li>• Spelling</li> </ul> </li> </ul>	<p><b>W.4.9.11. Apply</b> grammatical conventions to edit for standard inflections, agreement, word meaning, and conventions</p>	<p><b>W.4.10.10. Apply</b> grammatical conventions to edit for standard inflections, agreement, word meaning, and conventions</p>	<p><b>W.4.11.11. Apply</b> grammatical conventions to edit for standard inflections, agreement, word meaning, and conventions</p>	<p><b>W.4.12.11. Apply</b> grammatical conventions to edit for standard inflections, agreement, word meaning, and conventions</p>
			<p><b>W.4.9.12. Apply</b> grammatical conventions for capitalization, punctuation, formatting, and spelling</p>	<p><b>W.4.10.11. Apply</b> grammatical conventions for capitalization, punctuation, formatting, and spelling</p>	<p><b>W.4.11.12. Apply</b> grammatical conventions for capitalization, punctuation, formatting, and spelling</p>	<p><b>W.4.12.12. Apply</b> grammatical conventions for capitalization, punctuation, formatting, and spelling</p>
<b>Publishing</b>	<p><b>W.4.7.12.</b> Use available technology to experiment with various formats for a final written product</p>	<p><b>W.4.8.11.</b> Use available technology to create a product and communicate knowledge</p>	<p><b>W.4.9.13.</b> Refine selected pieces frequently to publish for intended audiences and purposes</p>	<p><b>W.4.10.12.</b> Refine selected pieces frequently to publish for intended audiences and purposes</p>	<p><b>W.4.11.13.</b> Refine selected pieces frequently to publish for intended audiences and purposes</p>	<p><b>W.4.12.13.</b> Refine selected pieces frequently to publish for intended audiences and purposes</p>
	<p><b>W.4.7.13.</b> Maintain a writing portfolio that exhibits growth in meeting goals and expectations</p>	<p><b>W.4.8.12.</b> Maintain a writing portfolio that exhibits growth in meeting goals and expectations</p>	<p><b>W.4.9.14.</b> Maintain a writing portfolio that exhibits growth and reflection in the progress of meeting goals and expectations</p>	<p><b>W.4.10.13.</b> Maintain a writing portfolio that exhibits growth and reflection in the progress of meeting goals and expectations</p>	<p><b>W.4.11.14.</b> Maintain a writing portfolio that exhibits growth and reflection in the progress of meeting goals and expectations</p>	<p><b>W.4.12.14.</b> Maintain a writing portfolio that exhibits growth and reflection in the progress of meeting goals and expectations</p>

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>W.4.7.14.</b> Publish/share according to purpose and audience	<b>W.4.8.13.</b> Publish/share according to purpose and audience	<b>W.4.9.15.</b> Use available technology for all aspects of the writing process	<b>W.4.10.14.</b> Use available technology for all aspects of the writing process	<b>W.4.11.15.</b> Use available technology for all aspects of the writing process	<b>W.4.12.15.</b> Use available technology for all aspects of the writing process
<b>Standard 5: Purpose, Topics, Forms and Audiences</b>						
Students shall demonstrate competency in writing for a variety of purposes, topics, and audiences employing a wide range of forms.						
<b>Purposes and Audiences</b>	<b>W.5.7.1.</b> Write to develop narrative, expository, descriptive, and persuasive pieces	<b>W.5.8.1.</b> Develop multiple works in a variety of modes of discourse	<b>W.5.9.1.</b> Adjust levels of formality, style, and tone when composing for different audiences	<b>W.5.10.1.</b> Adjust levels of formality, style, and tone when composing for different audiences	<b>W.5.11.1.</b> Use effective rhetorical techniques and demonstrate understanding of purpose, speaker, audience, and form when completing expressive, persuasive, or literary writing assignments	<b>W.5.12.1.</b> Use elements of discourse effectively when completing narrative, expository, or descriptive writing assignments
	<b>W.5.7.2.</b> Select the form of writing that addresses the intended audience	<b>W.5.8.2.</b> Select the form of writing that addresses the intended audience				
<b>Topics and Forms</b>	<b>W.5.7.3.</b> Create expository, narrative, descriptive, and persuasive writings	<b>W.5.8.3.</b> Create expository, narrative, descriptive, and persuasive writings	<b>W.5.9.2.</b> Write biographies or autobiographies that <ul style="list-style-type: none"> <li>communicate the significance of the events and characters</li> <li>specify scenes and incidents in specific places</li> <li>describe using sensory details</li> <li>pace time and mood</li> <li>maintain consistency in point of view</li> </ul>	<b>W.5.10.2.</b> Write short stories that <ul style="list-style-type: none"> <li>communicate the significance of the events and characters</li> <li>specify scenes and incidents in specific places</li> <li>describe using sensory details</li> <li>pace time and mood</li> <li>maintain consistency in point of view</li> </ul>	<b>W.5.11.2.</b> Write expository compositions, including analytical essays and research reports, that <ul style="list-style-type: none"> <li>assemble and convey evidence in support of the thesis</li> <li>make distinctions between the relative value and significance of data, facts, and ideas</li> <li>employ visual aids when appropriate</li> </ul>	<b>W.5.12.2.</b> Write expository compositions, including analytical essays and research reports, that <ul style="list-style-type: none"> <li>assemble and convey evidence in support of the thesis</li> <li>make distinctions between the relative value and significance of data, facts and ideas</li> <li>employ visual aids when appropriate</li> </ul>
	<b>W.5.7.4.</b> Write poems using a variety of techniques/devices, with emphasis on lyric poetry	<b>W.5.8.4.</b> Write poems using a variety of techniques/devices, with emphasis on free verse	<b>W.5.9.3.</b> Write expository compositions, including analytical essays and research reports that <ul style="list-style-type: none"> <li>assemble and convey evidence in support of the thesis</li> </ul>	<b>W.5.10.3.</b> Write expository compositions, including analytical essays, and research reports that <ul style="list-style-type: none"> <li>assemble and convey evidence in support of the thesis</li> <li>make distinctions between the relative value and significance of data, facts, and ideas</li> </ul>	<b>W.5.11.3.</b> Write using rhetorical strategies with special emphasis on compare/contrast, argumentation/persuasion, cause/effect, and classification	<b>W.5.12.3.</b> Write using rhetorical strategies with special emphasis on compare/contrast, argumentation/persuasion, cause/effect, and classification



**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>W.5.7.5.</b> Write research reports and document sources, summarizing, and paraphrasing	<b>W.5.8.5.</b> Write research reports that include a thesis and use a variety of sources	<b>W.5.9.4.</b> Write using rhetorical strategies with special emphasis on definition, narration, description, exemplification, and compare/contrast	<b>W.5.10.4.</b> Write using rhetorical strategies with special emphasis on exemplification, process/analysis, compare/contrast, and argumentation/persuasion	<b>W.5.11.4.</b> Write persuasive compositions that <ul style="list-style-type: none"> <li>• structure ideas and arguments</li> <li>• clarify and defend positions with precise and relevant evidence</li> <li>• use specific rhetorical devices to support assertions</li> <li>• address readers' concerns, counterclaims, biases, and expectations</li> </ul>	<b>W.5.12.4.</b> Write persuasive compositions that <ul style="list-style-type: none"> <li>• structure ideas and arguments</li> <li>• clarify and defend positions with precise and relevant evidence</li> <li>• use specific rhetorical devices to support assertions</li> <li>• address readers' concerns, counterclaims, biases, and expectations</li> </ul>
	<b>W.5.7.6.</b> Write to reflect ideas/interpretations of multicultural and universal themes and concepts	<b>W.5.8.6.</b> Write to reflect ideas/interpretations of multicultural and universal themes and concepts	<b>W.5.9.5.</b> Write a variety of letters including letter of apology that <ul style="list-style-type: none"> <li>• follow a conventional format</li> <li>• address the intended audience</li> <li>• provide clear, purposeful information</li> </ul>	<b>W.5.10.5.</b> Write a variety of letters, including letters of complaint, that <ul style="list-style-type: none"> <li>• follow a conventional format</li> <li>• address the intended audience</li> <li>• provide clear, purposeful information</li> <li>• use appropriate vocabulary, tone, and style</li> </ul>	<b>W.5.11.5.</b> Write a variety of letters, including letters for employment and letters of request, that <ul style="list-style-type: none"> <li>• follow a conventional format</li> <li>• address the intended audience</li> <li>• provide clear, purposeful information</li> <li>• use appropriate vocabulary, tone, and style</li> </ul>	<b>W.5.12.5.</b> Write a variety of letters, including cover letters and letters of recommendation, that <ul style="list-style-type: none"> <li>• follow a conventional format</li> <li>• address the intended audience</li> <li>• provide clear, purposeful information</li> <li>• use appropriate vocabulary, tone, and style</li> </ul>
	<b>W.5.7.7.</b> Write with and without prompts for a sustained period of time	<b>W.5.8.7.</b> Write with and without prompts for a sustained period of time	<b>W.5.9.6.</b> Write poems using a range of poetic techniques, forms, and figurative language, emphasizing narrative poetry	<b>W.5.10.6.</b> Write poems using a range of poetic techniques, forms and figurative language, emphasizing lyric poetry	<b>W.5.11.6.</b> Write poems using a range of poetic techniques, forms and figurative language, emphasizing free verse poetry	<b>W.5.12.6.</b> Write poems using a range of poetic techniques, forms and figurative language, emphasizing sonnets

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>W.5.7.8.</b> Write responses to literature that demonstrate understanding or interpretation	<b>W.5.8.8.</b> Write responses to literature that demonstrate understanding or interpretation	<b>W.5.9.7.</b> Write responses to literature that <ul style="list-style-type: none"> <li>articulate the significant ideas of literary works</li> <li>support important ideas with evidence from text</li> </ul>	<b>W.5.10.7.</b> Write responses to literature that <ul style="list-style-type: none"> <li>articulate the significant ideas of literary works</li> <li>support important ideas and viewpoints with evidence from the text</li> <li>demonstrate awareness of the author’s use of stylistic devices</li> </ul>	<b>W.5.11.7.</b> Write responses to literature that <ul style="list-style-type: none"> <li>articulate the significant ideas of literary works</li> <li>support important ideas and viewpoints</li> <li>analyze the author’s use of stylistic devices</li> <li>determine the impact of ambiguities, nuances, and complexities using evidence from the text</li> </ul>	<b>W.5.12.7.</b> Write responses to literature that <ul style="list-style-type: none"> <li>articulate the significant ideas of literary works</li> <li>support important ideas and viewpoints</li> <li>analyze and evaluate the author’s use of stylistic devices</li> <li>evaluate the impact of ambiguities, nuances, and complexities using evidence from the text</li> </ul>
	<b>W.5.7.9.</b> Write on demand with or without prompt within a given time frame	<b>W.5.8.9.</b> Write on demand with or without prompt within a given time frame	<b>W.5.9.8.</b> Write on demand to a specified prompt within a given time frame	<b>W.5.10.8.</b> Write on demand to a specified prompt within a given time frame	<b>W.5.11.8.</b> Write on demand to a specified prompt within a given time frame	<b>W.5.12.8.</b> Write on demand to a specified prompt within a given time frame
	<b>W.5.7.10.</b> Write across the curriculum	<b>W.5.8.10.</b> Write across the curriculum	<b>W.5.9.9.</b> Write across the curriculum	<b>W.5.10.9.</b> Write across the curriculum	<b>W.5.11.9.</b> Write across the curriculum	<b>W.5.12.9.</b> Write across the curriculum

**Standard 6: Conventions**

Students shall apply knowledge of Standard English conventions in written work.

<b>Sentence Formation</b>	<b>W.6.7.1.</b> Vary sentence structure by using simple, compound, and complex sentences and different kinds of sentences <ul style="list-style-type: none"> <li>Declarative</li> <li>Interrogative</li> <li>Imperative</li> <li>Exclamatory</li> </ul>	<b>W.6.8.1.</b> Vary sentence structure by using simple, compound, complex, and compound-complex sentences and different kinds of sentences <ul style="list-style-type: none"> <li>Declarative</li> <li>Interrogative</li> <li>Imperative</li> <li>Exclamatory</li> </ul>	<b>W.6.9.1.</b> Use knowledge of types of clauses (main, subordinate)	<b>W.6.10.1.</b> Use verbals and verbal phrases to achieve sentence conciseness and variety	<b>W.6.11.1.</b> Use a variety of sentence structures, types, and lengths for effect in writing	<b>W.6.12.1.</b> Use a variety of sentence structures, types, and lengths for effect in writing
	<b>W.6.7.2.</b> Write effective sentences by embedding clauses, prepositional and appositive phrases, and all compound elements	<b>W.6.8.2.</b> Write more effective sentences by using all compound elements and by embedding clauses and prepositional, appositive, and verbal phrases	<b>W.6.9.2.</b> Use parallel structures			
	<b>W.6.7.3.</b> Use phrases and clauses to invert sentence order for emphasis and variety	<b>W.6.8.3.</b> Use clauses and phrases, including verbal, to invert sentence order for emphasis and variety	<b>W.6.9.3.</b> Use knowledge of types of verbals (gerunds, infinitives, participles)			

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<p><b>W.6.7.4. Correct fragments, run-ons, comma splices, and fused sentences</b></p>	<p><b>W.6.8.4. Correct fragments, run-ons, comma splices, and fused sentences</b></p>				
	<p><b>W.6.7.5. Analyze personal and peer sentence formation for effective use of the parts of speech</b></p> <ul style="list-style-type: none"> <li>• <b>Precise nouns</b></li> <li>• <b>Pronouns</b> <ul style="list-style-type: none"> <li>• Demonstrative</li> <li>• Compound personal                             <ul style="list-style-type: none"> <li>• Reflexive</li> <li>• Intensive</li> </ul> </li> <li>• Personal                             <ul style="list-style-type: none"> <li>• Interrogative</li> <li>• Relative</li> <li>• Indefinite</li> </ul> </li> </ul> </li> <li>• <b>Active and linking verbs</b></li> <li>• <b>Adjectives</b> <ul style="list-style-type: none"> <li>• Possessive</li> <li>• Article</li> <li>• Interrogative</li> <li>• Numeral</li> <li>• Demonstrative</li> <li>• Indefinite</li> <li>• Descriptive</li> </ul> </li> <li>• <b>Adverbs</b> <ul style="list-style-type: none"> <li>• Manner</li> <li>• Time</li> <li>• Place</li> <li>• Degree</li> <li>• Negative</li> <li>• Interrogative</li> </ul> </li> <li>• <b>Conjunctions</b> <ul style="list-style-type: none"> <li>• Coordinate</li> <li>• Correlative</li> <li>• Subordinate</li> </ul> </li> <li>• Interjections for excitement</li> <li>• <b>Prepositions to indicate relationships</b></li> </ul>	<p><b>W.6.8.5. Evaluate personal, peer, or literature-based sentence formation for effective use of the parts of speech</b></p> <ul style="list-style-type: none"> <li>• <b>Precise nouns</b></li> <li>• Pronouns to avoid repetition</li> <li>• <b>Verbs</b> <ul style="list-style-type: none"> <li>• Transitive active</li> <li>• Transitive passive</li> <li>• Intransitive linking</li> <li>• Intransitive complete</li> </ul> </li> <li>• <b>Adjectives to modify nouns and pronouns</b></li> <li>• <b>Adverbs to modify verbs, adjectives, and other adverbs</b></li> <li>• <b>Conjunctions</b> <ul style="list-style-type: none"> <li>• Coordinate</li> <li>• Correlative</li> <li>• Subordinate</li> </ul> </li> <li>• Interjections for excitement</li> <li>• <b>Prepositions to indicate relationships</b></li> </ul>				

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
<b>Usage</b>	<p><b>W.6.7.6.</b> Apply conventions of grammar with emphasis on the following:</p> <ul style="list-style-type: none"> <li>• Agreement                             <ul style="list-style-type: none"> <li>• Subject-verb</li> <li>• Pronoun and antecedent</li> </ul> </li> <li>• Parts of speech</li> <li>• Parts of a sentence and sentence patterns                             <ul style="list-style-type: none"> <li>• S-V</li> <li>• S-V-DO</li> <li>• S-V-IO-DO</li> <li>• S-LV-PN</li> <li>• S-LV-PA</li> </ul> </li> <li>• Conjugation in progressive verb forms</li> <li>• Prepositional phrases as modifiers</li> <li>• Dependent clauses</li> </ul>	<p><b>W.6.8.6.</b> Apply conventions of grammar with emphasis on the following:</p> <ul style="list-style-type: none"> <li>• Subject-verb agreement</li> <li>• Parts of speech</li> <li>• Pronoun and antecedent agreement</li> <li>• Parts of a sentence and sentence patterns                             <ul style="list-style-type: none"> <li>• S-V</li> <li>• S-V-DO</li> <li>• S-V-IO-DO</li> <li>• S-LV-PN</li> <li>• S-LV-PA</li> </ul> </li> <li>• Conjugation in regular, progressive, and emphatic verb forms</li> <li>• Verbals</li> </ul>	<p><b>W.6.9.4.</b> Apply rules for the parts of a sentence, including subject/verb, direct/indirect object, predicate nominative/predicate adjective, objective complement, and pronoun case</p>	<p><b>W.6.10.2.</b> Apply usage rules appropriately in all formal writing</p> <ul style="list-style-type: none"> <li>• Subject verb agreement</li> <li>• Pronoun agreement</li> <li>• Misplaced modifiers</li> <li>• Pronoun case</li> <li>• Objective complements</li> </ul>	<p><b>W.6.11.2.</b> Apply usage rules appropriately in all formal writing</p> <ul style="list-style-type: none"> <li>• Subject verb agreement</li> <li>• Pronoun agreement</li> <li>• Misplaced modifiers</li> <li>• Active and passive voice</li> <li>• Indicative and subjunctive mood</li> </ul>	<p><b>W.6.12.2.</b> Apply usage rules appropriately in all formal writing</p>
			<p><b>W.6.9.5.</b> Distinguish between active and passive voice</p>	<p><b>W.6.10.3.</b> Demonstrate appropriate use of active and passive voice</p>		
			<p><b>W.6.9.6.</b> Maintain consistent verb tense within a writing product</p>			
			<p><b>W.6.9.7.</b> Select appropriate pronouns when writing</p>			
<b>Spelling</b>	<p><b>W.6.7.7.</b> Spell words correctly in all writing</p>	<p><b>W.6.8.7.</b> Spell words correctly in all writing</p>	<p><b>W.6.9.8.</b> Apply conventional spelling to all pieces</p>	<p><b>W.6.10.4.</b> Apply conventional spelling to all pieces</p>	<p><b>W.6.11.3.</b> Apply conventional spelling to all pieces</p>	<p><b>W.6.12.3.</b> Apply conventional spelling to all pieces</p>
<b>Capitalization</b>	<p><b>W.6.7.8.</b> Apply conventional rules of capitalization in writing</p>	<p><b>W.6.8.8.</b> Apply conventional rules of capitalization in writing</p>	<p><b>W.6.9.9.</b> Apply conventional rules of capitalization in writing</p>	<p><b>W.6.10.5.</b> Apply conventional rules of capitalization in writing</p>	<p><b>W.6.11.4.</b> Apply conventional rules of capitalization in writing</p>	<p><b>W.6.12.4.</b> Apply conventional rules of capitalization in writing</p>
<b>Punctuation</b>	<p><b>W.6.7.9.</b> Apply conventional rules for all end marks and commas in writing</p>	<p><b>W.6.8.9.</b> Apply conventional rules of punctuation in writing</p>	<p><b>W.6.9.10.</b> Use commas and semicolons to distinguish and divide main and subordinate clauses</p>	<p><b>W.6.10.6.</b> Apply the punctuation rules appropriately in writing</p>	<p><b>W.6.11.5.</b> Apply the punctuation rules appropriately in writing</p>	<p><b>W.6.12.5.</b> Apply the punctuation rules appropriately in writing</p>

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
	<b>W.6.7.10.</b> Use semi-colons and colons in compound and compound-complex sentences	<b>W.6.8.10.</b> Edit own and peer papers with emphasis on <ul style="list-style-type: none"> <li>• All end marks</li> <li>• Commas</li> <li>• Dash</li> <li>• Hyphen</li> <li>• Quotation marks                             <ul style="list-style-type: none"> <li>• Double</li> <li>• Single</li> </ul> </li> <li>• Parentheses</li> <li>• Semicolons</li> <li>• Colons</li> </ul>	<b>W.6.9.11.</b> Use colons and dashes effectively in writing			
	<b>W.6.7.11.</b> Use colons in compound and compound-complex sentences and to introduce lists		<b>W.6.9.12.</b> Use punctuation correctly and recognize its effect on sentence structure			
	<b>W.6.7.12.</b> Use double and single quotation marks in dialogue					

**Standard 7: Craftsmanship**

Students shall develop personal style and voice as they approach the craftsmanship of writing.

<b>Purposefully Shaping and Controlling Language</b>	<b>W.7.7.1.</b> Use figurative language purposefully, such as personification and hyperbole, to shape and control language to affect readers	<b>W.7.8.1.</b> Use figurative language purposefully, such as alliteration and assonance, to shape and control language to affect readers	<b>W.7.9.1.</b> Use figurative language effectively with emphasis on simile and personification	<b>W.7.10.1.</b> Use figurative language effectively with emphasis on metaphor and symbolism	<b>W.7.11.1.</b> Use figurative language effectively with emphasis on extended metaphor and symbolism	<b>W.7.12.1.</b> Use figurative language effectively with emphasis on extended metaphor
	<b>W.7.7.2.</b> Use a variety of sentence types and lengths (see Conventions Standard 6)	<b>W.7.8.2.</b> Use a variety of sentence types and lengths	<b>W.7.9.2.</b> Use a variety of sentence structures, types, and lengths to contribute to fluency and interest	<b>W.7.10.2.</b> Use a variety of sentence structures, types, and lengths to contribute to fluency and interest	<b>W.7.11.2.</b> Use a variety of sentence structures, types, and lengths to contribute to fluency and interest	<b>W.7.12.2.</b> Use a variety of sentence structures, types, and lengths to contribute to fluency and interest
	<b>W.7.7.3.</b> Use word or sentence repetition for effect	<b>W.7.8.3.</b> Use repetition for effect	<b>W.7.9.3.</b> Consider purpose, speaker, audience, and form when completing assignments emphasizing narration	<b>W.7.10.3.</b> Use such elements of discourse as purpose, speaker, audience, and form when completing narrative, expository, or descriptive writing assignments	<b>W.7.11.3.</b> Apply such elements of discourse as purpose, speaker, audience, and form when completing narrative, expository, or persuasive, or descriptive writing assignments	<b>W.7.12.3.</b> Apply such elements of discourse as purpose, speaker, audience, and form when completing narrative, expository, or persuasive, or descriptive writing assignments

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>W.7.7.4. Use transition words/phrases</b>	<b>W.7.8.4. Use transition words/phrases</b>	<b>W.7.9.4. Demonstrate organization, unity, and coherence by using direct transitions and sequencing</b>	<b>W.7.10.4. Demonstrate organization, unity, and coherence by using embedded transitions and sequencing</b>	<b>W.7.11.4. Demonstrate organization, unity, and coherence by using implied transitions and sequencing</b>	<b>W.7.12.4. Demonstrate organization, unity, and coherence by using implied transitions and sequencing</b>
	<b>W.7.7.5. Use purposeful vocabulary with emphasis on developing voice</b>	<b>W.7.8.5. Use purposeful vocabulary with emphasis on developing tone</b>	<b>W.7.9.5. Use extension and elaboration to develop an idea emphasizing the use of appositives</b>	<b>W.7.10.5. Use extension and elaboration to develop an idea emphasizing the use of participial phrases</b>	<b>W.7.11.5. Use extension and multi-level elaboration to develop an idea emphasizing dependent clauses</b>	<b>W.7.12.5. Use extension and multi-level elaboration to develop an idea emphasizing models from professional writing</b>
	<b>W.7.7.6. Create an effective lead and conclusion</b>	<b>W.7.8.6. Create an effective lead and conclusion</b>	<b>W.7.9.6. Use concrete information for elaboration</b>	<b>W.7.10.6. Distinguish between and use concrete and commentary information for elaboration</b>	<b>W.7.11.6. Combine concrete and commentary information for elaboration</b>	<b>W.7.12.6. Balance concrete and commentary information within a piece</b>
	<b>W.7.7.7. Narrow the time focus of a piece of writing</b>	<b>W.7.8.7. Use flashback/time transitions</b>	<b>W.7.9.7. Use precise word choices that convey specific meaning</b>	<b>W.7.10.7. Use precise word choices that convey specific meaning</b>	<b>W.7.11.7. Use precise word choices that convey specific meaning</b>	<b>W.7.12.7. Use precise word choices that convey specific meaning</b>
	<b>W.7.7.8. Vary the placement of topic sentences</b>	<b>W.7.8.8. Use dialogue effectively</b>	<b>W.7.9.8. Personalize writing to convey voice in formal and informal pieces</b>	<b>W.7.10.8. Personalize writing to convey voice in formal and informal pieces</b>	<b>W.7.11.8. Personalize writing to convey voice in formal and informal pieces</b>	<b>W.7.12.8. Personalize writing to convey voice in formal and informal pieces</b>
	<b>W.7.7.9. Use dialogue effectively</b>	<b>W.7.8.9. Use anecdotes and quotes</b>	<b>W.7.9.9. Evaluate own writing to determine the best features of a piece of writing</b>	<b>W.7.10.9. Evaluate own writing and others' writing to determine how writing achieves its purpose, ask for feedback, purpose, ask for feedback, and respond to classmates' writing</b>	<b>W.7.11.9. Use point of view, characterization, style, and related elements for specific rhetorical (communication) and aesthetic (artistic) purposes</b>	<b>W.7.12.9. Use point of view, characterization, style, and related elements for specific rhetorical (communication) and aesthetic (artistic) purposes</b>
	<b>W.7.7.10. Use humor appropriately</b>	<b>W.7.8.10. Use scoring guides or rubrics to improve all aspects of written projects</b>			<b>W.7.11.10. Evaluate own writing and others' writing to highlight the individual voice, improve sentence variety and style, and enhance subtlety of meaning of tone in ways that are consistent with the purpose, audience, and form of writing</b>	<b>W.7.12.10. Structure ideas and arguments in a sustained and persuasive way and support them with precise and relevant examples</b>
	<b>W.7.7.11. Use writer's checklist or scoring guides/rubrics to improve written work</b>	<b>W.7.8.11. Self-evaluate writing</b>				<b>W.7.12.11. Critique professional and peer writing for consistency of style</b>

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
	<b>W.7.7.12.</b> Self-evaluate writing					
<b>Strand:</b> Reading						
<b>Standard 8:</b> Foundations of Reading						
[Applies lower grades only]						
<b>Standard 9:</b> Comprehension						
Students shall apply a variety of strategies to read and comprehend printed material.						
<b>Prior Knowledge</b>	<b>R.9.7.1.</b> Use pre-viewing, activating prior knowledge, predicting content of text, formulating questions, and establishing purposes for reading	<b>R.9.8.1.</b> Use pre-viewing, activating prior knowledge, predicting content of text, formulating questions, and establishing purposes for reading				
<b>Making Connections</b>	<b>R.9.7.2.</b> Infer the interrelations of text and world issues/events by applying connection strategies	<b>R.9.8.2.</b> Evaluate the interrelations of text and world issues/events by applying connection strategies				
		<b>R.9.8.3.</b> Connect, compare, and contrast ideas, themes, and issues across texts				
<b>Using Questioning and Monitoring</b>	<b>R.9.7.3.</b> Prioritize questions formulated and purposes established for reading	<b>R.9.8.4.</b> Defend questions formulated and purposes established for reading				
	<b>R.9.7.4.</b> Generate and prioritize questions related to universal themes to interpret meaning	<b>R.9.8.5.</b> Generate and define questions related to universal themes to interpret meaning				
	<b>R.9.7.5.</b> Monitor reading strategies, including rereading, using resources and questions, and modify them when understanding breakdowns	<b>R.9.8.6.</b> Monitor reading strategies, including rereading, using resources, and questions, and modify them when understanding breakdowns				
<b>Using Inferences and Interpretations</b>	<b>R.9.7.6.</b> Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text	<b>R.9.8.7.</b> Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text				

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
	<b>R.9.7.7.</b> Infer a character's impact on plot development	<b>R.9.8.8.</b> Infer a character's role in development of plot and theme				
	<b>R.9.7.8.</b> Infer mood of text	<b>R.9.8.9.</b> Infer mood and theme of text				
	<b>R.9.7.9.</b> Analyze literary elements of fiction with emphasis on plot development, including conflict, rising action, climax, falling action, and resolution	<b>R.9.8.10.</b> Use literary elements and historical context to infer author's intent				
	<b>R.9.7.10.</b> Compare and contrast points of view, such as first person, limited, and omniscient third person, and explain the effect on the overall theme of a literary work	<b>R.9.8.11.</b> Analyze the literary elements of plot, subplot, and climax, and explain the way in which conflicts are resolved or unresolved				
	<b>R.9.7.11.</b> Distinguish among stated fact, reasoned judgment, and opinion in text	<b>R.9.8.12.</b> Compare and contrast points of view, such as first person, limited, and omniscient third person, and explain the effect on the overall theme of a literary work				
		<b>R.9.8.13.</b> Distinguish among stated fact, reasoned judgment, and opinion in text				
<b>Determining Importance</b>	<b>R.9.7.12.</b> Identify main ideas and supporting evidence in short stories and novels	<b>R.9.8.14.</b> Classify and organize information from more than one text, based on purpose and/or level of importance				
	<b>R.9.7.13.</b> Use the text features to locate and recall information, with emphasis on graphics	<b>R.9.8.15.</b> Identify main ideas and supporting evidence in short stories and novels				



**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
	<b>R.9.7.14.</b> Use knowledge of text structure(s) to enhance understanding with emphasis on problem/solution	<b>R.9.8.16.</b> Use the text features to locate and recall information, with emphasis on text organizers				
	<b>R.9.7.15.</b> Organize information, including simple outlining	<b>R.9.8.17.</b> Determine text structure(s) to enhance understanding				
	<b>R.9.7.16.</b> Use skimming, scanning, notetaking, outlining, and questioning as study strategies	<b>R.9.8.18.</b> Organize information, including simple outlining				
		<b>R.9.8.19.</b> Use skimming, scanning, note-taking, outlining, and questioning as study strategies				
<b>Summarizing and Synthesizing</b>	<b>R.9.7.17.</b> Summarize the content of multiple chapters of a text	<b>R.9.8.20.</b> Synthesize information from multiple texts and provide evidence to support				
<b>Evaluating</b>	<b>R.9.7.18.</b> Evaluate the accuracy and appropriateness of the evidence used by the author to support claims and assertions	<b>R.9.8.21.</b> Evaluate conflicts, motivations, points of view, and changes that affect the plot or theme				
	<b>R.9.7.19.</b> Evaluate personal, social, and political issues as presented in text	<b>R.9.8.22.</b> Evaluate personal, social, and political issues as presented in text				
<b>Literal and Inferential Understanding</b>			<b>R.9.9.1.</b> Connect own background knowledge, including personal experience and perspectives shaped by age, gender, class, or national origin, to determine author's purpose	<b>R.9.10.1.</b> Connect own background knowledge, including personal experience and perspectives shaped by age, gender, or national origin, to examine author's purpose	<b>R.9.11.1.</b> Connect own background knowledge to recognize and analyze personal biases brought to a text	<b>R.9.12.1.</b> Connect own background knowledge to recognize and analyze personal biases brought to a text with an emphasis on gender and national origin

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
			<b>R.9.9.2.</b> Identify specific ways an author accomplishes purpose, including organization, narrative and persuasive techniques, style, literary forms or genre, portrayal of themes, tone, and intended audiences	<b>R.9.10.2.</b> Interpret specific ways an author accomplishes purpose, including organization, narrative and persuasive techniques, style, literary forms or genre, portrayal of themes, tone, and intended audience	<b>R.9.11.2.</b> Analyze style and diction to determine author's purpose	<b>R.9.12.2.</b> Challenge or defend use of writer's diction and style
			<b>R.9.9.3.</b> Differentiate among strategies to aid comprehension, including skimming, scanning, note taking, outlining, questioning, creating graphic organizers, and annotating	<b>R.9.10.3.</b> Apply appropriate strategies to aid comprehension, including skimming, scanning, note taking, outlining, questioning, creating graphic organizers, and annotating	<b>R.9.11.3.</b> Develop and use appropriate strategies to support active reading and engagement	<b>R.9.12.3.</b> Evaluate and select individualized strategies to support active reading and engagement
			<b>R.9.9.4.</b> Recognize how works of a given period reflect author's background, historical events, and cultural influences	<b>R.9.10.4.</b> Research how works of a given period reflect author's background, historical events, and cultural influences	<b>R.9.11.4.</b> Analyze how works of a given period reflect author's background, historical events, and cultural influences	<b>R.9.12.4.</b> Analyze and evaluate how works of a given period reflect author's background, historical events, and cultural influences
			<b>R.9.9.5.</b> Draw inferences from a sentence or a paragraph (including conclusions, generalizations, and predictions) and support them with text evidence	<b>R.9.10.5.</b> Draw inferences from a passage (including conclusions, generalizations, and predictions) and support them with text evidence	<b>R.9.11.5.</b> Draw inferences from a complete selection (including conclusions, generalizations, and predictions) and support them with text evidence	<b>R.9.12.5.</b> Draw inferences from multiple selections and authors (including conclusions, generalizations, and predictions) and support them with text evidence
			<b>R.9.9.6.</b> Recognize the role of bias for both author and reader in the comprehension of a text	<b>R.9.10.6.</b> Identify bias in a variety of texts		<b>R.9.12.6.</b> Suspend personal biases in approaching texts
			<b>R.9.9.7.</b> Recognize how signal/transition words and phrases denote shifts that contribute to the meaning of the text			

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Summary and Generalization</b>			<b>R.9.9.8.</b> Summarize and paraphrase structures in informational and literary texts, including relationships among concepts and details	<b>R.9.10.7.</b> Summarize and paraphrase structures in informational and literary texts, including relationships among concepts and details	<b>R.9.11.6.</b> Summarize and paraphrase complex structures in informational and literary texts, including relationships among concepts and details	<b>R.9.12.7.</b> Summarize and paraphrase complex structures in informational and literary texts, including relationships among concepts and details
<b>Analysis and Evaluation</b>			<b>R.9.9.9.</b> Discriminate between fact/opinion and fiction/nonfiction	<b>R.9.10.8.</b> Evaluate deceptive and/or faulty arguments in persuasive texts	<b>R.9.11.7.</b> Compare and contrast aspects of texts, including themes, conflicts, and allusions, both within and across texts	<b>R.9.12.8.</b> Investigate both the features and the rhetorical devices of different policy statements, speeches, debates, or other public documents and the ways in which authors use those features and devices
			<b>R.9.9.10.</b> Analyze the structure and format of informational and literary documents and explain how authors use the features to achieve their purposes	<b>R.9.10.9.</b> Analyze techniques used to convey point of view or impressions, including language, organization, tone, and context	<b>R.9.11.8.</b> Analyze point of view and its influence on elements of the text (e.g., tone, theme, and purpose)	<b>R.9.12.9.</b> Evaluate the effect of point of view on elements of text (e.g., tone, theme, and purpose, etc.)
			<b>R.9.9.11.</b> Recognize and define various points of view (e.g., omniscient narrator, third-person limited)	<b>R.9.10.10.</b> Examine author's purpose in choosing a point of view (e.g., humor, suspense, satire, etc.)	<b>R.9.11.9.</b> Challenge or defend author's use of fallacies	<b>R.9.12.10.</b> Challenge or defend author's use of fallacies
			<b>R.9.9.12.</b> Define fallacies and identify fallacies in a text	<b>R.9.10.11.</b> Examine fallacies to determine purpose	<b>R.9.11.10.</b> Analyze and defend a position using concepts gained from reading	<b>R.9.12.11.</b> Defend and justify a position using concepts gained from reading
			<b>R.9.9.13.</b> Identify and discuss a position using concepts gained from reading. (e.g., debate, discussion, position paper, etc.)	<b>R.9.10.12.</b> Investigate and interpret a position using concepts gained from reading	<b>R.9.11.11.</b> Analyze and compare the author's use of figures of speech and sound devices	<b>R.9.12.12.</b> Analyze and evaluate the effects of rhetorical devices
			<b>R.9.9.14.</b> Identify and categorize figures of speech and sound devices, including simile, metaphor, personification, hyperbole, oxymoron, and pun	<b>R.9.10.13.</b> Identify and categorize figures of speech and sound devices, including extended metaphor, personification, hyperbole, understatement, oxymoron, paradox, and pun	<b>R.9.11.12.</b> Examine the way in which clarity of meaning is affected by the patterns of organization, repetition of the main ideas, organization of language, and word choice in the text	<b>R.9.12.13.</b> Analyze and evaluate the author's use of tone, diction, and syntax such as anaphora and inversion

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
					<b>R.9.11.13.</b> Analyze authors' use of archetypes (universal modes or patterns) drawn from myth and tradition in literature, film, political speeches, and religious writings	<b>R.9.12.14.</b> Evaluate the credibility of information sources, including how the writer's motivation affects that credibility
<b>Standard 10: Variety of Text</b>						
<b>Grades 7–8:</b> Students shall read, examine, and respond to a wide range of texts for a variety of purposes.						
<b>Grades 9–12:</b> Students shall read, examine, and respond to a wide range of texts.						
<b>Exhibits Behaviors and Habits of an Active Reader</b>	<b>R.10.7.1.</b> Read for a substantial amount of time daily, including assigned and self-selected materials at independent and instructional levels	<b>R.10.8.1.</b> Read for a substantial amount of time daily, including assigned and self-selected materials at independent and instructional levels				
	<b>R.10.7.2.</b> Read texts that reflect contributions of different cultural groups	<b>R.10.8.2.</b> Read texts that reflect contributions of different cultural groups				
	<b>R.10.7.3.</b> Vary reading strategies according to text and purpose	<b>R.10.8.3.</b> Vary reading strategies according to text and purpose				
<b>Reading a Variety of Informational Materials for Enjoyment, Critical Analysis, and Evaluation</b>	<b>R.10.7.4.</b> Understand how word choice and language structure convey an author's viewpoint	<b>R.10.8.4.</b> Examine the author's credibility, use of text structure, word choice, and viewpoint to evaluate message				
	<b>R.10.7.5.</b> Use skimming, scanning, note taking, outlining, and questioning as study strategies	<b>R.10.8.5.</b> Use skimming, scanning, note taking, outlining, and questioning as study strategies				
	<b>R.10.7.6.</b> Organize and synthesize information for use in written and oral presentation					
<b>Reading a Variety of Literature for Enjoyment, Critical Analysis and Evaluation</b>	<b>R.10.7.7.</b> Read a variety of literature, including short stories, science fiction, legends, and myths	<b>R.10.8.6.</b> Read a variety of literature, including essays and plays				
		<b>R.10.8.7.</b> Evaluate the credibility of the narrator				

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
		<b>R.10.8.8.</b> Identify the basic parts of drama				
		<b>R.10.8.9.</b> Describe how stage directions help the reader understand a play				
<b>Reading a Variety of Poetry for Enjoyment, Critical Analysis and Evaluation</b>	<b>R.10.7.8.</b> Read a variety of poetry, with emphasis on lyric poetry	<b>R.10.8.10.</b> Read a variety of poetry, with emphasis on free verse				
	<b>R.10.7.9.</b> Identify the use of poetic devices, including comparison, alliteration, repetition, onomatopoeia, and rhyme	<b>R.10.8.11.</b> Interpret poetry, noting distinctive poetic devices				
	<b>R.10.7.10.</b> Examine the effect of imagery on the mood or meaning of the poem					
<b>Reading a Variety of Practical Materials for Enjoyment, Critical Analysis and Evaluation</b>	<b>R.10.7.11.</b> Read and utilize functional/practical texts, including forms, reports, cover letters, letterheads, and business letters	<b>R.10.8.12.</b> Read and utilize functional/practical texts, including manuals, memos, job applications, and career guides				
	<b>R.10.7.12.</b> Analyze advertisements for bias and propaganda	<b>R.10.8.13.</b> Analyze newspaper articles and editorials for bias and propaganda				
<b>Practical Texts</b>			<b>R.10.9.1.</b> Read across the curriculum a variety of such practical texts as advertisements, warranties, manuals, handbooks, agendas, labels, warnings and directions	<b>R.10.10.1.</b> Read across the curriculum a variety of such practical texts as advertisements, warranties, manuals, job and career descriptions, and applications	<b>R.10.11.1.</b> Read across the curriculum a variety of such practical texts as advertisements, warranties, manuals, job and career descriptions, applications, college catalogs and financial documents	<b>R.10.12.1.</b> Read across the curriculum a variety of such practical texts as advertisements, warranties, manuals, job and career descriptions, applications, college catalogs, financial documents, and contracts
			<b>R.10.9.2.</b> Evaluate clarity and accuracy of information in practical texts	<b>R.10.10.2.</b> Evaluate clarity and accuracy of information in practical texts	<b>R.10.11.2.</b> Evaluate clarity and accuracy of information in practical texts	<b>R.10.12.2.</b> Evaluate clarity and accuracy of information in practical texts
<b>Poetry</b>			<b>R.10.9.3.</b> Read a variety of narrative poetry, including ballad and epic	<b>R.10.10.3.</b> Read a variety of lyric poetry, including odes and sonnets	<b>R.10.11.3.</b> Read a variety of poetry, including free verse	<b>R.10.12.3.</b> Read a variety of poetry, including free and formal verse and narrative and lyric poetry

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
			<b>R.10.9.4.</b> Define and identify poetic conventions and structures, including line, stanza, imagery, rhythm, rhyme, and sound devices	<b>R.10.10.4.</b> Recognize and discuss an author's use of poetic conventions and structures, including line, stanza, imagery, rhythm, rhyme, and sound devices	<b>R.10.11.4.</b> Analyze an author's use of poetic conventions and structures including line, stanza, imagery, rhythm, rhyme, and sound devices	<b>R.10.12.4.</b> Evaluate the effectiveness of an author's use of poetic conventions and structures, including line, stanza, imagery, rhythm, rhyme, and sound devices
			<b>R.10.9.5.</b> Identify the characteristics of narrative poetry	<b>R.10.10.5.</b> Identify the characteristics of lyric poetry	<b>R.10.11.5.</b> Analyze and compare characteristics of free verse	<b>R.10.12.5.</b> Analyze and compare characteristics of formal verse, including sonnets, sestinas, and villanelles
			<b>R.10.9.6.</b> Read traditional and contemporary works of poets from many cultures	<b>R.10.10.6.</b> Compare and contrast traditional and contemporary works of poets from many cultures	<b>R.10.11.6.</b> Analyze traditional and contemporary works of poets from many cultures	<b>R.10.12.6.</b> Evaluate traditional and contemporary works of poets from many cultures
			<b>R.10.9.7.</b> Identify the concept of persona	<b>R.10.10.7.</b> Examine the author's possible use of persona	<b>R.10.11.7.</b> Analyze the author's possible use of persona	<b>R.10.12.7.</b> Evaluate the effectiveness of the author's use of persona
			<b>R.10.9.8.</b> Identify techniques poets use to evoke emotion in a reader	<b>R.10.10.8.</b> Compare and contrast techniques poets use to evoke emotion in a reader	<b>R.10.11.8.</b> Analyze techniques poets use to evoke emotion in a reader	<b>R.10.12.8.</b> Evaluate techniques poets use to evoke emotion in a reader
			<b>R.10.9.9.</b> Explain how word choice in a poem creates tone and voice	<b>R.10.10.9.</b> Identify examples of words that contribute to tone and voice	<b>R.10.11.9.</b> Analyze word choice, tone, and voice	<b>R.10.12.9.</b> Evaluate the effectiveness of word choice, tone, and voice
			<b>R.10.9.10.</b> Paraphrase and interpret to find the meaning of selected poems, emphasizing the line	<b>R.10.10.10.</b> Paraphrase and interpret to find the meaning of selected poems, emphasizing the stanza	<b>R.10.11.10.</b> Paraphrase and interpret to find the meaning of selected poems, emphasizing the complete selection	<b>R.10.12.10.</b> Paraphrase and interpret to find the meaning of selected poems, emphasizing multiple selections and authors
<b>Drama</b>			<b>R.10.9.11.</b> Read a variety of dramatic selections, including an Elizabethan tragedy	<b>R.10.10.11.</b> Read a variety of dramatic selections, including a classical tragedy	<b>R.10.11.11.</b> Read a variety of dramatic selections, including modern drama	<b>R.10.12.11.</b> Read and critique dramatic selections from a variety of authors
			<b>R.10.9.12.</b> Identify the two basic parts of drama: staging and scripting	<b>R.10.10.12.</b> Compare and contrast character development in a play to characterizations in other literary forms	<b>R.10.11.12.</b> Compare drama to stage, film, or television adaptations	<b>R.10.12.12.</b> Evaluate stage, film, or television adaptations and interpretations of a drama

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
			<b>R.10.9.13.</b> Define and identify examples of dramatic conventions, including soliloquy, aside, monologue, dialogue, and character types	<b>R.10.10.13.</b> Read and discuss an author's use of dramatic conventions	<b>R.10.11.13.</b> Describe the dramatic conventions or devices used by playwrights to present ideas	<b>R.10.12.13.</b> Evaluate the effectiveness of an author's use of dramatic conventions
			<b>R.10.9.14.</b> Compare and contrast the elements of character, setting, and plot in drama	<b>R.10.10.14.</b> Identify the functions of dialogue, scene designs, soliloquies, asides, and character foils in dramatic literature	<b>R.10.11.14.</b> Analyze an author's use of dramatic conventions	<b>R.10.12.14.</b> Analyze and evaluate the most effective elements of selected plays
			<b>R.10.9.15.</b> Describe how stage directions help the reader understand the setting, mood, characters, plot, and theme	<b>R.10.10.15.</b> Explain the use of asides, soliloquies, and monologues in the development of a single character	<b>R.10.11.15.</b> Compare and contrast the effects of dramatic elements of plays from various cultures	<b>R.10.12.15.</b> Compare and contrast ways in which character, scene, dialogue, and staging contribute to the theme and the dramatic effect
			<b>R.10.9.16.</b> Define and identify the elements of Elizabethan tragedy	<b>R.10.10.16.</b> Read and examine the elements of classical tragedy	<b>R.10.11.16.</b> Recognize and examine the elements of modern drama	<b>R.10.12.16.</b> Compare and contrast tragic heroes from various literary eras
				<b>R.10.10.17.</b> Define and identify the characteristics of a tragic hero	<b>R.10.11.17.</b> Compare and contrast the hero of a modern drama to the tragic hero	
				<b>R.10.10.18.</b> Explain the relationship between the expressed purposes and the characteristics of different forms of dramatic literature		
<b>Literary and Content Prose</b>			<b>R.10.9.17.</b> Read a variety of literary and content prose	<b>R.10.10.19.</b> Read a variety of literary and content prose	<b>R.10.11.18.</b> Reads a variety of literary and content prose	<b>R.10.12.17.</b> Read a variety of literary and content prose
			<b>R.10.9.18.</b> Recognize the influence of historical context on the form, style, and point of view of a written work	<b>R.10.10.20.</b> Explain the influence of historical context on the form, style, and point of view of a written work	<b>R.10.11.19.</b> Analyze the influence of historical context on the form, style, and point of view of a written work	<b>R.10.12.18.</b> Evaluate the influence of historical context on the form, style, and point of view of a written work
			<b>R.10.9.19.</b> Identify the characteristics that distinguish literary forms from different cultures	<b>R.10.10.21.</b> Explain similarities and differences of techniques and literary forms represented in the literature of different cultures	<b>R.10.11.20.</b> Describe literary contributions of various cultures	<b>R.10.12.19.</b> Compare and contrast the literary contributions of various cultures

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
			R.10.9.20. Identify and define literary terms	R.10.10.22. Use literary terms to discuss a work	R.10.11.21. Use literary terms to critique a work	R.10.12.20. Evaluate an author's use of literary devices
			R.10.9.21. Explain the relationship between the author's style and literary effect	R.10.10.23. Recognize the impact of diction, imagery, style, and figurative language on tone, mood, and theme, using literary terminology	R.10.11.22. Analyze the impact of diction, imagery, style, and figurative language on tone, mood, and theme using literary terminology	R.10.12.21. Evaluate the impact of diction, imagery, style, and figurative language on tone, mood, and theme using literary terminology
			R.10.9.22. Identify literary elements in a work	R.10.10.24. Identify and explain literary elements in a work	R.10.11.23. Analyze the prominence of a literary elements in a work	R.10.12.22. Evaluate the significance of literary elements in a work
			R.10.9.23. Explain the use of verbal irony, dramatic irony, and situational irony	R.10.10.25. Analyze the use of irony in a text	R.10.11.24. Analyze the impact of irony on a text	R.10.12.23. Evaluate the impact of irony on text
					R.10.11.25. Analyze several of an author's works that deal with a single issue	R.10.12.24. Analyze several of an author's works that deal with a single issue
					R.10.11.26. Evaluate the credibility of an author's argument or defense	R.10.12.25. Evaluate the credibility of an author's argument or defense

**Standard 11: Vocabulary, Word Study, and Fluency**

Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.

<b>Word Recognition</b>	R.11.7.1. Automatically decode words to ensure focus on comprehension	R.11.8.1. Automatically decode words to ensure focus on comprehension				
	R.11.7.2. Continue to develop and maintain an adequate body of sight words	R.11.8.2. Continue to develop and maintain an adequate body of sight words				
	R.11.7.3. Add content words to sight vocabulary	R.11.8.3. Add content words to sight vocabulary				
<b>Word Study and Vocabulary</b>	R.11.7.4. Use knowledge of root words and affixes and word relationships to determine meaning	R.11.8.4. Use knowledge of root words and affixes and word relationships to determine meaning	R.11.9.1. Expand vocabulary through reading, listening, and discussing	R.11.10.1. Expand vocabulary through reading, listening, and discussing	R.11.11.1. Recognize and apply specialized vocabulary	R.11.12.1. Recognize and apply specialized vocabulary
	R.11.7.5. Use context to determine meaning of multiple meaning words	R.11.8.5. Use context to determine meaning of multiple meaning words	R.11.9.2. Use roots, prefixes, and suffixes to define words	R.11.10.2. Use Greek and Latin roots, prefixes, and suffixes to determine meanings	R.11.11.2. Analyze roots and word parts to draw inferences about meaning	R.11.12.2. Analyze Greek, Latin, Anglo-Saxon and meaning and draw inferences



**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>R.11.7.6.</b> Use resources to determine meaning of technical and specialized vocabulary	<b>R.11.8.6.</b> Use resources to determine meaning of technical and specialized vocabulary	<b>R.11.9.3.</b> Use reference materials including glossary, dictionary, thesaurus, and available technology to determine precise meaning and usage of words	<b>R.11.10.3.</b> Use reference materials including glossary, dictionary, thesaurus, and available technology to apply precise meaning and usage of words	<b>R.11.11.3.</b> Use reference materials including glossary, dictionary, thesaurus, and available technology to determine precise meaning and uses of words	<b>R.11.12.3.</b> Use reference materials including glossary, dictionary, thesaurus, and available technology to facilitate and extend learning
	<b>R.11.7.7.</b> Determine useful and relevant words	<b>R.11.8.7.</b> Determine useful and relevant words	<b>R.11.9.4.</b> Distinguish between connotation and denotation	<b>R.11.10.4.</b> Recognize the connotative power of words	<b>R.11.11.4.</b> Analyze the connotative power of words	<b>R.11.12.4.</b> Interpret the connotative power of words
	<b>R.11.7.8.</b> Identify and explain idioms and comparisons such as analogies, metaphors and similes to infer the literal and figurative meanings of phrases	<b>R.11.8.8.</b> Identify and explain similes, metaphors, personification, hyperboles and analogies to infer the literal and figurative meanings of phrases				
	<b>R.11.7.9.</b> Use knowledge of Greek and Latin word parts and roots to determine the meaning of subject related vocabulary	<b>R.11.8.9.</b> Identify how words from other cultures have been incorporated into English vocabulary usage.				
	<b>R.11.7.10.</b> Use context to determine meaning of multiple meaning words	<b>R.11.8.10.</b> Use context, structure, denotations and connotations to determine meaning of words and phrases				
<b>Reading with Fluency</b>	<b>R.11.7.11.</b> Read grade level text with an approximate rate of 167 words per minute	<b>R.11.8.11.</b> Read grade level text with an approximate rate of 171 words per minute				
	<b>R.11.7.12.</b> Read grade level text orally with accuracy and expression	<b>R.11.8.12.</b> Read grade level text orally with accuracy and expression				
<b>Strand:</b> Inquiring/Researching						
<b>Standard 12:</b> Research/Inquiry Process						
Students shall engage in inquiry and research to address questions, to make judgments about credibility, and to communicate findings in ways that suit the purpose and audience.						
<b>Accessing Information</b>	<b>IR.12.7.1.</b> Formulate original questions to select a topic for research	<b>IR.12.8.1.</b> Formulate original questions to explain and select a topic for research	<b>IR.12.9.1.</b> Generate open-ended questions to select a topic	<b>IR.12.10.1.</b> Generate open-ended questions to explore and select a topic	<b>IR.12.11.1.</b> Formulate original, open-ended questions to explore, narrow, and select a topic	<b>IR.12.12.1.</b> Formulate original, open-ended questions to explore, narrow, and select a topic

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	<b>Grade 7</b>	<b>Grade 8</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
	<b>IR.12.7.2.</b> Use reference features (e.g., endnotes, etc.) and text features (e.g., endnotes, footnotes, bibliography, etc.) to access information	<b>IR.12.8.2.</b> Use appropriate reference features and text features to access information effectively	<b>IR.12.9.2.</b> Establish a focus for research and design a research plan to answer a specific question	<b>IR.12.10.2.</b> Establish a focus for research and design a research plan to answer a set of questions	<b>IR.12.11.2.</b> Establish a focus for research and design a research plan to answer a specific question or defend a position	<b>IR.12.12.2.</b> Establish a focus for research and design a research plan to defend a position or prove/disprove a hypothesis
	<b>IR.12.7.3.</b> Use print and electronic sources, such as card catalogs and computer databases, to locate information	<b>IR.12.8.3.</b> Use print and electronic sources independently to locate information	<b>IR.12.9.3.</b> Determine the purpose of using different research tools to access multiple sources	<b>IR.12.10.3.</b> Utilize a variety of research tools to access multiple sources	<b>IR.12.11.3.</b> Access multiple sources, using a variety of research tools, with increasing proficiency	<b>IR.12.12.3.</b> Access multiple sources using a variety of research tools with increasing proficiency
	<b>IR.12.7.4.</b> Gather information from more than one type of source (e.g., periodicals, books, learning logs, etc.)	<b>IR.12.8.4.</b> Gather information from more than one type of source (e.g., interviews, Internet, lab notes, etc.)	<b>IR.12.9.4.</b> Use a variety of electronic sources to access information	<b>IR.12.10.4.</b> Use key words to search a database to find specific information		
	<b>IR.12.7.5.</b> Evaluate sources to select those most reliable and appropriate to purpose and topic	<b>IR.12.8.5.</b> Self-select credible sources appropriate to purpose and topic				
<b>Interpreting Information</b>	<b>IR.12.7.6.</b> Use information presented in graphic sources to draw conclusions	<b>IR.12.8.6.</b> Create visual graphics to interpret information				
	<b>IR.12.7.7.</b> Develop notes that include main topics, details, summaries, and paraphrasing from multiple types of sources	<b>IR.12.8.7.</b> Use notes to narrow a topic to develop a thesis statement				
	<b>IR.12.7.8.</b> Create a formal topic outline of main topic, sub-topics, and details	<b>IR.12.8.8.</b> Create a formal topic outline of thesis, main topics, subtopics, and details				
	<b>IR.12.7.9.</b> Use research to create one or more oral, written, or visual presentations/products	<b>IR.12.8.9.</b> Use research to create one or more oral, written, or visual presentations/products				

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Evaluating Credibility and Identifying Relevant Information</b>			<b>IR.12.9.5.</b> Recognize ways to assess the credibility of authors and reliability of sources (e.g., author credentials, author biases, copyright dates, etc.)	<b>IR.12.10.5.</b> Determine the credibility of authors and reliability of sources (e.g., author credentials, author biases, copyright dates, etc.)	<b>IR.12.11.4.</b> Compare the credibility of authors and reliability of sources	<b>IR.12.12.4.</b> Evaluate the credibility of authors and reliability of sources
			<b>IR.12.9.6.</b> Recognize ways to verify the accuracy and usefulness of information	<b>IR.12.10.6.</b> Use criteria to compare ways to verify the accuracy and usefulness of information	<b>IR.12.11.5.</b> Analyze ways to verify the accuracy and usefulness of information	<b>IR.12.12.5.</b> Evaluate ways to verify the accuracy and usefulness of information
			<b>IR.12.9.7.</b> Distinguish between primary and secondary sources	<b>IR.12.10.7.</b> Skim sources to evaluate their usefulness and accuracy	<b>IR.12.11.6.</b> Skim sources to evaluate their usefulness and accuracy	<b>IR.12.12.6.</b> Synthesize information from multiple primary and secondary sources
			<b>IR.12.9.8.</b> Define plagiarism and cite quoted sources to avoid plagiarism	<b>IR.12.10.8.</b> Apply research skills to collect a variety of primary and/or secondary sources	<b>IR.12.11.7.</b> Compile and organize information from a variety of relevant primary and secondary sources	<b>IR.12.12.7.</b> Demonstrate awareness of plagiarism laws while editing written work and avoid plagiarism
			<b>IR.12.9.9.</b> Differentiate among paraphrasing, summarizing and plagiarizing	<b>IR.12.10.9.</b> Paraphrase and/or summarize information to avoid plagiarism	<b>IR.12.11.8.</b> Interpret the meaning and consequences of plagiarism	
<b>Interpreting and Presenting Information</b>			<b>IR.12.9.10.</b> Organize information and use a style manual such as MLA or APA to create <ul style="list-style-type: none"> <li>• Note cards</li> <li>• Formal outline</li> <li>• Works cited page or resource sheet</li> <li>• Thesis statement</li> </ul>	<b>IR.12.10.10.</b> Organize information and use a style manual such as MLA or APA to create <ul style="list-style-type: none"> <li>• Note cards</li> <li>• Formal outline</li> <li>• Works cited page or resource sheet</li> <li>• Thesis statement</li> <li>• Parenthetical citations within text</li> </ul>	<b>IR.12.11.9.</b> Organize information and use a style manual such as MLA or APA to create <ul style="list-style-type: none"> <li>• Note cards or other note taking forms</li> <li>• Formal outline</li> <li>• Works cited page or resource sheet</li> <li>• Thesis statement</li> <li>• Parenthetical citations within text</li> <li>• Title page or style heading</li> </ul>	<b>IR.12.12.8.</b> Organize information and use a style manual such as MLA or APA to create <ul style="list-style-type: none"> <li>• Note cards or other note taking forms</li> <li>• Formal outline</li> <li>• Works cited page or resource sheet</li> <li>• Thesis statement</li> <li>• Parenthetical citations within text</li> <li>• Title page or style heading</li> </ul>
			<b>IR.12.9.11.</b> Summarize, paraphrase, and/or quote relevant information	<b>IR.12.10.11.</b> Summarize, paraphrase, and/or quote relevant information	<b>IR.12.11.10.</b> Summarize, paraphrase, and/or quote relevant information	<b>IR.12.12.9.</b> Summarize, paraphrase, and/or quote relevant information

**Table B-1. ARKANSAS English Language Arts Content Standards and Student Learner Expectations**

	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
			<b>IR.12.9.12.</b> Create research products such as <ul style="list-style-type: none"> <li>• Oral presentation</li> <li>• Reports</li> <li>• Essays</li> </ul>	<b>IR.12.10.12.</b> Create research products such as <ul style="list-style-type: none"> <li>• Oral presentation</li> <li>• Reports</li> <li>• Essays</li> </ul>	<b>IR.12.11.11.</b> Create a formal research paper	<b>IR.12.12.10.</b> Create a formal research paper

## Mathematics

	Grade 7	Grade 8
<b>Strand:</b> Number and Operations		
<b>Standard 1:</b> Number Sense		
Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems.		
<b>Rational Numbers</b>	<b>NO.1.7.1.</b> Relate, with and without models and pictures, concepts of ratio, proportion, and percent, including percents less than 1 and greater than 100	<b>NO.1.8.1.</b> Read, write, compare and solve problems, with and without appropriate technology, including numbers less than 1 in scientific notation
	<b>NO.1.7.2.</b> Demonstrate, with and without appropriate technology, an understanding of place value using powers of 10 and write numbers greater than one in scientific notation	<b>NO.1.8.2.</b> Convert between scientific notation and standard notation, including numbers from zero to one
	<b>NO.1.7.3.</b> Convert between scientific notation and standard notation using numbers greater than one.	<b>NO.1.8.3.</b> Compare and order real numbers including irrational numbers and find their approximate location on a number line (Use technology when appropriate)
	<b>NO.1.7.4.</b> Find decimal and percent equivalents for mixed numbers and explain why they represent the same value	<b>NO.1.8.4.</b> Understand and justify classifications of numbers in the real number system
	<b>NO.1.7.5.</b> Compare and represent integers, fractions, decimals and mixed numbers and find their approximate location on a number line	
	<b>NO.1.7.6.</b> Recognize subsets of the real number system (natural, whole, integers, rational, and irrational numbers)	
<b>Standard 2:</b> Properties of Number Operations		
Students shall understand meanings of operations and how they relate to one another.		
<b>Number Theory</b>	<b>NO.2.7.1.</b> Apply the distributive property of multiplication over addition or subtraction to simplify computations with integers, fractions and decimals	<b>NO.2.8.1.</b> Apply the addition, subtraction, multiplication and division properties of equality to two-step equations
	<b>NO.2.7.2.</b> Apply the addition, subtraction, multiplication and division properties of equality to onestep equations with integers, fractions, and decimals	<b>NO.2.8.2.</b> Understand and apply the inverse and identity properties
	<b>NO.2.7.3.</b> Apply rules (conventions) for order of operations to integers and positive rational numbers including parentheses, brackets or exponents	<b>NO.2.8.3.</b> Use inverse relationships (addition and subtraction, multiplication and division, squaring and square roots) in problem solving situations
		<b>NO.2.8.4.</b> Apply rules (conventions) for order of operations to rational numbers
<b>Understand Operations</b>	<b>NO.2.7.4.</b> Model and develop addition, subtraction, multiplication and division of integers	<b>NO.2.8.5.</b> Model and develop addition, subtraction, multiplication and division of rational numbers (Example: $-8\frac{1}{2} + 2\frac{3}{4}$ )
<b>Standard 3:</b> Numerical Operations and Estimation		
Students shall compute fluently and make reasonable estimates.		
<b>Computational Fluency</b>	<b>NO.3.7.1.</b> Compute, with and without appropriate technology, with integers and positive rational numbers using real world situations to solve problems	<b>NO.3.8.1.</b> Compute, with and without appropriate technology, with rational numbers in multi-step problems
	<b>NO.3.7.2.</b> Solve with and without appropriate technology, multistep problems using a variety of methods and tools (i.e., objects, mental computation, paper and pencil)	<b>NO.3.8.2.</b> Solve, with and without appropriate technology, multistep problems using a variety of methods and tools (i.e. objects, mental computation, paper and pencil)
<b>Estimation</b>	<b>NO.3.7.3.</b> Determine when an estimate is sufficient and use estimation to decide whether answers are reasonable in problems including fractions and decimals	<b>NO.3.8.3.</b> Use estimation to solve problems involving rational numbers; including ratio, proportion, percent (increase or decrease) then judge the reasonableness of solutions

	Grade 7	Grade 8
<b>Application of Computation</b>	<b>NO.3.7.4.</b> Apply factorization, LCM, and GCF to solve problems using more than two numbers and explain the solution	<b>NO.3.8.4.</b> Apply factorization to find LCM and GCF of algebraic expressions (Examples: $4x^2y^3$ ; $6xy^2$ ; $GCF = 2xy^2$ ; $LCM = 12x^2y^3$ )
	<b>NO.3.7.5.</b> Represent and solve problem situations that can be modeled by and solved using concepts of absolute value, exponents and square roots (for perfect squares) with and without appropriate technology	<b>NO.3.8.5.</b> Calculate and find approximations of square roots with appropriate technology
	<b>NO.3.7.6.</b> Solve, with and without technology, real world percent problems (Example: $I = PRT$ )	<b>NO.3.8.6.</b> Solve, with and without technology, real world percent problems including percent of increase or decrease

**Strand:** Algebra

**Standard 4:** Patterns, Relations and Functions

Students shall recognize, describe and develop patterns, relations and functions.

<b>Patterns, Relations and Functions</b>	<b>A.4.7.1.</b> Create and complete a function table (input/output) using a given rule with two operations	<b>A.4.8.1.</b> Find the nth term in a pattern or a function table
	<b>A.4.7.2.</b> Identify and extend patterns in real world situations	<b>A.4.8.2.</b> Using real world situations, describe patterns in words, tables, pictures, and symbolic representations
	<b>A.4.7.3.</b> Interpret and write a rule for a two operation function table (Example: multiply by 2, add 1)	<b>A.4.8.3.</b> Interpret and represent a two operation function as an algebraic equation (Example: $y = 2x + 1$ )
		<b>A.4.8.4.</b> Use tables, graphs, and equations to identify independent/dependent variables (input/output)

**Standard 5:** Algebraic Representations

Students shall represent and analyze mathematical situations and structures using algebraic symbols.

<b>Expressions, Equations and Inequalities</b>	<b>A.5.7.1.</b> Solve and graph one-step linear equations and inequalities using a variety of methods (i.e., hands-on, inverse operations, symbolic) with real world applications with and without technology	<b>A.5.8.1.</b> Solve and graph two-step equations and inequalities with one variable and verify the reasonableness of the result with real world application with and without technology
	<b>A.5.7.2.</b> Solve simple linear equations using integers and graph on a coordinate plane (Example: use a T chart)	<b>A.5.8.2.</b> Solve and graph linear equations (in the form $y = mx + b$ )
	<b>A.5.7.3.</b> Translate phrases and sentences into algebraic expressions and equations including parentheses and positive and rational numbers and simplify algebraic expressions by combining like terms	<b>A.5.8.3.</b> Translate sentences into algebraic equations and inequalities and combine like terms within polynomials
	<b>A.5.7.4.</b> Write and evaluate algebraic expressions using positive rational numbers	<b>A.5.8.4.</b> Write and evaluate algebraic expressions using rational numbers

**Standard 6:** Algebraic Models

Students shall develop and apply mathematical models to represent and understand quantitative relationships.

<b>Algebraic Models and Relationships</b>	<b>A.6.7.1.</b> Use tables and graphs to represent linear equations by plotting, with and without appropriate technology, points in a coordinate plane	<b>A.6.8.1.</b> Describe, with and without appropriate technology, the relationship between the graph of a line and its equation, including being able to explain the meaning of slope as a constant rate of change (rise/run) and y-intercept in real world problems
	<b>A.6.7.2.</b> Represent, with and without appropriate technology, linear equations by plotting and graphing points in the coordinate plane using all four quadrants given data in a table from a real world situation	<b>A.6.8.2.</b> Represent, with and without appropriate technology, linear relationships concretely, using tables, graphs and equations
	<b>A.6.7.3.</b> Create and complete a function table (input/output) using a given rule with two operations in real world situations	<b>A.6.8.3.</b> Differentiate between independent/dependent variables given a linear relationship in context
		<b>A.6.8.4.</b> Represent, with and without appropriate technology, simple exponential and/or quadratic functions using verbal descriptions, tables, graphs and formulas and translate among these representations

	Grade 7	Grade 8
<b>Standard 7: Analysis of Change</b>		
Students shall analyze change in various contexts.		
<b>Analyze Change</b>	<b>A.7.7.1.</b> Use, with and without appropriate technology, tables and graphs to compare and identify situations with constant or varying rates of change	<b>A.7.8.1.</b> Use, with and without technology, graphs of real life situations to describe the relationships and analyze change including graphs of change (cost per minute) and graphs of accumulation (total cost)
<b>Strand:</b> Geometry		
<b>Standard 8: Geometric Properties</b>		
Students shall analyze characteristics and properties of 2- and 3-dimensional geometric shapes and develop mathematical arguments about geometric relationships.		
<b>Characteristics of Geometric Shapes</b>	<b>G.8.7.1.</b> Identify, draw, classify and compare geometric figures using models and real world examples	<b>G.8.8.1.</b> Form generalizations and validate conclusions about properties of geometric shapes
	<b>G.8.7.2.</b> Investigate geometric properties and their relationships in one-, two-, and three-dimensional models, including convex and concave polygons	<b>G.8.8.2.</b> Make, with and without appropriate technology, and test conjectures about characteristics and properties between two-dimensional figures and three-dimensional objects (Example: circle vs. cylinder, square vs. cube)
	<b>G.8.7.3.</b> Recognize the pairs of angles formed and the relationship between the angles including two intersecting lines and parallel lines cut by a transversal (vertical, supplementary, complementary, corresponding, alternate interior, alternate exterior angles and linear pair)	<b>G.8.8.3.</b> Determine appropriate application of geometric ideas and relationships, such as congruence, similarity, and the Pythagorean theorem, with and without appropriate technology
	<b>G.8.7.4.</b> Use paper or physical models to determine the sum of the measures of interior angles of triangles and quadrilaterals	
	<b>G.8.7.5.</b> Model and develop the concept that pi ( $\pi$ ) is the ratio of the circumference to the diameter of any circle	
	<b>G.8.7.6.</b> Develop the properties of similar figures (ratio of sides and congruent angles)	
<b>Standard 9: Transformation of Shapes</b>		
Students shall apply transformations and the use of symmetry to analyze mathematical situations.		
<b>Symmetry and Transformations</b>	<b>G.9.7.1.</b> Examine the congruence, similarity, and line or rotational symmetry of objects using transformations	<b>G.9.8.1.</b> Determine a transformation's line of symmetry and compare the properties of the figure and its transformation
	<b>G.9.7.2.</b> Perform translations and reflections of two-dimensional figures using a variety of methods (paper folding, tracing, graph paper)	<b>G.9.8.2.</b> Draw the results of translations and reflections about the x- and y-axis and rotations of objects about the origin
<b>Standard 10: Coordinate Geometry</b>		
Students shall specify locations and describe spatial relationships using coordinate geometry and other representational systems.		
<b>Coordinate Geometry</b>	<b>G.10.7.1.</b> Plot points in the coordinate plane	<b>G.10.8.1.</b> Use coordinate geometry to explore the links between geometric and algebraic representations of problems (lengths of segments/distance between points, slope/perpendicular-parallel lines)
	<b>G.10.7.2.</b> Plot points that form the vertices of a geometric figure and draw, identify and classify the figure.	
<b>Standard 11: Visualization and Geometric Models</b>		
Students shall use visualization, spatial reasoning and geometric modeling.		
<b>Spatial Visualization and Models</b>	<b>G.11.7.1.</b> Build three-dimensional solids from two-dimensional patterns (nets)	<b>G.11.8.1.</b> Using isometric dot paper interpret and draw different views of buildings
	<b>G.11.7.2.</b> Construct a building out of cubes from a set of views (front, top, side)	



	Grade 7	Grade 8
<b>Strand:</b> Measurement		
<b>Standard 12:</b> Physical Attributes		
Students shall use attributes of measurement to describe and compare mathematical and real-world objects.		
<b>Attributes and Tools</b>	<b>M.12.7.1.</b> Understand, select and use the appropriate units and tools (metric and customary) to measure length, weight, mass and volume to the required degree of accuracy for real world problems	<b>M.12.8.1.</b> Understand, select and use, with and without appropriate technology, the appropriate units and tools to measure angles, perimeter, area, surface area and volume to solve real world problems
	<b>M.12.7.2.</b> Understand relationships among units within the same system	<b>M.12.8.2.</b> Describe and apply equivalent measures using a variety of units within the same system of measurement
	<b>M.12.7.3.</b> Find different areas for a given perimeter and find a different perimeter for a given area	
<b>Standard 13:</b> Systems of Measurement		
Students shall identify and use units, systems and processes of measurement.		
<b>Attributes and Tools</b>	<b>M.13.7.1.</b> Solve real world problems involving two or more elapsed times, counting forward and backward (calendar and clock)	<b>M.13.8.1.</b> Draw and apply measurement skills with fluency to appropriate levels of precision
	<b>M.13.7.2.</b> Draw and measure distance to the nearest mm and 1/16 inch accurately	
	<b>M.13.7.3.</b> Develop and use strategies to solve problems involving area of a trapezoid and circumference and area of a circle	
<b>Applications</b>	<b>M.13.7.4.</b> Derive and use formulas for surface area and volume of prisms and cylinders and justify them using geometric models and common materials	<b>M.13.8.2.</b> Solve problems involving volume and surface area of pyramids, cones and composite figures, with and without appropriate technology
	<b>M.13.7.5.</b> Apply properties (scale factors, ratio, and proportion) of congruent or similar triangles to solve problems involving missing lengths and angle measures	<b>M.13.8.3.</b> Apply proportional reasoning to solve problems involving indirect measurements, scale drawings or rates
	<b>M.13.7.6.</b> Find the distance between two points on a number line and locate the midpoint	<b>M.13.8.4.</b> Find the distance between two points on a coordinate plane using with the Pythagorean theorem
	<b>M.13.7.7.</b> Estimate and compute the area of more complex or irregular two-dimensional shapes by dividing them into more basic shapes	<b>M.13.8.5.</b> Estimate and compute the area of irregular two-dimensional shapes
<b>Strand:</b> Data Analysis and Probability		
<b>Standard 14:</b> Data Representation		
Students shall formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.		
<b>Collect, Organize and Display Data</b>	<b>DAP.14.7.1.</b> Identify different ways of selecting samples and compose appropriate questions (Example: survey response, random sample, representative sample and convenience sample)	<b>DAP.14.8.1.</b> Design and conduct investigations which include <ul style="list-style-type: none"> <li>adequate number of trials</li> <li>unbiased sampling</li> <li>accurate measurement</li> <li>record-keeping</li> </ul>
	<b>DAP.14.7.2.</b> Explain which types of display are appropriate for various data sets (line graph for change over time, circle graph for part-to-whole comparison, scatter plot for trends)	<b>DAP.14.8.2.</b> Explain which types of display are appropriate for various data sets (scatter plot for relationship between two variants and line of best fit)
	<b>DAP.14.7.3.</b> Construct and interpret circle graphs, box-and-whisker plots, histograms, scatter plots and double line graphs with and without appropriate technology	<b>DAP.14.8.3.</b> Interpret or solve real world problems using data from charts, line plots, stem-and-leaf plots, double-bar graphs, line graphs, box-and-whisker plots, scatter plots, frequency tables or double line graphs
<b>Standard 15:</b> Data Analysis		
Students shall select and use appropriate statistical methods to analyze data.		



	Grade 7	Grade 8
<b>Data Analysis</b>	<b>DAP.15.7.1.</b> Analyze data displays, including ways that they can be misleading	<b>DAP.15.8.1.</b> Compare and contrast the reliability of data sets with different size populations (Example: 40/80 vs. 40/800)
	<b>DAP.15.7.2.</b> Analyze, with and without appropriate technology, a set of data by using and comparing measures of central tendencies (mean, median, mode) and measures of spread (range, quartile, interquartile range)	<b>DAP.15.8.2.</b> Analyze, with and without appropriate technology, graphs by comparing measures of central tendencies and measures of spread
		<b>DAP.15.8.3.</b> Given at least one of the measures of central tendency create a data set
		<b>DAP.15.8.4.</b> Describe how the inclusion of outliers affects those measures
<b>Standard 16: Inferences and Predictions</b>		
Students shall develop and evaluate inferences and predictions that are based on data.		
<b>Inferences and Predictions</b>	<b>DAP.16.7.1.</b> Make, with and without appropriate technology, conjectures of possible relationships in a scatter plot and approximate the line of best fit (trend line)	<b>DAP.16.8.1.</b> Use observations about differences between sets of data to make conjectures about the populations from which the data was taken
<b>Standard 17: Probability</b>		
Students shall understand and apply basic concepts of probability.		
<b>Probability</b>	<b>DAP.17.7.1.</b> Understand that probability can take any value between 0 and 1 (events that are not going to occur have probability 0, events certain to occur have probability 1)	<b>DAP.17.8.1.</b> Compute, with and without appropriate technology, probabilities of compound events, using organized lists, tree diagrams and logic grid
	<b>DAP.17.7.2.</b> Design, with and without appropriate technology, an experiment to test a theoretical probability and explain how the results may vary (Example: suggested materials for simulations are: two-color counters, a number cube, and spinners)	<b>DAP.17.8.2.</b> Make predictions based on theoretical probabilities, design and conduct an experiment to test the predictions, compare actual results to predict results, and explain differences (Example: suggested materials for simulations are: polyhedra die, random number table, and technology)

## ARKANSAS Algebra I

**Strand:** Language of Algebra

**Standard 1:** Students will develop the language of algebra including specialized vocabulary, symbols, and operations.

LA.1.AI.1. Evaluate algebraic expressions, including radicals, by applying the order of operations

LA.1.AI.2. Translate word phrases and sentences into expressions, equations, and inequalities, and vice versa

LA.1.AI.3. Apply the laws of (integral) exponents

LA.1.AI.4. Solve problems involving scientific notation

LA.1.AI.5. Perform polynomial operations (addition, subtraction, multiplication) with and without manipulatives

LA.1.AI.6. Simplify algebraic fractions by factoring

LA.1.AI.7. Recognize when an expression is undefined

LA.1.AI.8. Simplify radical expressions such as  $\frac{3}{\sqrt{7}}$

LA.1.AI.9. Add, subtract, and multiply simple radical expressions like  $3\sqrt{20} + 7\sqrt{5}$  and  $4\sqrt{5} * 2\sqrt{3}$

**Strand:** Solving Equations and Inequalities

**Standard 2:** Students will write, with and without appropriate technology, equivalent forms of equations, inequalities and systems of equations and solve with fluency.

SEI.2.AI.1. Solve multi-step equations and inequalities with rational coefficients

- numerically (from a table or guess and check)
- algebraically (including the use of manipulatives)
- graphically
- technologically

SEI.2.AI.2. Solve systems of two linear equations

- numerically (from a table or guess and check)
- algebraically (including the use of manipulatives)
- graphically
- technologically

**SEI.2.AI.3.** Solve linear formulas and literal equations for a specified variable (Example: Solve for  $p$  in  $I = prt$ .)

**SEI.2.AI.4.** Solve and graph simple absolute value equations and inequalities (Example:  $|x| = 5$ ,  $|x| \leq 5$ ,  $|x| > 5$ )

**SEI.2.AI.5.** Solve real world problems that involve a combination of rates, proportions and percents

**SEI.2.AI.6.** Solve problems involving direct variation and indirect (inverse) variation to model rates of change

**SEI.2.AI.7.** Use coordinate geometry to represent and/or solve problems (midpoint, length of a line segment, and Pythagorean Theorem)

**SEI.2.AI.8.** Communicate real world problems graphically, algebraically, numerically and verbally

**Strand:** Linear Functions

**Standard 3:** Students will analyze functions by investigating rates of change, intercepts, and zeros.

**LF.3.AI.1.** Distinguish between functions and non-functions/relations by inspecting graphs, ordered pairs, mapping diagrams and/or tables of data

**LF.3.AI.2.** Determine domain and range of a relation from an algebraic expression, graphs, set of ordered pairs, or table of data

**LF.3.AI.3.** Know and/or use function notation, including evaluating functions for given values in their domain

**LF.3.AI.4.** Identify independent variables and dependent variables in various representational modes: words, symbols, and/or graphs

**LF.3.AI.5.** Interpret the rate of change/slope and intercepts within the context of everyday life (Example: telephone charges based on base rate (y-intercept) plus rate per minute (slope))

**LF.3.AI.6.** Calculate the slope given

- two points
- the graph of a line
- the equation of a line

**LF.3.AI.7.** Determine by using slope whether a pair of lines are parallel, perpendicular, or neither

**LF.3.AI.8.** Write an equation in slope-intercept form given

- two points
- a point and y-intercept
- x-intercept and y-intercept
- a point and slope
- a table of data
- the graph of a line

**LF.3.AI.9.** Describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa

**Strand:** Non-linear Functions

**Standard 4:** Students will compare the properties in the family of functions.

**NLF.4.AI.1.** Factoring polynomials

- greatest common factor
- binomials (difference of squares)
- trinomials

**NLF.4.AI.2.** Determine minimum, maximum, vertex, and zeros, given the graph

**NLF.4.AI.3.** Solve quadratic equations using the appropriate methods with and without technology

- factoring
- quadratic formula with real number solutions

**NLF.4.AI.4.** Recognize function families and their connections including vertical shift and reflection over the x-axis

- quadratics
- absolute value
- exponential functions

**NLF.4.AI.5.** Communicate real world problems graphically, algebraically, numerically and verbally

**Strand:** Data Interpretation and Probability

**Standard 5:** Students will compare various methods of reporting data to make inferences or predictions.

**DIP.5.AI.1.** Construct and use scatter plots and line of best fit to make inferences in real life situations

**DIP.5.AI.2.** Use simple matrices in addition, subtraction, and scalar multiplication

**DIP.5.AI.3.** Construct simple matrices for real life situations

**DIP.5.AI.4.** Determine the effects of changes in the data set on the measures of central tendency

**DIP.5.AI.5.** Use two or more box-and-whisker plots to compare data sets

- DIP.5.AI.6. Construct and interpret a cumulative frequency histogram in real life situations
- DIP.5.AI.7. Recognize linear functions and non-linear functions by using a table or a graph
- DIP.5.AI.8. Compute simple probability with and without replacement
- DIP.5.AI.9. Recognize patterns using explicitly defined and recursively defined linear functions
- DIP.5.AI.10. Communicate real world problems graphically, algebraically, numerically and verbally

## ARKANSAS Geometry

**Strand:** Language of Geometry

**Standard 1:** Students will develop the language of geometry including specialized vocabulary, reasoning, and application of theorems, properties, and postulates.

LG.1.G.1. Define, compare and contrast inductive reasoning and deductive reasoning for making predictions based on real world situations

- Venn diagrams
- matrix logic
- conditional statements (statement, inverse, converse, and contrapositive)

LG.1.G.2. Represent points, lines, and planes pictorially with proper identification, as well as basic concepts derived from these undefined terms, such as segments, rays, and angles

LG.1.G.3. Describe relationships derived from geometric figures or figural patterns

LG.1.G.4. Apply, with and without appropriate technology, definitions, theorems, properties, and postulates related to such topics as complementary, supplementary, vertical angles, linear pairs, and angles formed by perpendicular lines

LG.1.G.5. Explore, with and without appropriate technology, the relationship between angles formed by two lines cut by a transversal to justify when lines are parallel

LG.1.G.6. Give justification for conclusions reached by deductive reasoning

**Strand:** Triangles

**Standard 2:** Students will identify and describe types of triangles and their special segments. They will use logic to apply the properties of congruence, similarity, and inequalities. The students will apply the Pythagorean Theorem and trigonometric ratios to solve problems in real world situations.

T.2.G.1. Apply congruence (SSS ...) and similarity (AA ...) correspondences and properties of figures to find missing parts of geometric figures and provide logical justification

T.2.G.2. Investigate the measures of segments to determine the existence of triangles (triangle inequality theorem)

T.2.G.3. Identify and use the special segments of triangles (altitude, median, angle bisector, perpendicular bisector, and midsegment) to solve problems

T.2.G.4. Apply the Pythagorean Theorem and its converse in solving practical problems

T.2.G.5. Use the special right triangle relationships ( $30^\circ$ - $60^\circ$ - $90^\circ$  and  $45^\circ$ - $45^\circ$ - $90^\circ$ ) to solve problems

T.2.G.6. Use trigonometric ratios (sine, cosine, tangent) to determine lengths of sides and measures of angles in right triangles including angles of elevation and angles of depression

**Strand:** Measurement

**Standard 3:** Students will measure and compare, while using appropriate formulas, tools, and technology to solve problems dealing with length, perimeter, area and volume.

M.3.G.1. Calculate probabilities arising in geometric contexts (Example: Find the probability of hitting a particular ring on a dartboard.)

M.3.G.2. Apply, using appropriate units, appropriate formulas (area, perimeter, surface area, volume) to solve application problems involving polygons, prisms, pyramids, cones, cylinders, spheres as well as composite figures, expressing solutions in both exact and approximate forms

M.3.G.3. Relate changes in the measurement of one attribute of an object to changes in other attributes (Example: How does changing the radius or height of a cylinder affect its surface area or volume?)

M.3.G.4. Use (given similar geometric objects) proportional reasoning to solve practical problems (including scale drawings)

M.3.G.5. Use properties of parallel lines and proportional reasoning to find the lengths of segments

**Strand:** Relationships Between Two and Three Dimensions

**Standard 4:** Students will analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

R.4.G.1. Explore and verify the properties of quadrilaterals

R.4.G.2. Solve problems using properties of polygons:

- sum of the measures of the interior angles of a polygon
- interior and exterior angle measure of a regular polygon or irregular polygon

- number of sides or angles of a polygon

R.4.G.3. Identify and explain why figures tessellate

R.4.G.4. Identify the attributes of the five Platonic Solids

R.4.G.5. Investigate and use the properties of angles (central and inscribed) arcs, chords, tangents, and secants to solve problems involving circles

R.4.G.6. Solve problems using inscribed and circumscribed figures

R.4.G.7. Use orthographic drawings ( top, front, side) and isometric drawings (corner) to represent three-dimensional objects

R.4.G.8. Draw, examine, and classify cross-sections of three-dimensional objects

**Strand:** Coordinate Geometry and Transformations

**Standard 5:** Students will specify locations, apply transformations and describe relationships using coordinate geometry.

CGT.5.G.1. Use coordinate geometry to find the distance between two points, the midpoint of a segment, and the slopes of parallel, perpendicular, horizontal, and vertical lines

CGT.5.G.2. Write equations of lines in slope-intercept form and use slope to determine parallel and perpendicular lines

CGT.5.G.3. Determine, given a set of points, the type of figure based on its properties (parallelogram, isosceles triangle, trapezoid)

CGT.5.G.4. Write, in standard form, the equation of a circle given a graph on a coordinate plane or the center and radius of a circle

CGT.5.G.5. Draw and interpret the results of transformations and successive transformations on figures in the coordinate plane

- translations
- reflections
- rotations ( $90^\circ$ ,  $180^\circ$ , clockwise and counterclockwise about the origin)
- dilations (scale factor)

## ARKANSAS Algebra II

**Strand:** Relations and Functions

**Standard 1:** Students will represent and analyze mathematical situations and properties using patterns, relations, functions and algebraic symbols.

RF.1.AII.1. Determine, with or without technology, the domain and range of a relation defined by a graph, a table of values, or a symbolic equation including those with restricted domains and whether a relation is a function

RF.1.AII.2. Evaluate, add, subtract, multiply, divide and compose functions and give appropriate domain and range restrictions

RF.1.AII.3. Determine the inverse of a function (Graph, with and without appropriate technology, functions and their inverses)

RF.1.AII.4. Analyze and report, with and without appropriate technology, the effect of changing coefficients, exponents, and other parameters on functions and their graphs (linear, quadratic, and higher degree polynomial)

RF.1.AII.5. Determine, with and without appropriate technology, whether a function is even, odd or neither to analyze the behavior of a graph

RF.1.AII.6. Graph, with and without appropriate technology, functions defined as piece-wise and step

RF.1.AII.7. Apply the concepts of functions to real world situations

**Strand:** Linear and Absolute Value Equations and Inequalities

**Standard 2:** Students will analyze and apply various methods to model, graph and solve linear and absolute value equations and inequalities.

LEI.2.AII.1. Translate linear equations from one form (slope-intercept, point-slope, and standard) to another

LEI.2.AII.2. Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given

- a point and the slope
- two points
- real world data

LEI.2.AII.3. Develop, write and graph (given the point and the slope, two points, or a point and a line) equations of

- a parallel line
- a perpendicular line
- a perpendicular bisector of a segment

LEI.2.AII.4. Solve, with and without appropriate technology, absolute value equations and inequalities written in one or two variables, and graph solutions

LEI.2.AII.5. Solve, with and without appropriate technology, systems of linear equations and systems of linear inequalities with two or more variables through the use of graphs, tables, matrices, and other algebraic methods

LEI.2.AII.6. Develop and apply, with and without appropriate technology, the basic operations and properties of matrices (associative, commutative, identity, and inverse)

**LEI.2.AII.7.** Apply, with or without technology, the concepts of linear and absolute value equations and inequalities and systems of linear equations and inequalities to model real world situations including linear programming

**Strand:** Quadratic Equations and Functions

**Standard 3:** Students will use algebraic, graphical, and numerical methods to analyze, compare, translate, and solve quadratic equations.

**QEF.3.AII.1.** Perform computations with radicals

- simplify radicals with different indices
- add, subtract, multiply and divide radicals
- rationalize denominators
- solve equations that contain radicals or radical expressions

**QEF.3.AII.2.** Extend the number system to include the complex numbers

- evaluate powers of  $i$
- add, subtract, multiply, and divide complex numbers
- rationalize denominators

**QEF.3.AII.3.** Solve quadratic equations with and without appropriate technology by

- extracting the square root
- graphing
- factoring
- completing the square
- using the quadratic formula

**QEF.3.AII.4.** Develop and analyze, with and without appropriate technology, quadratic relations

- graph a parabolic relationship when given its equation
- write an equation when given its roots (zeros or solutions) or graph
- determine the nature of the solutions graphically and by evaluating the discriminant
- determine the maximum or minimum values and the axis of symmetry both graphically and algebraically

**QEF.3.AII.5.** Apply the concepts of quadratic equations and functions to model real world situations by using appropriate technology when needed

**Strand:** Polynomial and Rational Functions

**Standard 4:** Students will use algebraic, graphical, and numerical methods to analyze, compare, translate, and solve polynomial and rational equations.

**PRF.4.AII.1.** Determine the factors of polynomials by

- using factoring techniques including grouping and the sum or difference of two cubes
- using long division
- using synthetic division

**PRF.4.AII.2.** Develop and analyze, with and without appropriate technology, polynomial functions from their roots, graphs, or equations

- write an equation when given its factors or roots (zeros or solutions)
- determine the x- and y-intercepts
- describe the end behaviors
- sketch the graph

**PRF.4.AII.3.** Solve, with and without appropriate technology, polynomial equations, including real world situations, graphically, numerically (using tables), and algebraically

**PRF.4.AII.4.** Simplify, add, subtract, multiply, and divide with rational expressions

**PRF.4.AII.5.** Graph, with and without appropriate technology, rational functions of the form  $y = 1/x$  and  $y = 1/x^2$  and their transformations and identify x- and y-intercepts, domain restrictions, and vertical asymptotes

**PRF.4.AII.6.** Solve, with and without appropriate technology, problems using rational equations, including proportions, rate, and variation (direct, inverse(indirect), or joint) and real world problems

**PRF.4.AII.7.** Establish the relationship between radical expressions and expressions containing rational exponents

**PRF.4.AII.8.** Simplify variable expressions containing rational exponents using the laws of exponents

**Strand:** Exponential and Logarithmic Functions

**Standard 5:** Students will graph exponential functions and relate them to logarithms. They will solve real world problems using exponential functions.

**ELF.5.AII.1.** Interpret and graph, with and without appropriate technology, exponential functions

**ELF.5.AII.2.** Solve, with and without appropriate technology, exponential equations, including real world problems

**ELF.5.AII.3.** Establish the relationship between exponential and logarithmic functions

**ELF.5.AII.4.** Evaluate simple logarithms using the definition (Example:  $\log_3 81$ )

**Strand:** Data Analysis and Probability

**Standard 6:** Students will evaluate and interpret data, make predictions based on data, and apply basic understanding of probability to solve real world problems.

**DAP.6.AII.1.** Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for

- consistency with the data
- appropriateness of type of graph or data display
- scale
- overall message

**DAP.6.AII.2.** Calculate, with and without appropriate technology, probabilities of events using the laws of probability

- apply the Fundamental Counting Principle
- distinguish between and use permutations and combinations
- calculate conditional probability
- calculate probabilities of mutually exclusive events, independent events, and dependent events

### ARKANSAS Pre-Calculus including Trigonometry

**Strand:** Polynomial and Rational Functions

**Standard 1:** Students will analyze polynomial and rational functions graphically and algebraically.

**PRF.1.PCT.1.** Investigate and sketch, with and without appropriate technology, the graphs of polynomial and rational functions using the characteristics of domain and range, upper and lower bounds, maximum and minimum points, asymptotes and end behavior, zeros, multiplicity of zeros, y-intercepts, and symmetry

**PRF.1.PCT.2.** Solve, with and without appropriate technology, polynomial equations utilizing techniques such as Descartes' Rule of Signs, upper and lower bounds, Intermediate Value Theorem and Rational Root Theorem

**PRF.1.PCT.3.** Describe, with and without appropriate technology, the fundamental characteristics of rational functions: zeros, discontinuities (including vertical asymptotes), and end behavior (including horizontal asymptotes)

**PRF.1.PCT.4.** Apply the concepts of polynomial and rational functions to model real world situations using appropriate technology when needed

**Strand:** Exponential and Logarithmic Functions

**Standard 2:** Students will solve real world problems involving logarithmic and exponential functions. Draw and analyze graphs and find inverse functions.

**ELF.2.PCT.1.** Establish the inverse relationship between exponential and logarithmic functions

**ELF.2.PCT.2.** Develop and apply the laws of logarithms and the change-of-base formula to simplify and evaluate expressions

**ELF.2.PCT.3.** Solve graphically, algebraically and numerically, with and without appropriate technology, equations and real world problems involving exponential and logarithmic expressions

**ELF.2.PCT.4.** Find, with and without appropriate technology, the domain, range, intercepts, and asymptotes of logarithmic and exponential functions

**ELF.2.PCT.5.** Draw and analyze, with and without appropriate technology, graphs of logarithmic and exponential functions

**Strand:** Conics

**Standard 3:** Students will identify, analyze and sketch the graphs of the conic sections and relate their equations and graphs.

**C.3.PCT.1.** Identify, graph, write, and analyze equations of conic sections, using properties such as symmetry, intercepts, foci, asymptotes, and eccentricity, and when appropriate, use technology

**C.3.PCT.2.** Solve, with and without appropriate technology, systems of equations and inequalities involving conics and other types of equations

**C.3.PCT.3.** Solve, with and without appropriate technology, real world problems involving conic sections

**Strand:** Sequences and Series

**Standard 4:** Students will use sequences and series to represent, analyze, and solve real world problems and mathematical situations.

**SS.4.PCT.1.** Develop, with and without appropriate technology, a representation of sequences recursively

**SS.4.PCT.2.** Define and discriminate between arithmetic and geometric sequences and series and use appropriate technology when needed

**SS.4.PCT.3.** Solve, with and without appropriate technology, problems involving the sum (including Sigma notation) of finite and infinite sequences and series

**SS.4.PCT.4.** Determine the nth term of a sequence given a rule or specific terms and use appropriate technology when needed

**SS.4.PCT.5.** Use, with and without appropriate technology, sequences and series to solve real world problems



**Strand:** Trigonometric Functions

**Standard 5:** Students will use different perspectives to develop and apply the definitions of the six trigonometric functions. They will sketch and analyze graphs, find inverse functions, and solve real world problems.

**TF.5.PCT.1.** Define the six trigonometric functions as

- circular functions
- ratios of sides of right triangles
- functions of an angle in standard position when given a point on the terminal side of the angle

**TF.5.PCT.2.** Use degrees and radians interchangeably to represent angle measure

**TF.5.PCT.3.** Sketch an angle in standard position and determine the reference angle and coterminal angles

**TF.5.PCT.4.** Find the values of the trigonometric functions given the value of one trigonometric function and an additional piece of qualifying information or given the coordinates of a point on the terminal side of an angle

**TF.5.PCT.5.** Develop and become fluent in the recall of the exact values of the trigonometric functions for special angles

**TF.5.PCT.6.** Solve, with and without appropriate technology, real world problems involving applications of trigonometric functions

**TF.5.PCT.7.** Graph the six trigonometric functions, identify domain, range, intercepts, period, amplitude, and asymptotes as applicable and use symmetry to determine whether the function is even or odd through appropriate technology when needed

**TF.5.PCT.8.** Determine, with and without appropriate technology, the amplitude, period, phase shift, and vertical shift, and sketch the graph of transformations of the trigonometric functions

**TF.5.PCT.9.** Identify and graph, with and without appropriate technology, the inverse of trigonometric functions including the restrictions on the domain

**Strand:** Oblique Triangles

**Standard 6:** Students will identify, create, and solve real world problems involving oblique triangles and vectors.

**OT.6.PCT.1.** Develop and use the Law of Sines and the Law of Cosines to solve oblique triangles and use appropriate technology when needed

**OT.6.PCT.2.** Solve real world problems applying the Law of Sines and the Law of Cosines and appropriate technology when needed

**OT.6.PCT.3.** Determine the area of an oblique triangle by using an appropriate formula and appropriate technology when needed

**OT.6.PCT.4.** Use vectors to solve problems and describe addition of vectors and multiplication of a vector by a scalar, both symbolically and geometrically

**OT.6.PCT.5.** Use vectors to model situations defined by magnitude and direction and analyze and solve real world problems by using appropriate technology when needed

**Strand:** Trigonometric Equations and Identities

**Standard 7:** Students will verify trigonometric identities and solve trigonometric equations.

**TEI.7.PCT.1.** Develop the Pythagorean Identities and use to verify other identities and simplify expressions

**TEI.7.PCT.2.** Develop and use trigonometric formulas including sum and difference formulas and multiple-angle formulas

**TEI.7.PCT.3.** Solve trigonometric equations algebraically and graphically and use appropriate technology when needed

**Strand:** Polar Coordinates

**Standard 8:** Students will define polar coordinates and relate them to rectangular coordinates.

**PC.8.PCT.1.** Convert polar coordinates to rectangular coordinates and rectangular coordinates to polar coordinates

**PC.8.PCT.2.** Represent equations given in rectangular coordinates in terms of polar coordinates

**PC.8.PCT.3.** Graph polar equations and use appropriate technology when needed

**PC.8.PCT.4.** Apply polar coordinates to real world situations and use appropriate technology when needed

## Science

**Table B-3. ARKANSAS Science Content Standards and Student Learner Expectations**

Grade 7–8	Grades 9–12
<b>Strand 1:</b> Physical Systems	
<b>Standard 1:</b> Students will demonstrate an understanding of physical systems as a process of inquiry.	
PS.1.1. Understand that the laws of science are universal.	PS.1.1. Understand that science is a process based on the scientific method which leads to a deeper understanding of real world situations.
PS.1.2. Understand that a scientific theory is based on current, accepted evidence and used to make predictions.	PS.1.2. Follow procedures for a scientific inquiry using step-by-step instructions, mathematical formulas, flow diagrams, and/or sketches.
PS.1.3. Generate written conclusions based on evidence acquired through experimentation.	PS.1.3. Develop and implement a workable scientific inquiry independently and with a group using standard safety procedures.
PS.1.4. Interpret scientific information from graphs and charts.	PS.1.4. Evaluate the process that scientists use to construct and validate scientific theory, such as data collection, prediction, experimentation (controls and variables), bias elimination, and replication.
	PS.1.5. Make objective observations and perform error analysis on collected data.
	PS.1.6. Formulate valid conclusions.
	PS.1.7. Communicate and defend in writing a scientific argument.
	PS.1.8. Critique and interpret scientific data on charts and graphs.
	PS.1.9. Recognize that theories are models and may be revised when new data is introduced.
	PS.1.10. Understand the criteria for the formation of scientific theory and a scientific law.
<b>Standard 2:</b> Students will explore, demonstrate, communicate, apply, and evaluate the knowledge of physical systems.	
PS.2.1. Demonstrate an understanding of the states of matter and describe the various combinations of matter (mixtures and compounds).	PS.2.1. Evaluate the historical and multi-cultural contributions to the scientific body of knowledge in physical systems (nature of light, falling objects, expanding universe, model of the atom, quantum physics, periodic table). Construct time lines.
PS.2.2. Identify and describe the properties of an atom.	PS.2.2. Classify matter into elements, compounds, and mixtures. Classify mixtures as heterogeneous or homogeneous and separate mixtures into pure substances using procedures such as distillation or chromatography.
PS.2.3. Investigate the periodic chart.	PS.2.3. Explore various physical and chemical properties of matter such as density, specific heat, viscosity, buoyancy, and reactivity.
PS.2.4. Experiment and identify physical and chemical changes.	PS.2.4. Distinguish between physical and chemical changes that affect everyday life, such as hot and cold packs, light sticks, rusting, fireworks display, and water displacement.
PS.2.5. Examine the sources and analyze the preservation of energy resources.	PS.2.5. Use models to show the structure and behavior of matter (includes Rutherford's Gold Foil Experiment, sub-atomic particles, electron energy levels, quantum theory, and organic molecules).
PS.2.6. Experiment with forces (gravity, magnetism, and electricity).	PS.2.6. Understand the rationale of the periodic chart.
PS.2.7. Investigate the laws of motion.	PS.2.7. Explain the relationship among mole, chemical bonding, and molecular geometry within chemical compounds.
PS.2.8. Demonstrate and communicate the relationship between magnetic fields and electric currents.	PS.2.8. Demonstrate the relationships between kinetic theory and the states of matter (gas laws).
PS.2.9. Introduce the electromagnetic spectrum (radio, infrared, visible light, and ultraviolet waves; x-rays).	PS.2.9. Understand the representation of and energetics of chemical reactions (equation writing, types of reactions, stoichiometry, reaction rates, equilibria and electrochemistry).



**Table B-3. ARKANSAS Science Content Standards and Student Learner Expectations**

Grade 7–8	Grades 9–12
<b>PS.2.10.</b> Investigate and identify conductors and insulators of heat and electricity.	<b>PS.2.10.</b> Understand the nature of solutions (solubility, concentrations, pH, acids/bases, colligative properties, and buffer solutions).
<b>PS.2.11.</b> Distinguish energy transfer (conduction, convection, radiation).	<b>PS.2.11.</b> Define the four fundamental forces in nature (gravitational, electromagnetic, weak nuclear and strong nuclear).
<b>PS.2.12.</b> Investigate sound waves and gamma rays.	<b>PS.2.12.</b> Analyze the aspects of motion (frame of reference, speed, velocity, acceleration, relativity, time and displacement), and distinguish between average, constant and instantaneous motion. (Demonstrate and evaluate motion graphically.)
	<b>PS.2.13.</b> Investigate the aspects of two-dimensional motion (circular, rotational and projectile), momentum and impulse.
	<b>PS.2.14.</b> Apply the laws of conservation to interactions of matter (momentum, angular momentum, mass/energy, and electric charge).
	<b>PS.2.15.</b> Explain the relationship of matter and energy ( $E = mc^2$ ).
	<b>PS.2.16.</b> Recognize the relationships of forces and motion, applying Newton’s laws, and use diagrams to analyze the forces on a system.
	<b>PS.2.17.</b> Examine the types of waves (transverse, longitudinal, standing, circular, electromagnetic), properties and characteristics of waves (reflection, refraction, diffraction, interference, pitch, frequency, and velocity), and how waves transfer energy.
	<b>PS.2.18.</b> Investigate the properties and characteristics of light and different optical systems (lenses, mirrors, polarization filters, fiber optics, and lasers).
	<b>PS.2.19.</b> Evaluate the concept of the duality of light exploring contributions of scientists such as DeBroglie, Schrodinger, and Heisenberg.
	<b>PS.2.20.</b> Investigate the electromagnetic spectrum and the derivation of emission and absorption spectra.
	<b>PS.2.21.</b> Examine the properties of sound (pitch, frequency, and intensity) and other related aspects (earthquakes, shock waves, SONAR).
	<b>PS.2.22.</b> Investigate electric and magnetic interactions and fields (poles, magnetic domains, charges, field lines, potential difference, force and Coulomb’s Law).
	<b>PS.2.23.</b> Distinguish between direct and alternating current.
	<b>PS.2.24.</b> Analyze and evaluate the parameters of circuits applying Ohm’s Law and use appropriate data collections and calculations (current, resistance, and voltage).
	<b>PS.2.25.</b> Analyze the interdependent fields of electricity and magnetism (electromagnets, motors, generators, and transformers).
<b>Standard 3:</b> Students will demonstrate an understanding of the connections and applications of physical science.	
<b>PS.3.1.</b> Design and conduct different kinds of scientific investigations to answer different kinds of questions.	<b>PS.3.1.</b> Analyze the role science plays in everyday life and compare different careers in the physical sciences.
<b>PS.3.2.</b> Demonstrate how physical science is connected to mathematics (analyze collected data).	<b>PS.3.2.</b> Evaluate long range plans for resource use and by-product disposal in terms of environmental, economic, and political impact.
<b>PS.3.3.</b> Apply multiple strategies to problem solving.	<b>PS.3.3.</b> Assess current world issues applying scientific themes (suggested issues: global changes in climate, ozone depletion, UV radiation, natural resources, use of technology, and public policy).
<b>PS.3.4.</b> Use appropriate equipment, tools, techniques, technology, mathematics, and technical writing in scientific investigation.	<b>PS.3.4.</b> Understand that mathematics is the precise language of communication and problem solving in science (conversions, logarithms, inverse square law, etc.). (Measure and calculate using SI units.)
<b>PS.3.5.</b> Investigate a variety of careers related to physical science.	<b>PS.3.5.</b> Apply technology as appropriate tools for solving problems (electronic balances, computers, pH meters, spectrophotometers, multimeters, etc.).

= Standards measured by ACT’s Science tests

= Standards content sampled by ACT’s Science tests

**Table B-3. ARKANSAS Science Content Standards and Student Learner Expectations**

Grade 7–8	Grades 9–12
PS.3.6. Acknowledge the impact of scientific discoveries upon society.	PS.3.6. Assess the connections between pure science and applied science to the world of work by performing labs and activities common to the physical sciences.
PS.3.7. Recognize that scientific discovery has been influenced by historical events.	PS.3.7. Understand broad themes of Project 2061. Such themes include systems, patterns of change, interactions, energy equilibrium, models, and scale (e.g., relative dimensions such as solar system size).
<b>Strand 2: Life Science Systems</b>	
<b>Standard 1: Students will demonstrate an understanding of life science as a process of inquiry.</b>	
LS.1.1. Recognize that science deals only with inquiry about the natural world.	LS.1.1. Understand that science is a process based on the scientific method which leads to a deeper understanding of real world situations.
LS.1.2. Interpret scientific information from graphs and charts.	LS.1.2. Follow procedures for a scientific inquiry using step-by-step instructions, mathematical formulas, flow diagrams, and/or sketches.
LS.1.3. Conduct investigative science through use of the scientific method.	LS.1.3. Develop and implement a workable scientific inquiry independently and with a group using standard safety procedures.
LS.1.4. Generate conclusions based on evidence acquired through experimentation.	LS.1.4. Evaluate the process that scientists use to construct and validate scientific theory, such as data collection, prediction, experimentation (variables, control), bias elimination, and replication.
	LS.1.5. Make objective observations and perform error analysis on collected data.
	LS.1.6. Formulate valid conclusions.
	LS.1.7. Communicate and defend in writing a scientific argument.
	LS.1.8. Critique and interpret scientific data on charts and graphs.
	LS.1.9. Recognize that theories are models and may be revised when new data are introduced.
	LS.1.10. Understand the criteria for the formation of scientific theory and a scientific law.
<b>Standard 2: Students will explore, demonstrate, communicate, apply and evaluate the knowledge of life systems.</b>	
LS.2.1. Identify, describe, and explain various types of cells and cell processes.	LS.2.1. Evaluate the historical developments of, and cultural contributions to the scientific body of knowledge (e.g., biochemistry, food science, genetics, blood typing).
LS.2.2. Describe similarities and differences between single celled and multicellular organisms.	LS.2.2. Investigate and identify cellular processes, including homeostasis, permeability, energy production, transportation of molecules, disposal of wastes, function of cellular parts, synthesis of new molecules, and cell division.
LS.2.3. Arrange organisms into groups according to similarities and differences.	LS.2.3. Understand that DNA is the basis for genetic transfer (Mendel's laws, genetic engineering, DNA replication, genetic disorders, reproduction and development in various life forms).
LS.2.4. Identify the requirements for living organisms.	LS.2.4. Compare genetic variations observed in plants and animals (adaptations and mutations).
LS.2.5. Explain life cycles of various organisms.	LS.2.5. Identify and describe the relationships between internal feedback mechanisms in the maintenance of homeostasis.
LS.2.6. Describe the parts of the human body systems and determine their function.	LS.2.6. Compare and contrast life cycles of familiar organisms (sexual, asexual, metamorphosis, and alternation of generations).
LS.2.7. Describe how heredity and environment influence/determine characteristics of an organism.	LS.2.7. Understand that all living things contain similar genetic material that evolves because of gene mutation, natural selection, and change in environments. Species change through time, and new life forms evolve.
LS.2.8. Recognize that reproduction is a characteristic of all living organisms and is essential to the continuation of life.	LS.2.8. Analyze levels of organization in the human body systems (atoms, molecules, organelles, cells, tissues, and organs).

**Table B-3. ARKANSAS Science Content Standards and Student Learner Expectations**

Grade 7–8	Grades 9–12
<u>LS.2.9. Explain how physical and/or behavioral characteristics of organisms help them to adapt and survive in their environments.</u>	<u>LS.2.9. Analyze relationships among organisms and develop a model of a hierarchical classification system based on similarities and differences using taxonomic nomenclature.</u>
<u>LS.2.10. Describe how environmental changes and genetic mutations cause species to evolve over time, thus producing new species.</u>	<u>LS.2.10. Interpret interactions among organisms exhibiting predation, parasitism, commensalism, and mutualism.</u>
<u>LS.2.11. Analyze ecosystems in terms of population relationships, food webs, energy flow, and biotic succession.</u>	<u>LS.2.11. Investigate and formulate solutions to problems resulting from human impact on the environment.</u>
<u>LS.2.12. Evaluate human impact on the environment.</u>	<u>LS.2.12. Analyze the flow of energy through various cycles including the carbon, oxygen, nitrogen and water cycles.</u>
	<u>LS.2.13. Investigate and explain the interactions in an ecosystem including food chains, food webs, and food pyramids.</u>
	<u>LS.2.14. Interpret the functions of systems found in living organisms (e.g., circulatory, digestive, nervous, endocrine, reproductive, integumentary, skeletal, respiratory, muscular, excretory, and immune).</u>
	<u>LS.2.15. Compare cells from different parts of plants including roots, stems, and leaves, to show specialization of structure and function.</u>
	<u>LS.2.16. Draw and label the structures of viruses. Relate the structure of viruses to their abilities in causing diseases and conditions such as acquired immune deficiency syndrome, common colds, smallpox, influenza, and warts.</u>
	<u>LS.2.17. Identify the structures of bacteria and describe the multiple roles of bacteria in maintaining health such as digestion and causing diseases such as streptococcus infections and diphtheria.</u>
	<u>LS.2.18. Understand that responses to external stimuli can result from interactions with an organism's own species, with other species, and with environmental changes (innate or learned).</u>
<b>Standard 3: Students will demonstrate an understanding of the connections and applications in life sciences.</b>	
<b>LS.3.1. Design and conduct life science investigations to answer different kinds of questions.</b>	<b>LS.3.1. Analyze the role science plays in everyday life and compare different careers in the life sciences.</b>
<b>LS.3.2. Correlate life science activities to other curricular areas (e.g., language arts, mathematics, social studies).</b>	<b>LS.3.2. Evaluate long range plans for resource use and by-product disposal in terms of environmental, economic, and political impact.</b>
<b>LS.3.3. Apply multiple strategies to problem solving.</b>	<b>LS.3.3. Assess current world issues applying scientific themes (suggested issues: population growth, global changes in climate, ozone depletion, UV radiation, natural resources, use of technology, and public policy).</b>
<b>LS.3.4. Use appropriate equipment, tools, techniques, technology, mathematics, and technical writing in scientific investigation.</b>	<b>LS.3.4. Understand that mathematics is the precise language of communication and problem solving in science.</b>
<b>LS.3.5. Investigate a variety of careers related to life sciences.</b>	<b>LS.3.5. Apply technology as appropriate tools for solving problems (microscopes, centrifuges, flex cameras, computers, etc.).</b>
	<b>LS.3.6. Assess the connections between pure science and applied science to the world of work by performing labs and activities common to the life sciences.</b>
	<b>LS.3.7. Understand broad themes of Project 2061. Such themes include systems, patterns of change, interactions, energy equilibrium, models, and scale (relative dimensions of the inclusions in a cell).</b>
<b>Strand 3: Earth/Space Systems</b>	
<b>Standard 1: Students will demonstrate an understanding of the inquiry process through the study of Earth and space systems.</b>	
<b>ES.1.1. Identify the components of Earth (rocks, water, and air) and their properties.</b>	<b>ES.1.1. Understand that science is a process based on the scientific method which leads to a deeper understanding of real world situations.</b>

**Table B-3. ARKANSAS Science Content Standards and Student Learner Expectations**

Grade 7–8	Grades 9–12
ES.1.2. <u>Understand that Earth and objects in space constantly undergo changes and/or cycles which can be observed and measured.</u>	ES.1.2. <b>Follow procedures for a scientific inquiry using step-by-step instructions, mathematical formulas, flow diagrams, and/or sketches.</b>
ES.1.3. <b>Generate conclusions based on evidence acquired through experimentation.</b>	ES.1.3. <b>Develop and implement a workable scientific inquiry independently and with a group using standard safety procedures.</b>
ES.1.4. <b>Interpret scientific information from graphs and charts.</b>	ES.1.4. <b>Evaluate the process that scientists use to construct and validate scientific theory, such as data collection, prediction, experimentation (controls and variables), bias elimination, and replication.</b>
ES.1.5. <u>Identify and classify rocks and minerals.</u>	ES.1.5. <b>Make objective observations and perform error analysis on collected data.</b>
ES.1.6. <u>Understand the relationship between Earth and objects in space.</u>	ES.1.6. <b>Formulate valid conclusions.</b>
	ES.1.7. <b>Communicate and defend in writing a scientific argument.</b>
	ES.1.8. <b>Critique and interpret scientific data on charts and graphs.</b>
	ES.1.9. Recognize that theories are models and may be revised when new data is introduced.
	ES.1.10. Understand the criteria for the formation of scientific theory and a scientific law.
<b>Standard 2: Students will explore, demonstrate, communicate, apply and evaluate knowledge of the properties of Earth and space systems.</b>	
ES.2.1. <u>Investigate the formation and properties of rocks (igneous, sedimentary, and metamorphic), minerals, and fossils.</u>	ES.2.1. Evaluate the historical and multicultural contributions to the scientific body of knowledge in the earth and space sciences. Topics may include expanding universe, plate tectonics, composition of the Earth and stars, and geologic time; and the works of Galileo, Copernicus, Kepler, and Wegener.
ES.2.2. <u>Understand the relationship which exists between rock formation, fossil evidence, and geological history of the Earth and age of the Earth.</u>	ES.2.2. <u>Understand that the sun is the source of energy for the solar system.</u>
ES.2.3. <u>Investigate how Earth's internal processes affect external features (volcanoes, earthquakes, mountain formation).</u>	ES.2.3. <u>Explain how Earth's energy and materials are conserved, interrelated, and recycled; include ores, and the following cycles—water, oxygen, carbon, and nitrogen.</u>
ES.2.4. <u>Understand the effects of weathering and erosion on the Earth's surface.</u>	ES.2.4. <u>Explain the features of the Earth's composition and geological phenomena. Utilize the plate tectonics, the continental drift, and the sea-floor spreading theories.</u>
ES.2.5. <u>Describe and model the natural divisions of Arkansas.</u>	ES.2.5. <u>Analyze the composition and categorize types of rocks and minerals. Use Moh's Hardness Scale and the rock cycle.</u>
ES.2.6. <u>Describe the energy transfer within the atmosphere as it relates to the development of weather and climate patterns.</u>	ES.2.6. <u>Perform chemical analysis and classification of soil samples (pH or NPK).</u>
ES.2.7. <u>Explain and illustrate the water cycle.</u>	ES.2.7. <u>Examine origins of the natural land divisions of Arkansas in view of the earth formations (soil and rock) peculiar to that division.</u>
ES.2.8. <u>Model and explain how the Earth's shape and tilt result in different seasons.</u>	ES.2.8. <u>Investigate the characteristics of oceans such as composition, features, waves, and energy transfer resulting from the currents.</u>
ES.2.9. <u>Investigate the predictable motion of objects in space in explaining phenomena such as day, night, moon phases, ocean tides, and eclipses.</u>	ES.2.9. <u>Evaluate the physical interactions of water with the Earth (glaciers, erosion, and leaching).</u>
ES.2.10. <u>Analyze how the features of the oceans affect humans.</u>	ES.2.10. <u>Evaluate weather and climate, globally and locally, as a result of a complex exchange of heat energy (clouds, solar radiation, ocean currents, gases, Coriolis effect, human activities, jet stream, El Nino, etc.).</u>
ES.2.11. <u>Compare the ability to support life on Earth and other objects in space.</u>	ES.2.11. <u>Given measurements of weather conditions, relate them to the temperature, pressure, density, ideal gas law, and buoyancy of air.</u>

**█** = Standards measured by ACT's Science tests

**▬** = Standards content sampled by ACT's Science tests

**Table B-3. ARKANSAS Science Content Standards and Student Learner Expectations**

Grade 7–8	Grades 9–12
<b>ES.2.12.</b> Explain and compare the properties (gravity, size, shape, distance, and color) of objects in the solar system.	<b>ES.2.12.</b> Interpret the features on weather maps and predict future conditions.
<b>ES.2.13.</b> Explore past, present, and future space technology.	<b>ES.2.13.</b> Compare Earth's sun to other stars in size, mass, temperature, energy source, position on HR diagram, and stages in a star's existence.
<b>ES.2.14.</b> Relate the physical characteristics of the sun to other stars.	<b>ES.2.14.</b> Locate common constellations.
	<b>ES.2.15.</b> Describe the organization of the known universe (solar system, galaxy, cluster, supercluster).
	<b>ES.2.16.</b> Analyze the impact of modern technology on the study of the Earth and universe (telescopes, space probes, robotic arms, weather satellites, Doppler radar, sonar, seismographs).
<b>Standard 3:</b> Students will demonstrate an understanding of the connections and applications of Earth/space systems.	
<b>ES.3.1.</b> Design and conduct scientific investigations to answer different kinds of questions.	<b>ES.3.1.</b> Analyze the role science plays in every day life and compare different careers in the Earth/space sciences.
<b>ES.3.2.</b> Apply multiple strategies to problem solving.	<b>ES.3.2.</b> Evaluate long range plans for resource use and by-product disposal in terms of environmental, economic and political impact (human activities vs. resource quality).
<b>ES.3.3.</b> Use appropriate equipment, tools, techniques, technology, mathematics, and technical writing in scientific investigations.	<b>ES.3.3.</b> Assess current world issues applying scientific themes (e.g., global changes in climate, ozone depletion, UV radiation, natural resources, use of technology, and public policy).
<b>ES.3.4.</b> Investigate a variety of earth science related careers.	<b>ES.3.4.</b> Understand that mathematics is the precise language of communication and problem solving in science.
<b>ES.3.5.</b> Construct models of earth science systems and make real world applications.	<b>ES.3.5.</b> Apply technology as appropriate tools for solving problems (electronic balances, computers, digital cameras, pH meters, spectrophotometers, telescopes, barometers, etc.).
<b>ES.3.6.</b> Analyze the impact of human activities on the Earth's crust, hydrosphere, atmosphere, and biosphere (e.g., climate change, greenhouse effect, global warming, ozone depletion, and UV radiation) and demonstrate methods of conservation and recycling of the Earth's resources.	<b>ES.3.6.</b> Assess the connections between pure science and applied science to the world of work by performing labs and activities common to the Earth/space sciences.
<b>ES.3.7.</b> Explore the impact of space technology on society.	<b>ES.3.7.</b> Understand broad themes of Project 2061. Such themes include systems, patterns of change, interactions, energy equilibrium, models, and scale (relative dimensions such as solar system size).
<b>ES.3.8.</b> Illustrate the positive and negative effects of human use of natural resources on Earth.	
<b>ES.3.9.</b> Measure weather conditions using appropriate equipment.	
<b>ES.3.10.</b> Calculate the gravitational forces of objects in space.	



## Section C: **ACT's College Readiness Standards Included in Arkansas's Grades 7–12 Curriculum Framework**

Using thousands of student records and responses, content and measurement experts worked backwards to develop data-driven, empirically derived statements of what students know and are typically able to do in various score ranges on the English, Reading, Mathematics, and Science tests on the EXPLORE, PLAN, and ACT tests. These empirically derived score descriptors are called **ACT's College Readiness Standards**. Because of this unique way the ACT Standards were derived, ACT's Standards contain specific descriptions of proficiency and content, including descriptions of the complexity of the test material. The ACT standards prove to be an effective way to communicate the skills and knowledge measured by our EXPLORE, PLAN, and ACT tests.

In this section (Section C), the ACT Standards that are highlighted are those that are included in Arkansas's Content Standards and Student Learner Expectations. ACT Standards not highlighted are those statements that include specific content, complexity and/or proficiency level descriptions that were not described in Arkansas's Content Standards and Student Learner Expectations.

Because Arkansas educators are the experts on the Arkansas Curriculum Framework, we would strongly encourage them to examine this document and offer their interpretations.





**Table C-1. ACT’s College Readiness Standards — English**

	<b>Topic Development in Terms of Purpose and Focus</b>	<b>Organization, Unity, and Coherence</b>	<b>Word Choice in Terms of Style, Tone, Clarity, and Economy</b>
13–15		Use conjunctive adverbs or phrases to show time relationships in simple narrative essays (e.g., <i>then, this time</i> )	Revise sentences to correct awkward and confusing arrangements of sentence elements  Revise vague nouns and pronouns that create obvious logic problems
16–19	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., <i>first, afterward, in response</i> )  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., <i>therefore, however, in addition</i> )  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



**Table C-1. ACT’s College Readiness Standards — English (continued)**

	<b>Sentence Structure and Formation</b>	<b>Conventions of Usage</b>	<b>Conventions of Punctuation</b>
<b>13–15</b>	<p>Use conjunctions or punctuation to join simple clauses</p> <p>Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences</p>	<p>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</p>	<p>Delete commas that create basic sense problems (e.g., between verb and direct object)</p>
<b>16–19</b>	<p>Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences</p> <p>Decide the appropriate verb tense and voice by considering the meaning of the entire sentence</p>	<p>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</p> <p>Recognize and use the appropriate word in frequently confused pairs such as <i>there</i> and <i>their</i>, <i>past</i> and <i>passed</i>, and <i>led</i> and <i>lead</i></p>	<p>Provide appropriate punctuation in straightforward situations (e.g., items in a series)</p> <p>Delete commas that disturb the sentence flow (e.g., between modifier and modified element)</p>
<b>20–23</b>	<p>Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers)</p>	<p>Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., <i>long for</i>, <i>appeal to</i>)</p> <p>Ensure that a verb agrees with its subject when there is some text between the two</p>	<p>Use commas to set off simple parenthetical phrases</p> <p>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)</p>
<b>24–27</b>	<p>Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems</p> <p>Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence</p>	<p>Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences</p> <p>Identify the correct past and past participle forms of irregular and infrequently used verbs and form present-perfect verbs by using <i>have</i> rather than <i>of</i></p>	<p>Use punctuation to set off complex parenthetical phrases</p> <p>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 <i>and</i>)</p> <p>Use apostrophes to indicate simple possessive nouns</p> <p>Recognize inappropriate uses of colons and semicolons</p>
<b>28–32</b>	<p>Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs</p> <p>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</p>	<p>Correctly use reflexive pronouns, the possessive pronouns <i>its</i> and <i>your</i>, and the relative pronouns <i>who</i> and <i>whom</i></p> <p>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)</p>	<p>Use commas to set off a nonessential/nonrestrictive appositive or clause</p> <p>Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical)</p> <p>Use an apostrophe to show possession, especially with irregular plural nouns</p> <p>Use a semicolon to indicate a relationship between closely related independent clauses</p>
<b>33–36</b>	<p>Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses</p>	<p>Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas</p> <p>Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb</p>	<p>Use a colon to introduce an example or an elaboration</p>

**Table C-2. ACT's College Readiness Standards — Reading**

	<b>Main Ideas and Author's Approach</b>	<b>Supporting Details</b>
<b>13–15</b>	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
<b>16–19</b>	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
<b>20–23</b>	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
<b>24–27</b>	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
<b>28–32</b>	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
<b>33–36</b>	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

**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.

**Table C-2. ACT’s College Readiness Standards — Reading (continued)**

	<b>Sequential, Comparative, and Cause-Effect Relationships</b>	<b>Meanings of Words</b>	<b>Generalizations and Conclusions</b>
<b>13–15</b>	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
<b>16–19</b>	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
<b>20–23</b>	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
<b>24–27</b>	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
<b>28–32</b>	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
<b>33–36</b>	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

**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**

	<b>Expressing Judgments</b>	<b>Focusing on the Topic</b>	<b>Developing a Position</b>
<b>3–4</b>	<p>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</p> <p>Show limited recognition of the complexity of the issue in the prompt</p>	<p>Maintain a focus on the general topic in the prompt through most of the essay</p>	<p>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</p> <p>Show little or no movement between general and specific ideas and examples</p>
<b>5–6</b>	<p>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</p> <p>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</p>	<p>Maintain a focus on the general topic in the prompt throughout the essay</p>	<p>Offer limited development of ideas using a few general examples; resort sometimes to merely repeating ideas</p> <p>Show little movement between general and specific ideas and examples</p>
<b>7–8</b>	<p>Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt</p> <p>Show some recognition of the complexity of the issue in the prompt by</p> <ul style="list-style-type: none"> <li>acknowledging counterarguments to the writer’s position</li> <li>providing some response to counterarguments to the writer’s position</li> </ul>	<p>Maintain a focus on the general topic in the prompt throughout the essay and attempt a focus on the specific issue in the prompt</p> <p>Present a thesis that establishes focus on the topic</p>	<p>Develop ideas by using some specific reasons, details, and examples</p> <p>Show some movement between general and specific ideas and examples</p>
<b>9–10</b>	<p>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</p> <p>Show recognition of the complexity of the issue in the prompt by</p> <ul style="list-style-type: none"> <li>partially evaluating implications and/or complications of the issue, and/or</li> <li>posing and partially responding to counterarguments to the writer’s position</li> </ul>	<p>Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay</p> <p>Present a thesis that establishes a focus on the writer’s position on the issue</p>	<p>Develop most ideas fully, using some specific and relevant reasons, details, and examples</p> <p>Show clear movement between general and specific ideas and examples</p>
<b>11–12</b>	<p>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</p> <p>Show understanding of the complexity of the issue in the prompt by</p> <ul style="list-style-type: none"> <li>examining different perspectives, and/or</li> <li>evaluating implications or complications of the issue, and/or</li> <li>posing and fully discussing counterarguments to the writer’s position</li> </ul>	<p>Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay</p> <p>Present a critical thesis that clearly establishes the focus on the writer’s position on the issue</p>	<p>Develop several ideas fully, using specific and relevant reasons, details, and examples</p> <p>Show effective movement between general and specific ideas and examples</p>

**Table C-3. ACT's College Readiness Standards — Writing (continued)**

	<b>Organizing Ideas</b>	<b>Using Language</b>
<b>3–4</b>	<p>Provide a discernible organization with some logical grouping of ideas in parts of the essay</p> <p>Use a few simple and obvious transitions</p> <p>Present a discernible, though minimally developed, introduction and conclusion</p>	<p>Show limited control of language by</p> <ul style="list-style-type: none"> <li>correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes significantly impede understanding</li> <li>using simple vocabulary</li> <li>using simple sentence structure</li> </ul>
<b>5–6</b>	<p>Provide a simple organization with logical grouping of ideas in parts of the essay</p> <p>Use some simple and obvious transitional words, though they may at times be inappropriate or misleading</p> <p>Present a discernible, though underdeveloped, introduction and conclusion</p>	<p>Show a basic control of language by</p> <ul style="list-style-type: none"> <li>correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes impede understanding</li> <li>using simple but appropriate vocabulary</li> <li>using a little sentence variety, though most sentences are simple in structure</li> </ul>
<b>7–8</b>	<p>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</p> <p>Use some simple and obvious, but appropriate, transitional words and phrases</p> <p>Present a discernible introduction and conclusion with a little development</p>	<p>Show adequate use of language to communicate by</p> <ul style="list-style-type: none"> <li>correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding</li> <li>using appropriate vocabulary</li> <li>using some varied kinds of sentence structures to vary pace</li> </ul>
<b>9–10</b>	<p>Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas</p> <p>Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas</p> <p>Present a somewhat developed introduction and conclusion</p>	<p>Show competent use of language to communicate ideas by</p> <ul style="list-style-type: none"> <li>correctly employing most conventions of standard English grammar, usage, and mechanics, with a few distracting errors but none that impede understanding</li> <li>using some precise and varied vocabulary</li> <li>using several kinds of sentence structures to vary pace and to support meaning</li> </ul>
<b>11–12</b>	<p>Provide unity and coherence throughout the essay, often with a logical progression of ideas</p> <p>Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas</p> <p>Present a well-developed introduction and conclusion</p>	<p>Show effective use of language to clearly communicate ideas by</p> <ul style="list-style-type: none"> <li>correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors</li> <li>using precise and varied vocabulary</li> <li>using a variety of kinds of sentence structures to vary pace and to support meaning</li> </ul>

**Table C-4. ACT's College Readiness Standards — Mathematics**

	<b>Basic Operations &amp; Applications</b>	<b>Probability, Statistics, &amp; Data Analysis</b>	<b>Numbers: Concepts &amp; Properties</b>	<b>Expressions, Equations, &amp; Inequalities</b>
13–15	<p><b>201.</b> Perform one-operation computation with whole numbers and decimals</p> <p><b>202.</b> Solve problems in one or two steps using whole numbers</p> <p><b>203.</b> Perform common conversions (e.g., inches to feet or hours to minutes)</p>	<p><b>201.</b> Calculate the average of a list of positive whole numbers</p> <p><b>202.</b> Perform a single computation using information from a table or chart</p>	<p><b>201.</b> Recognize equivalent fractions and fractions in lowest terms</p>	<p><b>201.</b> Exhibit knowledge of basic expressions (e.g., identify an expression for a total as <math>b + g</math>)</p> <p><b>202.</b> Solve equations in the form <math>x + a = b</math>, where <math>a</math> and <math>b</math> are whole numbers or decimals</p>
16–19	<p><b>301.</b> Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent</p> <p><b>302.</b> Solve some routine two-step arithmetic problems</p>	<p><b>301.</b> Calculate the average of a list of numbers</p> <p><b>302.</b> Calculate the average, given the number of data values and the sum of the data values</p> <p><b>303.</b> Read tables and graphs</p> <p><b>304.</b> Perform computations on data from tables and graphs</p> <p><b>305.</b> Use the relationship between the probability of an event and the probability of its complement</p>	<p><b>301.</b> Recognize one-digit factors of a number</p> <p><b>302.</b> Identify a digit's place value</p>	<p><b>301.</b> Substitute whole numbers for unknown quantities to evaluate expressions</p> <p><b>302.</b> Solve one-step equations having integer or decimal answers</p> <p><b>303.</b> Combine like terms (e.g., <math>2x + 5x</math>)</p>
20–23	<p><b>401.</b> 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</p>	<p><b>401.</b> Calculate the missing data value, given the average and all data values but one</p> <p><b>402.</b> Translate from one representation of data to another (e.g., a bar graph to a circle graph)</p> <p><b>403.</b> Determine the probability of a simple event</p> <p><b>404.</b> Exhibit knowledge of simple</p>	<p><b>401.</b> Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor</p>	<p><b>401.</b> Evaluate algebraic expressions by substituting integers for unknown quantities</p> <p><b>402.</b> Add and subtract simple algebraic expressions</p> <p><b>403.</b> Solve routine first-degree equations</p> <p><b>404.</b> Perform straightforward word-to-symbol translations</p> <p><b>405.</b> Multiply two binomials</p>
24–27	<p><b>501.</b> Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)</p>	<p><b>501.</b> Calculate the average, given the frequency counts of all the data values</p> <p><b>502.</b> Manipulate data from tables and graphs</p> <p><b>503.</b> Compute straightforward probabilities for common situations</p> <p><b>504.</b> Use Venn diagrams in counting</p>	<p><b>501.</b> Find and use the least common multiple</p> <p><b>502.</b> Order fractions</p> <p><b>503.</b> Work with numerical factors</p> <p><b>504.</b> Work with scientific notation</p> <p><b>505.</b> Work with squares and square roots of numbers</p> <p><b>506.</b> Work problems involving positive integer exponents</p> <p><b>507.</b> Work with cubes and cube roots of numbers</p> <p><b>508.</b> Determine when an expression is undefined</p> <p><b>509.</b> Exhibit some knowledge of the complex numbers</p>	<p><b>501.</b> Solve real-world problems using first-degree equations</p> <p><b>502.</b> 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)</p> <p><b>503.</b> Identify solutions to simple quadratic equations</p> <p><b>504.</b> Add, subtract, and multiply polynomials</p> <p><b>505.</b> Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)</p> <p><b>506.</b> Solve first-degree inequalities that do not require reversing the inequality sign</p>
28–32	<p><b>601.</b> Solve word problems containing several rates, proportions, or percentages</p>	<p><b>601.</b> Calculate or use a weighted average</p> <p><b>602.</b> Interpret and use information from figures, tables, and graphs</p> <p><b>603.</b> Apply counting techniques</p> <p><b>604.</b> Compute a probability when the event and/or sample space are not given or obvious</p>	<p><b>601.</b> Apply number properties involving prime factorization</p> <p><b>602.</b> Apply number properties involving even/odd numbers and factors/multiples</p> <p><b>603.</b> Apply number properties involving positive/negative numbers</p> <p><b>604.</b> Apply rules of exponents</p> <p><b>605.</b> Multiply two complex numbers</p>	<p><b>601.</b> Manipulate expressions and equations</p> <p><b>602.</b> Write expressions, equations, and inequalities for common algebra settings</p> <p><b>603.</b> Solve linear inequalities that require reversing the inequality sign</p> <p><b>604.</b> Solve absolute value equations</p> <p><b>605.</b> Solve quadratic equations</p> <p><b>606.</b> Find solutions to systems of linear equations</p>
33–36	<p><b>701.</b> 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)</p>	<p><b>701.</b> Distinguish between mean, median, and mode for a list of numbers</p> <p><b>702.</b> Analyze and draw conclusions based on information from figures, tables, and graphs</p> <p><b>703.</b> Exhibit knowledge of conditional and joint probability</p>	<p><b>701.</b> Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers</p> <p><b>702.</b> Exhibit knowledge of logarithms and geometric sequences</p> <p><b>703.</b> Apply properties of complex numbers</p>	<p><b>701.</b> Write expressions that require planning and/or manipulating to accurately model a situation</p> <p><b>702.</b> Write equations and inequalities that require planning, manipulating, and/or solving</p> <p><b>703.</b> Solve simple absolute value inequalities</p>

**Table C-4. ACT's College Readiness Standards — Mathematics (continued)**

	<b>Graphical Representations</b>	<b>Properties of Plane Figures</b>	<b>Measurement</b>	<b>Functions</b>
13–15	201. Identify the location of a point with a positive coordinate on the number line		201. Estimate or calculate the length of a line segment based on other lengths given on a geometric figure	
16–19	301. Locate points on the number line and in the first quadrant	301. Exhibit some knowledge of the angles associated with parallel lines	301. Compute the perimeter of polygons when all side lengths are given 302. Compute the area of rectangles when whole number dimensions are given	
20–23	401. Locate points in the coordinate plane 402. Comprehend the concept of length on the number line 403. Exhibit knowledge of slope	401. Find the measure of an angle using properties of parallel lines 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)	401. Compute the area and perimeter of triangles and rectangles in simple problems 402. Use geometric formulas when all necessary information is given	401. Evaluate quadratic functions, expressed in function notation, at integer values
24–27	501. Identify the graph of a linear inequality on the number line 502. Determine the slope of a line from points or equations 503. Match linear graphs with their equations 504. Find the midpoint of a line segment	501. Use several angle properties to find an unknown angle measure 502. Recognize Pythagorean triples 503. Use properties of isosceles triangles	501. Compute the area of triangles and rectangles when one or more additional simple steps are required 502. Compute the area and circumference of circles after identifying necessary information 503. Compute the perimeter of simple composite geometric figures with unknown side lengths	501. Evaluate polynomial functions, expressed in function notation, at integer values 502. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
28–32	601. Interpret and use information from graphs in the coordinate plane 602. Match number line graphs with solution sets of linear inequalities 603. Use the distance formula 604. Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point 605. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)	601. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles 602. Use the Pythagorean theorem	601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure	601. Evaluate composite functions at integer values 602. Apply basic trigonometric ratios to solve right-triangle problems
33–36	701. Match number line graphs with solution sets of simple quadratic inequalities 702. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ 703. Solve problems integrating multiple algebraic and/or geometric concepts 704. Analyze and draw conclusions based on information from graphs in the coordinate plane	701. Draw conclusions based on a set of conditions 702. Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas 703. Use relationships among angles, arcs, and distances in a circle	701. Use scale factors to determine the magnitude of a size change 702. Compute the area of composite geometric figures when planning or visualization is required	701. Write an expression for the composite of two simple functions 702. Use trigonometric concepts and basic identities to solve problems 703. Exhibit knowledge of unit circle trigonometry 704. Match graphs of basic trigonometric functions with their equations



**Table C-5. ACT's College Readiness Standards — Science**

	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	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	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

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