

# ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

## Released Item Booklet

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Arkansas Augmented  
Benchmark Examination

**APRIL 2010  
ADMINISTRATION**

**GRADE**

**5**

**Arkansas Department of Education**

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## PART I Overview—2010 Augmented Benchmark Grade 5

The criterion-referenced tests implemented as part of the **Arkansas Comprehensive Testing, Assessment, and Accountability Program** (ACTAAP) are being developed in response to Arkansas Legislative Act 35, which requires the State Board of Education to develop a comprehensive testing program that includes assessment of the challenging academic content standards defined by the Arkansas Curriculum Frameworks.

As part of this program, all Grade 5 students in Arkansas public schools participated in the *Grade 5 Augmented Benchmark Examination* in April 2010.

This *Released Item Booklet* for the *Grade 5 Augmented Benchmark Examination* contains test questions or items that were asked of students during the April 2010 operational administration. The test items included in Part II of this booklet are those items that contributed to the student performance results for that administration. **Please make note that only 50% of the 2010 criterion-referenced test items are released in this booklet.**

Students were given approximately two and a half hours each day to complete assigned test sessions during the five days of testing in April 2010. Students were permitted to use a calculator for the Mathematics items (both multiple choice and open response), with the exception of questions 1–3 in this *Released Item Booklet*. Students were also supplied with a reference sheet to be used during the Mathematics sessions so that all students would have equal access to this information during testing. (See the reference sheet on page 13 of this booklet.) All of the Mathematics, Reading, Writing, and Science multiple-choice items within this booklet have the correct response marked with an asterisk. The open-response questions for Mathematics, Reading, Science, and the prompt for Writing are listed with scoring guides (rubrics) immediately following. These rubrics provide information on the scoring model used for each subject, with the scoring model for Writing defining the overall curricular and instructional link for that subject with the Arkansas *English Language Arts Curriculum Framework*. The domain scoring model, implemented within Arkansas for a number of years, illustrates the appropriate instructional approaches for Writing within the state.

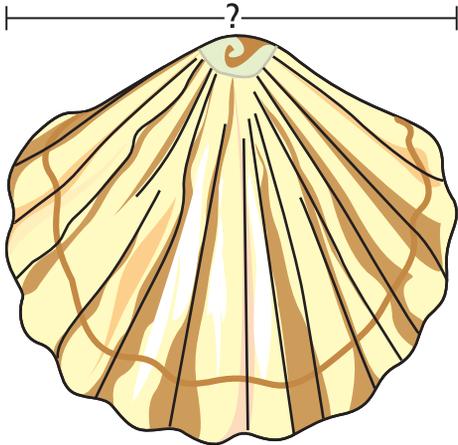
The development of the *Grade 5 Augmented Benchmark Examination* was based on the Arkansas Curriculum Frameworks. These frameworks have common, distinct levels: *Strands*, which are broad concepts, *Content Standards* within each Strand, and *Student Learning Expectations* within each Content Standard. Abridged versions of the *Arkansas Mathematics Curriculum Framework*, *Arkansas English Language Arts Curriculum Framework—Reading Strand*, *Arkansas English Language Arts Curriculum Framework—Writing Strand*, and *Arkansas Science Curriculum Framework* can be found in Part III of this booklet. It is important to note that these abridged versions list only the predominant Strand, Content Standard, and Student Learning Expectation associated with each item. However, since many key concepts within the Arkansas Curriculum Frameworks are interrelated, in many cases there are other item correlations or associations across Strands, Content Standards, and Student Learning Expectations.

Part III of the *Released Item Booklet* also contains a tabular listing of both released and non-released items, aligned to the Strand, Content Standard, and Student Learning Expectation that each question was designed to assess. The multiple-choice and open-response items found on the *Grade 5 Augmented Benchmark Examination* were developed in close association with the Arkansas educational community. Arkansas teachers participated as members of Content Advisory Committees for each subject area, providing routine feedback and recommendations for all items. Part III of the *Released Item Booklet* provides Arkansas educators with specific information on how the *Grade 5 Augmented Benchmark Examination* items align or correlate with the Arkansas Curriculum Frameworks to provide models for classroom instruction.

CALCULATOR NOT PERMITTED—ITEMS 1–3

1

Robert found a seashell at the beach. He measured the width of the seashell.



What is the width, to the nearest centimeter, of the seashell?

- A 2 centimeters
- B 3 centimeters
- \* C 6 centimeters
- D 7 centimeters

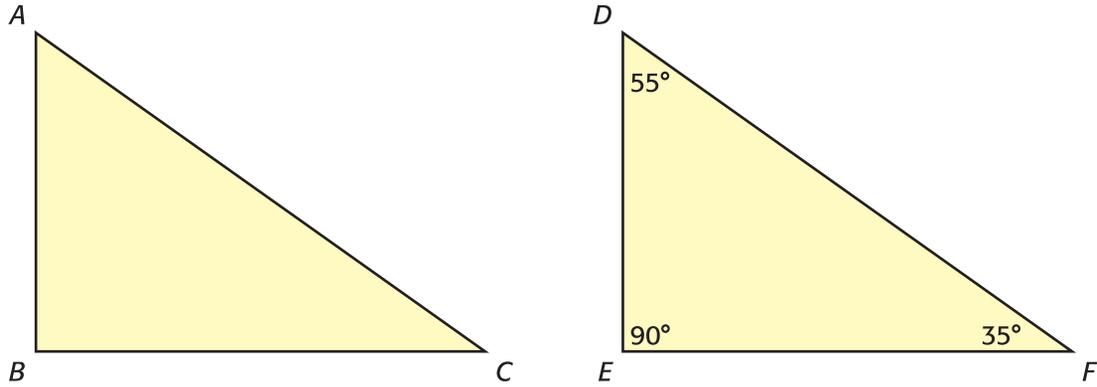
2

Mrs. Valentine has 4 pairs of shoes and 6 pairs of earrings. What is the total number of combinations she can make?

- A 26
- \* B 24
- C 10
- D 6

3

Uriah drew 2 congruent triangles as shown.



Which is true about angle C?

- \* **A** It has a measure of 35°.
- B** It has a measure of 55°.
- C** It has a measure of 90°.
- D** It has a measure of 180°.

## CALCULATOR PERMITTED—ITEMS 4–10 and A–B

4

Connie kept track of the number of airplanes she heard flying over her apartment each evening. The table below shows her data.

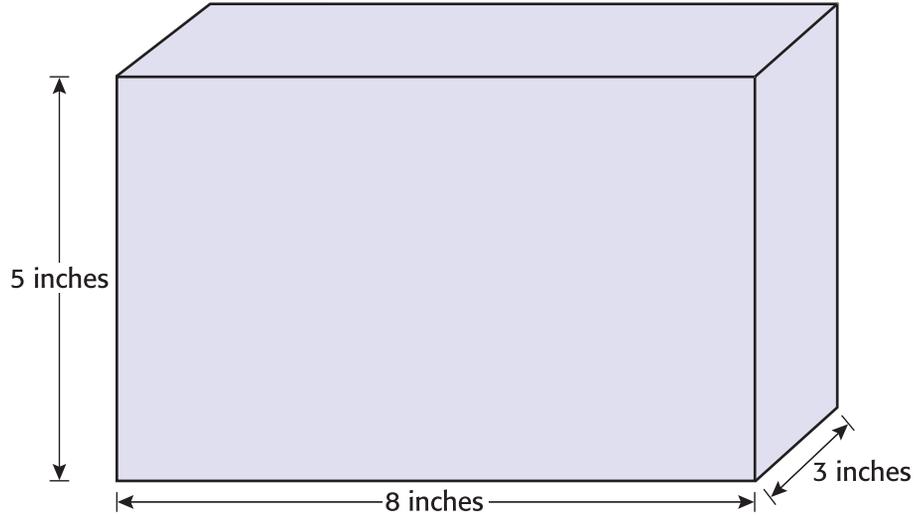
Day of Week	Number of Airplanes
Sunday	12
Monday	10
Tuesday	13
Wednesday	12
Thursday	11
Friday	14
Saturday	

Based on Connie's data, how many airplanes would she likely hear flying over her apartment on Saturday evening?

- A 25
- B 22
- ★ C 15
- D 7

5

The picture shows a scale drawing of a rectangular prism.

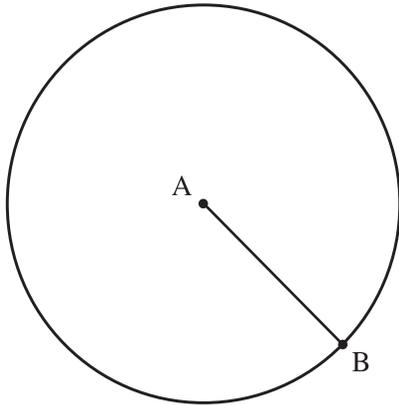


Which of these best describes the volume of this prism?

- A 120 square inches
- \* B 120 cubic inches
- C 16 square inches
- D 16 cubic inches

6

If A is the center of the circle shown below, what is the **correct** term for line segment AB?



- A chord
- \* B radius
- C diagonal
- D diameter

7

There are 6 classes of fifth grade students at Larry's school. Larry estimates that there are 21 students in each class.

Based on his estimate, which is **closest** to the total number of fifth grade students at Larry's school?

- A 21
- B 27
- \* C 120
- D 440

**8**

Jared ate 3 servings of a fruit snack in one day. He wrote the equation shown to find  $c$ , the total number of calories in each serving of the fruit snack.

$$3 \cdot c = 135$$

What is the value of  $c$ ?

- \* **A** 45
- B** 132
- C** 138
- D** 405

**9**

The expression below represents the total number of fifth grade students and fifth grade teachers at Sarah's school.

$$(3 + 2) \times (20 + 1)$$

Based on this expression, what is the total number of fifth grade students and fifth grade teachers at Sarah's school?

- A** 26
- B** 44
- C** 101
- \* **D** 105

10

The table shows the total number of cases of soda and water that were sold at a supermarket during each of 5 months.

**Soda and Water Sales**

Month	Cases of Soda	Cases of Water
July	315	195
August	304	216
September	298	257
October	310	289
November	307	301

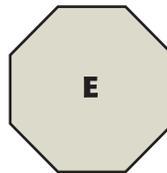
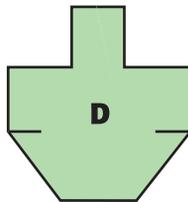
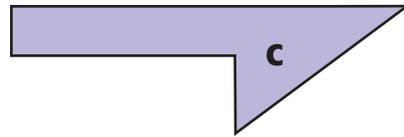
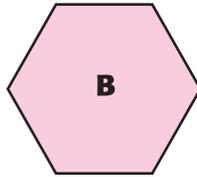
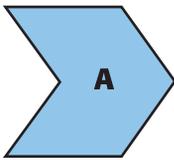
Which statement is true of the soda and water sales over the 5-month time period?

- A** Soda sales increased and water sales increased.
- B** Soda sales increased while water sales decreased.
- C** Soda sales remained about the same while water sales decreased.
- \* D** Soda sales remained about the same while water sales increased.

## MATHEMATICS OPEN-RESPONSE ITEM A

**A**

The picture below shows some regular and irregular polygons.



1. Identify the geometric name of each of the shapes, A, B, C, D, and E.
2. Identify which of the shapes, A, B, C, D, or E, are regular polygons. Explain your answer.
3. Identify which of the shapes, A, B, C, D, or E, are irregular polygons. Explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

**PART II Released Mathematics Items—2010 Augmented Benchmark Grade 5**

**RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM A**

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns $3-3\frac{1}{2}$ points.
2	The student earns $2-2\frac{1}{2}$ points.
1	The student earns $\frac{1}{2}-1\frac{1}{2}$ points, or some minimal understanding shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item.) Score of "0" assigned for the item.

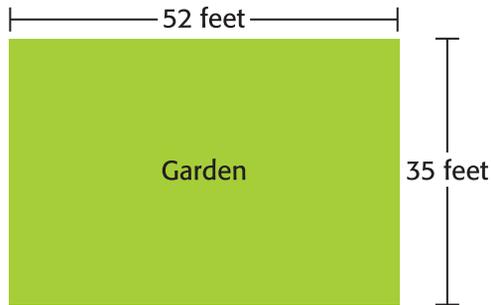
**Solution and Scoring**

Part	Points
<b>1</b>	<p><b>2 Points Possible</b></p> <p>2 points: Correctly labels all 5 shapes: A. hexagon, B. hexagon, C. pentagon, D. decagon and E. octagon</p> <p><b>OR</b></p> <p>1 point: Correctly labels 3 of the 5 shapes</p>
<b>2</b>	<p><b>1 Point Possible</b></p> <p>1/2 point: Correctly identifies the regular polygons B and E</p> <p><b>AND</b></p> <p>1/2 point: Correct and complete explanation of how answer was determined</p> <p>Give credit to the following or equivalent:</p> <p><i>Both shapes have all interior angles congruent and all of the sides are the same length.</i></p>
<b>3</b>	<p><b>1 Point Possible</b></p> <p>1/2 point: Correctly identifies the irregular polygons A, C, and D</p> <p><b>AND</b></p> <p>1/2 point: Correct and complete explanation of how answer was determined</p> <p>Give credit to the following or equivalent:</p> <p><i>All three shapes have interior angles that are not congruent and/or all of the sides for each shape are not congruent</i></p>

**MATHEMATICS OPEN-RESPONSE ITEM B**

**B**

Emily designed a garden in her backyard and drew the scale drawing shown.



1. According to the drawing, what is the perimeter of the garden? Use words, numbers, and/or pictures to explain how you determined your answer.
2. Emily plans to cover the garden with compost. According to the drawing, what is the area of the garden? Use words, numbers, and/or pictures to explain how you determined your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

**RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM B**

<b>SCORE</b>	<b>DESCRIPTION</b>
4	The student earns 4 points. The response contains no incorrect work. Correct units required for Part 1 and Part 2.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item.) Score of "0" assigned for the item.

**PART II Released Mathematics Items—2010 Augmented Benchmark Grade 5**

**Solution and Scoring**

<b>Part</b>	<b>Points</b>
<b>1</b>	<p><b>2 Points Possible</b></p> <p>2 points: Correct perimeter of 174 with a complete explanation of how to determine the perimeter.</p> <p>1 point: Correct perimeter of 174 with an incomplete or missing explanation. <b>OR</b> Incorrect perimeter due to a calculation or transcription error with a complete explanation of how to determine the perimeter.</p> <p>Note: Correct units of feet required at the 4 level.</p>
<b>2</b>	<p><b>2 Points Possible</b></p> <p>2 points: Correct area of 1820 with a complete explanation of how to determine the area.</p> <p>1 point: Correct area of 1820 with an incomplete or missing explanation. <b>OR</b> Incorrect area due to a calculation or transcription error with a complete explanation of how to determine the area.</p> <p>Note: Correct units of square feet required at the 4 level.</p>

## Mathematics Reference Sheet Grade 5

*Use the information below, as needed, to answer questions on the Mathematics test.*

<b>Square</b>	<b>Rectangle</b>	<b>Triangle</b>
Area = $s \times s$ Perimeter = $4 \times s$	Area = $l \times w$ Perimeter = $(2 \times l) + (2 \times w)$	Perimeter = $a + b + c$

1 foot = 12 inches

1 yard = 3 feet

1 mile = 5,280 feet

1 pound (lb) = 16 ounces (oz)

1 cup = 8 ounces (oz)

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 kilogram = 1000 grams

1 meter = 100 centimeters

1 centimeter = 10 millimeters

1 kilometer = 1000 meters

1 liter = 1000 milliliters

Read this passage about a parrot. Then answer multiple-choice questions 1 through 8 and open-response question A.

## **Excerpt From *How Come?***

by Kathy Wollard

How can parrots imitate words? Do they really know what they are saying?

It's thrilling when a pet parrot says its first word—especially if it's your name. Some parrots have even learned prayers or entire poems. But when a parrot talks, you wonder, does it have any idea what it is saying? Is a parrot just a mindless mimic? Or are parrots smarter than we think?

According to researcher Irene Pepperberg, parrots may be capable of much more than mimicry. Unlike many animals, parrots (and related birds, such as parakeets) have vocal tracts that make human speech easy to imitate. Also, Pepperberg said, parrots learn to communicate with others in their flock by imitating adult birds. That helps to explain the behavior of pet parrots, who get rewards for likewise imitating their owners.

But talking is different than understanding. So Pepperberg set up an experiment at Northwestern University to find out how much parrots can really learn. In 1977, she bought Alex, an African gray parrot at a pet shop. (African grays are the best talkers.) Alex seemed like a rather ordinary, friendly parrot at first. But soon, he showed he was one smart bird.

---

***Parrots in the wild learn to communicate with others in the flock by mimicking adult birds.***

---

Alex sits on his perch, and Pepperberg shows him a key on a tray. "Key!" Alex says—and Pepperberg hands it to him. Unlike a pet bird, which may get rewarded with a cracker for saying almost anything, Alex only gets what he correctly names.

In the beginning, Pepperberg said, no one believed a parrot could label

objects. But now, Alex can identify more than 100 things, from paper to corn to corks.

Once he was taught the individual names for things, the next step was combining two ideas—not just “key,” but “blue key.” Alex quickly learned the names for colors. When shown a red key and a green key, he is asked, “What’s the same or different?” “Color!” he shouts.

Alex can also answer “shape” or “material” when asked what is different. He has a little trouble with the word “material,” Pepperberg said; he pronounces it “matter.”

After years of learning, Alex has gotten a little bored. He’ll identify a key, take it in his beak, and throw it on the floor. After a session of naming the same old stuff, Alex sometimes asks for something different. After too many keys, Alex may say “I want cork!” He gets it.

- 10 The curious bird may also demand, “You tell me what’s that!” when shown a tray of brand-new objects. If asked about the new objects’ colors, Alex tends to outdo his usual performance—an attempt, Pepperberg thinks, to acquire the exciting new stuff. In fact, to keep Alex happily naming, she and her coworkers made

an expedition to a toy store, where they picked up a whole assortment of little figures and animals.

Still, Alex has his difficult days, sometimes shouting “No!” like a frustrated 2-year-old. And when he really wants to show who’s boss, he’ll announce, “I’m gonna go away,” walking off from the poor student trying to test him.

---

***Alex the parrot can identify more than 100 things.***

---

Some say Pepperberg’s experiment doesn’t prove that a parrot can use language. After all, they say, Alex doesn’t go around talking about what he’s just seen unless he gets a reward.

Pepperberg responds that although Alex doesn’t use language in general, he does use words to express ideas. That must mean, she said, that there is some pretty complex thinking going on in the parrot’s brain.

And there is this story: Alex knew the words for banana, cherry, and grape. One day, he saw an apple. “I want banary!” he said. By combining “banana” and “cherry,” Alex may have coined a new word for the strange fruit.

“How Come?—How Can Parrots Imitate Words” by Kathy Wollard. Copyright © 1993 by Kathy Wollard. Reprinted by permission of Kathy Wollard c/o Jane Rotrosen Agency, LLC, New York. All rights reserved.

1

Pepperberg is **most** interested in learning —

- A how parrots interact with each other
- ★ B whether animals know how to use language
- C how animal speech compares to human speech
- D what the best methods are for training birds to talk

2

What evidence suggests that Alex has a curious mind?

- A He will leave an experiment.
- B He made up a new word.
- C He can name many things.
- ★ D He likes new objects.

3

Which sentence uses expedition with the same meaning it has in paragraph 10?

- ★ A The expedition to the North Pole was a big success.
- B The family rushed with great expedition to finish their packing.
- C The expedition of bird watchers voted to camp for the night.
- D The fish swam to their food showing impressive expedition.

4

What information from the passage **best** supports the idea that Alex has a personality?

- A He is an African gray parrot.
- B He learned the names for colors.
- ★ C He shouts “No!” when he’s upset.
- D He only gets a reward when he correctly names something.

**5**

What does the reader know about African gray parrots after reading the passage?

- ★ **A** They can see colors.
- B** They are smarter than dogs.
- C** They form strong friendships.
- D** They have beautiful voices.

**6**

In the passage, Alex **most** resembles —

- A** a researcher
- B** a poet
- ★ **C** a child
- D** an inventor

**7**

What is the purpose of the text in large bold font?

- ★ **A** To emphasize important ideas
- B** To provide additional information
- C** To define new words or phrases
- D** To organize the passage into sections

**8**

Who would benefit **most** from reading this passage?

- A** A traveler trying to learn a new language
- ★ **B** A student interested in how animals think
- C** A businessperson thinking of opening a pet shop
- D** A researcher who wants to study sign language

Read this passage. Then answer multiple-choice questions 9 through 16 and open-response question B.

## **If These Walls Could Talk! Prehistoric Cave Painting**

by Arlette N. Braman

Illustrated by Jo-Ellen Bosson

Thousands of years ago, prehistoric people painted pictures on cave walls and rock surfaces. These pictures showed different seasons, people working together, their handprints, and hunting animals. Some of the most famous paintings are found in the *Chauvet* (pronounced show-VEH) and *Lascaux* (pronounced lass-CO) caves in France. One of the oldest paintings, found in Spain, shows a figure of a person using a bow and arrow. Rock art from the desert in Jordan shows a herd of camels with their babies. These early forms of visual communication help us understand how prehistoric people lived, because their art recorded their life stories.

Prehistoric people painted with their fingers and with brushes made from animal hair and reeds (hollow stems of tall grasses). They spray-painted by blowing paint through a hollow reed.

3 How have these cave paintings lasted for so long? The temperature and climate inside a cave stays about the same all year. There is no rain or snow in the cave to wear down the paintings. This constant condition has helped to protect the paintings.

You don't need a cave to make a cave painting. A paper grocery bag works great! You can copy the record-keeping art of prehistoric people and make your handprints. You can also add some fingerprints and prehistoric symbols.

Prehistoric artists made their own paint from soil. Because of the minerals in the soil, they could make black, brown, red, and yellow paint. You can use their colors for your painting, or choose different ones.

**Here's What You Need:**

- pencil
- ruler
- brown paper bag (from the grocery store)
- scissors
- craft paintbrush
- acrylic or poster paint (about 4 different colors)
- small bowl of water
- paper towels

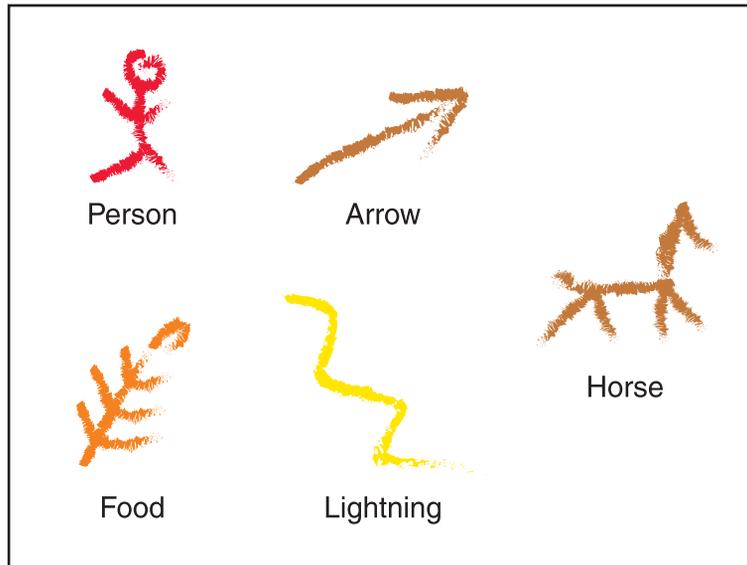
**Here's What You Do:**

- 1 Draw a 12-by-17 inch rectangle on the bag and cut it out. To give the paper a jagged, cavelike look, carefully tear off small pieces along each edge of the rectangle.
- 2 Crinkle the paper into a loose ball, then open it and lay it flat. Place your left hand on the left side of the paper. Trace your hand lightly with the pencil, starting and ending at your wrist. Do the same for your right hand on the right side of the paper.
- 3 Paint over the outline of your hands with one color of paint.
- 4 Now add some thumb- and fingerprints. Brush a little paint on your thumb or fingertip and press the paint onto the paper. Remember to rinse the brush in the bowl of water and blot it dry on a paper towel before changing colors.
- 5 Add some prehistoric symbols. Paint these with the brush.

**TIP: To re-create the look of a prehistoric cave painting, use very little detail in your picture.**

### Art Choice

Here are some symbols prehistoric people may have used. Put these on your painting, or create your own.



"If These Walls Could Talk! Prehistoric Cave Painting" by Arlette N. Braman. Copyright © 1999 by Arlette N. Braman. Reprinted with permission of John Wiley & Sons, Inc.

**9**

According to the passage, why are cave paintings studied?

- A** They are quickly being eroded by weather conditions.
- \* **B** They are a written record of prehistoric people.
- C** They are detailed and complex drawings.
- D** They are rare and hard to find.

**10**

What fact from the passage explains why cave paintings have been preserved for thousands of years?

- A** Their paint brushes were made from animal hair and reeds.
- \* **B** They were protected from the rain and the snow.
- C** Prehistoric artists made their own paint from soil.
- D** Very little detail was used in their pictures.

**11**

Which word is a synonym for constant as it is used in paragraph 3?

- \* **A** Endless
- B** Immediate
- C** Multiple
- D** Incredible

**12**

The author organizes the section of the passage titled “Here’s What You Do” by —

- \* **A** listing events in the order they occur
- B** listing causes and effects
- C** explaining problems and solutions
- D** describing an event

13

The purpose of crinkling the brown paper bag before painting on it is to —

- A make the paper softer
- \* B recreate a cave surface for painting
- C help the paint soak in faster
- D change the shape of the paper

14

According to the passage, what can young people do to make their cave paintings look prehistoric?

- A Outline their drawings with pencil
- B Blot their paintings with paper towels
- \* C Use very little detail in the artwork
- D Paint with the color brown

15

The **main** purpose of the passage is to —

- A describe the most famous cave paintings and rock art
- B compare cave paintings to rock art
- C persuade readers to preserve the history of cave paintings
- \* D explain how to recreate cave paintings

16

A student would **most likely** find this passage in —

- \* A a textbook for an art class
- B an encyclopedia entry about caves
- C a novel where characters explore a cave
- D an article about travel destinations

**READING OPEN-RESPONSE ITEM A, FOR PASSAGE "EXCERPT FROM *HOW COME?*"**

**A**

How does Alex show that he is "one smart bird"?

Use at least **four** details from the passage to support your answer.

**RUBRIC FOR READING OPEN-RESPONSE ITEM A, FOR PASSAGE "EXCERPT FROM *HOW COME?*"**

<b>SCORE</b>	<b>DESCRIPTION</b>
4	The response explains how Alex is "one smart bird," by providing at least <b>four</b> details from the passage.
3	The response explains how Alex is "one smart bird," by providing <b>three</b> details from the passage.
2	The response explains how Alex is "one smart bird," by providing <b>two</b> details from the passage.
1	The response explains how Alex is "one smart bird," by providing <b>one</b> detail from the passage. <b>OR</b> The response demonstrates minimal understanding of the question.
0	The response is totally incorrect and shows no evidence that the student understands the task. The response may be off topic or completely irrelevant.
B	Blank—No response. A score of "B" will be reported as "NA." (No attempt to answer the item.) Score of "0" assigned for the item.

**READING OPEN-RESPONSE ITEM B, FOR PASSAGE  
"IF THESE WALLS COULD TALK! PREHISTORIC CAVE PAINTING"**

**B**

Based on information in the passage, explain at least **four** details the reader learns about prehistoric people.

**RUBRIC FOR READING OPEN-RESPONSE ITEM B, FOR PASSAGE  
"IF THESE WALLS COULD TALK! PREHISTORIC CAVE PAINTING"**

<b>SCORE</b>	<b>DESCRIPTION</b>
4	The response explains at least <b>four</b> details the reader learns about prehistoric people based on information in the passage.
3	The response explains <b>three</b> details the reader learns about prehistoric people based on information in the passage.
2	The response explains <b>two</b> details the reader learns about prehistoric people based on information in the passage.
1	The response explains <b>one</b> detail the reader learns about prehistoric people based on information in the passage. <b>OR</b> The response demonstrates minimal understanding of the question.
0	The response is totally incorrect and shows no evidence that the student understands the task. The response may be off topic or completely irrelevant.
B	Blank—No response. A score of "B" will be reported as "NA." (No attempt to answer the item.) Score of "0" assigned for the item.

17

Read the sentence.

The knight \_\_\_\_\_ his heavy armor and prepared for the competition.

Which of these correctly completes the sentence?

- A fastens
- \* B fastened
- C will fasten
- D is fastening

18

Read the paragraph.

The needles are soft. They grow best in cool, moist soil. They don't do well in very wet or very dry climates. Fir trees are commonly known as evergreen trees.

Which sentence is the **best** lead for this paragraph?

- \* A Evergreen trees are tall and have flat green needles.
- B There are three types of evergreen trees.
- C Evergreen trees are easy to grow.
- D Some evergreen trees are commonly found.

**Writing Prompt C**

**C**

There is a writing contest in school. This is the story you must finish:

**One morning when I woke up, I was only twelve inches tall!**

Before you begin to write, think about this new size. What are some of the things you could do now? What are some of the things you couldn't do anymore? What happened when you were small?

Now write a story about when you were only twelve inches tall. Give enough detail so that the person reading your story will understand.

**Writer's Checklist**

1. Look at the ideas in your response.
  - Have you focused on one main idea?
  - Have you used enough details to explain yourself?
  - Have you put your thoughts in order?
  - Can others understand what you are saying?
  
2. Think about what you want others to know and feel after reading your paper.
  - Will others understand how you think or feel about an idea?
  - Will others feel angry, sad, happy, surprised, or some other way about your response? (Hint: Make your reader feel like you do about your paper's subject.)
  - Do you have sentences of different lengths? (Hint: Be sure you have variety in sentence lengths.)
  - Are your sentences alike? (Hint: Use different kinds of sentences.)
  
3. Look at the words you have used.
  - Have you described things, places, and people the way they are? (Hint: Use enough detail.)
  - Are you the same person all the way through your paper? (Hint: Check your verbs and pronouns.)
  - Have you used the right words in the right places?
  
4. Look at your handwriting.
  - Can others read your handwriting with no trouble?

## PART II Released Writing Prompt—2010 Augmented Benchmark Grade 5

### Domain Scoring Rubric

#### Content (C)

The Content domain includes the focusing, structuring, and elaborating that a writer does to construct an effective message for a reader. It is the creation of a product, the building of a composition intended to be read. The writer crafts his/her message for the reader by focusing on a central idea, providing elaboration of the central idea, and delivering the central idea and its elaboration in an organized text. Features are:

- Central idea
- Elaboration
- Unity
- Organization

#### Style (S)

The Style domain comprises those features that show the writer purposefully shaping and controlling language to affect readers. This domain focuses on the vividness, specificity, and rhythm of the piece and the writer's attitude and presence. Features are:

- Selected vocabulary
- Selected information
- Sentence variety
- Tone
- Voice

#### Sentence Formation (F)

The Sentence Formation domain reflects the writer's ability to form competent, appropriately mature sentences to express his/her thoughts. Features are:

- Completeness
- Standard word order
- Absence of fused sentences
- Expansion through standard coordination and modifiers
- Embedding through standard subordination and modifiers

#### Usage (U)

The Usage domain comprises the writer's use of word-level features that cause written language to be acceptable and effective for standard discourse. Features are:

- Standard inflections
- Agreement
- Word meaning
- Conventions

#### Mechanics (M)

The Mechanics domain includes the system of symbols and cueing devices a writer uses to help readers make meaning. Features are:

- Capitalization
- Punctuation
- Formatting
- Spelling

#### Scoring Scale

Each domain is scored independently using the following scale:

4 = The writer demonstrates **consistent**, though not necessarily perfect, control\* of almost all of the domain's features.

3 = The writer demonstrates **reasonable**, but not consistent, control\* of most of the domain's features, indicating some weakness in the domain.

2 = The writer demonstrates **inconsistent** control\* of several of the domain's features, indicating significant weakness in the domain.

1 = The writer demonstrates **little** or **no** control\* of most of the domain's features.

\*Control: The ability to use a given feature of written language effectively at the appropriate grade level. A response receives a higher score to the extent that it demonstrates control of the features in each domain.

The application of the scale, using actual student writing, is done with the assistance of a committee of Arkansas teachers, language arts supervisors, and representatives of the Arkansas Department of Education.

#### Non-scoreable and Blank Papers

Compositions are scored, unless they are off-topic, illegible, incoherent, refusals to respond, written in a language other than English, or too brief to assess. A score of "NA" indicates that the student's writing entry was non-scoreable and that entry will receive a score of "0."

1

A layer of rock is found to contain a fossil of a fish and a fossil of a land-dwelling dinosaur very close to one another. What is the **most likely** explanation for this?

- \* **A** The fish and dinosaur both lived near a shoreline.
- B** The fish was carried far inland by an enormous wave.
- C** The fish and dinosaur were fossilized at very different times.
- D** The dinosaur was swimming from one continent to another when it died.

2

In the 1600s Robert Hooke invented an improved type of microscope. Which of these was a direct result of this invention?

- A** The first view of atoms and molecules
- B** Detailed observations of Jupiter and Mars
- C** The name *spectrum* for the colors of light
- \* **D** The term *cell* to describe the smallest unit of life

3

During the Apollo 14 moon landing, astronauts played golf on the moon. Which of the following would be less on the moon than on Earth?

- A** The mass of the golf ball
- \* **B** The weight of the golf ball
- C** The mass and size of the golf ball
- D** The weight and size of the golf ball

4

Which list is correctly ordered from smallest to largest?

- A** Biosphere, organism, ecosystem, population
- B** Community, organism, ecosystem, biosphere
- \* **C** Organism, population, community, ecosystem
- D** Population, ecosystem, community, biosphere

**5**

A group of fish was released into a local lake. This species of fish had never lived in the lake before. Scientists want to collect data on how the lake's ecosystem is affected by the new fish. Which method of data collection will give the **most** accurate results?

- A** Measuring oxygen levels in the lake for two months
- B** Checking the lake water for nutrient levels on one day
- \* **C** Sampling fish populations in the lake over several years
- D** Observing the surface of the lake for signs of the new fish after one week

**6**

Mara planted six pots of lettuce seeds. She placed three pots in a sunny area and three pots in a shaded area. She watered each pot the same and measured the growth of the lettuce.

After Mara analyzes her data, what conclusion will it help her to make?

- A** When to plant her lettuce
- \* **B** Where to plant her lettuce
- C** How much water to give lettuce
- D** How many lettuce plants to grow

**7**

Heat was applied to a substance. First the substance expanded, and then it melted. Which state of matter did the substance start off as?

- A** Gas
- \* **B** Solid
- C** Liquid
- D** Plasma

**8**

Fossils of sea animals were found in a cave in Arkansas. What does this mean about that area of Arkansas in the past?

- \* **A** It was once underwater.
- B** It was once much warmer.
- C** It has become a rockier place.
- D** It has changed little from then.

9

Which is an example of a hypothesis?

- \* **A** Large mice will eat more food than smaller mice.
- B** One flower was measured to be 13 centimeters tall.
- C** On a dark night, a student counted hundreds of stars.
- D** People should be careful to protect endangered animals.

10

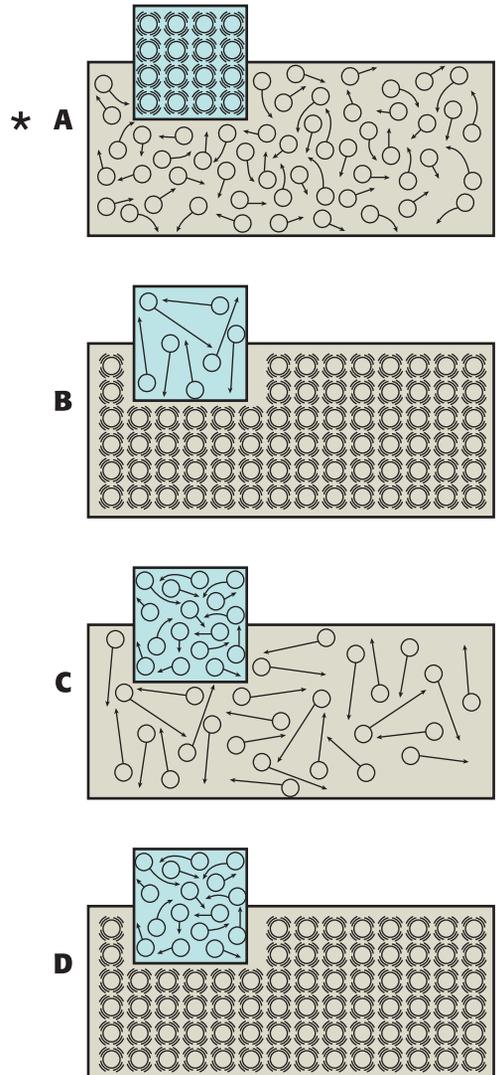
Sara turns on a flashlight and holds an object up to the light.

How will she be able to tell if the object is opaque?

- \* **A** No light will shine through.
- B** Some light will be reflected.
- C** The light will bend at an angle.
- D** Light will shine clearly through.

11

Which drawing shows a model of a solid floating in a liquid?



**12**

Which scientist would be **most** likely to study the changes in animal populations in nature?

- A** Botanist
- B** Engineer
- \* **C** Ecologist
- D** Veterinarian

**13**

Many things can contribute to the development of a theory. A student made a list of some things that might help scientists develop a theory.

- Observations
- Calculations
- Conversations
- Publications

From the student's list, which **must** be used in the development of every theory?

- \* **A** Observations
- B** Conversations
- C** Publications and calculations
- D** Calculations and conversations

**14**

How are green plants an important part of the carbon dioxide-oxygen cycle?

- A** They add oxygen to the soil.
- \* **B** They release oxygen into the air.
- C** They fix carbon dioxide in the soil.
- D** They store carbon dioxide in roots.

**15**

Ana rolled her wagon down the ramp to reach the playground. There, she and her sister played on the seesaw. Which set of simple machines has Ana used?

- A** Lever, pulley, and wedge
- B** Pulley, inclined plane, and screw
- C** Wedge, wheel and axle, and screw
- \* D** Wheel and axle, inclined plane, and lever

**16**

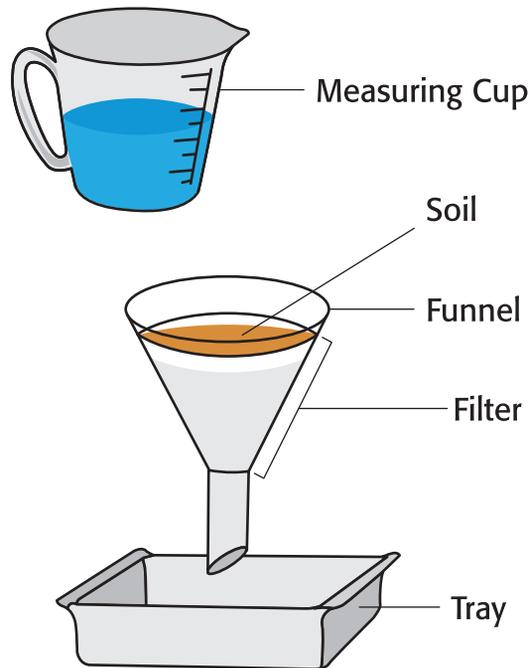
Jennifer has collected rocks while hiking. As she attempts to classify her rocks, which will she put in the pile of sedimentary rocks?

- A** Black-and-gray crystalline rocks
- B** Shiny rocks with smooth textures
- \* C** Rocks with visible pieces of shells in them
- D** Rocks with small interlocking crystals in them

## SCIENCE OPEN-RESPONSE ITEM A

A

Students were investigating water and soil. They poured all of the water from a measuring cup through a funnel filled with soil.



The students gathered the following data.

Object Measured	Mass <b>Before</b> Pouring	Mass <b>After</b> Pouring
Measuring Cup	300 grams	100 grams
Funnel and Soil	600 grams	700 grams
Tray	100 grams	200 grams

1. Describe where all of the water could be found at the end of this investigation.
2. Use data from the data table to explain how you got your answer to part 1.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

**RUBRIC FOR SCIENCE OPEN-RESPONSE ITEM A**

<b>SCORE</b>	<b>DESCRIPTION</b>
4	Response shows a <i>complete understanding</i> of the problem’s essential scientific concepts. The student presents all procedures correctly and responds to all parts of the task.
3	Response shows a <i>nearly complete understanding</i> of the problem’s essential scientific concepts. The student presents nearly all procedures correctly and responds to all parts of the task. The response may contain minor errors.
2	Response shows a <i>limited understanding</i> of the problem’s essential scientific concepts. The student presents some procedures correctly and responds correctly to most parts of the task. The response may contain a major error.
1	Response shows a <i>minimum understanding</i> of the problem’s essential scientific concepts. The student presents some correct work that contributes to a correct solution. The response contains incomplete procedures and major errors.
0	Response shows <i>insufficient understanding</i> of the problem’s essential scientific concepts. The procedures, if any, contain major errors. There may be no explanation of the solution, or the reader may not be able to understand the explanation. The reader may not be able to understand how and why decisions were made.

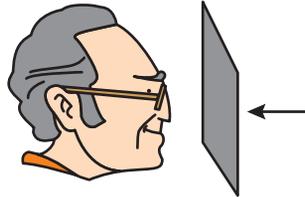
**Solution and Scoring**

<b>Part</b>	<b>Points</b>
<b>1</b>	<b>2 Points Possible</b> 1 point: Some of the water ended up in the tray. 1 point: Some of the water remained in (was absorbed by) the soil, funnel or filter.
<b>2</b>	<b>2 Points Possible</b> 1 point: Identifies correctly the increase/decrease in mass as evidence. 1 point: Indicates that both the funnel and tray have changed in mass.

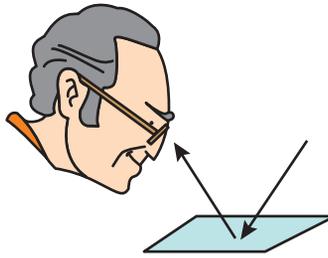
SCIENCE OPEN-RESPONSE ITEM B

B

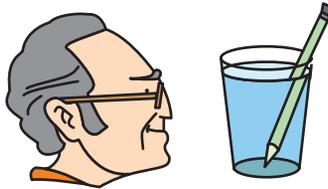
The diagram below shows three ways that light can interact with matter.



1



2



3

1. Name one interaction and describe what happens to the light for the interaction.
2. Name one of the other interactions and describe what happens to the light for the interaction.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

**PART II Released Science Items—2010 Augmented Benchmark Grade 5**

**RUBRIC FOR SCIENCE OPEN-RESPONSE ITEM B**

<b>SCORE</b>	<b>DESCRIPTION</b>
4	Response shows a <i>complete understanding</i> of the problem's essential scientific concepts. The student presents all procedures correctly and responds to all parts of the task.
3	Response shows a <i>nearly complete understanding</i> of the problem's essential scientific concepts. The student presents nearly all procedures correctly and responds to all parts of the task. The response may contain minor errors.
2	Response shows a <i>limited understanding</i> of the problem's essential scientific concepts. The student presents some procedures correctly and responds correctly to most parts of the task. The response may contain a major error.
1	Response shows a <i>minimum understanding</i> of the problem's essential scientific concepts. The student presents some correct work that contributes to a correct solution. The response contains incomplete procedures and major errors.
0	Response shows <i>insufficient understanding</i> of the problem's essential scientific concepts. The procedures, if any, contain major errors. There may be no explanation of the solution, or the reader may not be able to understand the explanation. The reader may not be able to understand how and why decisions were made.

**Solution and Scoring**

<b>Part</b>	<b>Points</b>
<b>1</b>	<p><b>2 Points Possible</b></p> <p>1 point for an accurately identified interaction.</p> <p>1 point for the description of what happens to the light in that interaction.</p>
<b>2</b>	<p><b>2 Points Possible</b></p> <p>1 point for a second, accurately identified interaction.</p> <p>1 point for the description of what happens to the light in that interaction.</p>

**PART III Item Correlation with Curriculum Frameworks–  
2010 Augmented Benchmark Grade 5**

**The Arkansas Mathematics Curriculum Framework\***

Strands	Content Standards	Student Learning Expectations
Number and Operations	2. Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.	4. Apply rules (conventions) for <i>order of operations</i> to <i>whole numbers</i> where the left to right computations are modified only by the use of parentheses
	3. Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.	4. Develop and use <i>strategies</i> to <i>estimate</i> the results of <i>whole number</i> computations and to judge the reasonableness of such results
Algebra	5. Algebraic Representations: Students shall represent and analyze mathematical situations and structures using algebraic symbols.	1. Model and solve simple <i>equations</i> by informal methods using manipulatives and appropriate <i>technology</i>
	6. Algebraic Models: Students shall develop and apply mathematical models to represent and understand quantitative relationships.	1. Draw conclusions and make predictions, with and without appropriate <i>technology</i> , from models, tables and <i>line graphs</i>
Geometry	8. Geometric Properties: Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships.	1. Identify and model regular and <i>irregular polygons</i> including decagon 3. Model and identify circle, <i>radius</i> , <i>diameter</i> , <i>center</i> , <i>circumference</i> and <i>chord</i> 4. Model and identify the properties of <i>congruent</i> figures
Measurement	12. Physical Attributes: Students shall use attributes and tools of measurement to describe and compare mathematical and real-world objects.	4. Understand when to use linear units to describe <i>perimeter</i> , square units to describe <i>area</i> or <i>surface area</i> , and cubic units to describe <i>volume</i> , in real world situations
	13. Systems of Measurement: Students shall identify and use units, systems and processes of measurement.	3. Draw and measure distance to the nearest cm and 1/4 inch accurately 4. Develop and use <i>strategies</i> to solve real world problems involving <i>perimeter</i> and <i>area</i> of rectangles
Data Analysis and Probability	16. Inferences and Predictions: Students shall develop and evaluate inferences and predictions that are based on data.	1. Make predictions and justify conclusions based on data
	17. Probability: Students shall understand and apply basic concepts of probability.	2. List and explain all possible <i>outcomes</i> in a given situation

\*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

**PART III Item Correlation with Curriculum Frameworks–  
2010 Augmented Benchmark Grade 5**

**Released Items for Mathematics\***

Item	Strand	Content Standard	Student Learning Expectation
1	M	13	3
2	D	17	2
3	G	8	4
4	D	16	1
5	M	12	4
6	G	8	3
7	N	3	4
8	A	5	1
9	N	2	4
10	A	6	1
A	G	8	1
B	M	13	4

\*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

**Non-Released Items for Mathematics\***

Item	Strand	Content Standard	Student Learning Expectation
1	G	11	1
2	G	8	2
3	G	10	1
4	M	13	1
5	G	9	1
6	A	7	1
7	N	3	5
8	A	4	1
9	M	12	2
10	N	2	1
11	N	1	6
12	A	5	2
13	A	5	3
14	D	15	2
15	D	15	1
A	D	14	3
B	A	4	2
C	N	1	5

**PART III Item Correlation with Curriculum Frameworks–  
2010 Augmented Benchmark Grade 5**

**The Arkansas English Language Arts Framework–Reading Strand\***

Content Standards	Student Learning Expectations
9. Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.	1. Use previewing, activating prior knowledge, predicting content of text, formulating questions, and establishing purposes for reading 6. Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text 7. Make inferences supported by a character’s thoughts, words and actions, or the narrator’s description 11. Use such comprehension strategies as establishing purpose, inferring, and summarizing, to determine essential information 12. Identify main ideas and supporting evidence in short reading passages 13. Use the <i>text features</i> to locate and recall information, with emphasis on fonts/effects and illustrations/photographs 14. Use knowledge of text structure(s) to enhance understanding with emphasis on sequence and description 16. Scan materials to locate specific information 19. Summarize information including main idea and significant supporting details
10. Variety of texts: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.	4. Read a variety of informational text, including textbooks, newspapers, magazines, and other instructional materials 6. Skim materials to locate specific information 8. Locate information to support opinions, predictions, and conclusions
11. Vocabulary, Word Study, and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.	5. Use context to determine meaning of multiple meaning words 10. Use context clues to select appropriate dictionary definition

\*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

**Released Items for Reading\***

Item	Content Standard	Student Learning Expectation	Passage Type
1	9	11	Content
2	9	11	Content
3	11	5	Content
4	10	8	Content
5	9	11	Content
6	9	7	Content
7	9	13	Content
8	9	1	Content
9	9	12	Practical
10	10	6	Practical
11	11	10	Practical
12	9	14	Practical
13	9	6	Practical
14	9	16	Practical
15	9	11	Practical
16	10	4	Practical
A	9	12	Content
B	9	19	Practical

**Non-Released Items for Reading\***

Item	Content Standard	Student Learning Expectation	Passage Type
1	9	11	Literary
2	10	5	Literary
3	11	10	Literary
4	9	7	Literary
5	9	12	Literary
6	9	20	Literary
7	9	7	Literary
8	9	3	Literary
A	9	20	Literary

\*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

**PART III Item Correlation with Curriculum Frameworks–  
2010 Augmented Benchmark Grade 5**

**The Arkansas English Language Arts Framework–Writing Strand\***

Content Standards	Student Learning Expectations
4. Purpose: Students shall employ a wide range of strategies as they write, using the writing process appropriately.	7. Create an effective lead sentence for each paragraph by using such features as questions or exclamations
6. Conventions: Students shall apply knowledge of Standard English conventions in written work.	7. Apply conventions of grammar with emphasis on the following: Subject-verb agreement Parts of speech Parts of a sentence Conjugation in simple verb tenses Possessive pronouns

\*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

**Released Items for Writing\***

Item	Content Standard	Student Learning Expectation
17	6	7
18	4	7

**Non-Released Items for Writing\***

Item	Content Standard	Student Learning Expectation
9	6	3
10	4	6

\*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

**PART III Item Correlation with Curriculum Frameworks–  
2010 Augmented Benchmark Grade 5**

**The Arkansas Science Curriculum Framework\***

Strands	Content Standards	Student Learning Expectations
Nature of Science	<p>1. Characteristics and Processes of Science Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.</p>	<p>4. Interpret scientific data using</p> <ul style="list-style-type: none"> <li>• data tables/charts</li> <li>• bar graphs</li> <li>• circle graphs</li> <li>• line graphs</li> <li>• stem and leaf plots</li> <li>• Venn diagrams</li> </ul> <p>6. Develop and implement strategies for long-term, accurate data collection</p> <p>8. Explain the role of observation in the development of a theory</p> <p>9. Define and give examples of hypotheses</p>
Life Science	<p>2. Living Systems: Characteristics, Structure, and Function Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.</p>	<p>11. Investigate careers, scientists, and historical breakthroughs related to <i>cells</i></p>
	<p>4. Populations and Ecosystems Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.</p>	<p>1. Distinguish among and model</p> <ul style="list-style-type: none"> <li>• <i>organisms</i></li> <li>• <i>populations</i></li> <li>• <i>communities</i></li> <li>• <i>ecosystems</i></li> <li>• <i>biosphere</i></li> </ul> <p>8. Describe and diagram the <i>carbon dioxide-oxygen cycle</i> in <i>ecosystems</i></p> <p>12. Conduct investigations in which plants are encouraged to thrive</p> <p>18. Investigate careers, scientists, and historical breakthroughs related to <i>populations</i> and <i>ecosystems</i></p>
Physical Science	<p>5. Matter: Properties and Changes Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.</p>	<p>6. Explain how heat influences the states of matter of a substance:</p> <ul style="list-style-type: none"> <li>• solid</li> <li>• liquid</li> <li>• gas</li> <li>• plasma</li> </ul> <p>8. Model the motion and position of <i>molecules</i> in solids, liquids, and gases in terms of <i>kinetic energy</i></p>
	<p>6. Motion and Forces Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.</p>	<p>1. Classify <i>simple machines</i></p>
	<p>7. Energy and Transfer of Energy Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.</p>	<p>1. Summarize how light can interact with <i>matter</i> through <i>absorption</i>, <i>refraction</i>, and <i>reflection</i></p> <p>4. Design and conduct investigations of transparent, <i>translucent</i>, and <i>opaque</i> as applied to light</p>

\*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

**PART III Item Correlation with Curriculum Frameworks–  
2010 Augmented Benchmark Grade 5**

**The Arkansas Science Curriculum Framework\*(continued)**

<b>Strands</b>	<b>Content Standards</b>	<b>Student Learning Expectations</b>
Earth and Space Science	8. Earth Systems Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.	9. Classify the three basic types of rocks
	9. Earth's History: Changes in Earth and Sky Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.	1. Explain and give examples of how physical <i>evidence</i> from <i>fossils</i> supports the <i>theory</i> that Earth has changed over time 3. Infer the nature of ancient <i>environments</i> based on <i>fossil record evidence</i>
	10. Objects in the Universe Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.	4. Distinguish between <i>mass</i> and <i>weight</i>

\*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

**Released Items for Science\***

<b>Item</b>	<b>Strand</b>	<b>Content Standard</b>	<b>Student Learning Expectation</b>
1	ES	9	3
2	LS	2	11
3	ES	10	4
4	LS	4	1
5	NS	1	6
6	LS	4	12
7	PS	5	6
8	ES	9	1
9	NS	1	9
10	PS	7	4
11	PS	5	8
12	LS	4	18
13	NS	1	8
14	LS	4	8
15	PS	6	1
16	ES	8	9
A	NS	1	4
B	PS	7	1

**Non-Released Items for Science\***

<b>Item</b>	<b>Strand</b>	<b>Content Standard</b>	<b>Student Learning Expectation</b>
1	PS	5	6
2	PS	7	1
3	LS	2	5
4	ES	8	2
5	LS	2	8
6	PS	5	1
7	ES	8	7
8	ES	10	1
9	ES	8	4
10	PS	5	9
11	LS	4	1
12	ES	9	1
13	LS	4	5
14	PS	6	3
15	ES	10	3
16	PS	6	5
17	ES	8	4
A	LS	2	4
B	ES	10	2
C	LS	4	3

\*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.



# ACTAAP

**Arkansas Comprehensive Testing, Assessment, and Accountability Program**