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District of Columbia

Comprehensive Assessment System

Resource Guide

2011

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MAYOR ADRIAN M. FENTY

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www.OSSE.dc.gov

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Introduction

Purpose

This resource guide has been developed to provide teachers and other stakeholders with an understanding of the District of Columbia Comprehensive Assessment System (DC CAS). When used in conjunction with other curricular materials and texts, the guide will

- help teachers as they make decisions about targeted classroom instruction and assessment,
- provide a framework and focus of instruction aligned with the skills and processes measured by test items of the DC CAS, and
- enhance and strengthen instructional journeys.

Test Accountability

The tests of the DC CAS have been designed to measure the academic proficiency of students in the District of Columbia relative to their mastery of the DC Content Standards. These tests are aligned to the approved English Language Arts, Mathematics, and Science standards of the District of Columbia. The complete standards documents can be viewed online at http://osse.dc.gov/seo/cwp/view,a,1222,q,561249,PM,1,seoNav,|31195|.asp.

The battery of tests of the DC CAS are administered in the spring of each school year. **DC CAS testing is scheduled to take place April 4–14, 2011.**

Reading and mathematics tests have been operational since 2006 and are administered to students in grades 3–8 and 10. Per the federal requirements of the Elementary and Secondary Education Act (ESEA) legislation, the goal of measuring Adequate Yearly Progress (AYP) will be attained by tracking students' reading and mathematics performance.

The testing of students' writing skills via the composition component of the DC CAS became operational in Spring 2008. Prior to that administration, a series of writing prompts were piloted in 2006 and 2007.

In Spring 2007, science tests were administered to students in grades 5 and 8 as well as to students who were enrolled in their school's biology course. The science and biology tests were first operational in 2008, and student scores on these tests have been reported since that administration.

At this time, neither writing nor science scores are included in the state's AYP, but they are reported to the United States Department of Education for accountability and included in schools' annual report cards.

Test Format

In 2011, as in previous years, the tests for reading and mathematics will be combined into one test book. For each tested grade, there will be two forms. Teachers should always confirm that each student has a corresponding test book and answer booklet.

For grade 3, the students write their answers in their scannable test books. Students in grades 4–8 and 10 record their answers in scannable answer booklets, color-coded by form and grade.

The science and biology tests will also have two forms each, and both a test book and an answer booklet will be assigned to each student taking the test.

Only the composition test will have one form for each tested grade.

Both selected-response (multiple-choice) and constructed-response items comprise the tests of the DC CAS. For a selected-response item, students choose the correct answer from among four answer choices. For a constructed-response item, students write a response to a test question. Student responses are then scored according to the criteria of rubrics or scoring guides. Reading, writing, and mathematics rubrics can be found on pages 92 through 94 of this guide. Sample scoring guides for science items can be found on pages 95 through 97.

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Reporting Categories

The test items of the DC CAS are written to measure the proficiency of students based on the District of Columbia standards. These standards are grouped according to strands, and these strands are the reporting categories of the DC CAS. Each category is not equally weighted.

A description of the reporting categories and what each measures follows:

Reading

- **Language Development:** Items in this category measure students' ability to identify meanings of words using prior knowledge, word structure, etymology, a dictionary, and/or context.
- **Informational Text:** Items of this category measure students' ability to read, comprehend, and respond to informational passages. The passages used may be expository texts, documentary or procedural texts, or persuasive texts. Students may be asked to locate or interpret details, examine structure, identify main idea, or explain/evaluate key ideas of a given text.
- **Literary Text:** Items of this category measure students' ability to read, comprehend, and respond to literary passages. These passages may be short stories, poems, excerpts from larger works, fables, or literary nonfiction. Students may be asked about the literary elements or the style and language of the text. They may also be asked to explain or analyze the theme or the author's implicit purpose or audience.

Composition

Student writing is evaluated on two rubrics that include the following:

- **Topic Development:** clarity of focus, development of ideas, appropriate organization, and effective use of language.
- **Language Conventions:** sentence structure, grammar, and use of conventions.

Grade 4: Each student is directed to write a story or personal narrative about a particular experience or situation.

Grade 7: Each student is directed to write an explanatory essay about a given topic or issue.

Grade 10: Each student is presented a quotation to consider and then directed to write a persuasive essay in which he/she takes a stand on a given issue or theme.

Mathematics

- **Number Sense and Operations:** These items measure students' ability to use numbers and number relationships. Students may be asked to represent numbers, describe relationships among numbers, compute fluently, or make reasonable estimations.
- **Patterns, Relations, and Algebra:** Items of this category measure students' ability to use algebraic methods to describe or analyze patterns, relations, and functions. They may also be asked to represent and analyze mathematical situations using algebraic symbols, tables, and graphs and to perform operations on algebraic expressions, equations, and inequalities.
- **Geometry:** Items of this category measure students' ability to use geometric concepts, properties, and relationships. Students may be asked to analyze the characteristics and properties of two- and three-dimensional geometric shapes and describe spatial relationships. They may also be asked to apply transformations and specify locations using coordinate geometry.
- **Measurement:** Items of this category measure students' ability to use tools, techniques, and formulas to determine measurements. They may also be asked to describe the measurable attributes of objects and the units, systems, and processes of measurement.
- **Data Analysis, Statistics, and Probability:** Items of this category measure students' ability to use data analysis, statistics, and probability. Students may be asked to represent and analyze data, including statistical methods, and make predictions based on data. They may also be asked to apply basic concepts of probability.

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Science

Grade 5 Science

- **Science and Technology:** Items of this category measure students' knowledge of scientific inquiry and the impacts of technology on society. Students may be asked to analyze experimental design and data. They may be asked to determine the area and volume of rectangles. Students may be asked to give examples of materials made available because of science and technology.
- **Earth and Space Science:** Items of this category measure students' knowledge of the solar system and the physical characteristics of Earth. Students may be asked to describe the water cycle and explain how global patterns influence local weather and climate.
- **Physical Science:** Items of this category measure students' basic understanding of the periodic table, force and motion, and heat transfer. Students may be asked to investigate how heating and cooling affect substances and describe the effect of balanced and unbalanced forces on an object.
- **Life Science:** Items of this category measure students' basic understanding of cells, inheritance, and adaptation. Students may be asked to identify organisms, describe their characteristics, examine their reactions to changes in the environment, and analyze the effect of environmental changes on their survival.

Grade 8 Science

- **Scientific Thinking and Inquiry:** Items of this category measure students' understanding and application of scientific design. Students may be asked to design or critique investigations and analyze reasoning used in scientific arguments. They may also be asked to apply simple mathematical models to problems.
- **Matter and Reactions:** Items of this category measure students' basic understanding of the properties and structures of elements and chemical reactions. Students may be asked to recognize and describe characteristics of atoms, molecules, compounds, and ions. They may be asked to describe the mass, weight, and density of an object. Students may be asked to demonstrate understanding of conservation of matter, endothermic and exothermic chemical reactions, factors that affect reaction rates, acidic and basic solutions, and evidence that chemical changes have taken place.
- **Forces:** Items of this category measure students' understanding of the concepts of force and motion. Students may be asked to determine and explain the buoyant force on an object. They may also be asked to determine and describe the effect of forces on the motion of objects.
- **Energy and Waves:** Items of this category measure students' basic knowledge of energy and how it is transferred. Students may be asked to recognize and describe various forms of energy including kinetic, potential, electrical, gravitational, sound, heat, and light energy.

Biology:

- **Cell Biology and Biochemistry:** Items of this category measure students' basic understanding of the chemistry of living things and knowledge of cell structures and functions. Students may be asked to use simplified Bohr diagrams, describe the structure and properties of water, and describe the molecules found in living things. They may be asked to describe cell organelles and compare and contrast prokaryotic and eukaryotic cells. They may also be asked to describe cellular respiration, mitosis, and meiosis.
- **Genetics and Evolution:** Items of this category measure students' knowledge of genes, biodiversity, and the theory of evolution. Students may be asked to describe how genes are passed from parents to offspring, and explain the relationship between DNA and proteins. They may be asked to explain recombination of genes in sexual reproduction and relate DNA similarities to degrees of kinship. Students may be asked to describe how genetic diversity helps organisms survive in a

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changing environment. They may also be asked to relate the concepts of heredity and natural selection to the modern theory of evolution.

- **Multicellular Organisms: Plants and Animals:** Items of this category measure students' knowledge of plant and animal biology. Students may be asked to describe the structure and function of plant parts and identify the roles of plants in the ecosystem. They may also be asked to identify and analyze the complementary activity of mammalian body systems.
- **Ecosystems:** Items of this category measure students' knowledge of biotic and abiotic factors in ecosystems. Students may be asked to analyze the effect of population changes on the ecological balance of a community. They may also be asked to assess methods for monitoring and safeguarding water quality.

This Guide and Other Resources

The item stems and resources in this guide have been created and assembled by the Office of the State Superintendent of Education (OSSE) and CTB/McGraw-Hill, the DC CAS test development vendor.

For a sample of released mathematics and science/biology items, go to: http://www.nclb.osse.dc.gov/itembank.asp. For a sample of released reading items, contact your Local Education Agency (LEA) for online access instructions.

For questions or to provide feedback, please email OSSE.assessment@dc.gov.

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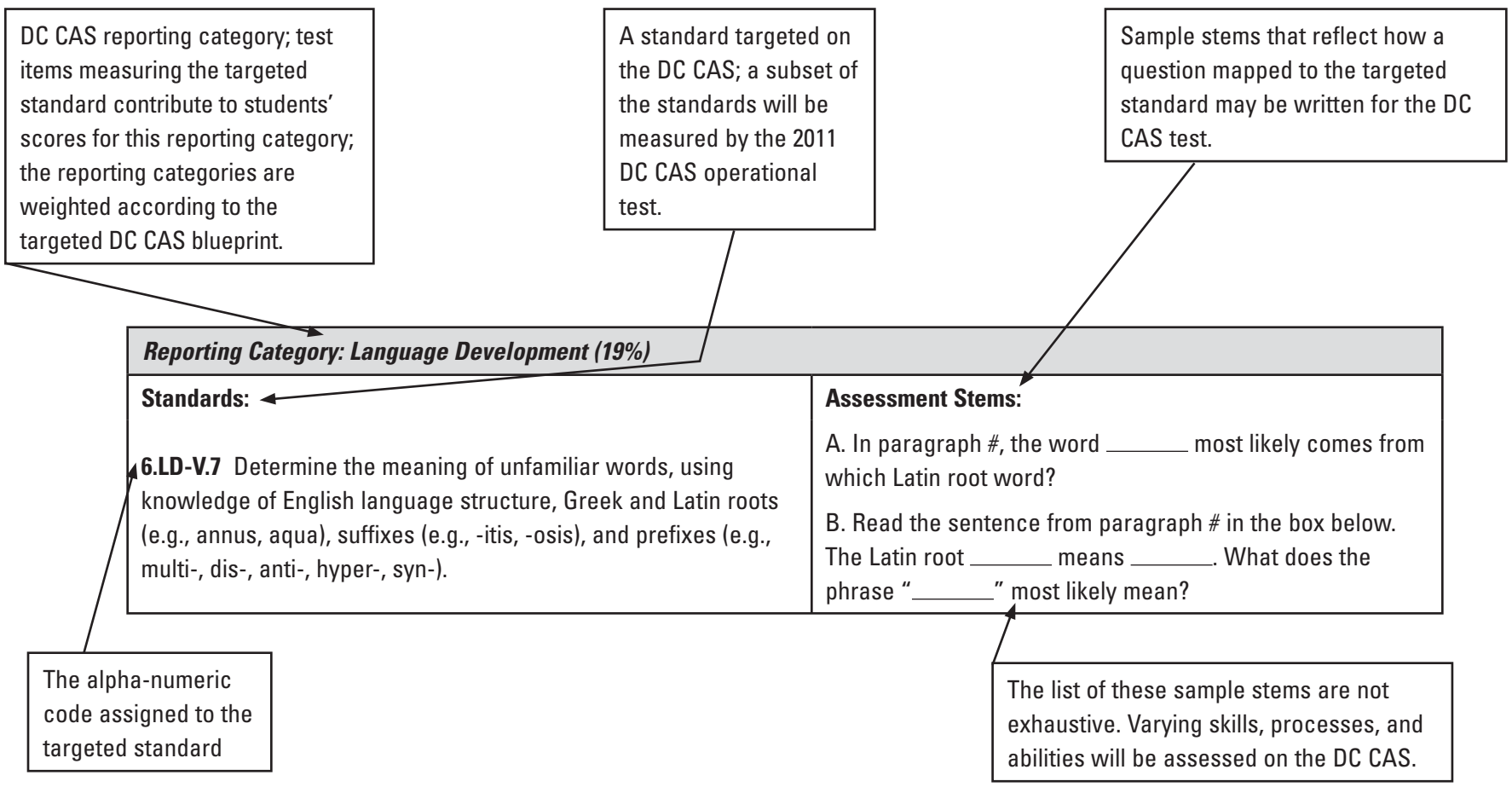
DC CAS Tested Standards

The information in the tables on pages 7 through 90 has been collected to provide instructional focus relative to the DC CAS tests. Instruction should not be limited to the skills and processes identified in the standards in the tables. All approved standards represent what students should know and be able to do and will be assessed across administrations.

For the 2011 DC CAS, all items on the reading and mathematics field test are aligned to both the current DC Standards and the newly adopted Common Core Standards. The 2011 DC CAS will remain aligned to the current DC Standards.

Prior to using the tables, educators should review the sample below and the explanation of the content of each column.



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READING

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
3.LD-V.8 Identify the meaning of common prefixes and suffixes (e.g., un-, re-, in-, dis-, -ful, -ly, -less) and know how they change the meaning of root words (e.g., happy/unhappy, tell/retell).	If the word [word from text] means _____, then the word [word from text with affix] means . . .
3.LD-V.9 Identify roots of words (e.g., "graph" is a common root in autograph, photograph, biography).	Read the sentence from paragraph #. The root word of _____ means _____. The word _____ as it is used in the sentence means . . .
3.LD-V.10 Identify playful uses of language (e.g., tongue twisters, riddles).	Read the sentence from paragraph X in the box below. [insert passage excerpt] In the sentence, the word _____ probably means . . .
3.LD-V.11 Recognize that some words and phrases have both a literal and non-literal meaning (e.g., take steps).	Read the sentence from paragraph #. The words "_____" mean that [a character] thinks . . .
3.LD-V.12 Use context of the sentence to determine the intended meaning of an unknown word or a word with multiple meanings.	Read the sentence from paragraph #. Which word in the sentence helps the reader understand that _____?
3.LD-V.13 Determine the meanings of words and alternate word choices using intermediate-level dictionaries and thesauri.	Read the dictionary entry below. _____ *n.* 1. First definition. 2. Second definition. 3. Third definition. 4. Fourth definition. Now read this sentence from paragraph X. [insert passage excerpt] What does _____ mean as it is used in the sentence?
Reporting Category: Informational Text (33%)	
3.IT-E.1 Identify the purpose or main point and supporting details in text.	A. This article was mostly written to . . . B. The article states that _____ can do all of these things EXCEPT . . .
3.IT-E.2 Identify the facts given in a text.	A. When does _____ happen? B. How long does it take for _____ to happen?
3.IT-E.3 Distinguish cause from effect.	According to the article, why can _____ do _____?

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Reporting Category: Informational Text (33%) (continued)	
Standards:	**Assessment Stems:**
3.IT-E.4 Identify and use knowledge of common textual features (e.g., title, headings, table of contents, glossary, captions) to make predictions about content.	A. The title of the column "_____" means the information will probably (explain, describe, etc.) . . . B. If the article were in a book, where would a definition of _____ be found?
3.IT-E.5 Form questions about text and locate facts in response to those questions.	Which of these questions about _____ is answered in the article?
3.IT-DP.6 Locate specific information in graphic representations (e.g., charts, maps, diagrams, illustrations, tables, timelines) of text.	A. Using information from the chart, explain how _____ and _____ are different. B. According to the chart, which of the following statements about the _____ is true?
3.IT-DP.7 Use information from text and text features to determine the sequence of activities needed to carry out a procedure.	According to the directions in the _____, what do you do right after _____?
Reporting Category: Literary Text (48%)	
3.LT-U.1 Identify chapter titles and illustrations as parts of a text that help the reader predict what will happen next in a story.	[Four illustrations] Which illustration shows what happens in the poem?
3.LT-U.3 Form questions about a text and locate facts/details in order to answer those questions.	What does [character] do first when he arrives at _____?
3.LT-U.4 Use story details and prior knowledge to understand ideas that are not directly stated in the text.	A. Which of these sentences helps the reader know that the story takes place in _____? B. According to the article/story, what is true about _____?
3.LT-G.6 Identify common forms of literature (poetry, prose, fiction, nonfiction, and drama) using knowledge of their structural elements.	How does the reader best know that _____ is a poem?
3.LT-T.7 Identify themes as moral lessons in folktales and fables.	What is the lesson of this story?

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Reporting Category: Literary Text (48%) (continued)	
Standards:	**Assessment Stems:**
3.LT-F.8 Identify the elements of stories (problem, solution, character, and setting) and analyze how major events lead from problem to solution.	A. In the story, what is true about _____? B. In the beginning of the story, _____ mostly feels . . . C. Explain how [a character] does or does not solve his problem. Support your answer with important details from the story.
3.LT-F.9 Identify personality traits of characters and the thoughts, words, and actions that reveal their personalities.	A. [Character] in the story could best be described as . . . B. In paragraph #, _____ speaks in what way?
3.LT-F.10 Identify who is telling the story or speaking in a poem.	Who is telling this story?
3.LT-P.11 Identify rhyme, rhythm, repetition, similes, and sensory images in poetry.	What is the rhyming pattern in this poem?
3.LT-S.13 Identify sensory words.	Which group of words from the poem best helps the reader imagine what the _____ looks and sounds like?

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
4.LD-V.9 Determine the effect of affixes on roots (e.g., the effect of "un" on roots such as "happy" or "common" to make the word "unhappy" or "uncommon").	A. In the story, [character] wanted to be [word from the text with an affix added]. What does _____ probably mean? B. Read the sentence from paragraph # in the box below. [sentence] If _____ means _____, then [a word from the text with an affix added] means . . .
4.LD-V.10 Use knowledge of morphology or the analysis of word roots and affixes to determine the meaning of unfamiliar words (e.g., meaning of Greek root "graph" to understand the meaning of the words telegraph, photograph, and autograph).	A [word with basic root] does _____. Something [another word with same root] can be _____. A [still another word with the root] is _____. What does the word [from the text] _____ mean?
4.LD-V.11 Identify and use playful language such as puns, jokes, palindromes.	The words _____ most likely mean . . .
4.LD-V.12 Identify the meaning of figurative language and phrases (e.g., "last straw," "cold feet," "I'm in hot water.").	Read the sentence from paragraph # in the box below. [sentence] What does [character] mean when she says she's _____?
4.LD-V.13 Recognize and use words with multiple meanings (e.g., sentence, school, hard) and determine which meaning is intended from the context of the sentence.	A. Read the sentence from paragraph # in the box below. [sentence] In the sentence, the word _____ means . . . B. Read the sentence from paragraph # in the box below. [sentence] What definition of the word _____ is used in the sentence?
4.LD-V.14 Determine meanings and other features of words (e.g., pronunciation, syllabication, parts of speech) using intermediate-level dictionaries and thesauri.	Read the dictionary entry below. _____ *n.* 1. First definition. 2. Second definition. 3. Third definition. 4. Fourth definition. Now read this sentence from paragraph X. [insert passage excerpt] What does _____ mean as it is used in the sentence?
Reporting Category: Informational Text (33%)	
4.IT-E.1* Identify the purpose and main points of a text and summarize its supporting details.	A. This article is mostly about . . . B. The main purpose for reading this article is to find out about . . . C. Explain how _____ is able to _____. Support your answer with important details from the story/article.

*Items mapped to these standards will contribute to either the Informational Text or Literary Text reporting category, which is dependent upon the text genre associated with the item.

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Reporting Category: Informational Text (33%) (continued)	
Standards:	**Assessment Stems:**
4.IT-E.2 Distinguish fact from opinion.	Which of these statements is an opinion from the article?
4.IT-E.3* Identify cause-and-effect relationships (stated and implied).	The boxes below show cause and effect in the passage. Which of the following events belongs in the empty box?
4.IT-E.4 Identify and use knowledge of common textual features (e.g., paragraphs, topic sentences, concluding sentences, glossary).	Which of the following choices would be the best heading for the first four paragraphs of the article?
4.IT-E.5* Ask questions and support answers by connecting prior knowledge with literal and inferential information found in texts.	From what you have read, you can conclude that . . .
4.IT-DP.6 Interpret information in graphic representations (e.g., charts, maps, diagrams, illustrations, tables, timelines) of text.	What does the timeline help the reader understand about _____?
Reporting Category: Literary Text (48%)	
4.LT-C.1 Identify similarities and differences between the characters or events in a literary work and the actual experiences in an author's life (e.g., Laura Ingalls Wilder and the *Little House* books).	Explain what is the same about _____ and the message in the poem. Support your answer with important details from the story/ poem/article.
4.LT-G.2 Distinguish among common forms of literature (poetry, prose, fiction, nonfiction, and drama) using knowledge of their structural elements.	Which of these sentences best explains why _____ [character] talks about _____?
4.LT-T.4 Compare the moral lessons of several fables.	Which of these lessons can be learned from the story?
4.LT-F.5 Explain how the plot, setting, or characters influence the events in a story, using evidence from the text.	A. Why does _____ decide to_____? B. At the end of the story, why does _____ decide to _____?
4.LT-F.6 Describe a character's traits, relationships, and feelings, using evidence from the text (e.g., thoughts, dialogue, actions).	A. Read the sentences from paragraph # in the box below. The author most likely uses the details in the sentences to show that [character] . . . B. Explain how _____ changes from the beginning of the story to the end. Support your answer with important details from the story.
4.LT-P.8 Recognize the similarities of sounds in words (e.g., onomatopoeia, alliteration, assonance) and rhythmic patterns in a poetry selection.	By repeating words in each verse of the poem, the poet . . .

*Items mapped to these standards will contribute to either the Informational Text or Literary Text reporting category, which is dependent upon the text genre associated with the item.

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Reporting Category: Literary Text (48%) (continued)	
Standards:	**Assessment Stems:**
4.LT-P.9 Identify characteristics and structural elements (e.g., imagery, rhyme, verse, rhythm, meter) of poetry (narrative poem, free verse, lyrical poem, humorous poem).	What makes _____ a poem?
4.LT-S.11 Identify sensory details and figurative language in a story or poem.	In which line of the poem does [a non-person] seem to be like a person?

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
5.LD-V.8 Identify the meaning of common Greek and Latin roots and affixes to determine the meaning of unfamiliar words.	Read the sentence from paragraph # in the box below. [sentence] The prefix _____ in the word _____ most likely means . . .
5.LD-V.9 Identify and apply the meanings of the terms antonym, synonym, and homophone.	Read the sentence from paragraph # in the box below. [sentence] Which word is closest in meaning to the word _____ as it is used in the sentence?
5.LD-V.10 Determine the meaning of unfamiliar words in context using definitions and examples stated in the text.	Read the sentence from paragraph # in the box below. [sentence] Which word means the same as the word _____ as it is used in the sentence?
5.LD-V.11 Identify meanings, pronunciations, alternate word choices, correct spellings, and parts of speech or words by using dictionaries and thesauri (printed and electronic).	Read the dictionary entry in the box below. [dictionary entry] Which definition matches the meaning of the word _____ as it is used in paragraph #?
Reporting Category: Informational Text (33%)	
5.IT-E.1* Identify the author's purpose and summarize the critical details of expository text, maintaining chronological or logical order.	A. According to the article, _____ happens when . . . B. The author most likely wrote this article in order to . . . C. This article is mostly about . . .
5.IT-E.2 Distinguish fact from opinion in expository text, providing supporting evidence from text.	Which of these sentences from the article expresses a(n) fact/opinion?
5.IT-E.4 Identify and use knowledge of common textual features (e.g., title, headings, key words, captions, paragraphs, topic sentences, table of contents, index, glossary).	The caption below the photo on page X helps the reader . . .
5.IT-E.5 Identify common organizational structures such as chronological order and cause and effect.	Which of these best describes how the information in the article is organized?
5.IT-A.7 Determine an author's position (i.e., what the author is arguing), providing supporting evidence from the text.	In paragraph #, the author most likely includes examples of _____ to . . .

*Items mapped to this standard will contribute to either the Informational Text or Literary Text reporting category, which is dependent upon the text genre associated with the item.

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Reporting Category: Literary Text (48%)	
Standards:	**Assessment Stems:**
5.LT-C.1 Relate the events and characters in a literary work to information about its setting (e.g., *The Remarkable Journey of Prince Jen* and information about China's T'ang dynasty).	Where did the events in the story take place?
5.LT-G.2 Identify and analyze the characteristics of various genres (poetry, fiction, nonfiction, short story, dramatic literature) as forms with distinct characteristics and purposes.	What would be different if the poem _____ were a play?
5.LT-T.3* Identify the theme (moral, lesson, meaning, message, view or comment on life) of a literary selection.	A. Which of the following statements best expresses the lesson _____ learns in the story? B. The lesson described in paragraphs #–# shows the importance of . . .
5.LT-F.4 Describe the relationships between major and minor characters; analyze how a character's traits influence that character's actions.	A. _____ can best be described as . . . B. Describe how _____ feels about _____. Support your answer with important details from the story.
5.LT-F.5 Identify the plot and its components (e.g., main events, conflict, resolution).	A. Which sentence best summarizes what happens in the story? B. The main problem _____ faces is . . .
5.LT-P.7 Respond to and analyze the effects of the sounds in words (alliteration, onomatopoeia, rhyme scheme), form (free verse, couplets), and figurative language (metaphor, simile) to uncover the meaning of a poem.	A. The narrator compares_____ to _____to show that B. Read lines #-# from the poem in the box below. [lines] What do the lines suggest about _____?
5.LT-D.8 Analyze the similarities and differences between a narrative text and its dramatic adaptation.	Read this scene. [a short dramatic stimulus is provided] How is the scene similar to the passage _____?
5.LT-S.9 Identify and draw conclusions about the author's use of sensory details, imagery, and figurative language.	In paragraph #, what does _____ mean when he says _____ [word/phrase using figurative language]?

*Items mapped to this standard will contribute to either the Informational Text or Literary Text reporting category, which is dependent upon the text genre associated with the item.

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
6.LD-V.7 Determine the meaning of unfamiliar words, using knowledge of English language structure, Greek and Latin roots (e.g., annus, aqua), suffixes (e.g., -itis, -osis), and prefixes (e.g., multi-, dis-, anti-, hyper-, syn-).	Read the sentence from paragraph # in the box below. The Latin root _____ means _____. What does the phrase " _____ " most likely mean?
6.LD-V.8 Use such clues as definition, example, and restatement to determine the meanings of unfamiliar words and words with multiple meanings in context.	A. Read this sentence from paragraph # in the passage. As used in the sentence, the word _____ probably means . . . B. Which word means the opposite of _____ in paragraph #?
6.LD-V.9 Determine the meaning of figurative language, including similes, metaphors, personification, and grade-appropriate idioms.	In paragraph # the phrase _____ is used to suggest that . . .
6.LD-V.10 Determine meanings, pronunciations, alternate word choices, correct spellings, and parts of speech or words using dictionaries, glossaries, thesauri, and other resources (printed and electronic).	Read the dictionary entry in the box below. [dictionary entry] Which definition of _____ is used in sentence # / paragraph #?
Reporting Category: Informational Text (33%)	
6.IT-E.1 Identify and analyze the author's stated purpose, main ideas, supporting ideas, and supporting evidence.	A. This passage is mostly about . . . B. What does the information in paragraph # suggest about _____? C. Based on the article, explain how _____ has changed. Support your answer with important details from the article.
6.IT-E.2 Identify and use knowledge of common textual features (paragraphs, topic sentences, concluding sentences, glossary, index, and bibliography).	According to the bibliography at the end of the passage, when was _____ published?
6.IT-E.3 Identify and use organizational structures in text, including chronological order, comparison and contrast, cause and effect, logical order, and classification schemes.	A. In [paragraph, passage, chart] the author organizes the information according to . . . B. How is the information in the passage organized?

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Reporting Category: Informational Text (33%) (continued)	
Standards:	**Assessment Stems:**
6.IT-DP.4 Identify the components (e.g., directions, legend, illustrations, diagram, sequence, boldface print, headings) of document and procedural text.	The _____ at the end of the article is most likely included to . . .
6.IT-A.6* Recognize arguments for and against an issue.	In the story, _____ says _____. Explain what [the character] means. Support your answer with important details from the passage.
Reporting Category: Literary Text (48%)	
6.LT-C.1 Analyze the relevance of the setting (e.g., time, place, and situation) to the mood and tone of the text.	A. Which phrase best describes the [setting, time, mood, situation] of this story? B. In your own words, describe how _____ feels about _____. Support your answer with important details from the story.
6.LT-G.2 Identify the characteristics of different forms of prose (short story, novel, novella, essay).	This passage is best described as a . . .
6.LT-T.3 Apply knowledge that theme, whether stated or implied, refers to the basic meaning of a literary text.	Which of these sentences/sayings best expresses the theme of the story/poem?
6.LT-F.4 Describe incidents that advance plot in a story or novel, explaining how each incident gives rise to the next or foreshadows a future event.	A. At the beginning of the story, _____ does _____ because . . . B. What causes _____ to _____?
6.LT-F.5 Provide examples of all aspects of the setting (time, place, situation) in a story or novel.	Which statement from the story shows why [a character acts in a certain way]?
6.LT-LNF.6 Describe the structural differences among essays, speeches, autobiographies, and biographies.	How would the passage most likely be different if it were written as an autobiography instead of a biography?
6.LT-P.7 Respond to and analyze the effects of figurative language (personification, metaphor, simile, hyperbole) and graphics (capital letters) to uncover the meaning of a poem.	Why does the speaker compare _____ to a _____ in the poem?

*Items mapped to this standard may contribute to either the Informational Text or Literary Text reporting category, which is dependent upon the text genre associated with the item.

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Reporting Category: Literary Text (48%) (continued)	
Standards:	**Assessment Stems:**
6.LT-S.9 Identify and analyze the importance of shades of meaning in determining word choice in a piece of literature.	In paragraph #, what does the phrase "_____" suggest about _____?
6.LT-TN.10 Identify stylistic elements such as hyperbole, refrain, and simile in traditional literature.	Read the sentence from the passage. [insert passage excerpt] This sentence is an example of . . .

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
7.LD-V.7 Use Greek and Latin roots and affixes to determine the meaning of content area vocabulary.	Read the sentence from paragraph # in the box below. [sentence] The Latin word _____ means _____. What does [related word] mean?
7.LD-V.8 Use such clues as cause and effect and comparison and contrast to identify the meaning of unfamiliar words and words with multiple meanings in context.	A. Read the sentence from paragraph # in the box below. [sentence] The word _____ most likely means . . . B. Based on the context of [passage], the word _____ most likely means . . .
7.LD-V.9 Use context to confirm meanings of metaphors, similes, and idiomatic language in prose and poetry.	Read the sentence from paragraph # in the box below. [sentence] In the sentence, what does the phrase _____ suggest about _____?
7.LD-V.10 Determine meanings, pronunciations, alternate word choices, correct spellings, parts of speech, or etymologies of words using dictionaries, glossaries, thesauri, and other resources (printed and electronic).	Read the dictionary entry below. _____ *n.* 1. First definition. 2. Second definition. 3. Third definition. 4. Fourth definition. Now read this sentence from paragraph X. [insert passage excerpt] What does _____ mean as it is used in the sentence?
Reporting Category: Informational Text (33%)	
7.IT-E.1 Identify the author's purpose(s) in a text when it is not stated.	A. What is the author's most likely purpose for including [table/box/paragraph]? B. What is the article mostly about?
7.IT-E.2 Identify and use knowledge of common textual features.	This passage can be identified as a _____ because . . .
7.IT-E.3 Apply knowledge of organizational structures of text to aid comprehension, including chronological order, comparison and contrast, cause and effect, logical order, and classification schemes.	A. What theme is introduced in paragraph #? B. According to paragraph #, what is the reason that _____? C. How are the details organized in paragraph #?

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Reporting Category: Informational Text (33%) (continued)	
Standards:	**Assessment Stems:**
7.IT-A.6 Describe the facts and evidence used to support an argument.	A. What does the author mostly suggest about _____ when he/she writes, "_____"? B. According to the article, which of these sentences is the best reason for _____?
7.IT-A.7 Identify ways to detect bias in persuasive text.	A. Which of these sentences is a fact from the passage? B. Which of these best describes the overall tone of the passage?
7.IT-A.8 Distinguish a stereotype from a generalization.	Which of these statements from the passage is a stereotype?
Reporting Category: Literary Text (48%)	
7.LT-G.3 Identify various genres of fiction (e.g., mysteries, science fiction, historical fiction, adventures, fantasies, fables, myths) based on their characteristics.	This story can best be described as [a fantasy, science fiction, etc.].
7.LT-T.4 Recognize multiple themes in a text and supply evidence from the selection.	Which of these did _____ find most unusual?
7.LT-F.5 Analyze plot development (e.g., conflict, rising action, falling action, resolution, subplots, flashbacks, parallel episodes) to determine whether and how conflicts are resolved.	A. This passage is mostly about . . . B. What will most likely happen to/after _____?
7.LT-F.6 Describe a character based on the thoughts, words, and actions of the character, the narrator's description, and what other characters say and do.	A. By saying _____ about _____, the narrator makes the character seem . . . B. The way _____ behaves with _____ shows that . . .
7.LT-F.7 Analyze the ways characters change or interact with others over time and give supporting evidence from the text.	According to the article, _____ might influence _____ by . . .
7.LT-P.9 Analyze the characteristics and structural elements of a variety of poetic forms (e.g., epic, sonnet, ode, ballad, lyric, narrative poem, free verse, haiku).	What is one change that occurs in line # of the poem?

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Reporting Category: Literary Text (48%) (continued)	
Standards:	**Assessment Stems:**
7.LT-S.11 Identify and analyze how an author's use of words creates tone and mood.	A. Read the sentence from paragraph # in the box below. [sentence] What is the author suggesting about _____ in the sentence? B. The author describes _____ as _____ in order to show that . . .
7.LT-TN.12 Identify similarities and differences in mythologies from different cultures (e.g., ideas of afterlife, roles of deities).	Which of these best describes the difference between _____'s and _____'s views of _____?
7.LT-TN.13 Identify the language styles of different characters in literary works.	Which of these best describes the way _____ speaks in the passage?

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
8.LD-V.9 Monitor text for unknown words or words with novel meanings, using word, sentence, and paragraph clues to determine meaning.	A. Read the sentence from the passage in the box below. [sentence] What other word in the passage means about the same as _____? B. In paragraph #, [character] says "_____" to show that . . .
8.LD-V.10 Understand and explain "shades of meaning" for related words.	Read the sentence from paragraph X in the box below. [insert passage excerpt] What does _____ mean in the sentence?
8.LD-V.11 Determine meanings, pronunciations, syllabication, synonyms, antonyms, correct spellings, parts of speech, or etymologies of words using dictionaries, glossaries, thesauri, CD-ROMs, and the Internet.	Read the dictionary entry below. _____ *n.* 1. First definition. 2. Second definition. 3. Third definition. 4. Fourth definition. Now read this sentence from paragraph X. [insert passage excerpt] What does _____ mean as it is used in the sentence?
Reporting Category: Informational Text (37%)	
8.IT-E.1 Compare (and contrast) the central ideas, problems, or situations from readings on a specific topic selected to represent a range of viewpoints.	A. Which of the following sentences best explains _____? B. Why did _____ decide to _____? C. How did _____ achieve his goal of _____?
8.IT-E.2 Explain how an author uses word choice and organization of text to achieve his purposes.	A. In paragraph #, the author uses _____ to emphasize . . . B. The events in the article are organized by . . . C. The purpose of the footnote/boxed information/introduction is . . .
8.IT-E.3 Distinguish between the concept of theme in a literary work and the author's explicit or implicit purpose in an expository text.	The author emphasizes _____ in order to convince readers that _____ . . .
8.IT-DP.4 Evaluate the adequacy of details and facts to achieve a specific purpose.	How do the details in paragraph # support the author's purpose?
8.IT-A.5 Recognize organizational structures and arguments for and against an issue.	Explain how the author supports the argument _____ .

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Reporting Category: Informational Text (37%) (continued)	
Standards:	**Assessment Stems:**
8.IT-A.6 Distinguish facts from opinions in selections such as editorials, newspaper articles, essays, reviews, and critiques, providing supporting evidence from the text.	Which statement from the article expresses an opinion?
8.IT-A.7 Compare and contrast readings on the same topic and explain how authors reach different conclusions, beginning with the author's stated position.	Explain how the authors of _____ and _____ present different viewpoints of the same topic.
Reporting Category: Literary Text (44%)	
8.LT-C.1 Relate a literary work to artifacts, artistic creations, or historical sites of the period of its setting.	Which statement from the article would best help a reader understand the setting of the poem?
8.LT-G.2 Identify and analyze how the different genres (e.g., poetry, short story, biography, drama) used by one particular author accomplish different aesthetic purposes.	What detail from the passage best shows that _____?
8.LT-T.3 Compare (and contrast) similar themes across a variety of selections, distinguishing theme from topic.	How are the themes of both short stories similar?
8.LT-F.4 Determine how central characters' qualities influence the resolution of the conflict.	[A character's] reaction to _____ can best be described as . . .
8.LT-F.5 Interpret a character's traits, emotions, or motivations and provide supporting evidence from a text.	A. The reader can conclude from the description of _____ that . . . B. What is the most likely reason _____ decides to _____?
8.LT-F.6 Analyze the influence of setting (e.g., time of day, place, historical period, situation) on the problem and resolution.	Based on the excerpt, explain how _____ has changed since _____. Support your answer with specific details from the passage.
8.LT-LNF.7 Analyze word choice (voice, tone, biblical or metaphoric language or imagery) in well-known speeches and political text.	A. Which of the following words best describes the tone used by [person/historian] in paragraph # / article? B. What does the image of _____ suggest about _____?

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Reporting Category: Literary Text (44%) (continued)	
Standards:	**Assessment Stems:**
8.LT-P.8 Analyze the effects of sound (alliteration, internal rhyme, rhyme scheme), figurative language (personification, metaphor, simile, hyperbole), and graphics (capital letters, line length, word position) on the meaning of a poem.	Read line X from the poem in the box below. [insert passage excerpt] The poet most likely includes this line to . . .
8.LT-S.10 Draw conclusions about style, mood, tone, and meaning of prose, poetry, and drama based on the author's word choice and use of figurative language.	A. What change in tone occurs in paragraph #? B. The description in paragraph # makes _____ seem . . .

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Reporting Category: Language Development (19%)	
Standards:	**Assessment Stems:**
10.LD-V.8 Identify and use idioms, cognates, and the literal and figurative meanings of words in speaking and writing.	As used in the article, the word _____ most likely means . . .
10.LD-V.9 Distinguish between the denotative and connotative meanings of words, and interpret the connotative power of words.	Read the sentence from paragraph # in the box below. [sentence] In the sentence, the word _____ means about the same as . . .
10.LD-V.10 Determine meanings, pronunciations, contextually appropriate synonyms and antonyms, replacement words and phrases, etymologies, and correct spellings of words using dictionaries, thesauri, histories of language, and books of quotations.	In the phrase _____, the word _____ probably means . . .
Reporting Category: Informational Text (37%)	
10.IT-E.1 Summarize the purpose and main ideas in passages; distinguish between a summary and a critique.	A. This excerpt is mostly about . . . B. Based on the article, explain the characteristics of _____ that have enabled them to _____. Support your answer with relevant and specific details from the article.
10.IT-E.2 Explain the author's stated or implied purpose(s) for writing expository text.	A. The main purpose of this article is to . . . B. This passage can best be described as a . . .
10.IT-E.3 Describe the controlling idea or specific purpose of passages and paragraphs, and determine the essential elements that elaborate it.	A. Which of these statements from the article best conveys the author's point of view? B. What main point is supported by _____?
10.IT-E.4 Analyze implied or subtly stated interrelationships between and among ideas and concepts within expository text.	According to the passage, _____ did _____ because . . .
10.IT-E.5 Make relevant inferences by synthesizing concepts and ideas from a single reading selection.	A. In the last paragraph, the author concludes that . . . B. Read the sentence from _____ in the box below. [sentence] Which of these sentences best restates the idea in the sentence?
10.IT-DP.6 Synthesize information from multiple sources (e.g., maps, illustrations, schematic diagrams, manuals, product information, consumer publications) to draw conclusions about the ideas presented.	Which information from the _____ helps the reader understand the difficulties encountered during _____?

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Reporting Category: Informational Text (37%) (continued)	
Standards:	**Assessment Stems:**
10.IT-DP.7 Analyze the presentation of information.	Why does the author most likely include _____ in the article?
10.IT-A.8 Distinguish supported inferences from unsupported inferences in contemporary political speeches, editorials, or newspaper articles.	According to the passage, what motivated _____ to do _____?
10.IT-A.9 Analyze the logic and use of evidence in an author's argument.	According to the article, which of the following statements is true about _____?
10.IT-A.10 Describe how rhetorical techniques (e.g., text repetition, sentence variety, understatement, irony, sarcasm) contribute to the effects of persuasive text, given the audience, purpose, and occasion.	At the beginning/end of the article, how does the author make the information _____ (e.g., interesting, persuasive, appealing)?
Reporting Category: Literary Text (44%)	
10.LT-C.1 Relate a literary work to primary source documents of its literary period or historical setting or to the seminal ideas of its time.	Based on the passage, which of these aspects of _____ had the greatest influence on the author?
10.LT-G.2 Explain how the genre for texts with similar themes shapes the meaning.	What does the use of free verse accomplish in both _____ and _____?
10.LT-T.3 Analyze the way in which the theme or meaning of a selection represents a view or comment on life, providing textual evidence for the identified theme.	A. What statement best expresses the main idea of the essay? B. According to paragraph #, what lesson does the author learn about _____ ?
10.LT-F.4 Analyze such elements in fiction as foreshadowing, flashbacks, suspense, and irony.	Explain how the author foreshadows _____. Support your answer with relevant and specific details/examples from the story.
10.LT-F.5 Explain how narrator's point of view affects tone, characterization, and plot.	A. [Character] does _____ in order to show that . . . B. Which of these belongs in the blank box? [web]
10.LT-LNF.6 Analyze the ways in which a narrator's point of view and language affect interpretation (e.g., Ralph Ellison's *Invisible Man*).	Read this paragraph from the passage. [paragraph] What do the details about _____ mostly emphasize?
10.LT-LNF.7 Analyze denotation, connotation, and irony contained within classical essays.	Explain why the author's situation described in the essay is ironic. Support your answer with relevant and specific details from the story. Write your answer on the lines in the answer booklet.

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Reporting Category: Literary Text (44%) (continued)	
Standards:	**Assessment Stems:**
10.LT-P.8 Identify, respond to, and analyze the effects of the form and dramatic structure of ballads, elegies, sonnets, and heroic couplets.	A. Which of these best states what happens in the poem? B. Which of these best explains how the poem is structured?
10.LT-S.10 Analyze the author's use of figurative language, including personification, symbolism, simile, metaphor, hyperbole, allusion, and imagery in a poetry selection.	A. What does the author mean when he/she writes _____? B. The author's image of _____ symbolizes . . .
10.LT-S.11 Evaluate how an author's choice of words advances the theme or purpose of a work.	Read these sentences from paragraph #. [sentences] What is being emphasized by the author's use of repetition?

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MATHEMATICS

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Reporting Category: Number Sense and Operations (32%)	
Standards:	**Assessment Stems:**
3.NSO-N.1 Exhibit an understanding of the base 10 number system by reading, modeling, and writing whole numbers to at least 10,000; demonstrate an understanding of the values of the digits.	Which of the following pictures shows _____ tens and _____ ones?
3.NSO-N.2 Represent, compare, and order numbers to 10,000 using various forms, including expanded notation (e.g., $3{,}206 = 3 \times 1{,}000 + 2 \times 100 + 6$) and written out in words (e.g., three thousand two-hundred six).	Put the following numbers in order from least to greatest.
3.NSO-N.3 Round whole numbers through 10,000 to the nearest 10, 100, and 1,000 (e.g., Round 1,548 to the nearest ten).	Which of the following shows [number] rounded to the nearest hundred?
3.NSO-N.4 Recognize sets to which a number may belong (odd numbers, even numbers, and multiples of numbers through 10). Identify the numbers in those classes. Example: Find multiples of 7 between 1 and 35 (7, 14, 21, 28, and 35).	Diane was playing with the number cards shown below. (Artwork of a series of squares with numbers on them) She picked up all the cards that were multiples of 6. Which of these shows all of the cards that Diane picked up?
3.NSO-F.5 Identify and represent fractions (between 0 and 1 with denominators through 10) as parts of unit wholes and parts of a collection.	What fraction of the [objects] are [a color/size]?
3.NSO-F.6 Recognize, name, and use equivalent fractions with denominators 2, 3, 4, and 8; place these fractions on the number line; compare and order them and relate the number line to a ruler (e.g., $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$).	Which of these fractions is equal to $\frac{1}{2}$?
3.NSO-F.7 Know the meaning of 0.75, 0.50, and 0.25 as they relate to money; know that fractions and decimals are two different representations of the same concept (e.g., 50 cents is what fraction of a dollar? 75 cents is what fraction of a dollar?).	Which of the following amounts represents $\frac{3}{4}$ of a dollar?
3.NSO-F.8 Know that any fraction can be written as a sum of unit fractions. Example: $\frac{3}{4}$ as a sum of its unit fractions ($\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$).	Which of these is equal to $\frac{3}{4}$?
3.NSO-F.9 Model and represent a mixed number (with denominator 2, 3, or 4) as a whole number and a fraction. Example: Represent $\frac{5}{3}$ as a mixed number.	Which of these is equal to (Artwork modeling 3 and a half)?

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Reporting Category: Number Sense and Operations (32%) (continued)	
Standards:	**Assessment Stems:**
3.NSO-C.10 Demonstrate an understanding of and the ability to use conventional algorithms for the addition and subtraction of up to five-digit whole numbers (e.g., 85412 − 42747 = ? Explain your method).	There are _____ [objects] in total. If you add _____ and then subtract _____, how many [objects] will there now be?
3.NSO-C.11 Add and subtract up to four-digit whole numbers accurately and efficiently.	Zoe and Tessa collected stamps. Zoe collected _____ stamps and Tessa collected _____ stamps. How many stamps did they collect all together?
3.NSO-C.12 Use concrete objects and visual models to add and subtract common fractions (halves, thirds, fourths, sixths, and eighths) with like denominators.	[Artwork of two equally sized rectangles, side by side, each divided into 6 equally sized parts represented as a 2-row × 3-column array; one has two parts (touching) shaded and one has 1 part shaded] What is $\frac{2}{6} + \frac{1}{6}$?
3.NSO-C.13 Solve problems involving addition and subtraction of money amounts in decimal notation.	What is [dollar amount] + [dollar amount] − [dollar amount]?
3.NSO-C.14 Know multiplication is the result of counting the total number of objects in a set of equal groups (e.g., Write a number sentence for 3 groups of 5 objects).	*(Students are given an image representing a multiplication number sentence.)* Which of the following represents how many [objects] there are in total?
3.NSO-C.15 Know division (÷) as another way of expressing multiplication, i.e., that division is the inverse of multiplication (e.g., Find other facts related to 2 × 3 = 6, such as 6 ÷ 2 = 3 or 6 ÷ 3 = 2).	Look at the number sentence below. *(Students are given a multiplication number sentence.)* What is another way to write this number sentence? *(Student identifies division number sentence.)*
3.NSO-C.16 Know multiplication facts through 10 × 10 and related division facts (e.g., 9 × 8 = 72 and 72 ÷ 9 = 8). Use these facts to solve related problems (e.g., 3 × 5 is related to 3 × 50).	A. Look at the multiplication fact. _____ . Which of these is a related division fact? B. Which multiplication fact is related to _____ ?
3.NSO-C.17 Solve simple problems involving multiplication of multidigit whole numbers by one-digit numbers. Example: 2,431 × 2 = ? Explain your method.	[Name] has _____ pages in her sticker collection book. Each page has _____ stickers. How many stickers does [Name] have in her sticker collection?
3.NSO-C.18 Solve division problems in which a multidigit whole number is evenly divided by a one-digit number. Example: What is 125 ÷ 5?	Solve. 125 ÷ 5 =

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Reporting Category: Number Sense and Operations (32%) (continued)	
Standards:	**Assessment Stems:**
3.NSO-C.19 Multiply up to two-digit numbers by a one-digit number accurately and efficiently.	Solve. (two-digit number) $\times$ (one-digit number) $=$ (Item may also assess student's ability to solve a multiplication problem as part of a basic word problem.)
3.NSO-C.20 Use the commutative (order) and identity properties of addition and multiplication on whole numbers in computations and problem situations (e.g., Multiply 7, 2, and 5. Now multiply them in the order 2, 5, and 7. Do they yield the same answer? Which was easier? Why?).	Look at the number sentence below. . . Which of these goes in the blank to make the number sentence true? *(Student identifies commutative property for addition or multiplication number sentence.)*
3.NSO-C.21 Know and apply the special properties of 0 and 1 in multiplication.	Look at the number sentence below. $\square \times 45 = 0$ Which of these goes in the box to make the number sentence true?
3.NSO-E.23 Estimate the sum and difference of two numbers with three digits (sums up to 1,000) and judge reasonableness of estimates (e.g., Your friend says that $79 - 22 = 27$. Without solving explain why you think the answer is wrong).	Use estimation to solve [addition or subtraction number sentence].
Reporting Category: Patterns, Relations, and Algebra (18%)	
3.PRA.1 Create, describe, and extend symbolic (geometric) patterns and addition and subtraction patterns.	What is the next [object/number] in the pattern?
3.PRA.2 Select appropriate operational and relational symbols to make an expression true (e.g., Solve the following: If 4 ___ 3 = 12, what operational symbol goes in the blank?).	*(Students are given a number sentence missing its operational symbol.)* What symbol will make the number sentence true?
3.PRA.3 Determine values of variables in simple equations involving addition, subtraction, or multiplication.	*(Students are given a number sentence with a missing value.)* What number goes in the blank to make the equation true?
3.PRA.4 Know and express the relationships among linear units of measure, i.e., unit conversions (e.g., How many feet are in one yard? How many inches are in one foot?).	The length of the [object] is _____ feet. How long is the [object] in inches?
3.PRA.5 Extend and recognize a linear pattern by its rules (e.g., Find the number of legs on 6 dogs).	*(Students are given a number pattern.)* If the pattern continues, what will be the _____ number in the pattern?

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Reporting Category: Geometry (13%)	
Standards:	**Assessment Stems:**
3.G.1 Compare and analyze attributes and other features (e.g., number and shape of sides, faces, corners, right angles) of two-dimensional geometric shapes, especially the attributes of triangles (isosceles, equilateral, right) and quadrilaterals (rectangle, square).	How many right angles does a [shape] have?
3.G.2 Describe, model, draw, compare, and classify three-dimensional and two-dimensional shapes, especially circles and polygons (e.g., triangles and quadrilaterals). Example: Use a geoboard to make a quadrilateral. How do you know it is a quadrilateral?	A. How many right angles does a rectangle have? B. On the lines below, give 2 differences between a rectangle and a triangle.
3.G.3 Identify angles as right, acute (less than a right angle), or obtuse (greater than a right angle).	*(Students are given images of different classifications of angles.)* Which of the following angles is an obtuse angle?
3.G.4 Identify and draw lines that are parallel, perpendicular, and intersecting.	Which of the following pictures shows parallel/perpendicular/ intersecting lines?
3.G.5 Identify and draw lines of symmetry in two-dimensional shapes.	*(Students are given a shape with _____ lines of symmetry.)* How many lines of symmetry does the shape have?
3.G.6 Apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent.	A. Which two shapes are congruent with one another? B. Which of the following is a flip of the figure across the line of reflection?
3.G.7 Using ordered pairs of whole numbers and/or letters, locate and identify points on a grid.	Where is the X located on the grid?
Reporting Category: Measurement (13%)	
3.M.1 Demonstrate an understanding of such attributes as length, area, and weight; select the appropriate type of unit for measuring each attribute using both the US customary and metric systems.	A. Which of the following units of measurement is the best one to use to measure [object]? B. How many centimeters long is the picture of the [object]?
3.M.2 Carry out simple unit conversions within a system of measurement such as hours to minutes and cents to dollars (e.g., How many minutes are in 3 hours?).	A. How many cents are in _____dollars and _____cents? B. How many minutes are in _____hours?

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Reporting Category: Measurement (13%) (continued)	
Standards:	**Assessment Stems:**
3.M.3 Identify time to the nearest five minutes on analog and digital clocks using a.m. and p.m. Compare elapsed time using a clock (e.g., hours and minutes since…) and using a calendar (e.g., days since…).	Look at the clock below. How long will it take the minute hand to reach the _____?
3.M.4 Estimate and find area and perimeter of a rectangle and triangle using diagrams, models, and grids, or by measuring.	A. What is the area of the shape? B. Which of the following has a perimeter of _____units?
Reporting Category: Data Analysis, Statistics, and Probability (23%)	
3.DASP.1 Collect and organize data using observations, measurements, surveys, or experiments.	A survey is being conducted about _____. What is the best question to ask?
3.DASP.2 Construct, identify the main ideas, and make predictions from various representations of data sets in the forms of tables, bar graphs (horizontal and vertical forms), pictographs, and tallies.	Study the graph. How many more [item in the graph] are there than [different item in the graph]?
3.DASP.4 Classify outcomes as certain, likely, unlikely, or impossible.	There is a bag of marbles that contains different colors. There are _____ blue marbles, _____ red marbles, and _____ yellow marbles. If a marble is selected from the bag, what color marble is *most* likely to be selected?
3.DASP.5 List and count the number of possible combinations of objects from 2 sets (e.g., Using pictures of two shirts and three pairs of pants from a catalogue, how many different outfits can you make?).	There are _____ types of ice-cream cones and _____ kinds of ice cream. How many different combinations of cones and ice cream can be made?

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Reporting Category: Number Sense and Operations (32%)	
Standards:	**Assessment Stems:**
4.NSO-N.1 Exhibit an understanding of the base 10 number system by reading, modeling, and writing whole numbers to at least 100,000; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers (e.g., Write the number that has 9 ten thousands, 8 hundreds, 6 tens, and 2 ones).	*(Students are given a number.)* How would you write this number out in words? What number is in the hundreds position?
4.NSO-N.3 Round whole numbers to 100,000 to the nearest 10, 100, 1,000, 10,000, and 100,000.	Which of the following shows [number] rounded to the nearest hundred thousand?
4.NSO-N.4 Recognize sets to which a number may belong (odds, evens, multiples and factors of given numbers, and squares) and use these in the solution of problems.	Which of these shows only multiples of 3?
4.NSO-N.5 Read and interpret whole numbers and decimals up to two decimal places; relate to money and place-value decomposition.	[Name] has 6 dollar bills, 3 quarters and 7 nickels. How much money does [Name] have in all?
4.NSO-N.7 Find all factors of a whole number up to 50; know that numbers such as 2, 3, 5, 7, and 11 do not have any factors except 1 and itself and that such numbers are called prime numbers.	Which of these are prime numbers?
4.NSO-N.8 Use concepts of negative numbers.	Which of these numbers is closest to (negative number) on a number line?
4.NSO-F.9 Demonstrate an understanding of fractions as parts of unit wholes, as parts of a collection, and as locations on a number line.	Look at the grid below. What fraction of the grid is shaded?
4.NSO-F.10 Know the relationships among halves, fourths, and eighths and among thirds, sixths, and twelfths; compare and order such fractions.	Which of these shows the fractions in order from least to greatest?
4.NSO-F.12 Select, use, and explain models to relate common fractions and mixed numbers (e.g., $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{8}$, $\frac{1}{10}$, $\frac{1}{12}$, and $1\frac{1}{2}$); find equivalent fractions, mixed numbers, and decimals.	*(Students are given _____ blank circles.)* How many circles must be shaded so that [*a particular fraction*] of the circles are shaded?
4.NSO-F.13 Represent positive decimals to the hundredths.	*(Students are given a 10 × 10 grid where each box in the grid represents 0.01.)* What decimal is shown by the shaded part of the grid?

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Reporting Category: Number Sense and Operations (32%) (continued)	
Standards:	**Assessment Stems:**
4.NSO-C.14 Demonstrate an understanding of and the ability to use conventional algorithms for the addition and subtraction of multidigit whole numbers.	Solve the following: [*multiple-digit number*] − [*multiple-digit number*] =
4.NSO-C.15 Add and subtract up to five-digit numbers accurately and efficiently.	A. What is [*5-digit number*] − [*5-digit number*]? B. What is [*5-digit number*] + [*5-digit number*]?
4.NSO-C.16 Use concrete objects and visual models to add and subtract fractions where the denominators are equal or when one denominator is a multiple of the other (denominators 2 through 12, and 100).	*(Students are given an image of two grids each partially shaded.)* Which of these models represents the correct total when added/subtracted to/from each other?
4.NSO-C.18 Know multiplication facts through 12 × 12 and the inverse division facts. Use these facts to solve related multiplication problems and compute related problems.	Look at the number sentence below. (Multiplication or division sentence through 12 × 12) Which of these belongs to the same fact family as the number sentence?
4.NSO-C.19 Demonstrate understanding of and ability to use the conventional algorithms for multiplication of up to a three-digit whole number by a two-digit whole number. Multiply three-digit whole numbers by two-digit whole numbers accurately and efficiently.	What is [*3-digit number*] × [*2-digit number*]?
4.NSO-C.20 Demonstrate understanding of and the ability to use the conventional algorithm for division of up to a three-digit whole number with a single-digit divisor (with or without remainders). Divide up to a three-digit whole number with a single-digit divisor accurately and efficiently. Interpret any remainders.	What is [*3-digit number*] ÷ [*1-digit number*]?
4.NSO-C.21 Multiply fractions by whole numbers, using repeated addition and area rectangular models.	Which number sentence represents the multiplication problem (whole number) × (fraction)?
4.NSO-C.22 Mentally calculate simple products and quotients up to a three-digit number by a one-digit number. Example: 400 × 7, or 320 ÷ 8.	Solve. 400 × 7 =
4.NSO-C.23 Multiply and divide money amounts in decimal notation by using whole-number multipliers and divisors.	(Name) bought (number) [(objects) at (cost)] each. What was the total cost of the (objects) that (Name) bought?

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Reporting Category: Number Sense and Operations (32%) (continued)	
Standards:	**Assessment Stems:**
4.NSO-C.24 Determine the unit cost when given the total cost and number of units.	What is the unit cost of 1 if the cost of _____ is equal to _____ ?
4.NSO-C.25 Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.	[Number] of [items] were purchased. Each one cost $_____. How much did the items cost all together?
4.NSO-C.26 Select, use, and explain the commutative, associative, and identity properties of operations on whole numbers in problem situations.	Look at the equation below: 755 + 319 = _____. Which of these has the same answer as this equation?
4.NSO-C.27 Use the relationship between multiplication and division to simplify computations and check results.	Look at the number sentence below. (Multiplication equation) Which of these can be used to check the answer?
4.NSO-E.28 Estimate and compute the sum or difference of whole numbers and positive decimals to two places.	Look at the following number sentence: _____ + _____ + _____ + _____ = What is the best estimate of the sum?
4.NSO-E.29 Estimate the answers to calculations involving addition, subtraction, or multiplication; know when approximation or a rounded solution is appropriate and use it to check the reasonableness of answers.	Mr. Johnson is baking 18 batches of 12 cookies. Which of these is the best estimate of the total number of cookies Mr. Johnson is baking?
4.NSO-E.30 Select and use a variety of strategies (e.g., front-end, rounding, and regrouping) to estimate quantities, measures, and the results of whole-number computations up to three-digit whole numbers and amounts of money to $1,000, and to judge the reasonableness of answers.	*(Students are given images of different items weighing different amounts.)* Which two items weigh approximately _____ pounds together?
Reporting Category: Patterns, Relations, and Algebra (18%)	
4.PRA.1 Create, describe, extend, and explain geometric and numeric patterns, including multiplication patterns; generalize the rule for the pattern and make predictions when given a table of number pairs of a set of data.	A. A pattern is created by starting with a number and adding _____ each time. Which of these number patterns follows that rule? B. *(Students are given a geometric pattern.)* If the pattern continues, which figure should come next?

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Reporting Category: Patterns, Relations, and Algebra (18%) (continued)	
Standards:	**Assessment Stems:**
4.PRA.2 Use letters and other symbols (e.g., Δ, x) as variables in expressions and in equations or inequalities (mathematical sentences that use $=$, $<$, and $>$).	*(Students are given a number sentence with a missing number.)* What number can be put in the box to make the number sentence true?
4.PRA.3 Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships.	*(Students are given a number sentence.)* Create a picture/model to represent the number sentence.
4.PRA.4 Solve problems involving proportional relationships, including unit pricing (e.g., four apples cost 80 cents, so one apple costs ? cents; 1 inch represents 5 miles, so 2 inches represent ? miles).	A. [Number of] [items] were purchased for $_____. How much did each bagel cost? B. One pound of bananas costs $_____. How much will _____ pounds of bananas cost?
4.PRA.5 Determine how change in one variable relates to a change in a second variable (e.g., input-output tables).	A. *(Students are given an input-output table.)* What is the missing number in the table? B. In relation to the input number, what rule is used to find the output number each time?
Reporting Category: Geometry (13%)	
4.G.1 Compare and analyze attributes and other features (e.g., number of sides, faces, corners, right angles, diagonals, and symmetry) of two- and three-dimensional geometric shapes.	A. Which of these solid figures has _____ number of faces? B. *(Students are given a shape to study.)* How many corners does the shape have? How many sides does the shape have?
4.G.2 Describe, model, draw, compare, and classify two- and three-dimensional shapes (e.g., circles, polygons, parallelograms, trapezoids, cubes, spheres, pyramids, cones, cylinders).	A. *(Students are given an image of a three-dimensional figure.)* Name the three-dimensional figure. B. What are 3 similarities between a [two- or three-dimensional shape/figure] and a [two- or three-dimensional shape/figure]?
4.G.3 Know the definitions of a right angle, an acute angle, and an obtuse angle. Understand that 90°, 180°, 270°, and 360° are associated respectively with $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and full turns.	*(Students are given different angle measures.)* Which angle is an obtuse angle?
4.G.4 Describe and draw intersecting, parallel, and perpendicular lines.	Which of the following diagrams shows perpendicular/parallel/intersecting lines?

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Reporting Category: Geometry (13%) (continued)	
Standards:	**Assessment Stems:**
4.G.5 Recognize similar figures (two shapes, R and S, are similar if they are congruent after one of them is shrunk or expanded).	Look at the figure. (Artwork of a figure of some kind) Which of these is similar to the figure shown?
4.G.6 Describe and apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent.	*(Students are given different images of shapes where only 3 of the given shapes are congruent to one another. The congruent shapes have been reflected/rotated/translated.)* Which of these shapes are congruent with one another?
4.G.7 Predict and validate the results of partitioning, folding, and combining two- and three-dimensional shapes.	*(Students are given pattern blocks that can be combined together to create a new shape.)* What shape is made by combining the pattern blocks together?
4.G.8 Using ordered pairs of numbers and/or letters, graph, locate, and identify points and describe paths (first quadrant).	A. *(Students are given 4 ordered pairs.)* Plot the following points on a grid. B. *(Students are given a graph with an X plotted on it.)* Name the ordered pair that gives the location of the X.
Reporting Category: Measurement (13%)	
4.M.1 Identify and use appropriate metric and US customary units and tools (e.g., ruler, protractor, graduated cylinder, thermometer) to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.	A. What unit of measurement is <u>best</u> used to measure _____? B. *(Students are given a picture/figure.)* Use your ruler to measure the length of the _____ in inches.
4.M.2 Carry out simple unit conversions within a system of measurement.	A house is _____ meters tall. How many centimeters tall is the house?
4.M.3 Identify time to the minute on analog and digital clocks using a.m. and p.m. Compute elapsed time using a clock (e.g., hours and minutes since…) and using a calendar (e.g., days since…).	A. *(Students are shown analog clocks.)* Which of the following clocks shows a time of _____? B. *(Students are shown a calendar.)* If the date today is _____, then in 23 days what will the date be?
4.M.4 Estimate and find area and perimeter of shapes, including irregular shapes, using diagrams, models, and grids or by measuring.	*(Students are given an irregular shape on a grid.)* What is the area of the given shape?

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Reporting Category: Measurement (13%) (continued)	
Standards:	**Assessment Stems:**
4.M.5 Recognize that rectangles that have the same area can have different perimeters; understand that rectangles that have the same perimeter can have different areas.	Look at the rectangle below. *(Students are given a rectangle with certain dimensions.)* Construct a rectangle that has the same area but has a different perimeter.
Reporting Category: Data Analysis, Statistics, and Probability (23%)	
4.DASP.1 Collect and organize data using observations, measurements, surveys, or experiments and identify appropriate ways to display the data.	A. *(Students are given results of a survey.)* Display the following information in a _____ graph. B. *(Students are given information about a survey that was conducted.)* What type of graph should be created to best display the data?
4.DASP.2 Match a representation of a data set, such as lists, tables, or graphs (including circle graphs), with the actual set of data.	*(Students are given results of a survery in a chart.)* Which graph displays the same information as the chart?
4.DASP.3 Compare two data sets represented in two bar graphs, pie graphs, and histograms.	*(Students are given 2 graphs to compare.)* Students from 2 different schools were asked what their favorite sport was. According to the bar graphs, which school has more students that chose baseball as their favorite sport?
4.DASP.4 Represent the possible outcomes for a simple probability situation.	There are _____ red marbles, _____ blue marbles, and _____ green marbles in a bag. What is the probability that a red marble will be selected from the bag?
4.DASP.5 List and count the number of possible combinations of objects from 3 sets (e.g., With pictures of three shirts, a set of two pairs of pants, and two hats from a catalogue, record all of the possible outfits).	*(Students are given pictures of 2 different kinds of ice-cream cones and 3 different kinds of scoops of ice cream.)* How many different combinations of ice-cream cones and scoops of ice cream can be made?

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Reporting Category: Number Sense and Operations (30%)	
Standards:	**Assessment Stems:**
5.NSO-N.1 Estimate, round, and manipulate very large (e.g., billions) and very small (e.g., thousandths) numbers; demonstrate an understanding of place value to billions and thousandths.	Look at the following number. [*Insert number that ranges from billions place to thousandths place, e.g., 456,721.38*]. What digit in this number is in the ten thousands place?
5.NSO-N.2 Represent and compare very large (billions) and very small (thousandths) positive numbers in various forms such as expanded notation without exponents (e.g., $9724 = 9 \times 1000 + 7 \times 100 + 2 \times 10 + 4$).	Write out the following number in expanded notation. [*Insert number that ranges from billions place to thousandths place, e.g., 93,456,721*].
5.NSO-N.3 Find and position integers, fractions, mixed numbers, and decimals (both positive and negative) on the number line.	[Name] plots _____ on a number line. Which of the following number lines shows _____ plotted correctly?
5.NSO-N.4 Compare and order integers (including negative integers) and positive fractions, mixed numbers, decimals, and percents.	Look at the list of numbers below. (List of positive/negative integers, fractions, mixed numbers, decimals, and/or percents) Which of these shows these numbers from least to greatest?
5.NSO-N.5 Apply the number theory concepts of common factor, common multiple, and divisibility rules for 2, 3, 5, and 10 to the solution of problems. Demonstrate an understanding of the concepts of prime and composite numbers.	A. What is the greatest common factor of _____ and _____? B. What is the lowest common multiple of _____ and _____?
5.NSO-N.6 Know the set of prime numbers to 100.	Look at the numbers listed below. Which of these numbers is a prime number?
5.NSO-N.7 Determine the prime factors of all numbers through 100 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$).	Which of these shows (number) as a product of its prime factors?
5.NSO-F.8 Explain different interpretations of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, as division of whole numbers by whole numbers, and as locations on the number line.	*(Students are given an improper fraction.)* Locate this fraction on the number line.
5.NSO-F.9 Interpret percents as parts out of 100, use % notation, and express a part of a whole as a percentage.	[Name] answered 15 out of 20 of the questions correct on a test. What percentage of questions was answered correctly?

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Reporting Category: Number Sense and Operations (30%) (continued)	
Standards:	**Assessment Stems:**
5.NSO-F.10 Identify and determine common equivalent fractions, mixed numbers (with denominators 2, 4, 5, 10), decimals, and percents and explain why they represent the same value.	A. Write out two fractions that are equivalent to _____ [*insert a fraction with a denominator of 2, 4, 5, or 10*]. B. Express _____ [*insert a fraction with a denominator of 2, 4, 5, or 10*] as a percent.
5.NSO-F.11 Write improper fractions as mixed numbers, and know that a mixed number represents the number of "wholes" and the part of a whole remaining (e.g., Write $\frac{5}{4}$ as a mixed number; $1\frac{1}{4}$ means "1 plus $\frac{1}{4}$").	Which of the following is equal to _____ [*insert an improper fraction*]?
5.NSO-C.12 Add with negative integers, subtract positive integers from negative integers, and verify the reasonableness of the results.	What is the value of the expression (integer) + (integer)?
5.NSO-C.13 Add and subtract fractions (including mixed numbers) with like and unlike denominators (of 2, 3, 4, 5, 6, and 10), and express answers in the simplest form.	Add/Subtract the following fractions: _____ + _____ =
5.NSO-C.14 Add and subtract positive decimals.	[Name] bought 3 books. The books cost $7.99, $12.99, and $8.59. What was the total cost of [Name's] purchase?
5.NSO-C.15 Solve problems involving multiplication and division of any whole number.	What is 720 divided by 12?
5.NSO-C.16 Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.	What is the value of _____ ÷ _____ ?
5.NSO-C.17 Show an understanding of multiplication and division of fractions; multiply positive fractions with whole numbers.	What is [fraction] ÷ [fraction]?

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Reporting Category: Number Sense and Operations (30%) (continued)	
Standards:	**Assessment Stems:**
5.NSO-C.18 Simplify fractions in cases when both the numerator and the denominator have 2, 3, 4, 5, or 10 as a common factor. Show that two fractions are or are not equivalent by reducing to simpler forms or by finding a common denominator.	Julia, Daniel, and Sam each had a puzzle book. The number of puzzles in each book is shown below. (A table showing the number of puzzles in each person's puzzle book) A. Julia solved 1 puzzle in her book. How many puzzles should Daniel solve so that the fraction of the solved puzzles in both their books is the same? In the answer booklet, show your work and write your answer on the line. B. What fraction of Sam's puzzle book has been completed if he has solved 4 puzzles? Write your answer in the simplest form on the line in the answer booklet.
5.NSO-C.19 Multiply positive decimals with whole numbers.	One flower costs \$1.75. What is the cost of 8 flowers?
5.NSO-C.20 Demonstrate an understanding of and compute (positive integer) powers of 10 (e.g., 10^2); compute examples as repeated multiplication.	A. What is the value of 10^8 centimeters? B. Which of these is equal to $10 \times 10 \times 10 \times 10$?
5.NSO-C.21 Know integer subtraction is the inverse of integer addition; use the number line to model addition and subtraction of integers and add and subtract integers, with the exception of subtracting negative integers.	A. Which of these is the same as (positive integer) $-$ (negative integer)? B. Which of these number lines correctly models (negative number) $+$ (positive integer)?
5.NSO-C.22 Demonstrate an understanding of how parentheses affect expressions involving addition, subtraction, and multiplication, and use that understanding to solve problems (e.g., Solve $3 \times (4 + 2) = ?$).	Solve the following: $(9 + 3) \times 6 - 4 =$
5.NSO-E.23 Estimate sums and differences of whole numbers, positive fractions, and positive decimals. Estimate products of whole numbers and products of positive decimals with whole numbers. Use a variety of strategies and judge reasonableness of answers.	[Name] bought 4 items from a department store. The items were for \$256.95, \$105.36, \$48.50, and \$18.99. What is the estimated total for [Name's] purchase?

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Reporting Category: Patterns, Relations, and Algebra (25%)	
Standards:	**Assessment Stems:**
5.PRA.1 Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions (e.g., ABBCCC…; 1, 5, 9, 13, …; 3, 9, 27, …).	*(Students are given a number pattern.)* What rule could be used to find the next number in the pattern?
5.PRA.2 Replace variables with given values, evaluate and simplify.	*(Students are given an expression with a variable n.)* What is the value of the expression if $n = 6$?
5.PRA.3 Use the properties of equality to solve problems with whole numbers (e.g., if $x + 7 = 13$, then $x = 13 - 7$, therefore $x = 6$; if $3 \times F = 15$, then $\frac{1}{3} \times 3 \times F = \frac{1}{3} \times 15$, therefore $F = 5$).	*(Students are given an equation with the variable n.)* What value of *n* would make this equation true?
5.PRA.4 Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols (e.g., input-output tables).	*(Students are given a visual representation of a scale with two different expressions with the variable n on each side of the scale.)* What would *n* have to be to keep the scale balanced?
5.PRA.5 Interpret and evaluate mathematical expressions that use parentheses; use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.	What is the value of the expression below? $5 + (3 \times 7) - 6$
5.PRA.6 Solve problems involving proportional relationships using concrete models, tables, graphs, and paper-pencil methods.	[Name] charges an hourly rate for babysitting. *(Students are given a graph to represent the number of hours she babysits and the amount she charges.)* Based on the graph, how much does [Name] charge for 5 hours of babysitting?
5.PRA.7 Interpret graphs that represent the relationship between two variables in everyday situations.	*(Students are given a line graph that shows the relationship between the number of hours [Name] worked and the amount of money earned.)* How much money did [Name] earn after working for 7 hours?

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Reporting Category: Geometry (15%)	
Standards:	**Assessment Stems:**
5.G.1 Identify polygons based on their properties, including types of interior angles, perpendicular or parallel sides, and congruence of sides (e.g., squares, rectangles, rhombuses, parallelograms, and trapezoids; isosceles, equilateral, and right triangles).	Write directions for drawing a parallelogram.
5.G.2 Identify, describe, and compare special types of three-dimensional shapes (e.g., cubes, prisms, spheres, cones, and pyramids) based on their properties, such as edges and faces.	A. How many faces does a hexagonal prism have? B. Which of the following shapes is a triangular prism?
5.G.3 Identify relationships among points, lines, and planes (e.g., intersecting, parallel, perpendicular).	*(Students are given an image with 3 labeled lines. Two of those lines are intersecting, two of those lines are parallel, and two of those lines are perpendicular.)* Name the two lines that are perpendicular with one another.
5.G.4 Identify and describe types of symmetry, including line and rotational.	*(Students are given an image that contains a design on one half of it.)* Complete the design so that the image has a vertical line of symmetry.
5.G.5 Determine if two triangles or two quadrilaterals are congruent by measuring sides or a combination of sides and angles.	Look at the quadrilateral below. (Artwork of a quadrilateral) Which of these is congruent to this quadrilateral?
5.G.6 Predict, describe, and perform transformations on two-dimensional shapes (e.g., translations, rotations, and reflections).	*(Students are given a shape with detailed designs.)* Which of the following represents the shape after it has been reflected over the reflection line?
5.G.7 Graph points and identify coordinates of points on the Cartesian coordinate plane in the first two quadrants.	*(Students are given a map using a coordinate grid where one unit on the grid is equal to one block.)* [Name] left his/her house and travelled 3 blocks north and 5 blocks east. What location was [Name] going to?

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Reporting Category: Measurement (15%)	
Standards:	**Assessment Stems:**
5.M.1 Apply the concepts of perimeter and area to the solution of problems involving triangles and rectangles. Apply formulas where appropriate.	[Name] has a rectangular garden. The garden is 6 feet long and 4 feet wide. What is the area of the garden?
5.M.2 Apply formulas for the areas of triangles, rectangles, and parallelograms; recognize that shapes with the same number of sides but different appearances can have the same area.	A triangle has a height of 5 and a base of 4. What is the area of the triangle?
5.M.3 Solve problems involving proportional relationships and units of measurement.	One package weighs 32 ounces. How many pounds do 4 packages weigh?
5.M.4 Identify, measure, and describe circles and the relationships of the radius, diameter, circumference, and area (e.g., $d = 2r$) and use these concepts to solve problems.	Look at the circle. (Artwork of a circle with radius or diameter provided) A. Which of these is the circumference of the circle? B. Which of these is the area of the circle?
5.M.5 Find volumes and surface areas of rectangular prisms.	*(Students are given an image of a rectangular prism with its dimensions.)* What is the volume of the rectangular prism?
5.M.6 Know that angles on a straight line add up to 180°, interior angles of a triangle add up to 180°, angles surrounding a point add up to 360°, and interior angles of a quadrilateral add up to 360°; use these properties to solve problems.	*(Students are given an image of a triangle and the measurements of 2 of the angles.)* What is the measurement of the third angle?
5.M.7 Identify, measure, describe, classify, and draw various angles and triangles, given sides and the angle between them or given two angles and the side between them (e.g., draw a triangle with one right angle and two sides congruent).	*(Students are given a triangle with 2 acute angles and 1 right angle.)* Which angle is a right angle?

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Reporting Category: Data Analysis, Statistics, and Probability (15%)	
Standards:	**Assessment Stems:**
5.DASP.1 Define and apply the concepts of mean to solve problems.	[Name] recorded the number of points he/she scored in each basketball game for the first 6 games of the season. What is the average number of points [Name] scored per game?
5.DASP.2 Construct, draw conclusions, and make predictions from various representations of data sets, including tables, line graphs, line plots, circle graphs, and bar graphs (where symbols or scales represent multiple units).	*(Students are given a bar graph that represents favorite types of music among grade 5 students.)* How many students chose [genre] as their favorite type of music?
5.DASP.3 Predict the probability of outcomes of simple experiments and test the predictions.	*(Students are given an image of a spinner divided into 5 equal sections. _____'s name is in 3 of the sections and _____'s name is in 2 of the sections.)* [Name and Name] are playing a game with the spinner shown. Each time the arrow lands on a name, that person earns a point. If [Name] spins the arrow one time, what is the probability that he/she will earn a point?

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Reporting Category: Number Sense and Operations (30%)	
Standards:	**Assessment Stems:**
6.NSO-N.2 Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.	Place the following numbers on a number line: $\frac{3}{2}, \frac{3}{4}, \frac{3}{6} \ldots$
6.NSO-N.3 Know that numbers and their opposites add to 0 and are on opposite sides and at equal distance from 0 on a number line; know that 0 is an integer that is neither negative nor positive.	Look at the number sentence below. $^{-}100 + \square = 0$ Which of these numbers should be written in the box to make the number sentence true?
6.NSO-N.4 Represent rational numbers as repeating or terminating decimals when possible and translate between these representations.	Write $\frac{2}{9}$ as a decimal.
6.NSO-N.5 Identify and determine common equivalent fractions, mixed numbers, decimals, and percentages.	A. Write 3 equivalent fractions for $\frac{4}{12}$. B. Write $\frac{20}{100}$ as a percent and a decimal number.
6.NSO-N.7 Round whole numbers and decimals to any given place.	What is 6,459,821.891 rounded to the nearest hundred?
6.NSO-C.8 Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers and with positive fractions, mixed numbers, decimals, and percentages.	[Name] was at a restaurant. The total cost of his/her meal was $16.00. [Name] left a 20% tip for the server. How much tip did [Name] leave?
6.NSO-C.9 Know integer subtraction is the inverse of integer addition; use the number line to model addition and subtraction of integers and add and subtract integers.	In the following equation what is the value of x? $(^{-}9) - (^{-}3) = x$
6.NSO-C.10 Accurately and efficiently add, subtract, multiply, and divide (with multidigit divisors) whole numbers and positive decimals.	Solve the following: $9.15 - 6.37 =$
6.NSO-C.11 Use prime factorization to add and subtract fractions with like and unlike denominators.	Solve the following: $\frac{4}{6} + \frac{3}{8} =$
6.NSO-C.12 Accurately and efficiently add, subtract, multiply, and divide positive fractions (including mixed numbers) with like and unlike denominators. Simplify fractions.	[Name] ate $\frac{1}{3}$ of a pizza and [Name] ate $\frac{5}{12}$ of the same pizza. How much pizza did they eat all together?
6.NSO-C.13 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.	[Name's] bill at a restaurant came to $32.00. He/She left a 15% tip for the server. How much money did the server receive for a tip?

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Reporting Category: Number Sense and Operations (30%) (continued)	
Standards:	**Assessment Stems:**
6.NSO-C.14 Solve simple proportion problems using such methods as unit rate, scaling, finding equivalent fractions, and solving the proportion equation $\frac{a}{b} = \frac{c}{d}$.	[Name] bought 12 bagels for $3.60. What was the cost of one bagel?
6.NSO-C.15 Apply laws of exponents to multiply whole number powers with like bases.	Solve the following: $6^{12} \times 6^{5} =$
6.NSO-C.16 Understand multiplication of a negative number by a positive integer as repeated addition.	A. Which of these is equal to $^{-}12 \times 4$? B. Which of these is equal to $^{-}10 + {}^{-}10 + {}^{-}10$?
6.NSO-C.17 Apply the Order of Operations for expressions involving addition, subtraction, multiplication, and division with grouping symbols.	What is the value of the expression below? (Expression with multiple steps, including grouping)
6.NSO-E.18 Estimate results of computations with whole numbers and with positive fractions, mixed numbers, decimals, and percentages. Determine reasonableness of estimates.	[Name] works between 5 hours and 7 hours each day. He/She earns $6.25 an hour. How much money can [Name] expect to earn each day?
Reporting Category: Patterns, Relations, and Algebra (27%)	
6.PRA.1 Use the properties of equality to solve problems using letter name variables (e.g., $\frac{1}{4} + x = \frac{7}{12}$).	Find the value of *x* in the following equation: $\frac{2}{3} + x = \frac{8}{9}$
6.PRA.2 Write and solve one-step linear equations and check the answers.	Student A (a) is 6 years younger than Student B (b). If Student A is 14, then how old is Student B? Write an equation to represent this problem and then solve.
6.PRA.3 Identify and describe relationships between two variables with a constant rate of change (e.g., perimeter-side relationship for a square, distance-time graphs, and conversions such as feet to inches). Contrast these with relationships where the rate of change is not constant.	The picture below shows the cabinet door that Jordan wants to order while remodeling his kitchen. (Artwork of a cabinet door, with height indicated in feet. Conversion from feet to inches provided.) What is the height, in inches, of the cabinet door?
6.PRA.4 Simplify expressions of the first degree by combining like terms, and evaluate using specific values.	Solve the following when $x = 3$. $6x - 3x - 5$
6.PRA.5 Understand that adding or subtracting the same number to both sides of an equation creates a new equation that has the same truth values.	Write an equation that is equivalent to $8x + 2 = 26$. *(Students should practice adding or subtracting the same number from each side.)*

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Reporting Category: Patterns, Relations, and Algebra (27%) (continued)	
Standards:	**Assessment Stems:**
6.PRA.6 Understand that multiplying or dividing both sides of an equation by the same non-zero number creates a new equation that has the same truth values.	Write an equation that is equivalent to $5x = 20$. *(Students should practice multiplying or dividing the same number from each side.)*
6.PRA.7 Distinguish between an algebraic expression and an equation.	A. Which of these is an expression? B. Which of these is an equation?
6.PRA.8 Recognize when information given in a table, graph, or formula suggests a proportional or linear relationship.	*(Students are given a chart with values for x and y that form a linear relationship.)* Which of these equations represents the relationship between *x* and *y* in the table?
6.PRA.9 Produce and interpret graphs that represent the relationship between two variables (x and y) in everyday situations.	*(Students are given a chart that displays linear data on the height a plant has grown and time in weeks.)* On a coordinate grid, create a line graph that shows the relationship between the number of weeks a plant has been growing and the height of the plant in inches.
Reporting Category: Geometry (13%)	
6.G.1 Match three-dimensional objects and their two-dimensional representations (e.g., nets, projections, and perspective drawings).	Which of the following nets will form a rectangular prism when folded on the dotted lines?
6.G.2 Identify angles as vertical, adjacent, complementary, or supplementary; provide descriptions of these terms; and use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle.	[Name] measured two angles of a triangle. One angle was 38 degrees and the other angle was 57 degrees. What is the measure of the third angle of the triangle?
6.G.3 Determine if two shapes are congruent by motions or series of motions (e.g., translations, rotations, and reflections); predict the results of transformations on unmarked planes and draw the transformed figure (e.g., predict how tessellations transform under translation, reflection, and rotation).	Which pair of shapes appear to be congruent?
6.G.4 Graph points and identify coordinates of points on the Cartesian coordinate plane in all four quadrants.	Which of the following ordered pairs describes the point on the coordinate grid below?

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Reporting Category: Geometry (13%) (continued)	
Standards:	**Assessment Stems:**
6.G.5 Find the distance between two points on horizontal or vertical number lines.	Look at the points on the number line below. (Artwork of a number line, with two points marked using variable labels, such as X and Y) What is the distance between X and Y?
Reporting Category: Measurement (13%)	
6.M.1 Differentiate between and use appropriate units of measures for two- and three-dimensional objects (i.e., when finding perimeter, area, and volume).	*(Students are shown an image of a pentagon.)* Use your ruler to find the length of this pentagon in inches.
6.M.2 Find areas of triangles and parallelograms. Recognize that shapes with the same number of sides but different appearances can have the same area.	Find the area of a parallelogram in square inches with a height of 7 inches and a base of 4.2 inches.
6.M.3 Develop strategies to find the area and perimeter of complex shapes (e.g., subdividing them into basic shapes such as quadrilaterals, triangles, circles).	*(Students are given an image of a complex shape.)* Find the area/perimeter of this shape.
6.M.4 Solve problems involving proportional relationships and units of measurement (e.g., same system unit conversions, scale models, maps, and speed).	A model of a building has a 1:80 scale factor of the actual building. If the model is 12 inches tall, how tall is the actual building?
6.M.5 Understand the concept of volume; use the appropriate units in common measuring systems (e.g., cubic inch, cubic centimeter, cubic meter, cubic yard) to compute the volume of rectangular solids, including rectangular prisms.	[Name] has a storage box that measures 5 feet in length, 4 feet in width, and has a height of 3 feet. What is the total volume of [Name's] storage box?
6.M.6 Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals; measure the interior angles of various polygons.	[Name] drew the shape described below. The shape has 4 sides. 2 of the angles are acute and 2 of the angles are obtuse. All four sides are the same length. What shape did [Name] draw?
6.M.7 Understand the concept of the constant π; know the formulas for the circumference and area of a circle. Use the concepts to solve problems.	What is the circumference of a circle if the diameter is 5?

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Reporting Category: Measurement (13%) (continued)	
Standards:	**Assessment Stems:**
6.M.8 Know and use the formulas for the volumes and surface areas of cubes and rectangular prisms, given the lengths of their sides.	What is the volume of a rectangular prism with a length of 8 inches, a width of 6 inches, and a height of 5 inches?
6.M.9 Find the sum of the angles in simple polygons (up to eight sides) with and without measuring the angles.	Look at the quadrilateral below. *(Students are given 3 angle measures in the quadrilateral.)* What is the measure of angle *x*?
Reporting Category: Data Analysis, Statistics, and Probability (17%)	
6.DASP.1 Describe and compare data sets using the concepts of median, mean, mode, maximum and minimum, and range.	*(Students are given a stem-and-leaf plot.)* The stem-and-leaf plot below shows the scores for 20 students on a math test. What is the range of the math test scores?
6.DASP.3 Construct, label, and interpret stem-and-leaf plots.	*(Students are given a table with data.)* The table below shows how 10 students scored on a test. Create a stem-and-leaf plot to represent this data.
6.DASP.4 Use tree diagrams and other models (e.g., lists and tables) to represent possible or actual outcomes of trials.	[Name] has 2 pairs of pants and 5 shirts [he/she] can choose from. *(Students are given a chart listing the pants on one side and the shirts on the other side.)* Which diagram shows all the possible ways [Name] can choose one pair of pants and one shirt?
6.DASP.5 Represent two numerical variables on a scatterplot and describe any apparent relationship that exists between the two variables (e.g., between time spent on homework and grades in class).	Look at the scatterplot below. (Artwork of a scatterplot) Which of these best describes the relationship between (the independent variable) and (the dependent variable)?
6.DASP.6 Compute probabilities of events from simple experiments with equally likely outcomes (e.g., tossing dice, flipping coins, spinning spinners) by listing all possibilities and finding the fraction that meets given conditions. Analyze the outcomes.	There are 5 pink, 4 purple, and 3 red candies in a bag. Without looking [Name] will choose one candy from the bag. What is the probability that [Name] will choose a purple candy?
6.DASP.7 Use appropriate ratios between 0 and 1 to represent the probability of the outcome and associate the probability with the likelihood of the event; know that 0 probability means an event will not occur and that probability 1 means an event will occur.	There are 4 white, 3 blue, and 7 green marbles in a bag. [Name] said that the probability of choosing a yellow marble is 0. Is [Name] correct? Explain your answer.

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Reporting Category: Number Sense and Operations (28%)	
Standards:	**Assessment Stems:**
7.NSO-N.1 Compare, order, estimate, and translate among integers, fractions, and mixed numbers (i.e., rational numbers), decimals, and percents.	Order the following from least to greatest: $\frac{3}{4}$, 1.6, 80%, 0.74, $1\frac{1}{2}$.
7.NSO-N.2 Know that in decimal form, rational numbers either terminate or eventually repeat; locate rational numbers on the number line; convert between common repeating decimals and fractions.	Which of the following is a rational number?
7.NSO-N.3 Demonstrate an understanding of absolute value (e.g., $\lvert -3\rvert = \lvert 3\rvert = 3$).	Which of the following is equivalent to $\lvert -8\rvert$?
7.NSO-N.4 Represent numbers in scientific notation (positive powers of 10 only), and use that notation in problem situations.	The distance that light travels in a year is about 5,680,000,000,000 miles. Express this number in scientific notation.
7.NSO-N.5 Differentiate between rational and irrational numbers (i.e., know that irrational numbers cannot be expressed as the quotient of two integers and cannot be represented by terminating or repeating decimals).	Which of these is an irrational number?
7.NSO-N.6 Interpret positive whole-number powers as repeated multiplication and negative powers as repeated division or multiplication by the multiplicative inverse. Simplify and evaluate expressions that include exponents.	What is the simplified form of the expression $\frac{x^4y^{-2}}{x^{-9}y^4}$?
7.NSO-N.7 Apply number theory concepts, including prime factorization and relatively prime numbers, to the solution of problems (e.g., find the prime factorization of whole numbers, and write the results using exponents: $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$).	Which of these shows the prime factorization of 200?
7.NSO-N.8 Express ratios in several ways (e.g., 3 cups to 5 people; 3:5; $\frac{3}{5}$); recognize and find equivalent ratios.	Which of these is equivalent to the ratio (ratio of two numbers)?
7.NSO-N.9 Know the meaning of a square root of a number and its connection to the square whose area is the number.	Which square below has a side length of 6 inches?

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Reporting Category: Number Sense and Operations (28%) (continued)	
Standards:	**Assessment Stems:**
7.NSO-C.10 Compute with fractions (including simplification of fractions), integers, decimals, and percents (including those greater than 100 and less than 1) using the four operations and combinations of the four operations.	Solve $3\frac{3}{4} + 5(\frac{2}{3} - \frac{1}{2})$
7.NSO-C.11 Demonstrate an understanding of the properties of arithmetic operations on rational numbers (integers, fractions, and terminating decimals); convert terminating decimals into reduced fractions.	Which of the following is equivalent to 7.825?
7.NSO-C.12 Select and use appropriate operations—addition, subtraction, multiplication, division, and positive integer exponents—to solve problems with rational numbers and negative integers.	A. $^{-}51 \div 3 =$ B. 30% of 50 = C. $^{-}6 \times {}^{-}7 =$ D. $10\frac{1}{2} - 5\frac{3}{4} =$
7.NSO-C.13 Calculate the percentage increase and decrease of a quantity.	[Name] paid $28.00 for a video game originally marked $35.00. What percent did [Name] save on the purchase?
7.NSO-C.14 Use ratios and proportions in the solution of problems involving unit rates, scale drawings, and reading of maps.	The map below shows the locations of Katie's home, Char's home, and the nearest park. (Artwork with a map showing these three locations, and the distances of a Y-shaped road that connects them. Distances are provided in inches, with a scale conversion of 1 inch = 0.5 mile) A. What is the total distance, in miles, between Char's home and the park? Show your work in the box in the answer booklet and write your answer on the line. B. How many more miles away from the park does Katie live than Char? Write your answer on the line in the answer booklet.
7.NSO-C.15 Take positive and negative rational numbers to positive whole number powers.	Which of these is the value of (rational number to whole number power)?

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Reporting Category: Number Sense and Operations (28%) (continued)	
Standards:	**Assessment Stems:**
7.NSO-C.16 Apply the laws of exponents to multiply whole number positive and negative powers of whole numbers; divide whole number powers with like bases; explain the inverse relationship between negative and positive exponents.	Which of the following is equivalent to $8^7 \times 8^5$?
7.NSO-C.17 Use the inverse relationships of addition/subtraction and multiplication/division to simplify computations and solve problems (e.g., multiplying by $\frac{1}{2}$ or 0.5 is the same as dividing by 2).	[Name] bought 3 apples and 2 oranges for $4.50. If each orange cost $1.05, what is the cost of 1 apple?
7.NSO-C.18 Use the associative, commutative, and distributive properties; properties of the identity and inverse elements (e.g., $-7 + 7 = 0$; $\frac{3}{4} \times \frac{4}{3} = 1$).	Which of the following expressions is equivalent to $(2 + 5) + 4$?
7.NSO-C.19 Know and apply the Order of Operations rules to expressions involving powers and roots.	What is the value of the expression below? $25 - 2^2 \times 5 =$
7.NSO-E.20 Estimate results of computations with rational numbers; determine estimates to a certain stated accuracy.	Which of these is the best estimate of the product of ____ and _____, to the nearest tenth?
Reporting Category: Patterns, Relations, and Algebra (27%)	
7.PRA.1 Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions. Include arithmetic and geometric progressions (e.g., compounding).	[Name] made the number pattern below: 4 15 26 37 . . . What is the next number in the sequence?
7.PRA.2 Evaluate simple algebraic expressions for given variable values (e.g., $3a^2 - b$ for $a = 3$ and $b = 7$).	Look at the expression below: $a^2 - 3b$ What is the value of the expression if $a = 8$ and $b = {}^{-}2$?
7.PRA.3 Use the correct order of operations to evaluate expressions (e.g., $3(2x) = 5$).	What is the value of the expression below? $2(3 + 4) - 35 \div 5$
7.PRA.4 Create and use symbolic expressions for linear relationships, and relate them to verbal and graphical representations.	Look at the table below. Which of the following equations shows the relationship between x and y?

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Reporting Category: Patterns, Relations, and Algebra (27%) (continued)	
Standards:	**Assessment Stems:**
7.PRA.5 Use variables and appropriate operations to write an expression, equation, or inequality that represents a verbal description (e.g., 3 less than a number, $\frac{1}{2}$ as large as area A).	A class ring cost $260.00. [Name] has $80.00 in a savings account and earns $20.00 a week babysitting. Write an equation to represent the number of weeks (W) [Name] needs to work in order to purchase the ring.
7.PRA.6 Write and solve two-step linear equations and check the answers.	Solve for x. $15x + 30 = 105$
7.PRA.7 Identify, describe, and analyze linear relationships between two variables. Compare positive rate of change (e.g., $y = 3x + 1$) to negative rate of change (e.g., $y = {}^{-}3x + 1$).	What is the value of the expression below when $x = 3$ and $y = {}^{-}4$? $x + 2y + 1$
7.PRA.8 Use linear equations to model and analyze problems involving proportional relationships.	[Name] bought 5 cookies for $2.40. How much would it cost [Name] to buy 9 cookies?
7.PRA.9 Simplify numerical expressions by applying properties of rational numbers (e.g., identity, inverse) and operations of rational numbers (distributive, associative, commutative); justify the process used.	Simplify the expression below. $(2 \div \frac{1}{2}) \div (2 \times \frac{1}{2})$
7.PRA.10 Use algebraic terminology including, but not limited to, variable, equation, term, coefficient, inequality, expression, and constant.	What is the constant in the expression $10x + 2$?
7.PRA.11 Plot the values of quantities whose ratios are always the same (e.g., cost to the number of an item, feet to inches, circumference to diameter of a circle). Fit a line to the plot and understand that the slope of the line equals the quantities.	Paula made different-sized squares from pieces of wood. The table below shows the relationship between the lengths of the sides of the squares (*x*) and their perimeters (*y*). (A table containing lengths of sides for squares and the related perimeters) Which of these graphs best represents the relationship between *x* and *y*?

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Reporting Category: Geometry (15%)	
Standards:	**Assessment Stems:**
7.G.1 Identify three-dimensional figures (e.g., prisms, pyramids) by their physical appearance, distinguishing attributes, and spatial relationships such as parallel faces.	How many parallel faces does a pyramid have?
7.G.2 Demonstrate an understanding of conditions that indicate two geometrical figures are congruent and what congruence means about the relationships between the sides and angles of the two figures.	Are these two triangles congruent? Explain your answer.
7.G.4 Know and understand the Pythagorean theorem and its converse. Apply the theorem to the solution of problems, including using it to find the length of the missing side of a right triangle, and perimeter, area, and volume problems.	Given the measure of the sides of the right triangle below, what is the measure of the hypotenuse?
7.G.5 Use compass, straightedge, and protractor to perform basic geometric constructions to draw polygons and circles.	Which of the following figures can be constructed using only a straightedge and compass?
7.G.6 Understand and use coordinate graphs to plot simple figures; determine lengths and areas related to them; and determine their image under translations, reflections, and rotations (e.g., predict how tessellations transform under translations, reflections, and rotations).	A. What is the area of the circle below? B. Look at the figure below. How many lines of symmetry does this figure have? C. Plot the following points on the coordinate grid.
Reporting Category: Measurement (13%)	
7.M.1 Select, convert (between systems of measurement), and use appropriate units of measurement or scale.	A football player ran from the 10 yard line to the 50 yard line. How many meters did he run?
7.M.2 Demonstrate an understanding of the concepts and apply formulas and procedures for determining measures, including those of area and perimeter/circumference of parallelograms, trapezoids, and circles. Given the formulas, determine the surface area and volume of rectangular prisms and cylinders.	A. A rectangle has a length of 4 inches and a width of 8 inches. What is the perimeter? B. Look at the map below. Using the inch side of your ruler, determine the distance from Washington, D.C., to Baltimore, MD. [Scale: 1 inch = 10 miles]

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Reporting Category: Measurement (13%) (continued)	
Standards:	**Assessment Stems:**
7.M.3 Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity; use models, graphs, and formulas to solve simple problems involving rates (e.g., velocity and density); check the units of the solutions; use dimensional analysis to check the reasonableness of the answer.	Gas costs $2.60/gallon. It cost [Name] $39.00 to fill his gas tank. How many gallons of gas did he buy?
7.M.4 Construct and read drawings and models made to scale.	Given the two similar figures below and their measurements, what is the ratio of their lengths?
7.M.5 Use ratio and proportion, including scale factors, in the solution of problems.	On Leon's map the distance from Washington, D.C., to New York City is approximately 4.5 inches. If the map has a scale of 1 inch = 50 miles, how many miles are between the two cities?
Reporting Category: Data Analysis, Statistics, and Probability (17%)	
7.DASP.1 Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data.	The table below shows the test scores of a math class. What is the mean score?
7.DASP.2 Select, create, interpret, and use various tabular and graphical representations of data (e.g., circle graphs, Venn diagrams, stem-and-leaf plots, histograms, tables, and charts).	A. Which circle graph correctly displays the data given below? B. Create a stem-and-leaf plot to display the test grades listed below.
7.DASP.3 Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling).	A television channel wants to find the most popular television show among children by surveying members of a sample population. Which of these samples is likely to give the most representative results?
7.DASP.4 Use tree diagrams, tables, organized lists, and area models to compute probabilities for simple compound events (e.g., multiple coin tosses or rolls of dice).	There are 5 red, 3 yellow, 8 green, and 7 blue marbles in a bag. If you reach into the bag without looking, what is the probability that you will take a red or a yellow marble from the bag?
7.DASP.5 Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.	A student flips two coins. What is the probability that both coins show heads once they are flipped?

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Reporting Category: Number Sense and Operations (28%)	
Standards:	**Assessment Stems:**
8.NSO-N.1 Explain the properties of and compute with real numbers expressed in a variety of forms.	A. $6\frac{1}{2} \times 3\frac{3}{4}$ B. $^{-}7 - {}^{-}10$ C. $(2 \times 6) \div \frac{1}{2}$
8.NSO-N.2 Know that every rational number is either a terminating or repeating decimal and that every irrational number is a nonrepeating decimal.	Which of the following is an irrational number?
8.NSO-N.3 Know that the absolute value is the distance of the number from 0; determine the absolute value and additive inverse of real numbers; determine the absolute value of rational numbers.	What is the absolute value of _____?
8.NSO-N.4 Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) and use them in calculations and problem situations.	$\frac{3.2 \times 10^4}{8.0 \times 10^5}$
8.NSO-N.5 Define, compare, order, and apply frequently used irrational numbers, such as $\sqrt{2\pi}$ and π (e.g., show that if π is known to be irrational, then 3π and $\pi/3$ are also irrational).	Order the list of numbers below from least to greatest.
8.NSO-N.6 Use the laws of exponents for integer exponents (e.g., write $2^2 \times 2^3$ as $2 \times 2 \times \ldots$ and then as a single power of 2; write 2^{-3} as a fraction).	Express 97 billion in scientific notation.
8.NSO-N.7 Determine an understanding of the properties of arithmetic operations on rational numbers.	Which of these demonstrates the associative property?
8.NSO-C.8 Calculate weighted averages such as course grades, consumer price indexes, and sports ratings.	Given a table of data and relevant weights, determine the weighted average of the data.
8.NSO-C.10 Solve problems involving derived quantities such as density, velocity, and weighted averages.	A certain chemical has a density of 2 kilograms per liter. How many liters will it take to have 10 kilograms of the chemical?
8.NSO-C.11 Solve problems that involve markups, commissions, profits, and simple and compound interest.	Tam made a friendship bracelet. The materials cost $1.20. If Tam sells the bracelet for 75% more than it cost to make, how much does it sell for?

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Reporting Category: Number Sense and Operations (28%) (continued)	
Standards:	**Assessment Stems:**
8.NSO-C.12 Apply the rules of powers and roots to the solution of problems.	Look at the expression below. $\sqrt{5} \times \sqrt{3^3}$ Which of these is equal to this expression?
8.NSO-C.13 Use the inverse relationship between squaring and finding the square root of a perfect square integer to solve problems.	Kim bought a carpet that is 81 square feet. The carpet's length and width are the same. How wide is the carpet?
8.NSO-C.14 Multiply and divide numbers written in scientific notation.	$(3.2 \times 10^3) \cdot (1.4 \times 10^5) =$
8.NSO-C.15 Select and use appropriate operations—addition, subtraction, multiplication, division, and positive integer exponents—to solve problems with rational numbers, including negative rationals.	A. A store is having a sale featuring 20% off all clothing. [Name] finds a shirt originally priced $52.50. What is the sale price of the shirt before taxes? B. Multiply $^{-}8 \times 6$ C. Add $1.4567 + 0.05932 + 0.134$
8.NSO-E.16 Estimate and solve problems with square roots; find square roots of perfect squares and approximate the square roots of nonperfect squares by locating them between consecutive integers.	Which of the following is the best estimate of $\sqrt{20}$?
8.NSO-E.17 Determine estimates to a certain stated accuracy.	Two friends went to a movie. Tickets cost $7.75 each. At the snack bar, they each bought a soda for $3.99 and popcorn for $4.49. Which of these is the best estimate for the total amount of money spent?
Reporting Category: Patterns, Relations, and Algebra (27%)	
8.PRA.1 Use tables and graphs to represent and compare linear growth patterns. In particular, compare rates of change and x- and y-intercepts of different linear patterns.	A. Look at the table below. Which equation represents the data shown? B. Continue the pattern below.
8.PRA.2 Set up and solve linear equations and inequalities with one or two variables using algebraic methods, models, and graphs.	A. If $x = 2$, in which of these equations does $y = 7$? B. Solve for x: $3x + 14 = 7$
8.PRA.3 Use linear equations to model and analyze problems involving proportional relationships.	A box of 34 pens costs $11.22 at the store. What is the cost of 10 pens?

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Reporting Category: Patterns, Relations, and Algebra (27%) (continued)	
Standards:	**Assessment Stems:**
8.PRA.4 Identify the slope of a line as a measure of its steepness and as a constant rate of change from its table of values, equation, or graph. Apply the concept of slope to the solution of problems.	At take off, the plane rises 150 feet for each 500 feet traveled horizontally. What is the slope of its path?
8.PRA.5 Identify the roles of variables within an equation (e.g., $y = mx + b$, expressing y as a function of x with parameters m and b).	Which of these functions has a slope of 4 and a y-intercept of 2?
8.PRA.6 Distinguish between numerical and algebraic expressions, equations, and inequalities.	Which of these is an inequality?
8.PRA.7 Interpret the formula $(-x)(-y) = xy$ in calculations involving such things as distance, speed, and time, or in the graphing of linear functions. Use this identity to simplify algebraic expressions [e.g., $(-2)(-x + 2) = 2x - 4$)].	Which of the following is equivalent to $(-5)(4x - 6)$?
8.PRA.8 Explain and analyze—both quantitatively and qualitatively, using pictures, graphs, charts, and equations—how a change in one variable results in a change in another variable in functional relationships (e.g., $C = \pi d$, $A = \pi r2$ (A as a function of r), A rectangle $=$ lw (A rectangle as a function of l and w).	A. Circle B has a diameter that is twice as long as Circle A. Describe the relationship between the circumference of the two circles. B. Rectangles A and B have the same area. If the length of A is twice the length of B, what is the width of rectangle B compared to A?
8.PRA.9 Graph a linear equation using ordered pairs; identify and represent the graphs of linear functions.	Which graph below represents the equation $y = -3x + 4$?
Reporting Category: Geometry (15%)	
8.G.1 Analyze, apply, and explain the relationship between the number of sides and the sums of the interior and exterior angle measures of polygons.	What is the sum of the interior angles of a pentagon?
8.G.2 Demonstrate an understanding of the relationships of angles formed by intersecting lines, including parallel lines cut by a transversal.	In the figure below [two parallel lines cut by a transversal], if $A = 60$ degrees, what is the measure of the remaining angles?

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Reporting Category: Geometry (15%) (continued)	
Standards:	**Assessment Stems:**
8.G.3 Demonstrate an understanding of conditions that indicate two triangles are similar: the corresponding angles are congruent (AAA similarity); the ratios of two pairs of corresponding sides are equal and the included angles are congruent (SAS similarity); ratios of all pairs of corresponding sides are equal (SSS similarity).	Which pair of triangles below are similar?
8.G.5 Apply spatial reasoning by recognizing and drawing two-dimensional representations of three-dimensional objects (e.g., nets, projections, and perspective drawings of cylinders, prisms, and cones).	Which of the nets below will form a rectangular prism?
8.G.6 Find the distance between two points on the coordinate plane using the distance formula; find the midpoint of the line segment; recognize that the distance formula is an application of the Pythagorean theorem.	Look at the coordinate grid below. What is the distance of line segment AB?
Reporting Category: Measurement (13%)	
8.M.2 Understand the concept of surface area and volume; given the formulas, determine the surface area and volume of rectangular prisms, cylinders, and spheres.	A. What is the volume of a cylinder with a radius of 3 cm and a height of 8 cm? B. What is the surface area of a sphere with a diameter of 5 feet?
8.M.3 Use a straightedge, compass, protractor, or other tools to formulate and test conjectures and to draw geometric figures.	Use a straightedge to construct a geometric figure meeting given conditions.
8.M.4 Solve problems about similar figures and scale drawings. Understand that when the lengths of all dimensions of an object are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and the volume is multiplied by the cube of the scale factor.	The triangles shown below are similar. What is the scale factor used? What is the area of both triangles? Explain the relationship between the scale factor and the area of the triangles.
8.M.5 Understand and use the fact that when two polygons or circles are similar with scale factor of r, their areas are related by a factor of r^2.	The diameter of Circle A is proportional to the diameter of Circle B by a scale factor of ___. What is the proportion of Circle A's area to Circle B's area?

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Reporting Category: Data Analysis, Statistics, and Probability (17%)	
Standards:	**Assessment Stems:**
8.DASP.1 Revisit measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data and then observe the change in each when an "outlier" is adjoined to the data set or removed from it. Use these notions to compare different sets of data and explain how each can be useful in a different way to summarize social phenomena such as price levels, clothing sizes, and athletic performances.	A. The table below shows the gas prices [Name] paid on his trip across the country. What was the average price he paid for gas? B. The box-and-whisker plot below shows the scores for last week's test. Because [Name] was absent last week, he took the test this week. Given his score below, explain how his score affects the box-and-whisker plot.
8.DASP.2 Select, create, interpret, and use various tabular and graphical representations of data (e.g., scatterplots, box-and-whisker plots).	Which of the following scatter plots represents the data in Sean's table?
8.DASP.3 Recognize practices of collecting and displaying data that may bias the presentation or analysis.	Which of these is the most biased location to perform a survey of a sample to determine the favorite sport for the residents of a town?
8.DASP.4 Use data to estimate the probability of future events (e.g., batting averages).	Given the spinner below, what is the probability of the arrow landing on yellow?
8.DASP.5 Select, create, interpret, and use various tabular and graphical representations of data; differentiate between continuous and discrete data and ways to represent them.	Which graph shows a continuous set of data?
8.DASP.7 Understand the difference between independent and dependent events, and recognize common misconceptions involving probability (e.g., Alice rolls a 6 on a number cube three times in a row; she is just as likely to roll a 6 on the fourth roll as she was on any previous roll).	The following table shows the results of 10 spins using the spinner below. What is the probability of landing on blue? Explain the difference between the table data and probability calculated.

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Reporting Category: Number Sense and Operations (20%)	
Standards:	**Assessment Stems:**
AI.N.1 Use the properties of operations on real numbers, including the associative, commutative, identity, and distributive properties, and use them to simplify calculations.	Which of the following is equivalent to $(x + 9) + 6$?
AI.N.2 Simplify numerical expressions, including those involving positive integer exponents or the absolute value, e.g., $3(24 - 1) = 45$, $4\|3 - 5\| + 6 = 14$; apply such simplifications in the solution of problems.	A. Solve the equation: $\|x\| = 5.1$ B. Simplify this expression: $(4 - 6) \div \|3 - 5\|$
AI.N.3 Calculate and apply ratios, proportions, rates, and percentages to solve a range of consumer and practical problems.	The Game Store is having a sale. The video system you want to buy costs $300. You have a coupon for 15% off. The store is offering an additional 10% off for today only. If you use both discounts, how much will the video system cost?
AI.N.4 Use estimation to judge the reasonableness of results of computations and of solutions to problems involving real numbers, including approximate error in measurement and the approximate value of square roots. (Reminder: This is without the use of calculators.)	Dinner at a restaurant cost $62.83. [Name] wants to leave approximately 15% for the tip. Which of the following tip amounts should he leave?
Reporting Category: Patterns, Relations, and Algebra (28%)	
AI.P.1 Recognize, describe, and extend patterns governed by a linear, quadratic, or exponential functional relationship or by a simple interactive process (e.g., the Fibonacci sequence).	A school is sponsoring a dance contest in which 256 couples are participating. At the end of the first song, $\frac{1}{4}$ of the couples are still on the dance floor. At the end of the second song, $\frac{1}{4}$ of the remaining couples are still on the dance floor. If this pattern continues, how many songs will be played before a winning couple is determined?
AI.P.3 Demonstrate an understanding of relations and functions. Identify the domain, range, and dependent and independent variables of functions.	Given the Input/Output Table below, which of the following is the domain of the function?
AI.P.5 Demonstrate an understanding of the relationship between various representations of a line. Determine a line's slope and x- and y-intercepts from its graph or from a linear equation that represents the line.	Look at the graph below. What is the slope of the line?

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Reporting Category: Patterns, Relations, and Algebra (28%) (continued)	
Standards:	**Assessment Stems:**
AI.P.8 Add, subtract, and multiply polynomials with emphasis on 1st- and 2nd-degree polynomials.	Simplify $(2x^2 + 4x - 7) + (3x + 10)$
AI.P.9 Demonstrate facility in symbolic manipulation of polynomial and rational expressions by rearranging and collecting terms, factoring (e.g., $a^2 - b^2 = (a + b)(a - b)$, $x^2 + 10x + 21 = (x + 3)(x + 7)$, $5x^4 + 10x^3 - 5x^2 = 5x^2(x^2 + 2x - 1)$), identifying and cancelling common factors in rational expressions, and applying the properties of positive integer exponents.	What are the factors of $x^2 + 5x + 6$?
AI.P.12 Find solutions to quadratic equations (with real roots) by factoring, completing the square, or using the quadratic formula. Demonstrate an understanding of the equivalence of the methods.	What are the solutions to $x^2 + 5x + 6$?
AI.P.13 Solve equations and inequalities, including those involving absolute value of linear expressions (e.g., $\|x - 2\| > 5$), and apply to the solution of problems.	Which of these is the solution for the inequality below? $2 + \|2x - 4\| < 8$
AI.P.14 Solve everyday problems (e.g., compound interest and direct and inverse variation problems) that can be modeled using linear or quadratic functions. Apply appropriate graphical or symbolic methods to the solution.	A deposit of $500.00 is made to an account that pays 6% interest compounded yearly. What will be the account balance after 6 years?
AI.P.15 Solve everyday problems (e.g., mixture, rate, and work problems) that can be modeled using systems of linear equations or inequalities. Apply algebraic and graphical methods to the solution.	One day a movie theater collected $4,750 from 710 people. Admission is $8 for an adult and $5 for a child. How many adults and children were admitted to the movie theater that day?
Reporting Category: Geometry (17%)	
G.G.3 Apply properties of sides, diagonals, and angles in special polygons; identify their parts and special segments (e.g., altitudes, midsegments); determine interior angles for regular polygons.	The rhombus below is cut by diagonals. What is the value of angle EBC?
G.G.4 Draw and label sets of points such as line segments, rays, and circles.	Does the drawing below represent a line, line segment, or ray?

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Reporting Category: Geometry (17%) (continued)	
Standards:	**Assessment Stems:**
G.G.7 Use properties and theorems about congruent and similar figures and about perpendicular and parallel lines to solve problems.	In the figure below, the pool and the patio around the pool are similar rectangles. What is the ratio of the length of the patio to the length of the pool?
G.G.12 Apply congruence and similarity correspondences (e.g., ▲ABC ≅ ▲XYZ) and properties of the figures to find missing parts of geometric figures, and provide logical justification.	Determine whether the triangles below are congruent.
G.G.13 Apply properties of angles, parallel lines, arcs, radii, chords, tangents, and secants to solve problems.	In the figure below [two parallel lines cut by a transversal], if angle A = 60 degrees, what is the measure of angle B?
G.G.14 Solve simple triangle problems using the triangle angle sum property and/or the Pythagorean theorem; study and understand more than one proof of this theorem.	Using the Pythagorean theorem, find the unknown side length of the triangle shown.
G.G.15 Use the properties of special triangles (e.g., isosceles, equilateral, 30°-60°-90°, 45°-45°-90°) to solve problems.	In the isosceles triangle drawn below, what is the measure of angle A?
G.G.16 Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.	In the triangle below, what represents the tangent of angle A?
G.G.17 Demonstrate an understanding of the relationship between various representations of a line. Determine a line's slope and x- and y-intercepts from its graph or from a linear equation that represents the line. Find a linear equation describing a line from a graph or a geometric description of the line (e.g., by using the point-slope or slope y-intercept formulas). Explain the significance of a positive, negative, zero, or undefined slope.	Look at the graph below. (Artwork of a coordinate plane containing a graphed line) Which linear equation represents this same line?
G.G.20 Draw the results and interpret transformations on figures in the coordinate plane such as translations, reflections, rotations, scale factors, and the results of successive transformations. Apply transformations to the solution of problems.	Which transformation was applied to figure ABCD to arrive at figure A'B'C'D'?

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Reporting Category: Geometry (17%) (continued)	
Standards:	**Assessment Stems:**
G.G.21 Demonstrate the ability to visualize solid objects and recognize their projections, cross sections, and graph points in 3-D.	Given two-dimensional projections of a three-dimensional object, identify a perspective drawing of the three-dimensional object upon which it's based.
G.G.22 Find and use measures of perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles.	What is the perimeter of a square with an area of 25 square feet?
Reporting Category: Measurement (13%)	
G.G.23 Find and use measures of lateral areas, surface areas, and volumes of prisms, pyramids, spheres, cylinders, and cones, and relate these measures to each other using formulas (e.g., find the volume of a sphere with a specified surface area).	What is the volume of a cone with a height of 9 inches and a radius of 3 inches?
G.G.24 Relate changes in the measurement (including units) of one attribute of an object to changes in other attributes (e.g., how changing the radius or height of a cylinder affects its surface area or volume).	Phillip has two cylinders, A and B, which have the same size of circular base. Cylinder A is twice as tall as Cylinder B. If the volume of Cylinder A is x, what is the volume of Cylinder B?
G.G.25 Describe the effects of approximate error in measurement and rounding on measurements and on computed values from measurements.	The side of a square is measured to be 4.0 inches. If the measurement is 0.2 inches too small, what is the approximate error in the computed area?
Reporting Category: Data Analysis, Statistics, and Probability (22%)	
AI.D.1 Select, create, and interpret an appropriate graphical representation (e.g., scatter plot, table, stem-and-leaf plots, circle graph, line graph, and line plot) for a set of data, and use appropriate statistics (e.g., mean, median, range, and mode) to communicate information about the data. Use these notions to compare different sets of data.	A. Create a circle graph to display the data table below. B. Find the mean, median, and mode of the following data set.

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Science and Biology

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Reporting Category: Science and Technology (30%)	
Standards:	**Assessment Stems:**
5.1.1 Evaluate the validity of claims based on the amount and quality of the evidence cited.	Students came to the conclusion that [conclusion] after reviewing [data provided]. Explain why their conclusion may be incorrect.
5.1.2 Explain that predictions can be based on what is known about the past, assuming that conditions are similar.	For the past [number of years] scientists have recorded that when [certain weather conditions] happen most of the [type of crop] that is grown by farmers [description of effect of these weather conditions on the crop]. Which of these is the most likely prediction of what will happen to the [crop] if [weather condition] occurs [certain time of year in current year]?
5.1.3 Realize and explain why predictions may be more accurate if they are based on large collections of similar events for statistical accuracy.	Which of these statements describes the kind of data that are needed to make a good prediction about an event?
5.1.4 Determine area and volume of rectangular shapes from linear dimensions, using the expressions $A = l \times w$ and $V = l \times w \times h$.	The equation for the area (A) of a rectangle is shown below. [Equation] An [object] is [value] long and [value] wide. What is the area of the [object]?
5.2.1 Recognize and describe how results of similar scientific investigations may turn out differently because of inconsistencies in methods, materials, and observations, or because of limitations of the precision of the instruments used.	Two researchers want to know [fact]. After one month, one researcher finds [different result] than the other researcher. Which of these best explains why the two researchers had different results?
5.2.2 Be able to distinguish inferences from actual observations.	Read about the [type of experiment]. Which of these statements is an inference about the experiment? Which is an observation?
5.2.3 Write instructions that others can follow to carry out an investigation.	Which of these statements best describes a good set of instructions for an investigation?
5.2.4 Read and follow step-by-step instructions when learning new investigations.	Below are the steps Amy followed during an investigation. Why might her results not be very accurate?
5.2.5 Identify the controlled variable and at least one independent variable in a scientific investigation, when appropriate.	Which of these statements best describes a controlled variable in an investigation?

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Reporting Category: Science and Technology (30%) (continued)	
Standards:	**Assessment Stems:**
5.2.6 Explain the distortion inherent in using only a portion of the data collected to describe the whole. Understand that it is sometimes acceptable to discard data.	[A teacher's] science class is collecting data on [subject of study]. The students decide to use only the average [data] to make it easier to report their results. Which of the following is the most likely problem with this procedure?
5.3.1 Give examples of technology, such as telescopes, microscopes, and cameras, that enable scientists and others to observe things that are too small or too far away to be seen without them and to study the motion of objects that are moving very rapidly or are hardly moving.	A. Which of these tools helped scientists to study [a planet]? B. Scientists know [information about an object or objects]. These [objects] are too small/far away to see without a tool. Which of these tools can be used to see [object]?
5.3.2 Give examples of advances in technology that have positively and/or negatively affected society.	[Brief history about a technological device]. Which of the following statements explains how [technological device] has positively affected society?
5.3.3 Give examples of materials not present in nature that have become available because of science and technology, such as cloth, metal alloys, plastic, ceramics, and concrete.	A. Which of these materials/objects is/is not present in nature? B. Which of these materials/objects is/is not made from a material that is naturally produced on Earth OR made of natural material?
Reporting Category: Earth and Space Science (26%)	
5.4.1 Describe that, like all planets and stars, the Earth is approximately spherical in shape.	A. Earth is similar in shape to what other objects found in space? B. What is the best way to describe the shape of planets and stars?
5.4.2 Observe how telescopes are used both to magnify images of distant objects in the sky, including the moon and the planets, and to gather enough light from very dim objects to make them visible.	A. Which of these describes an advantage to using a telescope to see [objects a telescope would be used to observe]? B. Which of these science tools would be the best to use to observe [an object for which a telescope would be used]?
5.4.3 Observe and describe that stars vary in size, but they are so far away that they look like points of light.	A. [Name] is looking at some stars in the night sky. She thinks they look like little points of light. Which of these causes the stars to look like points of light? B. Describe why the sun looks much larger than other stars.

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Reporting Category: Earth and Space Science (26%) (continued)	
Standards:	**Assessment Stems:**
5.5.1 Describe the Earth as part of a system called the solar system, which includes the sun (a star), planets, comets, asteroids, and many moons.	A. Identify various types of objects that are part of our solar system. B. Which of these best describes a solar system?
5.5.2 Recognize that the Earth is the third planet from the sun in our solar system.	A. Which of these [choices] describes Earth's position from the sun? B. Which of these [choices] describes where Earth is found in the solar system?
5.5.3 Demonstrate how the Earth orbits the sun in a year's time, and Earth rotates on its axis about once every 24 hours.	A. Here is model of an event that occurs in our solar system. What does this model represent? B. Which statement about Earth and the Sun is correct?
5.5.4 Explain that the alternation between day and night and the apparent movement of the sun, moon, and stars across the sky depend on the rotation of the Earth on its axis.	A. In these pictures why does the moon appear to move across the sky? B. What recurring cycle is caused by the rotation of Earth on its axis?
5.5.5 Explain that the air around us is matter and has weight (a force) and exerts pressure; explain that air pressure varies a little from place to place and from time to time.	A. [Name] weighs an empty balloon and then gets a different weight after filling the balloon with air. Which of these describes why [Name]'s measurements are different? B. Which of these describes how air pressure changes as a hiker climbs a mountain?
5.5.6 Describe that winds blow from areas of higher pressure to areas of lower pressure.	A weather map is shown. [Picture of weather map w/ compass] The meteorologist is predicting strong winds. In which direction will the wind most likely be blowing?
5.5.7 Explain how global patterns, such as the jet stream and ocean currents, influence local weather and climate in ways that can be measured in terms of temperature, pressure, wind direction and speed, and amounts of precipitation.	A. Which of these will least likely affect the weather in an area? B. Describe how ocean currents and the wind work together to affect weather patterns.

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Reporting Category: Earth and Space Science (26%) (continued)	
Standards:	**Assessment Stems:**
5.6.1 Describe that when liquid water evaporates, it turns into a gas (vapor) mixed into the air, and can condense and reappear as a liquid when cooled or as a solid (ice) if cooled below the freezing point of water.	A. Which picture/of these [choices] shows/is an example of a substance as both a liquid and a gas [or solid] OR a liquid changing to a solid? B. Which of these [pictures] shows that there is water vapor in the air?
5.6.2 Explain how water moves in air masses from one place to another in the form of clouds, fog, or as invisible water vapor, and falls to the Earth as rain, hail, sleet, or snow.	A. Which of these best describes how water moves from place to place? B. Explain how water from the ocean can fall to Earth as snow in the mountains.
5.6.3 Describe that clouds are made of tiny droplets of water or ice crystals.	A. What are clouds made up of? B. Which of these best explains why some clouds are made of [form of water] and some are made of [form of water]?
5.6.4 Explain that water on Earth cycles through different forms and in different locations (e.g., underground water and vapor in the atmosphere).	A. A diagram of the water cycle is shown. [diagram of water cycle] Which form of water is shown [at place indicated on diagram]? B. Which of these best describes how water moves through the water cycle?
5.6.5 Using maps and globes, recognize that the Earth's oceans are all connected as one body of water that covers about three-quarters of the Earth's surface.	A. A world map is shown. [world map] Using the map, determine which statement accurately describes the distribution of land and water on Earth. B. Which statement best describes Earth's oceans?
Reporting Category: Physical Science (21%)	
5.7.1 Recognize that all matter is made of small particles called atoms, which are too small to see with our eyes; describe how atoms may combine to form molecules or crystalline solids (compounds).	A. Which statement best describes matter? B. Which statement best describes atoms?
5.7.2 Recognize that there are more than 100 different kinds of atoms (each called an element), which are displayed on the periodic table of the elements.	A. Look at the diagram [of the periodic table] below. The diagram shows part of the . . . B. Which of these best describes the difference/a similarity between all of the elements in the periodic table?

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Reporting Category: Physical Science (21%) (continued)	
Standards:	**Assessment Stems:**
5.7.3 Explain that all matter is made up of an element, a compound, or mixtures of elements and compounds.	A. Which of these is all matter made up of? B. [Object] is shown. [diagram of object] Which of these best describes the [object]?
5.8.1 Describe that heating and cooling cause changes in the properties of substances. For example, liquid water can turn into steam by boiling, and liquid water can turn into ice by freezing.	A. Which of these will help change a [phase] to a [different phase]? B. Describe what happens to the volume of a given amount of water when it freezes.
5.8.2 Explain that many kinds of chemical changes occur faster at higher temperatures.	A. Which of these causes a chemical change to occur faster? B. A student observed that a [chemical reaction] at [temperature] took place over [a certain amount of time]. Describe what would happen if the reaction occurred at [higher temperature].
5.8.4 Describe how some materials conduct heat much better than others, and poor conductors (insulators) can be used to reduce heat loss or gain.	A student needs to choose which container to place his lunch in to keep it cold until lunchtime. [art and descriptions of four containers] Into which container should the student place his lunch?
5.9.1 Explain that objects can move with a very wide range of speeds, with some moving very slowly and some moving too quickly for people to see them.	A. Which of these moves too quickly to see? B. Which of these moves too slowly to see?
5.9.2 Demonstrate that if the forces acting on an object are balanced so that the net force is zero, the object will remain at rest if it is initially at rest or will maintain a constant speed and direction if it is initially moving.	A. [Diagram of two objects leaning against each other]. Which of these statements is true? B. Which of these best describes what will happen to an object moving at a constant speed if there is no net force acting on it?
5.9.3 Describe that unbalanced forces cause changes in the speed and/or direction of motion of an object (acceleration).	[Names] are [moving] forward at the same speed. At one point, [Name 1] accidentally bumps into [Name 2] from the side. Which of these statements best describes what happens to [Name 2's] movement?
5.9.4 Describe that, for an object moving in a straight line, acceleration, a, is the change in velocity, v, divided by the time, t, that change takes ($a = v \div t$).	[Name] wants to calculate the acceleration of a falling [object]. Which of these pairs of measurements does [Name] need to calculate acceleration?

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Reporting Category: Physical Science (21%) (continued)	
Standards:	**Assessment Stems:**
5.9.5 Describe that the greater the net force, F, applied to a body, the greater its acceleration, a. Describe that the greater the mass, m, of an object, the smaller the acceleration produced by a given force.	Jim has an [object] and Julie has an [object]. They each pushed their [objects] across the playground with the same force. Explain why Jim's [object] went much slower than Julie's.
5.9.6 Demonstrate and explain that things on or near Earth are pulled toward Earth's center by the gravitational force that Earth exerts on them.	A. Which statement best describes gravity? B. Which force causes an [object] to fall toward the ground when it is dropped?
Reporting Category: Life Science (23%)	
5.10.2 Explain that some organisms are made of a collection of similar cells that benefit from cooperating.	A. Which type of organism has a collection of cells that work together to [biological function]? B. Which statement best explains why some organisms benefit from having more than one cell?
5.10.3 Explain that in complex organisms such as humans, cells can have a very wide variety of forms and perform very different roles (e.g., nerve cells, muscle cells, and fat cells).	A. Which type of cell is responsible for [function]? B. Which statement about the role of cells in the human body is true?
5.11.1 Explain why there must be a reliable way to transfer information from one generation to the next in order for offspring to resemble their parents.	A. Which statement best explains why it is important for organisms to pass their genetic traits to their offspring? B. Explain why the offspring of a/an [organism] resembles its parent.
5.11.2 List some characteristics of plants and animals that are fully inherited (e.g., form of flower, shape of leaves) and others that are affected by the climate or environmental conditions (e.g., browning of leaves from too much sun, language spoken).	A. Which of these characteristics is least likely to be passed on to an [organism] from its parents? B. [Name] has [list of noninheritable traits with one inheritable trait]. Which of these statements describes something [Name] inherited from her parents?
5.12.1 Explain that in any particular environment, some kinds of plants and animals survive well, some do not survive as well, and some cannot survive at all.	A. Describe two different features of [organism] that allow it to survive in [its environment]. B. Which set of organisms is adapted to survive in [environment]?

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Reporting Category: Life Science (23%) (continued)	
Standards:	**Assessment Stems:**
5.12.2 Identify organisms that are not native to the Washington, DC, area and how they undergo changes to increase their chance of survival in the area.	A. An [organism] can [ability]. This organism has this ability because this helps it . . . B. [Animal] can change color. Describe when this animal will most likely change color and why this is an advantage to the animal.
5.12.3 Explain how organisms can cause changes in their environment to ensure survival, and these changes may affect the ecosystem (the living and nonliving components of the environment).	A. A population of [animal] is growing so quickly that it eats most of the [food] in an area. Which of these statements explains how this may affect other organisms in the area? B. [Description of a parasite]. Which of these describes the most likely effect of the [parasite] on a host animal?
5.12.4 Explain that organisms fit enough to survive in a particular environment will typically produce offspring fit enough to survive and reproduce in that particular environment. Over time, these inherited characteristics are carried as the predominant forms (e.g., adaptations such as shape of beak, length of neck, shape of teeth).	A. A/An [animal] is successful at [activities related to survival]. Which of these is the most likely result of these characteristics? B. Which of these statements describes how traits are passed on to the offspring in a population that successfully survives in a changing environment?
5.12.5 Explain how changes in an organism's habitat are sometimes beneficial and sometimes harmful, and how changes in the environment (drought, cold) have caused some plants and animals to die, migrate, or become extinct.	A. Which of these describes an impact that [occurrence] can have on [population]? B. Which of these would probably have the greatest impact on the survival of an [animal] population living in an [area]?
5.12.6 Explain that many plants and animals can survive harsh environments because of seasonal behaviors (e.g., in winter, some trees shed leaves, some animals hibernate).	A. [Animal w/fur] lives in [description of that animal's environment]. Which of these behaviors allows [the animal] to survive in [the harsh conditions of the animal's environment]? B. Explain why [animal] [exhibits certain seasonal behaviors]?
5.12.7 Recognize that some animal behaviors are instinctive (e.g., turtles burying their eggs, human infants crying when hungry) and others learned (e.g., a wolf's hunting skills, humans' ability to build fires for warmth).	A. [Animals] have instinctive behavior and learned behavior. Which of these is a learned/an instinctive behavior? B. Describe <u>one</u> instinctive behavior and <u>one</u> learned behavior for a/an [animal].

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Reporting Category: Life Science (23%) (continued)	
Standards:	**Assessment Stems:**
5.12.8 Describe well-defined plant behaviors, such as the way seedlings' stems grow toward light and their roots grow downward in response to gravity.	A. Look at the [plant with specific behavior exhibited]. Which statement best describes the behavior of the plant? B. The picture shows different plants growing in an ecosystem. Describe two different plant behaviors that are shown in the picture.
5.12.9 Examine the information that fossils provide us about living things that inhabited the Earth in the distant past, and describe how they can be compared both to one another and to living organisms according to their similarities and differences.	A. Diagrams of [fossil] and [animal] are shown. Which of these can scientists learn by comparing these two animals? B. Look at the [fossil]. Which information can be learned about the organism by observing this fossil?
5.12.10 Recognize and describe how artifacts and preserved remains provide some evidence of the physical characteristics and possible behaviors of human beings and their ancestors who lived long ago.	A. What can scientists learn from remains/fossils of humans and animals that lived long ago? B. Look at these objects found [location] where scientists are studying. What might these objects teach the scientists?

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Reporting Category: Scientific Thinking and Inquiry (18%)	
Standards:	**Assessment Stems:**
8.1.1 Describe how scientific knowledge is subject to modification and refinement as new information challenges prevailing theories.	A. Which statement best explains why Pluto is no longer considered a planet? B. Which of these best describes what will happen to the theory [certain scientific theory] if new information is found that proves that [the current theory is somehow flawed]?
8.1.3 Restate or summarize accurately what others have said, asking for clarification or elaboration, and expressing alternative positions.	A group of students conducted an investigation about [subject]. The students concluded that [conclusion]. Which of these accurately restates the students' conclusion?
8.1.4 Identify and criticize the reasoning in arguments in which fact and opinion are intermingled or the conclusions do not follow logically from the evidence given, an analogy is not apt, no mention is made of whether the control group is very much like the experimental group, or all members of a group are implied to have nearly identical characteristics that differ from those of other groups.	A. A group of scientists published data from an investigation and claimed [statement of opinion]. [Insert data that appears to support the opinion]. Which of these identifies the most important reason fellow scientists may question the scientists' claim? B. A scientist compared [variable] of two groups of 100 [subject]. After comparing the data from the two groups, the scientist concluded that [statement of conclusion]. Which of these best explains why the conclusion may be inaccurate?
8.2.1 Describe how if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be attributable to a change in any single variable.	A. [Description of an experiment with more than one manipulated variable]. [Name's] comparison would have been more valid if he had . . . B. Which of these best explains why there should only be one variable changed in an experiment?
8.2.2 Write clear step-by-step instructions (procedural summaries) for conducting investigations.	A student plans to investigate [hypothesis]. Describe two different steps the student must include in her investigation.
8.2.3 Use tables, charts, and graphs in making arguments and claims in presentations about lab work.	A. This graph shows [data]. According to the graph, [question asking student to analyze data in the graph]? B. Study the time line/chart below. According to the chart, [question asking student to analyze data in the time line/chart]?

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Reporting Category: Scientific Thinking and Inquiry (18%) (continued)	
Standards:	**Assessment Stems:**
8.2.4 Read analog and digital meters on instruments used to make direct measurements of length, volume, weight, elapsed time, rates, or temperatures, and choose appropriate units. Explain how to interpolate on analog scales.	A. A student measured the temperature of three beakers of water left in different locations around the classroom. Which of these lists the correct temperature and units shown on each thermometer? B. A student used analog scales to measure the length/volume/weight of a/an [object]. Explain how to interpolate measurements taken on an analog scale, and why this is necessary.
8.2.5 Explain why arguments may be invalid if based on very small samples of data, biased samples, or experiments in which there was no control sample.	Which of these best explains why the results of an investigation may be invalid when there is no control sample?
Reporting Category: Matter and Reactions (42%)	
8.3.1 Explain that all matter is made up of atoms that are far too small to see directly through an optical microscope.	A. Which statement about atoms is true? B. Which of these is the basic building block for all matter?
8.3.2 Construct a model of an atom and know the atom is composed of protons, neutrons, and electrons.	An atom of [element] has [protons] and a charge of [charge]. How many electrons does an atom of [element] have?
8.3.4 Know that density is mass per unit volume.	Which of these measurements represents an object with the highest density?
8.3.5 Explain that equal volumes of different substances usually have different masses and, therefore, different densities.	A student has equal volumes of [substance 1] and [substance 2]. Which statement about the mass and density of the two substances is true?
8.3.6 Determine the density of substances (regular and irregular solids, and liquids) from direct measurements of mass and volume, or of volume by water displacement.	An [irregular solid, regular solid] has a mass of [mass] and volume of [volume]. What is the density of the [substance]?
8.4.1 Using a periodic chart, explain that the atoms of any element are similar to each other, but they are different from atoms of other elements. Know that the atoms of a given isotope are identical to each other.	A. Identify one property that [isotope of element] and [different isotope of same element] have in common. B. Which of these describes a way that atoms of one element are different from atoms of another element?

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Reporting Category: Matter and Reactions (42%) (continued)	
Standards:	**Assessment Stems:**
8.4.2 Describe how elements can be classified, based on similar properties, into categories, including highly reactive metals, less reactive metals, highly reactive nonmetals, less reactive nonmetals, and some almost completely non-reactive (noble) gases.	A. Which list of elements shares the same classification? B. Which element is classified as a noble gas/highly reactive metal/ nonmetal?
8.5.1 Diagram and describe how atoms may combine (bond) into molecules or into large crystalline arrays.	A. Which diagram shows how the atoms of [molecule] bond? B. Which statement best describes how atoms combine to form [molecule]?
8.5.2 Know that there are more than 100 elements that combine in a multitude of ways to produce compounds that make up all the living and nonliving things in the universe.	A. About how many elements have been discovered? B. Which statement about elements is true?
8.5.3 Understand how an ion is an atom or group of atoms (molecule) that has acquired an electric charge by losing or gaining one or more electrons.	An ion of [element] has a charge of [charge] and takes one electron from a neutral atom of [element]. Which of these shows the final charge on the [element] ion?
8.6.1 Describe how the atoms, molecules, or ions comprising an object are in constant individual motion, and explain how their average motional (kinetic) energy determines the temperature of the object, and how the strength of the forces between them determines the state of matter at that temperature.	A. In which of these substances are molecules most free to move around? B. Which of these best describes the reaction of water molecules to heat?
8.6.2 Explain that the melting and boiling temperatures of a substance (element or compound) depend on pressure and are independent of the amount of the sample. (Some materials do not melt and others do not boil because they decompose as the temperature is raised; other materials do not have a sharp melting point because they are not homogeneous.)	A. A student is investigating the melting/boiling temperature of [element/compound]. She places [quantity] in beaker 1 and [quantity] in beaker 2 and heats them for the same length of time over the same size of flame. Which statement about the melting/ boiling temperature of [element/compound] is true? B. Which of these explains why the boiling temperature of [substance] is different at high and low altitudes?
8.7.1 Describe Law of Conservation of Matter, using the idea that when materials react with each other, many changes can take place, but that in every case the total amount of matter afterward is the same as before.	A. Which of these accurately describes how the conservation of matter affects [chemical reaction]? B. Which of these describes an experiment that would prove that the law of conservation of matter is true?

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Reporting Category: Matter and Reactions (42%) (continued)	
Standards:	**Assessment Stems:**
8.7.2 Explain how the idea of atoms explains the conservation of matter: In chemical reactions, the number of atoms stays the same no matter how they are arranged, and the mass of atoms does not change significantly in chemical reactions, so their total mass stays the same.	A. Which of these does not stay the same during a chemical reaction? B. Which of these best describes how the idea of atoms explains the conservation of matter?
8.8.1 Explain how elements and compounds (reactants) react with each other to form products with different properties.	[Element/compound 1] is [property]. [Element/compound 2] is [property]. Describe the properties of [product of the reaction between element/compound 1 and element/compound 2] and explain why they are different from those of [element/compound 1] and [element/compound 2].
8.8.2 Explain how during endothermic chemical reactions heat energy is absorbed from the surroundings, and in exothermic reactions heat energy is released to the surroundings.	Which of these types of reactions absorbs heat from/gives off heat to the surroundings?
8.8.3 Explain that reactions occur at different rates, slow to fast, and that reaction rates can be changed by changing the concentration of reactants, the temperature, the surface areas of solids, and by using catalyst.	A. How do low temperatures affect the speed of chemical reactions? B. [Details about a chemical reaction] as shown in the equation below. [Equation] Which of these best describes what will happen if the temperature at which this reaction takes place is increased?
8.8.4 Recognize that solutions can be acidic, basic, or neutral, depending on the concentration of hydrogen ions in the solution. Understand that because this concentration can vary over a very large range, the logarithmic pH scale is used to describe how acidic or basic a solution is (each increase of one in the pH scale is an increase of 10 times in concentration).	A. Which of these best describes why the pH scale is used to describe how acidic or basic a solution is? B. [Chart of pH values for various substances] [Substance] has a pH of about [value]. What acid in the chart would neutralize [substance] when both are used in equal volumes?
8.8.5 Recognize that indicators of chemical changes include temperature change, the production of gas, the production of a precipitate, or a color change.	A. Which of these proves that a chemical change has taken place? B. In which of these [scenarios] has a chemical change taken place?

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Reporting Category: Forces (18%)	
Standards:	**Assessment Stems:**
8.10.1 Explain that every object exerts an attractive gravitational force on every other object.	A. Describe two different attractive forces that act on the Moon and explain why one is stronger than the other. B. Which statement explains why two objects in a vacuum are attracted to each other?
8.10.2 Demonstrate that the mass of an object is a measure of the quantity of matter it contains (measured in kg or g), and that its weight (measured in N) is the magnitude of the gravitational force exerted between Earth and that much mass.	A. How are the mass and the weight of an object different from each other? B. What is mass and in what units is it measured?
8.10.3 Determine and explain that the buoyant force on an object in a fluid is an upward force equal to the weight of the fluid the object has displaced; this principle can be used to predict whether an object will float or sink in a given fluid.	[Names] are investigating [material]. They measured the mass and volume of [two or more types of the material] and recorded their data in the table below. [Table] The density of water is 1.0 gram per milliliter. If both [materials] are placed in water, which of these results will the students observe?
8.11.1 Recognize that a force has both magnitude and direction.	What information is necessary to calculate the force acting on an object?
8.11.2 Observe and explain that when the forces on an object are balanced (equal and opposite forces that add up to zero), the motion of the object does not change.	A. An [object] is moving through space at a constant speed. If no outside force interacts with the [object], which of these is true about its motion? B. Which of these best describes the forces acting on an object moving at a constant velocity?
8.11.3 Explain why an unbalanced force acting on an object changes the object's speed or direction of motion or both.	If two people are pushing in opposite directions on an object with an unequal force, how will the motion of the object change?
8.11.4 Know that the greater the mass of an object, the more force is needed to change its motion.	A force is applied to an [object] that causes the [object] to move across the floor with a constant acceleration. Which of these describes the motion of an [object] with twice the mass of the first [object] if the same force is applied?
8.11.5 Apply simple mathematical models to problems (e.g., formulas such as $F = ma$, $d = st$).	The formula used to convert [change in units] is shown below. [Equation] If the [physical property] is [value], what is the [physical property] in [different type of units]?

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Reporting Category: Forces (18%) (continued)	
Standards:	**Assessment Stems:**
8.11.6 Explain that if the net force acting on an object always acts toward the same center as the object moves, the object's path is a curve about the force center. (Motion in a circular orbit is the simplest example of this concept.)	A. Which of these correctly explains why a satellite's orbit is always around the center of Earth? B. When a person ties an [object] to a string and spins it in a circle, which of these correctly describes the forces on the [object]?
8.11.7 Plot and interpret distance versus time graphs for constant speed.	Look at the table showing the motion of an [object]. Which of these graphs correctly represents the motion of the object?
Reporting Category: Energy and Waves (22%)	
8.12.1 Explain how energy is the ability to do work and is measured in joules (J).	Which of these statements correctly describes the relationship between energy and work?
8.12.2 Describe kinetic energy as the energy of motion (e.g., a rolling ball), and potential energy as the energy of position or configuration (e.g., a raised object or a compressed spring).	Which of these best describes an example of kinetic energy/ potential energy?
8.12.3 Recognize and describe that energy is a property of many systems and can take the forms of mechanical motion, gravitational energy, the energy of electrostatic and magnetostatic fields, sound, heat, and light (electromagnetic field energy).	A. A [device] converts electrical energy into which kinds of energy? B. A battery can be used to make an electromagnet. Describe how chemical energy from the battery is eventually converted into mechanical energy. (Include a description of electrostatic and magnetostatic fields in your answer.)
8.12.4 Describe that energy may be stored as potential energy in many ways, including chemical bonds and in the nucleus of atoms.	A. Which of these does not describe potential energy? B. Chemical energy, nuclear energy, and the energy of an object at a height are all examples of what?
8.12.5 Explain that the sun emits energy in the form of light and other radiation, and only a tiny fraction of that energy is intercepted by the Earth.	Which statement correctly compares the amount of the Sun's energy that reaches Earth with the amount of the energy that the Sun actually emits?
8.12.6 Know that the sun's radiation consists of a wide range of wavelengths, mainly visible light, infrared, and ultraviolet radiation.	A. [Name] is looking at the colors of light produced by sunlight passing through a glass prism. Which of these colors that [Name] sees has the longest wavelength? B. How can exposure to the sun's ultraviolet radiation be harmful?

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Reporting Category: Energy and Waves (22%) (continued)	
Standards:	**Assessment Stems:**
8.15.1 Explain how kinetic energy can be transformed into potential energy and vice versa (e.g., in a bouncing ball).	Which of these correctly lists all of the energy transformations that occur when a spring is compressed and then released?
8.15.2 Explain that heat energy is a common product of an energy transformation, such as in biological growth, the operation of machines, the operation of a light bulb, and the motion of people.	Several students walk into a cold classroom. After several minutes, they feel as though the temperature in the room has increased. Which of these statements best describes why the room feels warmer to the students?
8.15.3 Explain how electrical energy can be generated using a variety of energy sources and can be transformed into almost any other form of energy, such as mechanical motion, light, sound, or heat.	A. Which of these is not used to generate electrical energy? B. Which machine/tool transforms electrical energy into [mechanical/light/sound/heat] energy?
8.15.4 Compare and contrast how heat energy can be transferred through radiation, convection, or conduction.	Which of these best describes how energy is transferred when a pot of water is heated on a stove?
8.16.1 Explain that in processes at the scale of atomic size or greater, energy cannot be created or destroyed but only changed from one form into another.	A. Which of these best describes what happens to the energy of an [object] as it falls out of a tree? B. Which of these describes a situation in which energy can be destroyed?

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Reporting Category: Cell Biology and Biochemistry (29%)	
Standards:	**Assessment Stems:**
B.1.1 Describe basic atomic structure using simplified Bohr diagrams to understand the basis of chemical bonding in covalent and ionic bonds.	A. Which of these statements best describes why an ionic bond occurs between two elements? B. Based on the [Bohr diagram], [atom] started with . . .
B.1.2 Describe the structure and unique properties of water and its importance to living things.	Which of these statements about the properties of water is <u>not</u> correct?
B.1.3 Describe the central role of carbon in the chemistry of living things because of its ability to combine in many ways with itself and other elements.	A. Which of these elements is essential to the makeup of all living things because of its ability to [quality of carbon]? B. Which of these statements about carbon is <u>true/false</u>?
B.1.4 Know that living things are made of molecules largely consisting of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.	A. Which of these elements is <u>least likely</u> to be found in molecules that make up living things? B. Which of these groups contains elements that can <u>all</u> be found in molecules that make up living things?
B.1.5 Know that living things have many different kinds of molecules, including small ones such as water; midsize ones such as sugars, amino acids, and nucleotides; and large ones such as starches, proteins, and DNA.	A. Which of these is a large molecule found in living things? B. Which of these groups lists the molecules found in living things correctly from smallest to largest?
B.2.1 Describe that all organisms begin their life cycles as a single cell, and in multicellular organisms the products of mitosis of the original zygote form the embryonic body.	A. Which of these statements about organisms is true? B. An embryo grows from the size of one cell to numerous cells through the process of . . .
B.2.2 Compare and contrast the general anatomy and constituents of prokaryotic and eukaryotic cells and their distinguishing features: Prokaryotic cells do not have a nucleus, and eukaryotic cells do. Know that prokaryotic organisms are classified in the Eubacteria and Archaebacteria Kingdoms and that organisms in the other four kingdoms have eukaryotic cells.	A. [Diagram or description of different types of cells]. • Which cell could be a normal body cell from an [organism]? • Which of the cells contains [organelle]? B. Look at the cells below. [Illustration of two cells] Which of these is a major difference between these cells?

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Reporting Category: Cell Biology and Biochemistry (29%) (continued)	
Standards:	**Assessment Stems:**
B.2.4 Explain that some structures in the eukaryotic cell, such as mitochondria, and in plants, such as chloroplasts, have apparently evolved by endosymbiosis (one organism living inside another, to the advantage of both) with early prokaryotes.	How are mitochondria and chloroplasts different from other structures within a cell?
B.2.5 Describe that all growth and development of organisms is a consequence of an increase in cell number, size, and/or products.	A. An increase in cell number, size, and/or products could all lead to which of these natural processes? B. Describe two ways that cells can cause a(n) [organism] to grow.
B.3.1 Observe and explain the role of enzymatic catalysis in biochemical processes.	Which of these substances will most likely increase the rate of [a biochemical reaction]?
B.3.2 Understand the function of cellular organelles and how the organelles work together in cellular activities (e.g., enzyme secretion from the pancreas).	A. Which of these best describes the function of [organelle] in a cell? B. Which of these explains how [organelle] works with [organelle] in [cellular activity]?
B.3.3 Demonstrate that most cells function best within a narrow range of temperature and pH; extreme changes usually harm cells by modifying the structure of their macromolecules and, therefore, some of their functions.	A. Most cells function best if which two factors remain within certain levels? B. If extreme changes are made in the temperature or pH of a cell's environment, which of these will most likely be affected in the cell?
B.3.6 Explain the photosynthesis process: Plants make simple sugars and other molecules in their leaves, and chlorophyll found in the leaves can make the food and nutrients that the plant can use from carbon dioxide, water, nutrients, and energy from sunlight.	Which of these is the original source of energy for photosynthesis?
B.3.7 Recognize and describe that cellular respiration is important for the production of adenosine triphosphate (ATP), which is the basic energy source for cell metabolism.	Which of these is the basic source of energy for cell metabolism?
B.4.1 Explain the hierarchical organization of living things from least complex to most complex (subatomic, atomic, molecular, cellular, tissue, organs, organ system, organism, population, community, ecosystem, and biosphere).	Which of these shows the organization of a living thing from least complex to most complex?

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Reporting Category: Cell Biology and Biochemistry (29%) (continued)	
Standards:	**Assessment Stems:**
B.4.2 Observe and describe that within the cell are specialized parts for the transport of materials, energy capture and release, waste disposal, and motion of the whole cell or of its parts.	A. Which of these structures within a cell is responsible for energy capture and release? B. [Diagram of typical cell with arrow pointing to one specific organelle]. Identify this specialized structure found within [organism] cells and describe its function.
B.4.3 Describe the organelles that plant and animal cells have in common (e.g., ribosomes, golgi bodies, endoplasmic reticulum) and some that differ (e.g., only plant cells have chloroplasts and cell walls).	Which of these best describes one way that animal cells are different from plant cells?
B.4.4 Describe that the work of the cell is carried out by structures made up of many different types of large (macro) molecules that it assembles, such as proteins, carbohydrates, lipids, and nucleic acids.	Some antibiotics work by blocking the bacterial cell's protein synthesis. Identify one protein that bacterial cells synthesize and explain why the protein is necessary for the cell's survival.
B.4.5 Explain that a complex network of proteins provides organization and shape to cells.	Which type of molecule creates complex networks within cells and is largely responsible for a cell's shape and organization?
B.5.1 Explain how layers of energy-rich organic material, mostly of plant origin, have been gradually turned into great coal beds and oil pools by the pressure of the overlying Earth and its internal heat.	Which pair of factors is most responsible for the formation of coal beds beneath Earth's surface?
Reporting Category: Genetics and Evolution (31%)	
B.6.1 Research and explain the genetic basis for Gregor Mendel's laws of segregation and independent assortment.	Which of these best describes the genetic basis for Gregor Mendel's law of segregation?
B.6.2 Investigate and describe how a biological classification system that implies degrees of kinship between organisms or species can be deduced from the similarity of their nucleotide (DNA) or amino acids (protein) sequences. Know that such systems often match the completely independent classification systems based on anatomical similarities.	The classification chart below shows how closely related four species are to each other. [Chart] According to the chart, which of these is the best conclusion about the species?
B.6.3 Explain how the actions of genes, patterns of inheritance, and the reproduction of cells and organisms account for the continuity of life.	Describe the mechanisms that enable traits to be passed down through many generations of humans. Explain why this is important.

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Reporting Category: Genetics and Evolution (31%) (continued)	
Standards:	**Assessment Stems:**
B.6.4 Investigate and explain how molecular evidence reinforces and confirms the fossil, anatomical, behavioral, and embryological evidence for evolution, and provides additional detail about the sequence in which various lines of descent branched off from one another.	Which of these describes molecular evidence that best supports the Theory of Evolution?
B.6.5 Explain Gregor Mendel's identification of what we now call genes, how they are sorted in reproduction, and how this led to an understanding of the mechanism of heredity. Understand how the integration of his concept of heredity and the concept of natural selection has led to the modern model of speciation and evolution.	A. The modern model of speciation and evolution arose from the integration of which of these two concepts? B. Describe what Gregor Mendel discovered about genes and how they are sorted in reproduction.
B.7.1 Describe how the discovery of the structure of DNA by James D. Watson and Francis Crick made it possible to interpret the genetic code on the basis of a nucleotide sequence. Know the important contribution of Rosalind Franklin's data to this discovery (i.e., the careful X-ray crystallography on DNA that provided Watson and Crick the clue they needed to build the correct structure).	Which of these discoveries made it possible for scientists to interpret the genetic code on the basis of a nucleotide sequence?
B.7.2 Explain how hereditary information is passed from parents to offspring in the form of genes, which are long stretches of DNA consisting of sequences of nucleotides. Explain that in eukaryotes, the genes are contained in chromosomes, which are bodies made up of DNA and various proteins.	A biological molecule is shown below. [Illustration of part of a double helix] Which of these is true about this molecule in eukaryotes?
B.7.4 Explain how biological evolution is also supported by the discovery that the genetic code found in DNA is the same for almost all organisms.	[Name] is doing research for a science project and finds that the genetic code found in DNA is the same for almost all organisms. Which of these concepts does [Name]'s data best support?
B.7.5 Differentiate between the functions of mitosis and meiosis. Mitosis is a process by which a cell divides into each of two daughter cells, each of which has the same number of chromosomes as the original cell. Meiosis is a process of cell division in organisms that reproduce sexually, during which the nucleus divides eventually into four nuclei, each of which contains half the usual number of chromosomes.	A. The picture shows a parent cell with [number] chromosomes. Which of these shows the daughter cells that will result after the parent cell goes through one complete cycle of mitosis/meiosis? B. The diagram below shows a type of cell division that happens in humans. Identify the process shown in the diagram. Describe the purpose of this type of cell division in humans.

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Reporting Category: Genetics and Evolution (31%) (continued)	
Standards:	**Assessment Stems:**
B.7.6 Explain how zygotes are produced in the fertilization process.	Describe the human fertilization process beginning with the movements of the egg and sperm cells within the body of the female. Be sure to name and describe the first cell that is produced by this process.
B.8.1 Explain the flow of information is usually from DNA to RNA, and then to protein.	Describe in the correct order the flow of genetic information that results in the formation of a protein.
B.8.2 Explain how the genetic information in DNA molecules provides the basic form of instructions for assembling protein molecules and that this mechanism is the same for all life forms.	Amino acids linked together in a chain create a polypeptide. One or more polypeptides makes a functional protein. Which of these provides the instructions for the assembly of a protein?
B.8.3 Understand and explain that specialization of cells is almost always due to different patterns of gene expression, rather than differences in the genes themselves.	Explain why heart cells and skin have the same genes but look and function so differently from each other.
B.9.1 Understand and describe how inserting, deleting, or substituting short stretches of DNA alters a gene. Recognize that changes (mutations) in the DNA sequence in or near a specific gene may (or may not) affect the sequence of amino acids in the encoded protein or the expression of the gene.	Describe three different ways a scientist could alter a strand of DNA and discuss how each change could affect the organism in which this change takes place.
B.9.2 Explain the mechanisms of genetic mutations and chromosomal recombinations, and when and how they are passed on to offspring.	Which diagram shows an example of a genetic mutation?
B.9.3 Explain how the sorting and recombination of genes in sexual reproduction result in a vast variety of potential allele combinations in the offspring of any two parents.	In [an organism], there are two alleles for [trait]. There are also two alleles for [other trait]. Two plants that are heterozygous/homozygous for both of these traits are crossed. Which of these Punnett squares correctly shows the genotypes that could result from this cross?

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Reporting Category: Genetics and Evolution (31%) (continued)	
Standards:	**Assessment Stems:**
B.9.4 Explain that genetic variation can occur from such processes as crossing over, jumping genes, and deletion and duplication of genes.	Which of these involves the exchange of chromatid segments between chromosomes?
B.10.1 Describe how life on Earth is thought to have begun as one or a few simple one-celled organisms about 3.5 billion years ago, and that during the first 2 billion years, only single-cell microorganisms existed. Know that, once cells with nuclei developed about a billion years ago, increasingly complex multicellular organisms could evolve.	A. Which of these best describes how life is thought to have begun on Earth? B. Which of these developments was necessary so that multi-cellular organisms could evolve?
B.10.3 Research and explain that Darwin argued that only biologically inherited characteristics could be passed on to offspring, and that some of these characteristics would be different from the average and advantageous in surviving and reproducing; over generations, accumulation of these inherited advantages would lead to a new species.	Which of these best describes Darwin's theory on how a new species comes to be?
B.10.4 Explain that evolution builds on what already exists, so the more variety there is, the more there can be in the future.	Which of these statements best describes why some populations have greater variation among individuals than other populations?
B.11.1 Explain how a large diversity of species increases the chance that at least some living things will survive in the face of large or even catastrophic changes in the environment.	How does the amount of diversity observed within a species affect its chance for survival in the event of a sudden change in the environment?
B.11.2 Research and explain how natural selection provides a mechanism for evolution and leads to organisms that are optimally suited for survival in particular environments.	Identify one trait of the [organism] that is most likely to have evolved through the process of natural selection. Explain how this trait makes [organism] optimally suited for survival in [organism's native environment].
B.11.3 Explain that biological diversity, episodic specification, and mass extinction are depicted in the fossil record, comparative anatomy, and other evidence.	How does comparative anatomy support the idea that new species have evolved from older ones?

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Reporting Category: Multicellular Organisms: Plants and Animals (20%)	
Standards:	**Assessment Stems:**
B.12.1 Describe the structure and function of roots, leaves, flowers, and stem of plants.	Which of these statements best describes why [part of plant] is important?
B.12.2 Know that about 250,000 species of flowering plants have been identified.	Of the known plant species, approximately how many are flowering?
B.12.4 Recognize that plants have a greater problem with unpredictable environments because they cannot seek shelter as many animals can.	Which of these organisms would have the hardest time dealing with sudden harsh environmental changes?
B.13.1 Identify the roles of plants in the ecosystem: Plants make food and oxygen, provide habitats for animals, make and preserve soil, and provide thousands of useful products for people (e.g., energy, medicines, paper, resins).	A. Which of these statements describes a role of plants in an ecosystem? B. Which product is made from plants?
B.13.2 Describe that plants have broad patterns of behavior that have evolved to ensure reproductive success, including co-evolution with animals that distribute a plant's pollen and seeds.	Describe how [animals] help [plants] reproduce, and explain one benefit that the [plants] provide to the [animals].
B.14.1 Explain the major systems of the mammalian body (digestive, respiratory, reproductive, circulatory, excretory, nervous, endocrine, integumentary, immune, skeletal, and muscular) and how they interact with each other.	Which of these best explains why [organ or organ system] is such an important part of the body?
B.15.1 Analyze the complementary activity of major body systems, such as how the respiratory and circulatory systems provide cells with oxygen and nutrients, and remove toxic waste products such as carbon dioxide.	Which of these describes how two body systems are involved in [major function]?
B.15.2 Explain how the nervous system mediates communication between different parts of the body and the environment.	Identify and explain how the body system responsible for alerting the [organism] to [environmental change] functions.
B.15.3 Describe that the nervous and endocrine systems maintain overall regulation of optimal conditions within the body by chemical communication.	The secretion of [hormone] by [gland] causes [function]. Which two body systems must communicate in order for [hormone] to cause [function]?

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Reporting Category: Multicellular Organisms: Plants and Animals (20%) (continued)	
Standards:	**Assessment Stems:**
B.15.4 Investigate and cite specific examples of how the mammalian immune system is designed to protect against microscopic organisms and foreign (or nonself) substances from outside the body and against some aberrant (e.g., cancer) cells that arise within.	A. Which type of cell is responsible for attacking pathogens in the body? B. Which of these body systems is responsible for creating a fever in response to an infection?
Reporting Category: Ecosystems (20%)	
B.17.1 Illustrate and describe the cycles of biotic and abiotic factors (matter, nutrients, energy) in an ecosystem.	Which of these is an abiotic/biotic factor in the [type of cycle]?
B.17.2 Describe how factors in an ecosystem, such as the availability of energy, water, oxygen, and minerals, and the ability to recycle the residue of dead organic materials, cause fluctuations in population sizes.	Which of these environmental factors is most likely to cause an increase in the population size of [species]?
B.17.3 Explore and explain how changes in population size have an impact on the ecological balance of a community and how to analyze the effects.	[Information about an organism's relationship with other organisms in its environment] Which of these would most likely result due to the decline of the [organism]?
B.17.4 Describe how the physical or chemical environment may influence the rate, extent, and nature of the way organisms develop within ecosystems.	[Species] has developed [physical adaptation or behavioral pattern based on physical environment]. This is most likely due to which of these environmental factors?
B.18.1 Describe how ecosystems can be reasonably stable over hundreds or thousands of years.	Explain two factors that might threaten an ecosystem's stability.
B.18.2 Explain that ecosystems tend to have cyclic fluctuations around a state of rough equilibrium, and change results from shifts in climate, natural causes, human activity, or when a new species or non-native species appears.	A. Certain laws in the United States prohibit the release of non-native species of [organism] because . . . B. Considering the advances in [human activity], which of these is the best reason for a country to [environmental policy]?

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Reporting Category: Ecosystems (20%) (continued)	
Standards:	**Assessment Stems:**
B.19.1 Investigate and describe how point and nonpoint source pollution can affect the health of a bay's watershed and wetlands.	Describe the difference between nonpoint source pollution and source pollution and explain why one of these is more difficult to regulate.
B.19.2 Assess the method for monitoring and safeguarding water quality, including local waterways such as the Anacostia and Potomac rivers, and know that macroinvertebrates can be early warning signs of decreasing water quality.	A. Which qualities of water can be monitored to assess water quality? B. Why is it important to assess water quality?

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DC CAS Scoring Tools

On the following pages are the rubrics used to score student responses to constructed-response (CR) items on the DC CAS. Holistic rubrics are used for scoring reading, mathematics, and writing CRs. Science CRs are scored according to the criteria of item-specific scoring guides. For this guide, a sample item and scoring guide have been created for each of the science tests.

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Writing Rubrics ..... Page 93

Mathematics Rubric ..... Page 94

Science and Biology Sample Scoring Guides ..... Page 95

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Rubric for DC CAS Constructed-Response Items: Reading

Score	*Description*
3	The response demonstrates a complete understanding of the passage as it relates to the question. The response includes support that • is clear and complete • provides relevant and specific details/information from the text
2	The response demonstrates a partial understanding of the passage as it relates to the question. The response includes support that • is partially clear and/or partially complete • provides mostly relevant but somewhat general and/or inaccurate details/information from the text
1	The response demonstrates a minimal understanding of the passage as it relates to the question. The response includes support that • is minimally correct or incomplete • provides inadequate, incorrect, or no relevant details/information from the text
0	The response demonstrates no understanding of the passage as it relates to the question. Any details/information that is included is incorrect or irrelevant.

Student responses that are awarded a score of 3 have

- fully answered <u>all</u> parts of the question posed
- demonstrated the student's understanding of the <u>whole</u> text relative to the question
- offered appropriate, clear, and full textual support for the answer
- explained direct quotations from the text that are used as support
- included inferences, when appropriate, based on the text

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Rubrics for DC CAS Constructed-Response Item: Writing

Topic/Idea Development

Score	*Description*
6	• Rich topic/idea development • Careful and/or subtle organization • Effective/rich use of language
5	• Full topic/idea development • Logical organization • Strong details • Appropriate use of language
4	• Moderate topic/idea development and organization • Adequate, relevant details • Some variety in language
3	• Rudimentary topic/idea development and/or organization • Basic supporting ideas • Simplistic language
2	• Limited or weak topic/idea development, organization, and/or details • Limited awareness of audience and/or task
1	• Limited topic/idea development, organization, and/or details • Little or no awareness of audience and/or task

Standard English Conventions

Score	*Description*
4	• Control of sentence structure, grammar and usage, and mechanics (length and complexity of essay provide opportunity for student to show control of standard English conventions)
3	• Errors do not interfere with communication and/or • Few errors relative to length of essay or complexity of sentence structure, grammar and usage, and mechanics
2	• Errors interfere somewhat with communication and/or • Too many errors relative to length of the essay or complexity of sentence structure, grammar and usage, and mechanics
1	• Errors seriously interfere with communication AND • Little control of sentence structure, grammar and usage, and mechanics

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Rubric for DC CAS Constructed-Response Items: Mathematics

Score	*Description*
3	The response demonstrates a thorough understanding of the mathematical concepts and processes needed to complete the task. • Response is correct and complete. • Response shows application of a reasonable and relevant strategy. • Mathematical ideas are expressed coherently through clear, complete, logical, and fully developed responses using words, calculations, and/or symbols as appropriate.
2	The response demonstrates a general and/or partial understanding of the mathematical concepts and processes needed to complete the task. • Response is mostly correct, and may be only partially complete. • Response shows application of a reasonable and relevant strategy, even though only partially applied. • Mathematical ideas are expressed generally or partially using words, calculations, and/or symbols as appropriate.
1	The response demonstrates a minimal and/or limited understanding of the mathematical concepts and processes needed to complete the task. • Response is only minimally correct or incomplete. • Application of a strategy is indicated or implied, but the strategy may reflect a misunderstanding of mathematical concepts and/or procedures. • Mathematical ideas are expressed in a limited manner and are flawed. Words, calculations, and/or symbols are attempted to be used appropriately but may be missing.
0	The response demonstrates no understanding of the mathematical concepts and processes needed to complete the task. • Response is incorrect, incomplete, or missing. • Response shows no application of a strategy or application of an irrelevant strategy. • Mathematical ideas cannot be interpreted or lack sufficient evidence to support even a limited understanding.

Student responses that are awarded a score of 3 have

- fully answered all parts of the question
- offered appropriate, clear, and full work to support their answer, as needed

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Grade 5 Science: Sample Constructed-Response Item with Scoring Guide

A student placed several ice cubes into a plastic container. After sitting at room temperature for an hour, the ice melted into water.

A Describe the physical change that the ice went through. Write your answer on the lines in the answer booklet.

B What would need to happen to change the water back into ice? Write your answer on the lines in the answer booklet.

Item-Specific Rubric	**Score Points**	2

Key Elements:

The ice changed from solid to liquid.

Any reasonable description of cooling the water until it freezes.

Score Points:

2 points Two key elements
1 point One key element
0 points Other

Sample Student Responses & Score Points Awarded

A The solid ice changed into a liquid.

B You could put it in the freezer until it turned back into ice.

Score: 2 points

A The ice changed into water.

B You would need to refreeze it.

Score: 1 point
Note: For Part A, no point awarded for a response of the ice changing into *water*, which is already stated in the item.

A The ice changed.

B You would need to undo it.

Score: 0 points
Note: No points awarded as the response to both parts are too vague.

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Grade 8 Science: Sample Constructed-Response Item with Scoring Guide

A student has several objects made of different materials. The student wants to find the density of each object in order to predict which objects will float when placed into water.

A Which <u>two</u> properties should the student measure in order to find the density of each object? Write your answer on the line in the answer booklet.

B Explain how the student could use the density of each object to predict which objects will float when placed into water. Write your answer on the line in the answer booklet.

Item-Specific Rubric	**Score Points**	2

Key Elements:

Mass **AND** volume

Any reasonable explanation of comparing the density of each object to the density of water to see which objects have a lower density than water (1.0 g/mL).

Score Points:

2 points Two key elements
1 point One key element
0 points Other

Sample Student Responses & Score Points Awarded

A <u>Mass and volume</u>

B <u>You could see if an object's density was less than the density of water, then it would float.</u>

Score: 2 points
Note: For Part B, students may state the 'density of water' or give the value of 1.0 g/mL.

A <u>Mass</u>

B <u>If the object's density was less than water's, then it would float.</u>

Score: 1 point
Note: No point awarded for just one property named in Part A.

A <u>Weight and space</u>

B <u>A large density means the object won't float.</u>

Score: 0 points
Note: No point awarded for Part A as the properties are incorrect, and no point awarded for Part B as there is no comparison to the density of water and/or the reasoning is incorrect.

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Biology: Sample Constructed-Response Item with Scoring Guide

Many different substances can enter and exit a cell by passing through the cell membrane.

A Name the process by which oxygen molecules would enter through the cell membrane, and identify whether this process would require energy to occur. Write your answers in the chart provided in the answer booklet.

B Name the process by which sodium ions would exit through the cell membrane, and identify whether this process would require energy to occur. Write your answers in the chart provided in the answer booklet.

Item-Specific Rubric	**Score Points**	2

Key Elements:

Diffusion **AND** No (no energy required)

Active transport **AND** Yes (energy required)

Score Points:

2 points Two key elements
1 point One key element
0 points Other

Sample Student Responses & Score Points Awarded

	Process	Energy Required?
A	Diffusion	no
B	Active Transport	yes

Score: 2 points

	Process	Energy Required?
A	Diffusion	yes
B	Active Transport	yes

Score: 1 point
Note: Both parts must be correct for a student to earn a point for the specific process.

	Process	Energy Required?
A	Easy	no
B	Pumping	yes

Score: 0 points
Note: Neither process was named correctly, so the student did not earn a point for either process.

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Additional Resource Information and Glossary

In this section of the *DC CAS Resource Guide* is a list of additional resources identified by educators of the District of Columbia. These resources have been used in classrooms because of their curricular and assessment alignment to DC standards.

Also included in this section is a glossary of assessment terms.

Additional Resources . . . . . Page 100

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Additional Resources

The following resources may be used by teachers in their instructional planning. The resources have been selected for their alignment to the state standards and the DC CAS.

Resource	*Description of Content*	*Content Alignment*
http://osse.dc.gov http://nclb.osse.dc.gov	• All standards documents • Released DC items	All content areas
www.corestandards.org	• Common Core Standards for English Language Arts and Mathematics	Reading and Mathematics
www.ctb.com	• Published by CTB/McGraw-Hill • Understanding Assessment • CTB Research	All content areas
www.ctb.com/dc-cas	• Performance Level Descriptors • Skills and concepts needed to achieve proficiency levels of the DC CAS • Based on student performance on the DC CAS	All content areas
www.brainpop.com	• Cartoon video with quizzes • Requires log in	All content areas
McDougal-Littell CD-ROM, website, and textbooks www.classzone.com	• Test generator and videos • General questions aligned to standards	All content areas
http://eduplace.com	• Houghton Mifflin Harcourt Education Place	All content areas
http://www.readingrockets.org/article/102	• Metacognitive reading strategies • Features Dr. Roger Farr's Think Aloud process • Dr. Farr is past president of International Reading Association • Appropriate for all grades • Applicable to other content areas	Reading

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Resource	*Description of Content*	*Content Alignment*
Utah State University http://nlvm.usu.edu/en/nav/vlibrary.html	• Virtual manipulatives by content strands • PreK–12	Mathematics
NCTM's Illuminations http://illuminations.nctm.org	• Standards-based resources • Online activities, lessons, and web links	Mathematics
Everyday Mathematics Center http://everydaymath.uchicago.edu/	• Variety of resources for users and non-users of Everyday Mathematics Program • Links to professional journals, organizations, web resources, EM learning goals	Mathematics
Science and Technology in Middle School: Series from Smithsonian www.smithsonianeducation.org	• Hands-on curriculum • Labs and text	Science: Forces/Density and Buoyancy
www.exploratorium.org	• Exploratorium snacks and online exhibits • Series of hands-on activities about light • Online exhibits to learn about perception and light	Science: Conservation of Energy
Smithsonian Museum www.smithsonian.org	• Botanic garden • Bodies exhibit (mammalian bodies)	Science: Biology
www.biologycorner.com	• Variety of biology-related lessons • Online assignments • Practice tests	Science: Biology
NIH www.science.education.nih.gov	• Curriculum guides correlated to Scientific Investigation and Inquiry	Science
DC Environmental Education Consortium www.dcnaturally.org	• Local non-profit environmental education groups	Science: Ecosystems

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Glossary

constructed response (CR)
a test item for which a student must write a response, usually to provide and then support an answer to a question OR to provide an answer and then show or explain a process for determining the answer

content standard
the skill and knowledge expected of students at a specific grade level

Performance-Level Descriptors (PLDs)
PLDs provide descriptions of students' performance at each achievement level. The PLDs for the DC CAS are included in the *Guide to Test Interpretation* distributed to schools.

rubric
a framework of criteria that defines how a student response, usually to a constructed-response item, will be evaluated and scored; a holistic, or generic, rubric gives criteria that are general in nature and can be used to score items of similar construct and content (e.g., reading comprehension items).

scoring guide
a guide that may include notes or sample responses that are specific to a constructed-response item; scoring guides are developed to help scorers as they apply scoring criteria to student responses.

selected response (SR)
a test item, also known as a multiple-choice item, in which a student is presented answer choices from which to select the correct response to a posed question or problem

strand
a cluster of standards within a content area that are often used as a reporting category, such as Informational Text or Number Sense and Operations

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