

**Oklahoma School Testing Program**  
**Oklahoma Core Curriculum Tests (OCCT)**  
**Grade 8 Mathematics, Reading, and Science**

**PARENT, STUDENT, AND TEACHER GUIDE**



2012–2013

---

Oklahoma State Department of Education

2704515-W

**Testing Dates  
2013 School Year**

**Writing Test**  
April 3–4, 2013

**Paper/Pencil Multiple-Choice Tests**  
April 10–24, 2013

**Online Math and Reading Testing Window**  
April 10–May 3, 2013

**Acknowledgement**

Front cover image copyright © Getty Images/PhotoDisc, Inc. Collection.



Developed and published under contract with the Oklahoma State Department of Education by CTB/McGraw-Hill LLC, 20 Ryan Ranch Road, Monterey, California 93940-5703. Copyright © 2013 by the Oklahoma State Department of Education. All rights reserved. Only State of Oklahoma educators and citizens may copy, download and/or print the document, located online at <http://www.ok.gov/sde/test-support-teachers-and-administrators>. Any other use or reproduction of this document, in whole or in part, requires written permission of the Oklahoma State Department of Education.



**STATE SUPERINTENDENT OF PUBLIC INSTRUCTION  
STATE OF OKLAHOMA**

Dear Parent/Guardian and Student:

Soon students will be participating in the Oklahoma Core Curriculum Tests. These tests are designed to measure knowledge in Mathematics, Reading, and Science. Students will also participate in a U.S. History field test.

Parents/guardians will receive a report on their child's performance on the tests. This report will indicate their child's areas of strength as well as areas needing improvement.

This guide provides a list of test-taking tips and objectives covered in the test. Parents/guardians are encouraged to discuss these materials with their child to help prepare them for the tests. During the test week, it is very important for each child to get plenty of sleep, eat a good breakfast, and arrive at school on time.

If you have any questions about the Oklahoma Core Curriculum Tests, please contact your local school or the State Department of Education.

Sincerely,  
Your State Superintendent of Public Instruction

**OKLAHOMA STATE DEPARTMENT OF EDUCATION  
2500 NORTH LINCOLN BOULEVARD, OKLAHOMA CITY, OK 73105-4599  
(405) 521-3301, FAX: (405) 521-6205  
<http://sde.state.ok.us>**



**TABLE OF CONTENTS**

**THE OKLAHOMA CORE CURRICULUM TESTS .....1**

**TEST-TAKING TIPS .....2**

**THE MULTIPLE-CHOICE TESTS .....3**

*Oklahoma C<sup>3</sup> Standards* .....3

        Mathematics .....3

        Reading .....8

        Science .....12

**MULTIPLE-CHOICE PRACTICE TESTS .....17**

    Mathematics Practice Test .....18

    Reading Practice Test .....26

    Science Practice Test .....36

**PREPARING FOR TESTING TO THE COMMON CORE STATE STANDARDS .....48**

**ANSWER KEYS .....54**

**ANSWER SHEET ..... INSIDE BACK COVER**



## The Oklahoma Core Curriculum Tests

The Governor, state legislators, and other Oklahoma elected officials have committed themselves to ensuring that all Oklahoma students receive the opportunity to learn the skills required to succeed in school and in the workplace. To achieve this goal, schools must prepare every Oklahoma student for colleges, universities, and jobs that require new and different skills.

Under the direction of the Legislature, Oklahoma teachers, parents, and community leaders met to agree upon the skills that students are expected to master by the end of each grade. The results of their efforts, *Oklahoma C<sup>3</sup> Standards*, provide the basis for Oklahoma's core curriculum.

In addition, the Legislature established the criterion-referenced test component of the Oklahoma School Testing Program to measure students' progress in mastering the *Oklahoma C<sup>3</sup>* standards and objectives. Tests have been developed by national test publishers that specifically measure the *Oklahoma C<sup>3</sup>* standards and objectives at Grade 8. Teachers from throughout Oklahoma have been involved in the review, revision, and approval of the questions that are included in the tests.

The Oklahoma Core Curriculum Tests (OCCT), a criterion-referenced testing program, compares a student's performance with performance standards established by the State Board of Education. These standards, referred to as the Oklahoma Performance Index, or OPI, identify specific levels of performance required on each test. These standards are based upon reviews from groups of Oklahoma educators and citizens who evaluated the tests and made recommendations.

In the content areas of Mathematics and Reading, a student's test performance is reported according to one of four performance levels: Advanced, Proficient, Limited Knowledge, and Unsatisfactory. In the content area of Science, the four performance levels include: Advanced, Satisfactory, Limited Knowledge, and Unsatisfactory.

This year, students in Grade 8 will take online Multiple-Choice tests in Mathematics and Reading and paper/pencil Multiple-Choice tests in Science. Students will also participate in a U.S. History field test.

This guide provides an opportunity for parents, students, and teachers to become familiar with how these skills in these subject areas will be assessed. It presents general test-taking tips, lists the *Oklahoma C<sup>3</sup>* standards and objectives that are eligible for assessment in a statewide testing program, gives a blueprint for the tests, and provides practice test questions. Finally, information regarding preparing for testing to the Common Core State Standards is presented.

## Test-Taking Tips

The following tips provide effective strategies for taking the Oklahoma Core Curriculum Tests. Test-taking skills cannot replace studying based on the *Oklahoma C<sup>3</sup>* standards and objectives, which serve as the foundation for the tests. **To access a practice test, go to [www.ctb.com/ok](http://www.ctb.com/ok) and click on the Experience Online Testing (Student) button.**

### General Test-Taking Tips:

- DO...** read this guide carefully and complete the practice tests.
- DO...** make sure you understand all test directions. If you are uncertain about any of the directions, raise your hand to ask questions before testing has started.
- DON'T...** wait until the last minute to study for the test. These tests cover a lot of material, and you cannot learn it all in a short amount of time.
- DON'T...** worry about the tests. Students who are calm and sure of themselves do better on tests.

### Tips for the Multiple-Choice Tests:

- DO...** read each question and every answer choice carefully. Choose the best answer for each question.
- DO...** check your work if you finish your test early. Use the extra time to answer any questions that you skipped.
- DO...** read the selections on the Reading test carefully.
- DO...** underline, mark, make notes, or work problems in your paper/pencil test book for Science if needed. Mark all your answers on the answer sheet. Make sure the question number in the test book matches the test number on the answer sheet.
- DO...** be sure that you have seen all four answer choices before making your selection. On an online test, this may require you to use the scroll bar on the right side of the test question.
- DO...** remember that if you cannot finish the test within the time allotted, you will be given additional time to complete the test.
- DON'T...** spend too much time on any one question. If a question takes too long to answer, skip it and answer the other questions. You can return to any skipped questions after you have finished all other questions.
- DON'T...** attempt to leave the online testing system by closing the window by clicking on the X. Doing so will result in termination of the test.

## The Multiple-Choice Tests

Each year, students in Grade 8 take Multiple-Choice tests in Mathematics, Reading, and Science. Students will also participate in a U.S. History field test.

Each Multiple-Choice subject test is meant to be administered in a separate session. Students should have enough time to complete all sessions. Students may be given additional time if needed, but additional time will be given as an extension of the same testing period, not at a different time.

Students who finish early need to make sure their work is complete and are encouraged to check and verify their answers prior to closing their test books. Students will not be allowed to reopen their test books once they have been closed for a given test session.

The following sections

- list the *Oklahoma C<sup>3</sup> Standards* that are eligible for Multiple-Choice testing in each subject area.
- reproduce the student directions.
- present practice test questions for each subject.
- provide information about preparing for testing to the Common Core State Standards.

## *Oklahoma C<sup>3</sup> Standards*

The *Oklahoma C<sup>3</sup> Standards* that are eligible for testing in the Grade 8 Multiple-Choice tests for each subject area are presented below. They represent the portion of the Oklahoma core curriculum in these subject areas that is assessed on the Oklahoma Core Curriculum Tests. The skills are grouped into standards with specific objectives listed under each one. Student performance on the Multiple-Choice tests is reported at the standard and objective levels in all subject areas. In Mathematics, student performance is reported by the content standards. In Science, student performance is reported by the process standards.

Please note that not all *Oklahoma C<sup>3</sup>* standards and objectives are appropriate for the statewide assessment. This guide includes only the *Oklahoma C<sup>3</sup>* standards and objectives that are assessed by the OCCT and are based on the 2011 revision for Science; the 2009 revision for Mathematics; and the 2010 revision for Reading.

### ***Mathematics (Process)—Grade 8***

#### **Process Standard 1: Problem Solving**

1. Develop and test strategies to solve practical, everyday problems which may have single or multiple answers.
2. Use technology to generate and analyze data to solve problems.
3. Formulate problems from situations within and outside of mathematics and generalize solutions and strategies to new problem situations.
4. Evaluate results to determine their reasonableness.

5. Apply a variety of strategies (e.g., restate the problem, look for a pattern, diagrams, solve a simpler problem, work backwards, trial and error) to solve problems, with emphasis on multistep and non-routine problems.
6. Use oral, written, concrete, pictorial, graphical, and/or algebraic methods to model mathematical situations.

**Process Standard 2: Communication**

1. Discuss, interpret, translate (from one to another) and evaluate mathematical ideas (e.g., oral, written, pictorial, concrete, graphical, algebraic).
2. Reflect on and justify reasoning in mathematical problem solving (e.g., convince, demonstrate, formulate).
3. Select and use appropriate terminology when discussing mathematical concepts and ideas.

**Process Standard 3: Reasoning**

1. Identify and extend patterns and use experiences and observations to make suppositions.
2. Use counter examples to disprove suppositions (e.g., all squares are rectangles, but are all rectangles squares?).
3. Develop and evaluate mathematical arguments (e.g., agree or disagree with the reasoning of other classmates and explain why).
4. Select and use various types of reasoning (e.g., recursive [loops], inductive [specific to general], deductive [general to specific], spatial, and proportional).

**Process Standard 4: Connections**

1. Apply mathematical strategies to solve problems that arise from other disciplines and the real-world.
2. Connect one area or idea of mathematics to another (e.g., relate equivalent number representations to each other, relate experiences with geometric shapes to understanding ratio and proportion).

**Process Standard 5: Representation**

1. Use a variety of representations to organize and record data (e.g., use concrete, pictorial, and symbolic representations).
2. Use representations to promote the communication of mathematical ideas (e.g., number lines, rectangular coordinate systems, scales to illustrate the balance of equations).
3. Develop a variety of mathematical representations that can be used flexibly and appropriately (e.g., base-10 blocks to represent fractions and decimals, appropriate graphs to represent data).
4. Use a variety of representations to model and solve physical, social, and mathematical problems (e.g., geometric objects, pictures, charts, tables, graphs).

## **Mathematics (Content)—Grade 8**

### **Standard 1: Algebraic Reasoning: Patterns and Relationships—The student will graph and solve linear equations and inequalities in problem solving situations.**

1. Equations
  - a. Model, write, and solve multi-step linear equations with one variable using a variety of methods to solve application problems.
  - b. Graph and interpret the solution to one- and two-step linear equations on a number line with one variable and on a coordinate plane with two variables.
  - c. Predict the effect on the graph of a linear equation when the slope or y-intercept changes (e.g., make predictions from graphs, identify the slope or y-intercept in the equation  $y = mx + b$  and relate to a graph).
  - d. Apply appropriate formulas to solve problems (e.g.,  $d = rt$ ,  $I = prt$ ).
2. Inequalities: Model, write, solve, and graph one- and two-step linear inequalities with one variable.

### **Standard 2: Number Sense and Operation—The student will use numbers and number relationships to solve a variety of problems.**

1. Number Sense: Represent and interpret large numbers and numbers less than one in exponential and scientific notation.
2. Number Operations
  - a. Use the rules of exponents, including integer exponents, to solve problems (e.g.,  $7^2 \cdot 7^3 = 7^5$ ,  $3^{-10} \cdot 3^8 = 3^{-2}$ ).
  - b. Solve problems using scientific notation.
  - c. Simplify numerical expressions with rational numbers, exponents, and parentheses using order of operations.

### **Standard 3: Geometry—The student will use geometric properties to solve problems in a variety of contexts.**

1. Construct models, sketch (from different perspectives), and classify solid figures such as rectangular solids, prisms, cones, cylinders, pyramids, and combined forms.
2. Develop the Pythagorean Theorem and apply the formula to find the length of line segments, the shortest distance between two points on a graph, and the length of an unknown side of a right triangle.

### **Standard 4: Measurement—The student will use measurement to solve problems in a variety of contexts.**

1. Develop and apply formulas to find the surface area and volume of rectangular prisms, triangular prisms, and cylinders (in terms of pi).
2. Apply knowledge of ratio and proportion to solve relationships between similar geometric figures.
3. Find the area of a “region of a region” for simple composite figures and the area of cross sections of regular geometric solids (e.g., area of a rectangular picture frame).

**Standard 5: Data Analysis—The student will use data analysis and statistics to interpret data in a variety of contexts.**

1. Data Analysis: Select, analyze and apply data displays in appropriate formats to draw conclusions and solve problems.
3. Central Tendency: Find the measures of central tendency (mean, median, mode, and range) of a set of data and understand why a specific measure provides the most useful information in a given context.

**Oklahoma School Testing Program  
Oklahoma Core Curriculum Tests  
Grade 8 Mathematics  
Test Blueprint  
School Year 2012–2013**

The Test Blueprint reflects the degree to which each *Oklahoma C<sup>3</sup>* standard and objective is represented on the test. The overall distribution of operational items in a test form is intended to look as follows:

<i>Oklahoma C<sup>3</sup></i> Standards and Objectives	Ideal Number of Items*	Ideal Percentage of Items**	Reporting Category***
<b>Algebraic Reasoning: Patterns and Relationships</b>	<b>16</b>	<b>32%</b>	<b>16</b>
Equations (1.1)	10–12		10–12
Inequalities (1.2)	4–6		4–6
<b>Number Sense and Operation</b>	<b>11</b>	<b>22%</b>	<b>11</b>
Number Sense (2.1)	3–4		3–4
Number Operations (2.2)	7–8		7–8
<b>Geometry</b>	<b>9</b>	<b>18%</b>	<b>9</b>
Three Dimensional Figures (3.1)	5		5
Pythagorean Theorem (3.2)	4		4
<b>Measurement</b>	<b>7</b>	<b>14%</b>	<b>7</b>
Surface Area and Volume (4.1)	3		5
Ratio and Proportions (4.2)	2		
Composite Figures (4.3)	2		2
<b>Data Analysis</b>	<b>7</b>	<b>14%</b>	<b>7</b>
Data Analysis (5.1)	3		3
Central Tendency (5.3)	4		4
<b>Total Test</b>	<b>50</b>	<b>100%</b>	<b>50</b>

\* A minimum of 4 items is required to report results for an objective, and a minimum of 6 items is required to report a standard. While the actual numbers of items on the test may not match the blueprint exactly, each future test will move toward closer alignment with the ideal blueprint.

\*\* Percents are approximations and may result in a sum other than 100 due to rounding.

\*\*\* Objectives have been grouped for reporting purposes only.

The *Oklahoma C<sup>3</sup> Standards* correspond to the *PASS* standards. In 2014–2015 the Common Core State Standards will be assessed.

## Reading—Grade 8

**Reading/Literature: The student will apply a wide range of strategies to comprehend, interpret, evaluate, appreciate, and respond to a wide variety of texts.**

### **Standard 1: Vocabulary—The student will expand vocabulary through word study, literature, and class discussion.**

Use a knowledge of word parts and word relationships, as well as context clues (the meaning of the text around a word), to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level appropriate words.

1. Words in Context—Verify the meaning of a word in its context, even when its meaning is not directly stated, through the use of definitions, restatement, example, comparison, or contrast.
2. Word Origins—Recognize and analyze the influence of historical events on English word meaning and vocabulary expansion. Example: Identify how the early influences of Spanish explorers in North America impacted American English vocabulary by adding words such as *lasso*, *tortilla*, and *patio* and investigate why these particular words were adopted from the Spanish.
3. Idioms and Comparisons—Analyze idioms and comparisons, such as analogies, metaphors, and similes, to infer the literal and figurative meanings of phrases.
  - a. Idioms: expressions that cannot be understood just by knowing the meanings of the words in the expression, such as *Rush hour traffic moves at a snail’s pace* or as *plain as day*.
  - b. Analogies: comparisons of the similar aspects of two different things.
  - c. Metaphors: implies comparisons, such as, *The cup of hot tea was the best medicine for my cold*.
  - d. Similes: comparisons that use *like* or *as*, such as, *The ice was smooth as glass before the skaters entered the rink*.

### **Standard 3: Comprehension—The student will interact with the words and concepts in the text to construct an appropriate meaning.**

Read and understand grade-level-appropriate material. Describe and connect the essential ideas, arguments, and perspectives of the text by using a knowledge of text structure, organization, and purpose. At Grade 8, in addition to regular classroom reading, read a variety of grade-level-appropriate narrative (story) and expository (informational and technical) texts, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.

1. Literal Understanding
  - a. Apply pre-reading strategies when reading both fiction and nonfiction that is appropriately designed for grade level.
    - Determine the purpose for reading such as to be informed, entertained, persuaded, or to understand.
    - Preview the text and use prior knowledge and experience to make connections to text.
  - b. Show understanding by asking questions and supporting answers with literal information from text.

2. Inferences and Interpreting
  - a. Make inferences and draw conclusions supported by text evidence and student experiences.
  - b. Connect, compare, and contrast ideas, themes, and issues across texts.
3. Summary and Generalization
  - a. Determine the main (or major) idea and how those ideas are supported with specific details.
  - b. Paraphrase and summarize text to recall, inform, or organize ideas.
4. Analysis and Evaluation
  - a. Distinguish between stated fact, reasoned judgment, and opinion in various texts.
  - b. Use text's structure or progression of ideas, such as cause and effect or chronology (sequential order).
  - c. Compare/contrast to determine similarities and differences in treatment, scope, or organization.
  - d. Problem/solution—offer observations, make connections, react, speculate, interpret, and raise questions in response to text.
  - e. Analyze character traits, conflicts, motivations, points of view, and changes that occur within the story.
  - f. Analyze the structural elements of the plot, subplot, and climax and explain the way in which conflicts are or are not resolved.

**Standard 4: Literature—The student will read, construct meaning, and respond to a wide variety of literary forms.**

Read and respond to grade-level-appropriate historically or culturally significant works of literature that reflect and enhance a study of history and social science. Clarify the ideas and connect them to other literary works.

1. Literary Genres—The student will demonstrate a knowledge of and an appreciation for various forms of literature.
  - a. Analyze the characteristics of genres, including short story, novel, drama, lyric poetry, nonfiction, historical fiction, and informational texts.
  - b. Identify and distinguish characteristics of subgenres, including autobiography, biography, fable, folk tale, mystery, myth, limericks, tall tales, and plays.
2. Literary Elements—Demonstrate knowledge of literary elements and techniques and how they affect the development of a literary work.
  - a. Analyze and explain elements of fiction including plot, conflict, character, mood, setting, theme, point of view, and author's purpose.
  - b. Identify and explain various points of view and how they affect a story's interpretation.

3. Figurative Language and Sound Devices—Identify figurative language and sound devices and analyze how they affect the development of a literary work.
  - a. Identify and explain the use of figurative language, in literary works to convey mood, images, and meaning, including metaphor, personification, and simile.
  - b. Identify and explain the use of sound devices in literary works to convey mood, images, and meaning, including alliteration, onomatopoeia, and rhyme.
  - c. Identify and interpret literary devices such as flashback, foreshadowing, symbolism, and imagery.

**Standard 5: Research and Information—The student will conduct research and organize information.**

1. Accessing Information—Select the best source for a given purpose, locate information relevant to research questioning.
  - a. Access information from a variety of primary and secondary sources, including electronic text, experts, and prime resources, to locate information relevant to research questioning.
  - b. Use text organizers, including headings, graphic features (e.g., boldface, italic type), and tables of contents, to locate and organize information.
  - c. Use organizational strategies to learn and recall important ideas from texts, such as preview, questions, reread, and record, as an aid to comprehend increasingly difficult content material.
  - d. Note instances of persuasion, propaganda, and faulty reasoning in text.
2. Interpreting Information—Analyze and evaluate information from a variety of sources.
  - a. Record, organize, and display relevant information from multiple sources in systematic ways (e.g., outlines, timelines, graphic organizers, or note cards).
  - b. Analyze and paraphrase or summarize information from a variety of sources into a research paper.
  - c. Identify and credit the sources used to gain information (e.g., bibliographies, footnotes, appendix).
  - d. Identify and apply test-taking strategies by answering different types and levels of questions, such as open-ended, literal, and interpretive as well as test-like questions, such as multiple choice, true/false, and short answer.
  - e. Interpret and use graphic sources of information such as maps, graphs, timelines, or tables to address research questions.

**Oklahoma School Testing Program  
Oklahoma Core Curriculum Tests  
Grade 8 Reading  
Test Blueprint  
School Year 2012–2013**

The test blueprint reflects the degree to which each *Oklahoma C<sup>3</sup>* standard and objective is represented on the test. The overall distribution of operational items in a test form is intended to look as follows:

<i>Oklahoma C<sup>3</sup></i> Standards and Objectives	Ideal Number of Items*	Ideal Percentage of Items**
<b>Vocabulary</b>	<b>6</b>	<b>12%</b>
Words in Context (1.1)	2	
Word Origins (1.2)	2	
Idioms and Comparisons (1.3)	2	
<b>Comprehension/Critical Literacy</b>	<b>21</b>	<b>42%</b>
Literal Understanding (3.1)	4	
Inferences and Interpretation (3.2)	4–6	
Summary and Generalization (3.3)	5–7	
Analysis and Evaluation (3.4)	6–8	
<b>Literature</b>	<b>15</b>	<b>30%</b>
Literary Genre (4.1)	4	
Literary Elements (4.2)	5–7	
Figurative Language/Sound Devices (4.3)	4–6	
<b>Research and Information</b>	<b>8</b>	<b>16%</b>
Accessing Information (5.1)	4	
Interpreting Information (5.2)	4	
<b>Total Test</b>	<b>50</b>	<b>100%</b>

\* A minimum of four items is required to report results for an objective, and a minimum of six items is required to report a standard. While the actual numbers of items on the test may not match the blueprint exactly, each future test will move toward closer alignment with the ideal blueprint.

\*\* Percents are approximations and may result in a sum other than 100 due to rounding.

The *Oklahoma C<sup>3</sup> Standards* correspond to the *PASS* standards. In 2014–2015 the Common Core State Standards will be assessed.

### Scoring Criteria

Scoring criteria focus on the clear understanding of the reading process, effective understanding and application of responding text, and effective understanding and analysis of information and research.

### ***Science (Process and Inquiry)—Grade 8***

**Process Standard 1: Observe and Measure—Observing is the first action taken by the learner to acquire new information about an object, organism, or event. Opportunities for observation are developed through the use of a variety of scientific tools. Measurement allows observations to be quantified. The student will accomplish these objectives to meet this process standard.**

1. Identify qualitative and/or quantitative changes given conditions (e.g., temperature, mass, volume, time, position, length) before, during, and after an event.
2. Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches, computers, handheld data collection devices) to measure objects, organisms, and/or events.
3. Use appropriate International System of Units (SI) (i.e., grams, meters, liters, degrees Celsius, and seconds) and SI prefixes (i.e. milli-, centi-, and kilo-) when measuring objects, organisms and/or events.

**Process Standard 2: Classify—Classifying establishes order. Objects, organisms, and events are classified based on similarities, differences, and interrelationships. The student will accomplish these objectives to meet this process standard.**

1. Using observable properties, place an object, organism, and/or event into a classification system (e.g., dichotomous keys, periodic table, biological hierarchy).
2. Identify properties by which a set of objects, organisms, or events could be ordered.

**Process Standard 3: Experimental design—Understanding experimental design requires that students recognize the components of a valid experiment. The student will accomplish these objectives to meet this process standard.**

2. Evaluate the design of a scientific investigation.
3. Identify variables and/or controls in an experimental setup: independent variable and dependent variable.
6. Recognize potential hazards and practice safety procedures in all science activities.

**Process Standard 4: Interpret and Communicate—Interpreting is the process of recognizing patterns in collected data by making inferences, predictions, or conclusions. Communicating is the process of describing, recording, and reporting experimental procedures and results to others. Communication may be oral, written, or mathematical and includes organizing ideas, using appropriate vocabulary, graphs, other visual representations, and mathematical equations. The student will accomplish these objectives to meet this process standard.**

2. Interpret data tables, line, bar, trend, and/or circle graphs. 📖
3. Evaluate to develop reasonable explanation and/or predictions. 📖

**Process Standard 5: Inquiry—Inquiry can be defined as the skills necessary to carry out the process of scientific thinking. In order for inquiry to occur students must have the opportunity to make observations, pose questions, formulate testable hypotheses, carry out experiments, and make conclusions based on evidence. The student will accomplish these objectives to meet this process standard.**

### *Physical Science—Grade 8*

**Standard 1: Properties and Chemical Changes in Matter—Physical characteristics of objects can be described using shape, size, and mass. The materials from which objects are made can be described using color, texture, and hardness. These properties can be used to distinguish and separate one substance from another. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:**

1. Substances react chemically with other substances to form new substances with different characteristics (e.g., oxidation, combustion, acid/base reactions).
2. Matter has physical properties that can be measured (i.e., mass, volume, temperature, color, texture, density, and hardness) and chemical properties. In chemical reactions and physical changes, matter is conserved (e.g., compare and contrast physical and chemical changes).

**Standard 2: Motions and Forces—The motion of an object can be described by its position, direction of motion, and speed as prescribed by Newton’s Laws of Motion. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:**

1. The motion of an object can be measured. The position of an object, its speed, and direction can be represented on a graph.
2. An object that is not being subjected to a net force will continue to move at a constant velocity (i.e., inertia, balanced and unbalanced forces).

### *Life Science—Grade 8*

**Standard 3: Diversity and Adaptations of Organisms—Millions of species of animals, plants, and microorganisms are alive today. Although different species might look dissimilar, the unity among organisms becomes apparent from an analysis of internal and external structures. Adaptation involves the selection of naturally occurring variations in populations. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:**

1. By classifying organisms, biologists consider details of internal and external structure to infer the degree of relatedness among organisms (i.e., kingdom, phylum, class, order, family, genus, species).
2. Organisms have a great variety of internal and external structures that enable them to survive in a specific habitat (e.g., echolocation, seed dispersal).

### *Earth/Space Science—Grade 8*

**Standard 4: Structures and Forces of the Earth and Solar System—The earth is mostly rock, three-fourths of its surface is covered by a relatively thin layer of water, and the entire planet is surrounded by a relatively thin blanket of air, and is able to support life. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:**

1. Landforms result from constructive forces such as crustal deformation, volcanic eruption, and deposition of sediment and destructive forces such as weathering and erosion.
2. The formation, weathering, sedimentation, and reformation of rock constitute a continuing “rock cycle” in which the total amount of material stays the same as its form changes.
3. Atmospheric and ocean circulation patterns affect weather on a global scale (e.g., El Niño, La Niña, Gulf Stream).

**Standard 5: Earth’s History—The Earth’s history involves periodic changes in the structures of the earth over time. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:**

1. Earth’s history has been punctuated by occasional catastrophic events (e.g., the impact of asteroids or comets, enormous volcanic eruptions, periods of continental glaciation, and the rise and fall of sea level).
2. Fossils provide important evidence of how life and environmental conditions have changed (e.g., Law of Superposition, index fossil, geologic time period, extinction).

**Oklahoma School Testing Program  
Oklahoma Core Curriculum Tests  
Grade 8 Science  
Test Blueprint  
School Year 2012–2013**

The test blueprint reflects the degree to which each *Oklahoma C<sup>3</sup>* standard and objective is represented on the test. The overall distribution of operational items in a test form is intended to look as follows:

<i>Oklahoma C<sup>3</sup></i> Process Standards and Objectives	Ideal Number of Items for Alignment*	Ideal Percentage of Items**
<b>Observe and Measure</b>	<b>8–11</b>	<b>18–24%</b>
Qualitative/quantitative observations/changes (P1.1)	4–6	
SI (metrics) units/appropriate tools (P1.2 and P1.3)	4–5	
<b>Classify</b>	<b>7–9</b>	<b>16–20%</b>
Classification system (P2.1)	4–6	
Properties ordered (P2.2)	3–5	
<b>Experiment</b>	<b>15–17</b>	<b>33–38%</b>
Experimental design (P3.2)	6–7	
Identify variables (P3.3)	6–7	
Hazards/practice safety (P3.6)	3–4	
<b>Interpret and Communicate</b>	<b>12–14</b>	<b>27–31%</b>
Data tables/line/bar/trend and circle graphs (P4.2)	6–7	
Explanations/prediction (P4.3)	6–7	
<b>Total Test</b>	<b>45</b>	<b>100%</b>

\* A minimum of four items is required to report results for an objective, and a minimum of six items is required to report a standard. While the actual numbers of items on the test may not match the blueprint exactly, each future test will move toward closer alignment with the ideal blueprint.

\*\* Percents are approximations and may result in a sum other than 100 due to rounding.

Grade 8 Science *Oklahoma C<sup>3</sup> Standards* correspond to the *PASS* standard revision 2011.

**Oklahoma School Testing Program  
Oklahoma Core Curriculum Tests  
Grade 8 Science (Continued)  
Test Blueprint  
School Year 2012–2013**

<i>Oklahoma C<sup>3</sup></i> Content Standards and Objectives	Ideal Number of Items for Alignment*	Ideal Percentage of Items**
<b>Properties and Chemical Changes in Matter</b>	<b>8</b>	<b>19%</b>
Chemical reactions (1.1)	4	
Conservation of matter (1.2)	4	
<b>Motion and Forces</b>	<b>8</b>	<b>19%</b>
Motion of an object (2.1)	4	
Object subjected to a force (2.2)	4	
<b>Diversity and Adaptations of Organisms</b>	<b>7</b>	<b>17%</b>
Classification (3.1)	3	
Internal and external structures (3.2)	4	
<b>Structures/Forces of the Earth/Solar System</b>	<b>11</b>	<b>27%</b>
Landforms result from constructive and destructive forces (4.1)	4	
Rock cycle (4.2)	3–4	
Global Weather Patterns (4.3)	3–4	
<b>Earth’s History</b>	<b>7–8</b>	<b>18%</b>
Catastrophic events (5.1)	3–4	
Fossil evidence (5.2)	3–4	
<b>Total Test</b>	<b>41–42*</b>	<b>100%**</b>

\* Safety items are not included within the content blueprint.

\*\* The ideal percents are based on the total number of items on a test that are matched to the content standards and do not include items added for safety.

Grade 8 Science *Oklahoma C<sup>3</sup> Standards* correspond to the *PASS* standard revision 2011.

## Multiple-Choice Practice Tests

### Student Directions

1. Multiple-Choice practice tests for each of the subjects assessed are provided in the sections that follow. Each practice test includes 15 questions that are similar to the questions on the test.
2. Mark your answers to the practice test questions on the answer sheet located on the inside back cover of this guide. Carefully tear off the answer sheet where it is perforated.
3. Go to the Mathematics practice test. Read the directions at the top of the page.
4. Look at Sample A in the box. Read it to yourself and think of the answer. Now look at the Mathematics section of the answer sheet on the last page of this manual. The correct answer to Sample A has been indicated.
5. Read Sample B of the Mathematics practice test. Mark your answer to Sample B. Next answer the 15 practice questions. For any of the tests, you may underline, mark, make notes, or work out problems in your test book. Mark only one answer for each question.

**Note for students:**

*The practice tests in the following section are short versions of the type of Multiple-Choice tests you will be taking. Follow the instructions as you take the practice tests on the pages that follow.*

6. After you finish the Mathematics practice test, go on to the Reading practice test, and then the Science practice test. Read the directions to yourself and then answer the practice questions.
7. When you are finished, check your answers against the Answer Keys. The standards and objectives for each question are also shown.

**DIRECTIONS**

Read each question and choose the best answer. Find the question number on the answer sheet that matches the question number on the Mathematics practice test. Mark your answer in the Mathematics section of the answer sheet.

The correct answer for Sample A has been filled in on the answer sheet to show how to mark your answers. Mark your answer for Sample B.

## Sample A

Stacey delivers newspapers. She earns \$15 each week plus \$2 for each customer on her route. Which equation can she use to find  $c$ , the number of customers she needs to earn exactly \$25 each week?

- A  $15c - 2 = 25$
- B  $15c + 2 = 25$
- C  $2c + 15 = 25$
- D  $2c - 15 = 25$

## Sample B

What is the value of  $(5^2)^3$ ?

- A  $5^5$
- B  $5^6$
- C  $5^8$
- D  $5^{23}$

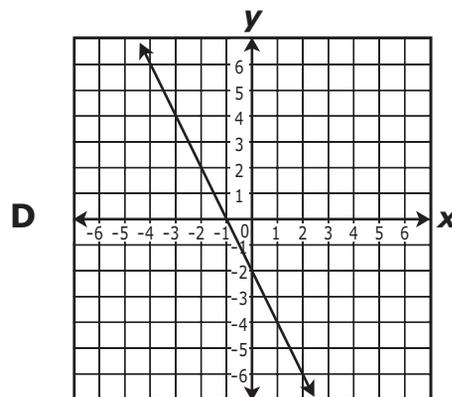
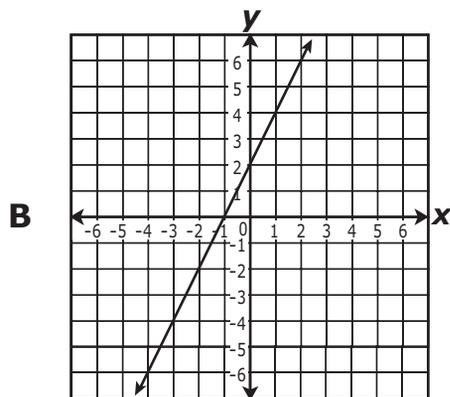
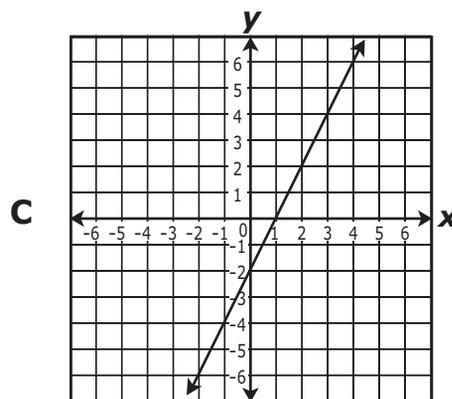
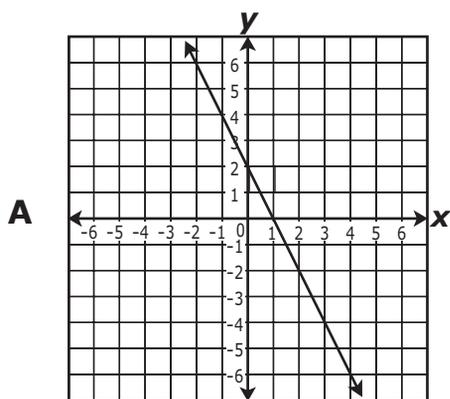


1 What value of  $x$  makes this equation true?

$$4x - 10 = 18$$

- A 2
- B 4
- C 7
- D 8

2 Which graph best represents the equation  $y = -2x - 2$ ?





**3** What is the solution to this inequality?

$$2x + 6 < 4$$

- A  $x < 1$
- B  $x < -1$
- C  $x > 1$
- D  $x > -1$

**4** What is the value of  $3^3 \cdot 3^2$ ?

- A 729
- B 243
- C 81
- D 54

**5** Which expression is a simplified form of the product shown?

$$(3 \times 10^2)(4 \times 10^3)$$

- A  $1.2 \times 10^5$
- B  $7 \times 10^5$
- C  $1.2 \times 10^6$
- D  $7 \times 10^6$



6

If  $\frac{m^9}{m^6} = 8$ , what is the value of  $\frac{m^5}{m^2}$ ?

- A 3
- B 7
- C 8
- D 14

7

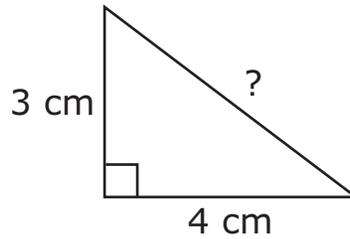
A box is 10 inches long, 3 inches wide, and 4 inches high. What is the surface area, in square inches (sq in.), of the closed box?

$$SA_{\text{rectangular prism}} = 2(lw + lh + wh)$$

- A 120 sq in.
- B 134 sq in.
- C 140 sq in.
- D 164 sq in.



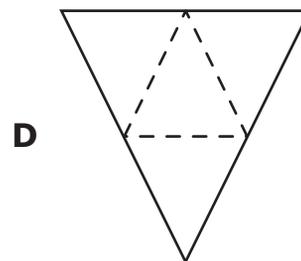
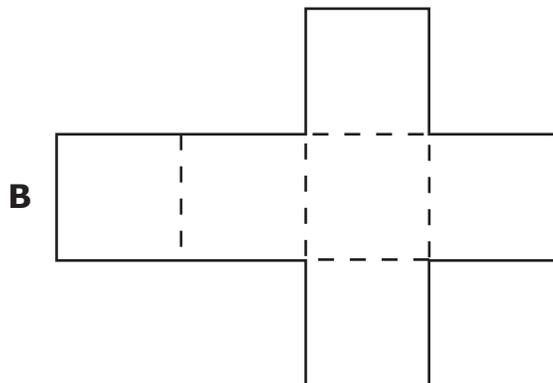
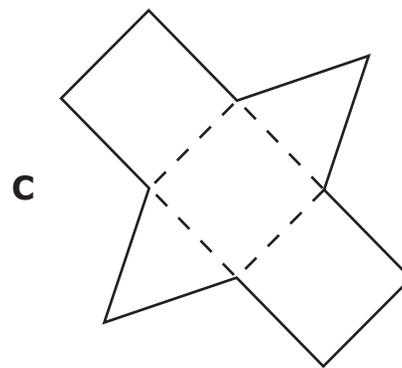
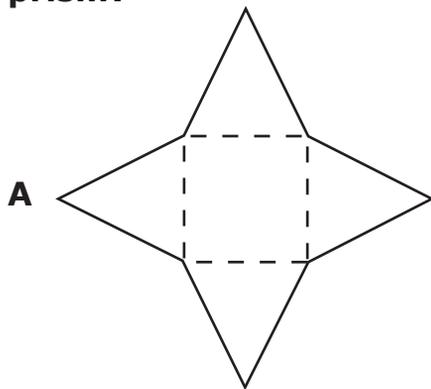
**8** What is the length of the side that is not labeled in this right triangle?



$$a^2 + b^2 = c^2$$

- A 5 cm
- B 6 cm
- C 7 cm
- D 8 cm

**9** Which two-dimensional pattern can be folded to make a triangular prism?





**10** The table shows the masses of four planets.

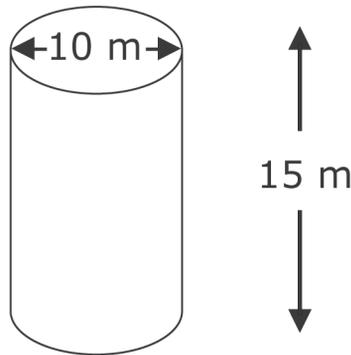
**Planets by Mass**

Planet	Mass (kg)
Jupiter	$1.9 \times 10^{27}$
Mercury	$3.3 \times 10^{23}$
Earth	$5.98 \times 10^{24}$
Neptune	$1.02 \times 10^{26}$

Which lists these planets in order from least to greatest mass?

- A Jupiter, Neptune, Earth, Mercury
- B Mercury, Earth, Neptune, Jupiter
- C Neptune, Jupiter, Mercury, Earth
- D Mercury, Neptune, Earth, Jupiter

**11** The diagram shows the dimensions of a cylinder.

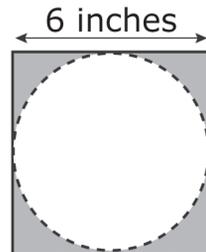


Which of these could be the dimensions, in meters, of a different cylinder that is similar to the one shown in the diagram?

- A diameter = 6 m, height = 8 m
- B diameter = 6 m, height = 9 m
- C diameter = 9 m, height = 12 m
- D diameter = 9 m, height = 15 m



- 12** Juan cut the largest possible circle out of a 6-inch square as shown.



What is the area of the remaining shaded region of the square?

$$A_{\text{square}} = s^2$$

$$A_{\text{circle}} = \pi r^2$$

- A  $(24 - 6\pi)$  square inches
- B  $(24 - 9\pi)$  square inches
- C  $(36 - 6\pi)$  square inches
- D  $(36 - 9\pi)$  square inches

- 13** Jill plans to conduct a survey to study the relationship between the number of hours her classmates watch television and their quiz scores. Which would be an appropriate way for Jill to display the survey data?

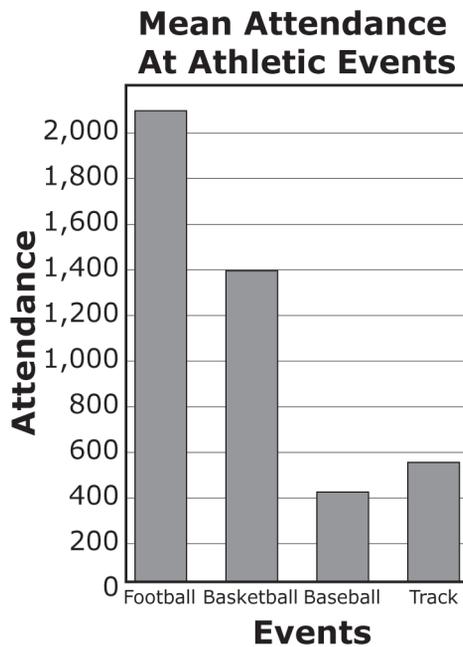
- A stem-and-leaf plot
- B line graph
- C circle graph
- D scatter plot



**14** For which data set is the median greater than the mode?

- A 10, 7, 5, 3, 10
- B 26, 31, 28, 26, 22
- C 9, 0, 1, 9, 3
- D 16, 12, 21, 12, 14

**15** The table shows the mean attendance for four different athletic events during the past year.



How much greater was the mean attendance for the football events than the track events?

- A 14
- B 15
- C 1,550
- D 14,500



**DIRECTIONS**

Read each selection and the questions that follow it. Choose the best answer for each question. Find the question number on the Reading practice test. Mark your answer in the Reading section of the answer sheet.

The correct answer for Sample A has been filled in on the answer sheet to show how to mark your answers. Mark your answer for Sample B.

### Camping Adventure

- 1 A loud crack made Daniel sit straight up in his sleeping bag. The silver-white flash of lightning lit up his father's face. His father was peering out through the tent flap at their remote campsite. In the next instant, torrents of rain as loud as a freight train beat down on the tent.
- 2 "We'll have to move to higher ground," Daniel's father yelled above the din. "The river will rise pretty quickly if it's been raining this hard upstream."
- 3 Quickly Daniel stepped into his shoes and pulled his poncho on over his clothes. He skillfully rolled up his sleeping bag and strapped it to his backpack, while his father did the same with his own. Within minutes, they were fighting against the wind and rain, pulling apart the tent and bundling up the soggy nylon. They knew exactly what to do.



## Sample A

**The author provides enough evidence to show that**

- A** Daniel had chosen the campsite himself.
- B** Daniel had forgotten to pack a flashlight.
- C** Daniel and his father were experienced campers.
- D** Daniel was sorry that he and his father had gone camping.

## Sample B

**flash** (flăsh) *n.* **1.** A sudden burst of light. **2.** A sudden outburst of emotion.  
**3.** A brief thought.  
**4.** A brief news report.

**Which definition fits the meaning of flash as it is used in the first paragraph?**

- A** 1
- B** 2
- C** 3
- D** 4



Read the selection below. Then answer the questions that follow.

## In a Class of Their Own

- 1 Animals are classified into two main categories: vertebrates and invertebrates. Within each category, animals are further classified by their various characteristics. Animal groups that are vertebrates are fish, amphibians, reptiles, birds, mammals, marsupials, primates, rodents, cetaceans (whales and dolphins), and others, such as seals. While these animal groups classify a majority of vertebrates, they do not classify all vertebrates. There are two vertebrates native to Australia that scientists initially had trouble classifying. These two are the duckbilled platypus and the echidna.

### Their Features and Habits

- 2 Platypuses and echidnas are similar in several ways. They both have traits that are purely distinctive of mammals. They are covered with hair, have milk glands to nurse their young, and have large brains. They also have traits that are purely distinctive of reptiles. They lay eggs, and their body temperatures change based upon their surroundings. While platypuses and echidnas share these traits, they differ from one another in other important ways.
- 3 Platypuses live near streams, rivers, and lakes where their unique bodies benefit them. Platypuses have a bill, or beak, that enables them to find crayfish, shrimp, tadpoles, and fish to eat. They also have webbed feet with claws that allow them to swim while in the water and to walk and burrow holes while on land. In addition, platypuses have large, flat tails similar to a beaver's that allow the platypus to store food like camels do in their humps.
- 4 Echidnas live on land near rocks, hollow logs, or the roots of trees where their unique bodies benefit them. Echidnas have an elongated snout that enables them to break up logs and insect mounds in order to find termites to eat. They also have short, stocky limbs with clawed feet, allowing them to dig holes and search for food. In addition, echidnas have spines covering their bodies that protect them from predators, as do porcupines and hedgehogs.

### Caring for Their Young

- 5 The female platypus digs a hole to nest her young. Inside the hole, she places vegetation to secure her eggs. Before she lays her eggs, she will close any access to the nesting hole to protect the eggs from predators and to provide a stable temperature for the eggs to hatch. She will lay one to three eggs and incubate them by curling her warm body around them. Once the eggs hatch, the young platypuses are nursed by their mother's milk for approximately three to four months. After this time, the young platypuses are ready to explore the water and land of the outside world.
- 6 The female echidna develops a simple pouch to carry her young. This pouch is where she will lay a single egg. Within ten days this single egg will hatch; however, the young echidna will stay in its mother's pouch for another three months. After this time, the young echidna will have developed its spikes and leave its mother's pouch, but it will still nurse from its mother's milk for several more months. During this nursing period, the young echidna will begin to eat the termites and ants that will soon become its sole diet.

**Their Discovery and Classification**

- 7 Platypus specimens were first brought to England from Australia in the late 1700s to early 1800s. Scientists were unsure how to classify this new animal, and many believed the animal to be a fraud. It took almost a century before scientists were able to agree that the platypus was indeed a mammal. The feature that settled the debate over classifying the platypus is the fact that platypus young are nursed by their mother's milk, a trait unique to mammals. Because echidna young are also nursed by their mother's milk, they too are classified as mammals.
- 8 However, platypuses and echidnas are a special order of mammal known as "monotremes." Monotremes differ from other mammals in that monotremes lay eggs like birds or reptiles do. They are also found only in Australia and New Guinea. Because of their uniqueness, platypuses and echidnas are in a class all by themselves.

**1** In paragraph 8, what does the word order mean?

- A rule
- B group
- C method
- D purchase

**2** What was the author's purpose in writing the passage?

- A to inform readers about echidnas and platypuses
- B to inform readers that echidnas and platypuses are common
- C to persuade readers to protect echidnas and platypuses
- D to persuade readers that echidnas and platypuses make good pets



**3** What platypus trait is unique to mammals?

- A They have large brains.
- B They have webbed feet.
- C They feed on crayfish and shrimp.
- D They hatch their young from eggs.

**4** Which would be the best resource to find more information about how echidnas raise their young?

- A an encyclopedia entry, "Echidnas and Their Ways"
- B an article, "Echidnas in the Zoo: Care and Feeding"
- C a book, *Linnstaedter's Field Guide to Unique Animals*
- D a tourist guide, *Australia and New Guinea's Famous Animals*

**5** This selection is most likely to be accurate if it is written by

- A a scientist.
- B a zookeeper.
- C an animal trainer.
- D an animal owner.



Read the next two selections below. Then answer the questions that follow.

## Summer Time

- 1 Bobby stared out the window as the bus bounced down the bumpy dirt road. Summer was here and that meant a two-month stay in the country to live with his grandfather, helping him on his farm. Bobby had dreaded this trip all year. Most of his friends were looking forward to going to the pool and playing baseball, but all Bobby had to look forward to was picking squash and sweating in the corn fields. What could he possibly enjoy about a summer in the country?
- 2 He woke up on his first morning in the old creaky house to the sight of a daddy-longleg spider scuttling across his ceiling. He groaned, dragged himself out of bed, and trudged to the back porch. The morning sun peeked over the horizon. A gentle mist was a blanket rising from the little creek and covering the nearby fields. As the sun rose Bobby could hear the crickets chirping and an orchestra of sounds from other insects as they began their rising and falling hum.
- 3 He stood for a while, looking at the rabbits running through the garden, and heard his grandfather limp up behind him and say, “Right pretty sight, isn’t it, son?” Bobby was surprised to hear his grandfather noticing the beauty of the morning. He was a gruff man and lived alone out on the farm. His grandfather took a deep breath, smiled, and said, “Well, we’d better get to it—it’s gonna be a scorcher today.”
- 4 They walked out to the garden with their baskets. The damp earth made black crescents under Bobby’s fingernails as he worked, the damp scent filling his nose. His grandfather was happily whistling a song out of tune and again Bobby paused to wonder at his grandfather’s enthusiasm for something considered a chore by most people.
- 5 Later that afternoon, after a lunch of sandwiches, his grandfather turned to him and asked, “You ever been fishing?” When Bobby shook his head, his grandfather walked off to the shed that stood hunched in the shadow of the big oak tree and pulled out two rods and reels and a tackle box. He motioned at Bobby to follow him and they walked out into the field, down a hill, and to the stream Bobby had noticed earlier. His grandfather sat down on a boulder and showed Bobby how to bait his line. They sat in companionable silence, with Bobby feeling as though he had met his grandfather for the first time. His grandfather obviously loved his life in the country. Bobby knew his friends were sitting next to the pool, laughing and joking, with music blaring and the clear blue chlorinated water shining below them—while his own feet dangled in a creek bed full of brown water with red clay silt. He expected to feel jealous but somehow, with the warm sunlight on his back and the chirping of the birds around him, he didn’t. In fact, he was beginning to think this might be a better place to be after all. And he smiled into the water, relaxing into his new experience of summer.



## Summer

- 1 My locker door slams shut one last time—  
Summer days are here!  
I walk out of the building  
Full of chalkboards, books and pencils,
- 5 Whose halls are empty now except for  
Crumpled up papers drifting down the hall  
In the afternoon breeze  
Like tumbleweeds in the desert.
- I leave behind the cafeteria
- 10 With its scent of overcooked hamburgers  
And bleach  
And the desks in classrooms  
Marching down strict rows like soldiers.
- My feet carry me forward to days at the pool
- 15 With inviting sparkling blue water  
With fresh-squeezed lemonade  
For a parched summer throat.
- Carrying my backpack stuffed with old tests and essays,  
I walk towards home,
- 20 Towards catching fireflies at night  
And playing flag football in the park.
- No more alarms when it's still dark outside,  
No more raising hands to speak,  
No more walking in straight lines,
- 25 No more tucked in shirts and ironed pants.
- Summer means shorts, sandals, sunshine,  
T-shirts, and swim trunks  
Freedom to run, to shout, to play  
Weeks to sleep in, and then to be bored.
- 30 By August, I'll have had enough of swimming,  
Of eating, of games, of movies, of reading.  
By August, I'll be ready for that building again,  
With the smell of fresh erasers and new school supplies—
- But not now.
- 35 Now...it's time for summer.



Use "Summer Time" to answer questions 6 through 10.

**6** In paragraph 3, the idiom "a scorcher" means a very

- A hard day.
- B bad day.
- C fast day.
- D hot day.

**7** In paragraph 2, the metaphor "orchestra of sounds" refers to

- A the creaks of the house.
- B the noises made by insects.
- C the mist covering the fields.
- D the sun rising over the horizon.

**8** In paragraph 5, it is reasonable to conclude that Bobby will

- A catch a big fish.
- B spend next summer at home.
- C enjoy his time in the country.
- D feel jealous of his friends at the pool.



**9** When summarizing the passage, which statement would be least important to include?

- A He woke up to see a big spider on his ceiling.
- B Bobby was not looking forward to his summer.
- C He and his grandfather enjoyed fishing together.
- D Bobby felt he had met his grandfather for the first time.

**10** Which word best describes how Bobby felt at the end of the story?

- A ashamed
- B envious
- C content
- D calm

Use "Summer" to answer questions 11 through 13.

**11** Which idea would best fit in stanza 2?

- A Laughter of times spent with friends
- B To stroll through the fields with no place to go
- C Smell the chlorine from the water in the air all around me
- D To say goodbye to clocks whose hands move in slow motion

**12** In stanza 2, what image is compared to tumbleweeds?

- A empty halls
- B chalkboards
- C locker doors
- D crumpled up papers



**13** This poem is an example of

- A haiku.
- B sonnet.
- C limerick.
- D free verse.

Use "Summer Time" and "Summer" to answer questions 14 and 15.

**14** What is a common idea present in both "Summer" and "Summer Time"?

- A going to the country
- B the importance of family
- C the arrival of a new season
- D swimming at the neighborhood pool

**15** In the story, Bobby is dreading the summer. How does the attitude of the poem's narrator compare to Bobby's attitude?

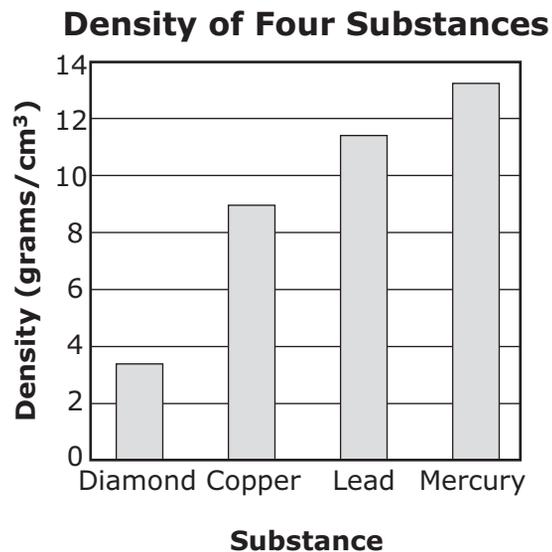
- A The narrator dreads the summer heat.
- B The narrator feels excited about the summer.
- C The narrator and Bobby are anxious about the summer.
- D The narrator and Bobby are looking forward to summer's end.



**DIRECTIONS**

Read each question and choose the best answer. Find the question number on the answer sheet that matches the question number on the Science practice test. Mark your answer in the Science section of the answer sheet.

The correct answer for Sample A has been filled in on the answer sheet to show how to mark your answers. Mark your answer for Sample B.

**Sample A**

**Which substance in the bar graph has the greatest density?**

- A** mercury
- B** copper
- C** diamond
- D** lead



Sample B

All insects have three pairs of legs. Which of these animals is an insect?

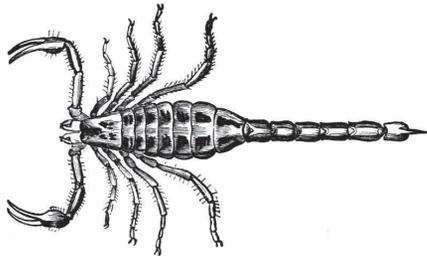
A



B



C

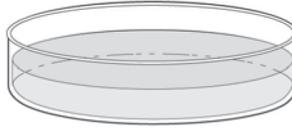


D





1



Which is the **most** appropriate quantity and scientific unit for measuring the liquid in this container?

- A mass and milliseconds.
- B volume and milliliters.
- C time and millimeters.
- D length and milligrams.

2

An experiment is performed to test the effects of different types of fertilizers on the number of tomatoes produced by one type of tomato plant.

What is the independent (experimental) variable in this experiment?

- A amount of light
- B type of fertilizer
- C number of tomatoes
- D type of tomato plant



3

**Some students studied the layers of rock in a hill. They measured the thickness of the rock layers, identified the rock type, and collected fossils from each rock layer.**

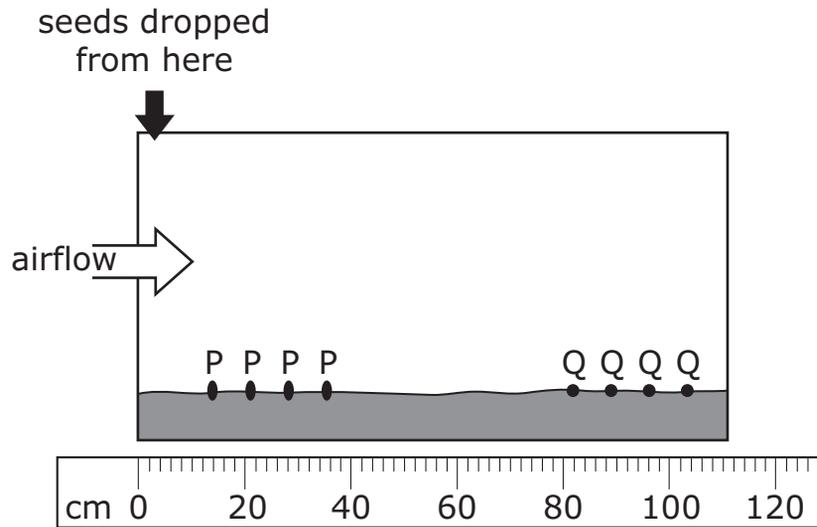
**Which is the best data that students could use to help identify the geologic time period of each rock layer?**

- A** the thickness of each layer
- B** the type of rock of each layer
- C** the type of fossils in each layer
- D** the number of fossils in each layer



4

In an investigation, two seed types are labeled P and Q. The seeds were all dropped from the same location. A fan provided a steady airflow. The final positions of the seeds after they were dropped were measured and a picture was drawn of the results.



Which conclusion is best supported by the investigation?

- A The rapidly moving air moved type P seeds farther because the seeds are better adapted for reproduction.
- B The rapidly moving air moved type Q seeds farther because the seeds are better adapted for reproduction.
- C The rapidly moving air moved type P seeds farther because the seeds are better adapted for wind dispersal.
- D The rapidly moving air moved type Q seeds farther because the seeds are better adapted for wind dispersal.



- 5** Students collect two sedimentary rock samples of sandstone. The students rub the two rocks together and observe that pieces of sand break off from the rocks.

**Sedimentary Rock Activity**

Student	Measurement	Unit	Results
1	mass	gram	total mass of sand and sandstone rocks remains the same
2	volume	gram	total volume of sand and sandstone rocks remains the same
3	mass	gram	total mass of sand and sandstone rocks increases
4	volume	gram	total volume of sand and sandstone rocks increases

**Based on the rock cycle, which student made a correct measurement and best described the results of this activity?**

- A** Student 1
- B** Student 2
- C** Student 3
- D** Student 4
- 6** A student stirs 2 grams of salt into a cup of water. The student then separates the salt from the water by evaporation. In this experiment, the mass of salt separated from the water would be the same as the initial mass because
- A** a chemical change occurred.
- B** salt does not dissolve in water.
- C** salt does not evaporate with water.
- D** some of the salt evaporates with the water.



7

**Chemistry of Four Minerals**

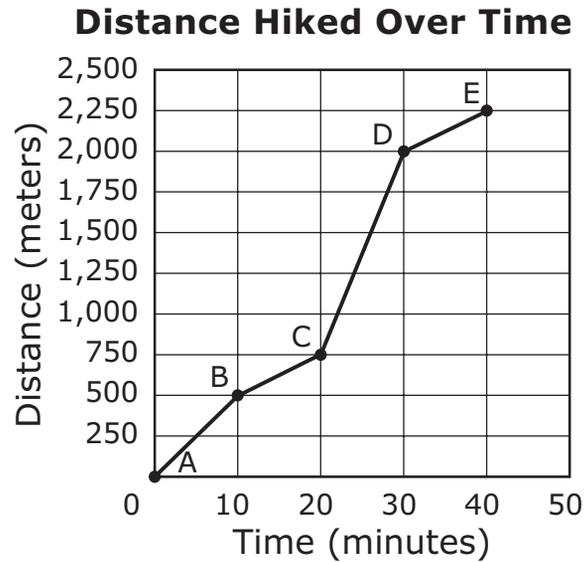
Mineral	Chemical Formula
Quartz	$\text{SiO}_2$
Zircon	$\text{ZrSiO}_2$
Talc	$\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$
Orthoclase	$\text{KAlSi}_3\text{O}_8$

**All these minerals belong to the same group. Which group do these minerals belong to, and which element is contained in each mineral?**

- A** silicates because each mineral contains a combination of silicon and oxygen
- B** silicates because each mineral contains oxygen
- C** oxides because each mineral contains oxygen
- D** oxides because each mineral contains oxygen and a metal



8



**What is the speed of the person from point C to point D?**

- A  $25 \frac{\text{meters}}{\text{minute}}$
- B  $125 \frac{\text{meters}}{\text{minute}}$
- C  $200 \frac{\text{meters}}{\text{minute}}$
- D  $500 \frac{\text{meters}}{\text{minute}}$

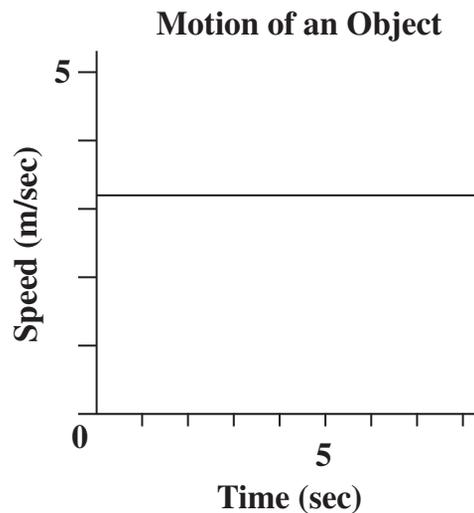
9

**Which action can be a hazard while working in the science laboratory?**

- A working alone
- B following directions
- C wearing safety goggles
- D knowing how to use equipment



- 10 The motion of an object was measured and graphed during a lab activity.



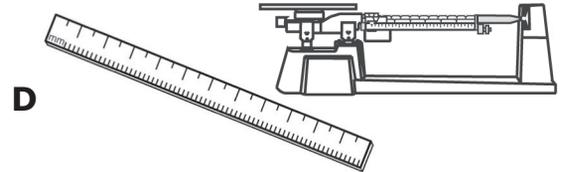
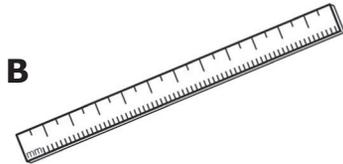
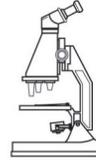
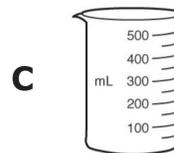
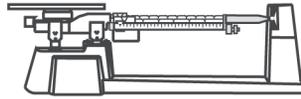
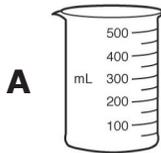
Which statement best describes the forces acting on the object?

- A Two opposite forces are unequal.
- B The total of all forces equals zero.
- C The forward forces change at a constant rate.
- D The horizontal force is greater than the vertical force.



- 11** Students classified leaves by their lengths and patterns of their veins.

Which pair of tools was most likely used for this activity?



- 12** Use the following information to calculate the volume of an irregularly shaped rock specimen:

1. Place 250 mL of water in a graduated cylinder.
2. Place the rock specimen in the graduated cylinder.
3. The water level in the graduated cylinder then rises to a level of 318 mL.

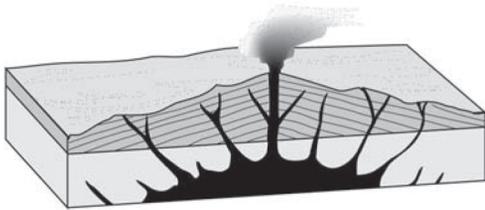
The volume of the rock specimen is

- A** 68 mL.
- B** 250 mL.
- C** 318 mL.
- D** 568 mL.

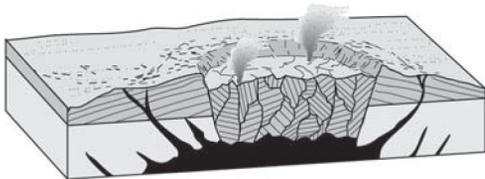


13

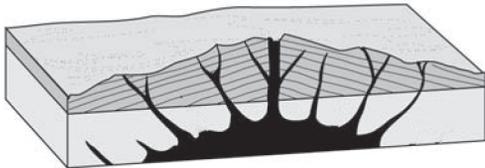
W



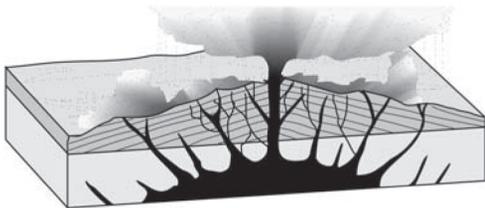
X



Y



Z



Which list best orders the events that formed a volcanic crater?

- A Y, X, Z, W
- B X, W, Y, Z
- C Y, W, Z, X
- D X, Z, Y, W



**14** Which statement best describes how scientists are studying nature to predict a future event on Earth?

- A They are observing nearby asteroids with an anemometer.
- B They are measuring the temperature of ice sheets using a seismograph.
- C They are observing the direction of ocean currents using an anemometer.
- D They are monitoring for volcanic activity by using a seismograph.

**15** Students design an investigation to determine if temperature affects the rate of a chemical reaction.

Which statement includes the best set of reactants and the dependent variable for the investigation?

**A**

Set of Reactants	Dependent Variable
<ul style="list-style-type: none"><li>• baking soda</li><li>• vinegar at three different temperatures</li></ul>	time it takes each product to form

**B**

Set of Reactants	Dependent Variable
<ul style="list-style-type: none"><li>• baking soda</li><li>• vinegar</li></ul>	temperature of each product

**C**

Set of Reactants	Dependent Variable
<ul style="list-style-type: none"><li>• salt</li><li>• water at three different temperatures</li></ul>	temperature of each salt solution

**D**

Set of Reactants	Dependent Variable
<ul style="list-style-type: none"><li>• salt</li><li>• water</li></ul>	time it takes the salt to dissolve



## Preparing for Testing to the Common Core State Standards

“The Common Core State Standards Initiative is a state-led effort to establish a shared set of clear educational standards for English language arts and mathematics that states can voluntarily adopt. The standards have been informed by the best available evidence and the highest state standards across the country and globe and designed by a diverse group of teachers, experts, parents, and school administrators, so they reflect both our aspirations for our children and the realities of the classroom. These standards are designed to ensure that students graduating from high school are prepared to go to college or enter the workforce and that parents, teachers, and students have a clear understanding of what is expected of them. The standards are benchmarked to international standards to guarantee that our students are competitive in the emerging global marketplace.” (www.corestandards.org)

Oklahoma’s State Board of Education adopted the CCSS in 2010 along with the majority of other states. These next few years will be a time of transition as Oklahoma begins moving from our current *Oklahoma C<sup>3</sup> Standards* curriculum to the CCSS. Transition will include teacher development, local curriculum revision, and test development for a new generation of state assessments. This transition will be complete and fully implemented by the 2014–15 school year.

In order to begin bridging to the requirements of the CCSS, students in Grade 8 will participate in field testing of five items aligned to the CCSS for Mathematics and five items aligned to the CCSS for Reading this year. Reading items will include one short constructed response item related to a passage. These newly developed CCSS-based items were reviewed by committees of Oklahoma educators in the summer of 2012. Students will not be scored on these field test items.

## Mathematics CCSS

### The Number System (8.NS)

**Know that there are numbers that are not rational, and approximate them by rational numbers.**

1. Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational.
2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g.,  $\pi^2$ ). *For example, by truncating the decimal expansion of  $\sqrt{2}$ , show that  $\sqrt{2}$  is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

### Expressions and Equations (8.EE)

**Work with radicals and integer exponents.**

1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,  $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$ .*

2. Use square root and cube root symbols to represent solutions to equations of the form  $x^2 = p$  and  $x^3 = p$ , where  $p$  is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that  $\sqrt{2}$  is irrational.
3. Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as  $3 \times 10^8$  and the population of the world as  $7 \times 10^9$ , and determine that the world population is more than 20 times larger.*
4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for sea floor spreading). Interpret scientific notation that has been generated by technology.

**Understand the connections between proportional relationships, lines, and linear equations.**

5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*
6. Use similar triangles to explain why the slope  $m$  is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation  $y = mx$  for a line through the origin and the equation  $y = mx + b$  for a line intercepting the vertical axis at  $b$ .

**Analyze and solve linear equations and pairs of simultaneous linear equations.**

7. Solve linear equations in one variable.
  - a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form  $x = a$ ,  $a = a$ , or  $a = b$  results (where  $a$  and  $b$  are different numbers).
  - b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
8. Analyze and solve pairs of simultaneous linear equations.
  - a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
  - b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example,  $3x + 2y = 5$  and  $3x + 2y = 6$  have no solution because  $3x + 2y$  cannot simultaneously be 5 and 6.*
  - c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*

## Functions (8.F)

### Define, evaluate, and compare functions.

1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.<sup>1</sup>
2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*
3. Interpret the equation  $y = mx + b$  as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function  $A = s^2$  giving the area of a square as a function of its side length is not linear because its graph contains the points  $(1,1)$ ,  $(2,4)$  and  $(3,9)$ , which are not on a straight line.*

### Use functions to model relationships between quantities.

4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two  $(x, y)$  values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

## Geometry (8.G)

### Understand congruence and similarity using physical models, transparencies, or geometry software.

1. Verify experimentally the properties of rotations, reflections, and translations:
  - a. Lines are taken to lines, and line segments to line segments of the same length.
  - b. Angles are taken to angles of the same measure.
  - c. Parallel lines are taken to parallel lines.
2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two dimensional figures, describe a sequence that exhibits the similarity between them.

---

<sup>1</sup> Function notation is not required in Grade 8.

5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*

### **Understand and apply the Pythagorean Theorem.**

6. Explain a proof of the Pythagorean Theorem and its converse.
7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

### **Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.**

9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

## **Statistics and Probability (8.SP)**

### **Investigate patterns of association in bivariate data.**

1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*

## Reading CCSS

### Literature

#### Key Ideas and Details

1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.
3. Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.

#### Craft and Structure

4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
5. Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.
6. Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.

#### Integration of Knowledge and Ideas

7. Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.
8. (Not applicable to literature)
9. Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.

#### Range of Reading and Level of Text Complexity

10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6–8 text complexity band independently and proficiently.

### Informational Text

#### Key Ideas and Details

1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.
3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).

### **Craft and Structure**

4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
5. Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.
6. Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.

### **Integration of Knowledge and Ideas**

7. Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.
8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.
9. Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of factor interpretation.

### **Range of Reading and Level of Text Complexity**

10. By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently.

## Answer Keys

<b>Mathematics</b>		
Number	Answer	OK C <sup>3</sup> Objective
Sample A	C	1.1a
Sample B	B	2.2a
1	C	1.1a
2	D	1.1b
3	B	1.2
4	B	2.2a
5	C	2.2b
6	C	2.2a
7	D	4.1
8	A	3.2
9	C	3.1
10	B	2.1
11	B	4.2
12	D	4.3
13	D	5.1
14	D	5.3
15	C	5.3

<b>Reading</b>		
Number	Answer	OK C <sup>3</sup> Objective
Sample A	C	3.2a
Sample B	A	1.1
1	B	1.1
2	A	4.2a
3	A	3.1b
4	A	5.1a
5	A	5.1a
6	D	1.3a
7	B	1.3c
8	C	3.2a
9	A	3.3b
10	C	3.4e
11	D	3.3a
12	D	4.3c
13	D	4.3a
14	C	3.2b
15	B	3.2b

<b>Science</b>			
Number	Answer	OK C <sup>3</sup> Process Objective	OK C <sup>3</sup> Content Objective
Sample A	A	4.2	1.2
Sample B	B	2.1	3.1
1	B	1.3	1.2
2	B	3.3	1.2
3	C	3.2	5.2
4	D	1.1	3.2
5	A	1.3	4.2
6	C	4.3	1.2
7	A	2.1	4.2
8	B	1.1	2.1
9	A	3.6	N/A
10	B	4.2	2.2
11	B	1.2	3.1
12	A	1.2	1.2
13	C	2.2	4.1
14	D	1.2	5.1
15	A	3.3	1.1



# Oklahoma School Testing Program

To Measure *Oklahoma's C<sup>3</sup>*  
Standards

State Superintendent  
Oklahoma State Department of Education  
2013

## Answer Sheet

Grade 8— Multiple-Choice  
Practice Tests

\_\_\_\_\_  
**Name**

### Mathematics

SAMPLES  
A  A  B  C  D  
B  A  B  C  D

1  A  B  C  D  
2  A  B  C  D  
3  A  B  C  D  
4  A  B  C  D

5  A  B  C  D  
6  A  B  C  D  
7  A  B  C  D  
8  A  B  C  D

9  A  B  C  D  
10  A  B  C  D  
11  A  B  C  D  
12  A  B  C  D

13  A  B  C  D  
14  A  B  C  D  
15  A  B  C  D

### Reading

SAMPLES  
A  A  B  C  D  
B  A  B  C  D

1  A  B  C  D  
2  A  B  C  D  
3  A  B  C  D  
4  A  B  C  D

5  A  B  C  D  
6  A  B  C  D  
7  A  B  C  D  
8  A  B  C  D

9  A  B  C  D  
10  A  B  C  D  
11  A  B  C  D  
12  A  B  C  D

13  A  B  C  D  
14  A  B  C  D  
15  A  B  C  D

### Science

SAMPLES  
A  B  C  D  
B  A  B  C  D

1  A  B  C  D  
2  A  B  C  D  
3  A  B  C  D  
4  A  B  C  D

5  A  B  C  D  
6  A  B  C  D  
7  A  B  C  D  
8  A  B  C  D

9  A  B  C  D  
10  A  B  C  D  
11  A  B  C  D  
12  A  B  C  D

13  A  B  C  D  
14  A  B  C  D  
15  A  B  C  D

