Grade 7

CRCT Study Guide

Reading
English/Language Arts
Mathematics
Science
Social Studies

Georgia
Criterion-Referenced Competency Tests
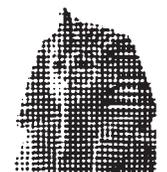
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Using the CRCT Study Guide

This Study Guide focuses on the knowledge and skills that are tested on the Georgia Criterion-Referenced Competency Tests (CRCT). It is designed for teachers to use with their students and for parents to use with their children. Go to **www.gadoe.org**/ to find further information about and support for the CRCT.

Use the following section of this guide, *About the CRCT*, for an overview of the CRCT and for test-taking strategies to review with your students.

– The content tested on the CRCT is based on the Georgia Performance Standards, which describe what all students should know, understand, and be able to do.

The chapters of this guide are organized by subject. In each chapter you can explore the skills needed to succeed in a specific, tested domain (grouping of similar content standards). The subject chapters include a snapshot of each domain, instructional **Activities** that address covered skills, and a **Practice Quiz** with annotated **Solutions** to help assess student progress.

Overview of the CRCT

What is the CRCT?

The CRCT is a series of state-mandated achievement tests for students in Grades 1 through 8. In Grades 3 through 8, the subject areas of Reading, English/Language Arts, Mathematics, Science, and Social Studies are covered.

What does the CRCT measure?

The CRCT measures how well students have acquired the knowledge and skills covered by the state curriculum for their grade level. A new statewide curriculum, known as the Georgia Performance Standards (GPS), sets academic standards and expectations for all students in Georgia's public schools. The CRCT corresponds to the new standards.

The tests accomplish the following:

− Ensure that students are learning
− Provide data to teachers, schools, and school districts so they can make better instructional decisions
− Measure accountability, including Adequate Yearly Progress (AYP) as measured by the federal No Child Left Behind Act

CRCT results measure the academic achievement of students, classes, schools, school systems, and the state. This information can be used to identify individual student strengths and weaknesses, or, more generally, to measure the quality of education throughout Georgia.

How are CRCT questions scored?

The CRCT currently uses only selected-response (multiple-choice) questions. There are four choices for each question, labeled A, B, C, and D.

Students are not compared to each other. Each student is measured on his or her achievement in meeting the standards. Scores are reported according to three performance levels: Does Not Meet the Standard, Meets the Standard, and Exceeds the Standard. For more information, go to the website **www.gadoe.org/ci_testing.aspx?PageReq=CI_TESTING_CRCT** and click the link for "2009 CRCT Score Interpretation Guide."

Since the spring of 2006, performance on the reading portion of the CRCT has been linked to the Lexile scale. Visit **www.gadoe.org/lexile.aspx** for more information on this national reading measure.

Preparing for the CRCT

Test-Taking Strategies

The following are study skills and test-taking tips to share with students:

Weeks Before the Test

Keep on top of material as you learn it in school. Don't leave everything until the last minute!

Ask questions in class when you don't understand something.

Set academic goals for the upcoming weeks and months (short-and-long term).

Choose a quiet place to work that is free of distractions.

Find out as much as you can about the test.

Build in time to review what you learned in your last study session.

Divide assignments into smaller pieces. It's easier to remember information this way.

Take breaks! Studying for a long time nonstop is not productive.

Consider reviewing materials with others after you've studied on your own. This helps reinforce what you already know and reminds you of things you've forgotten.

Actively take notes while you read. This forces you to think about what you are reading.

Try sample test questions for practice.

At the end of each study session, evaluate what you have accomplished.

. . . .

Day Before the Test

Get a good night's rest.

If you are feeling nervous, talk to a teacher or parent.

Remember that this test is only one measure of your knowledge.

Eat a good breakfast before the test; it will give you energy to stay alert.

During the Test

Remind students of the following strategies to use during the test:

Relax by taking slow, deep breaths.

Make sure you understand the directions. If you are not sure, ask the teacher for clarification.

Read each question carefully.

When you use scratch paper, make sure that you copy the problem correctly from the test onto your paper.

You can underline and make marks on your test to help you while you work, but the only answers that will be scored are those in the correct place on your answer sheet.

Try to come up with your own answer before seeing the choices. This will help in choosing the best answer choice available.

Eliminate answer choices that you know cannot be right.

Leave a question blank if you are unsure of the answer, then return to it at the end.

Manage your time. Don't let the pace of others make you nervous. However, don't spend too much time on one question.

Be sure to answer all of the questions.

Review your answers when you have finished the test.

Try to stay calm during the test. Remember, this is a chance for you to show what you know.

Related Links

Below are links to important resources that contain information related to the CRCT.

Georgia Performance Standards:
www.georgiastandards.org/

CRCT Content Descriptions:
www.gadoe.org/ci_testing.aspx?PageReq=CI_TESTING_CRCT

GPS Frameworks:
www.georgiastandards.org/

Lexile Framework for Reading:
www.gadoe.org/lexile.aspx

Best practices in education indicate that teachers should first model new skills for students. Next, teachers should provide opportunities for guided practice. Only then should teachers expect students to successfully complete an activity independently.

The activities in this guide are no exception. They are designed to be used by teachers and parents to help students with the skills on the Georgia CRCT.

Since different students have different strengths and needs, the activities in this study guide can be scaffolded for students who need more support, extended to challenge advanced students, or presented as is (with appropriate modeling) for grade-level students.

Reading

Reading

When reading a text closely, the Grade 7 student works carefully to discern the author's perspective and the particular facts and details that support it. The student reads thoughtfully and purposefully, constantly checking for understanding of the author's intent and meaning so that interpretation will be sound.

The Reading activities focus on some of the concepts that are assessed on the Grade 7 CRCT Reading domains. These domains are as follows:

1 **Reading Skills and Vocabulary Acquisition**

2 **Literary Comprehension**

3 **Information and Media Literacy**

Activities
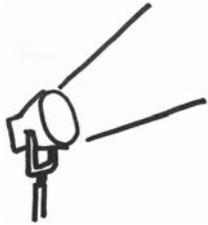
❶ Reading Skills and Vocabulary Acquisition
Georgia Performance Standards ELA7CR2, ELA7RC3, and ELA7RC4

In Grade 7, students need to determine the meanings of words using common roots and affixes. Students also need to use context clues to figure out the meanings of unfamiliar words and multiple-meaning words. In addition to figuring out word meanings, students should use these words within different contexts (e.g., subject areas). Additionally, they should explain idioms and analogies in prose and poetry.

The following activities develop skills in this domain:

– To increase familiarity with Greek/Latin root words and affixes, students should keep a *Word Ring* (large key ring) with a collection of 3 x 5, hole-punched index cards attached to it. Students should add new words and word parts to their *Word Rings* as they encounter them in their school material. On each card, students should write a word/word part and its definition. To increase understanding of these word parts and how they affect the meanings of the words, students should list other words in the same word family. For example, for the suffix -*less* the students could list beneath the definition: *useless*, *homeless*, and *pointless*. Encourage students to use the *Word Rings* often; for example, while waiting for the bus students could review the words on their ring.

– To help students understand the term *idiom*, explain that an idiom is *an expression whose meaning is not understandable from the ordinary meaning of its words*. Then provide students with opportunities to identify and interpret them. A children's book, such as *Amelia Bedelia,* is a good source for this exercise. The character Amelia gets in trouble by interpreting others' idioms as literal. For example, when asked to *draw the drapes* or *change the towels* she misunderstands the instructions. Students should locate and analyze specific idioms throughout the book. Then students should generate a list of their own idioms such as *it's raining cats and dogs* and *let's break the ice*. Students should also make literal illustrations of their favorite idioms and ask classmates to determine the meanings of their idioms. After students have a good understanding of idiomatic expressions, review with them the definition of idioms.

– To help students learn to use context clues to determine the meanings of unfamiliar words, students should examine sentences that have examples of direct definitions, contrast clues, and cause-and-effect logic. For this activity, students should examine three sentences for each type of context clue. Direct definitions are often signaled by *or*, as in the sentence *Chaps, or protective leg coverings, are often worn by cowboys*. Students should underline both *chaps* and *protective leg coverings*. In sentences with contrasts, students should underline the two words or phrases in contrast to one another and

then guess what the word means. For example, *My last apartment was really <u>small</u>, but my new one is quite <u>spacious</u>.* Another type of context clue that students should learn to recognize is in the cause-and-effect sentence. For example, *Because we lingered too long at the restaurant, we missed the beginning of the movie*. Students should underline both *linger* and *missed the beginning* to determine the meaning of the word *linger*.

Activities
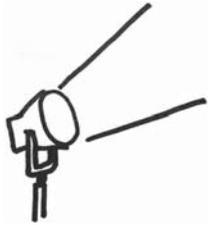
❷ Literary Comprehension
Georgia Performance Standard ELA7R1

How an author uses language—the author's style—is as significant as *what* texts literally state. In order to understand literary texts, students need to identify text features. They need to be familiar with different literary genres as well as common poetic devices (e.g., figurative language, sound devices, visual features, etc.). Students must also trace plot development and analyze plots that may or may not progress chronologically. Students must identify the ways that authors create characters, and analyze characters' traits, feelings, and motivations. Furthermore, students must distinguish themes from topics as well as relate texts to their cultural and historical contexts. Finally, students should identify and understand how authors' word choices create the tone and moods of texts.

The following activities develop skills in this domain:

–   For students to analyze character motivation and draw conclusions about characters, they should select a character from their text to analyze using a *Character Trait Sheet*. In the first column of the sheet, there should be statements about the character. In the second column, using specific quotations from the text, students must write in support of or against the statement about the character. Finally, in the third column, students must describe why this character's particular trait is significant in the text and what motivates him or her to be this way. Emphasize that students must support any claims they make about a character with concrete textual evidence.

–   To help reinforce students' reading comprehension and an understanding of the five elements of a story (characters, plot, setting, theme, and style), students should answer questions in a particular category based on a piece of literature they have just completed. Label five envelopes, one for each story element. In each of the envelopes, place a cluster of questions about the text for that element. For example, in the Character envelope there would be a quotation from a character whom students must identify. Then students should describe what this quotation shows about the character. In the Theme envelope, students will answer questions based on the ideas in the text. For example, *What does the recurring symbol represent to the main character?* In the Style envelope, there are questions that require the student to identify a particular sound element and describe how it is significant in the piece. For example, a character is anxious so he or she speaks in short, choppy sentences that sound rushed, conveying his or her sense of worry. Students should work in pairs or with an adult.

–   To help students improve reading comprehension and identify implicit themes in a text, students should be assigned a selection of quotations from the text, with a graphic organizer beneath each quotation. The graphic organizer will contain three boxes labeled Character, Plot, and Theme. In the Character box,

the student must name the speaker. Then in the Plot box, the student must discuss the context of the quotation. Finally, in the Theme box, the student must discuss how the quotation is significant in terms of the ideas in the novel. To avoid having students merely identify the theme, the Theme box should be divided in half. In the top half of the Theme box, students identify and label the quote's Theme such as the *individual vs. the community*. In the bottom half of the theme box, students must explain how the quote supports and illustrates this idea in the text.

– To help students recognize style, tone, and voice in literature, students should study stories such as *White Fang* by Jack London, *Summer of Fear* by Lois Duncan, *Cheaper by the Dozen* by Frank B. Gilbreth and Ernestine Gilbreth Carey, and *Little Women* by Louisa May Alcott. In addition, students should participate in mini-lessons that focus on writing issues such as word choice, repetition, sentence length, and rhythm. Then students should read and listen to sections of the stories and make notes about style, tone, and voice. Finally, students should discuss their observations and try imitating those techniques while writing short stories.

Activities
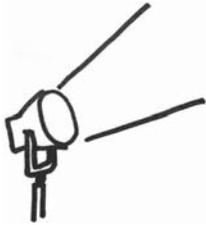
❸ Information and Media Literacy
Georgia Performance Standards ELA7R1, ELA7RC2, and ELA7LSV2

Students need to understand and analyze a wide range of informational texts and media. As students encounter various types of media, as well as workplace and consumer materials, they need strong skills to identify common text features (e.g., paragraphs, topic sentences, concluding sentences, footnotes), organizational patterns (e.g., cause-and-effect relationships, comparison and contrast), main ideas, and the evidence used to support them. Students should also be able to recognize an author's purpose and understand the ways authors develop their arguments. Additionally, students need to apply what they read as they follow technical directions for mechanical devices such as computers. Because many of these texts contain diagrams and images, students must also have the skills to analyze common graphic features and understand their relationships with the texts.

The following activities develop skills in this domain:

– To help students learn to identify and interpret graphic features (e.g., diagrams, maps, illustrations, charts, tables, and graphs), guide students in an examination of a science and/or social studies textbook. First, students should locate all the graphic features in a short chapter or a section of their textbook. Second, students should study each graphic feature and the caption that goes with it. They should then write a sentence summarizing the information in each graphic feature. Next, students should write two questions that can be answered by each graphic feature. One question should focus on a detail, such as, *Which city had the highest population in 1970?* The second question should focus on broader information, such as, *What pattern do you notice in the population size since World War II?* Finally, students should predict the main points they think will be covered in the chapter or section.

– To help students understand the way an author develops an argument throughout a piece of writing and how a paragraph is structured with a main idea and supporting details, students should outline an essay that has been written. For example, students could look at an essay or article on global warming. After reading the piece, they will select three paragraphs that illustrate the author's development of his or her theory. In Paragraph #1, students cite the evidence or hypothesis of the theory of global warming. Paragraph #2 illustrates what is done to measure and collect the data. Paragraph #3 addresses the analysis of the data collected. For each paragraph, students should draw a rectangular text box labeled Main Idea. Remind students that the main idea may be implied rather than directly stated. Next, students should label three more text boxes underneath the main idea box, labeled Supporting Details, and fill in the text boxes. After the boxes have been filled in, students should give each paragraph a title

or name and describe the development of the author's argument as represented by this three-paragraph outline.

– To help students identify an author's implicitly stated purpose, students will read texts in which the author or source is being persuasive and/or manipulative. Students should look for techniques such as repetition, rhetorical questions, accentuating one side of the argument, exaggeration, and appealing to people's emotions. Also, students should examine some visual sources of propaganda, such as World War II posters. Students should analyze print advertisements from magazines and newspapers to recognize persuasive language and suggestiveness. Next, students should create their own persuasion project in the form of an advertising campaign for an imaginary product. Students should create a product logo (a distinctive symbol to represent the product), a product jingle (a catchy, short song), a product poster (a visual advertisement), and then script a product speech (a promotional passage about the product). Students should present their campaigns to their classmates or family members.

Practice Quiz

Genre: Nonfiction

Read the passage below and answer the questions that follow.

Peppers and Pepper: Worlds Apart

When Christopher Columbus landed in the Americas in the 15th century, he was hoping to find a new route to India. A new sea route to India would have meant, among other things, easier access to black pepper. At the time, black pepper was the most valuable spice in the world.

Columbus never reached India, but he did reach the Americas. Instead of black pepper, Columbus found the hot chili, a unique fruit previously unknown to Europeans. Widely used to season food in the Americas, the chili has a spicy quality similar to that of black pepper. Probably because of this similarity, Columbus called this newfound seasoning "pepper." Ever since, the two spices have been linked by a common name. However, despite the name, black pepper from India and the chili pepper of the Americas are actually very different.

Peppercorns from Asia

Black pepper comes from the dried berries of *Piper nigrum*, a vine native to India. When dried, these berries are called peppercorns. Peppercorns from *Piper nigrum* can be black, white, or green. Black peppercorn is the type most commonly used. It is usually ground into a powder and used as a seasoning.

Black pepper has been used as a spice for at least 4,000 years. First used only in Asia, it eventually became known throughout the rest of the world. For most of its history, black pepper has been extremely valuable. Grown almost exclusively in India, black pepper was one of the first items traded between Asia and Europe. Its distinctive flavor created a high demand among Europeans, who were willing to pay a high price for it. Only the wealthy could afford to use black pepper to season their food.

Over the years, the spice trade became a big business, and many tried to profit from it. Cities along the trade routes charged "customs duties" or tolls for the right to ship goods through their territories. This raised the price of pepper in Europe. By the 1400s, black pepper became so expensive that Europeans wanted a route to India that would avoid these cities. Columbus and many other explorers sailed across the Atlantic trying to reach India by sea.

American Chilies

The chili pepper has played a very important part in the culture of the Americas. The word "chili" comes from the Nahuatl (na-WHA-tull) people of southern Mexico and Central America, who called it *chilli* or *xilli*. One of the first plants cultivated in the Americas, it has been farmed there for thousands of years. By the time Columbus arrived, chilies were being grown throughout Central America, Mexico, and the Caribbean.

The chili pepper comes from plants of the *Capsicum* genus and is native to South America. Sweet bell peppers, paprika, cayenne pepper, and jalapeños are among the most common varieties.

The spicy "heat" of many types of chilies comes from the chemical called *capsaicin*. It causes a burning feeling on the lips, tongue, and throat. Unlike many chemicals, capsaicin stays "hot" even when it has been cooked or frozen. Capsaicin is also very potent. It is about 100 times hotter than *piperine*, the chemical that makes black pepper spicy.

Worlds Crossing

The Spanish were the first Europeans to recognize the chili's potential. They found that the ground chilies made a good substitute for high-priced black pepper. Soon they were shipping tons of chilies from the Americas to Europe. European farmers even began to grow chili peppers. The dried powder came to be sold in markets all over Europe. Many recipes printed in 18th century Europe used chili powder.

Chilies never completely displaced peppercorns, though. In the 1800s, better trade routes made black pepper easier to obtain. As a result, black pepper became more affordable. A greater number of people were able to use black pepper on a daily basis. Today, black pepper is the most widely traded spice in the world. Black pepper stands next to salt on family and restaurant tables. It appears in countless recipes. People in the United States use, on average, more than a quarter pound of black pepper per person per year.

These days, both black pepper and chili peppers are used throughout the world. The next time you use a pepper shaker or burn your mouth on a fiery chili, think about the long, interesting histories of these remarkable spices.

1   **What is one reason European explorers tried to find a sea route to India?**
    A   They needed a replacement for black pepper.
    B   They wanted to learn how to grow chili peppers.
    C   They needed to create new uses for chili peppers.
    D   They wanted an easier way to import black pepper.

2   **Which of these is the topic sentence in the fourth paragraph?**
    A   Black pepper has been used as a spice for at least 4,000 years.
    B   For most of its history, black pepper has been extremely valuable.
    C   Grown almost exclusively in India, black pepper was one of the first items traded between Asia and Europe.
    D   Only the wealthy could afford to use black pepper to season their food.

3   **According to the passage, what is the MAIN reason the discovery of the chili was important for Europe?**
    A   It gave explorers an important new source of food.
    B   It provided a cheap substitute for an expensive spice.
    C   It was a unique ingredient that could be used in interesting ways.
    D   It was grown by farmers, sold in markets, and used in many recipes.

4   **What was MOST LIKELY the author's purpose for writing this passage?**
    A   to argue that chilies are superior to peppercorns
    B   to describe the cultivation of chilies and peppercorns
    C   to suggest new ways of using chilies and peppercorns
    D   to explain the relationship between chilies and peppercorns

5   **Which of these BEST explains why black pepper became so expensive in Europe?**
    A   Many recipes listed black pepper as an ingredient.
    B   Few people were interested in selling black pepper.
    C   Customs duties added to the cost of importing black pepper.
    D   Explorers were hoping to find another source of black pepper.

6   **Why does the author MOST LIKELY italicize the words _chilli_ and _xilli_?**

> The word "chili" comes from the Nahuatl (na-WHA-tull) people of southern Mexico and Central America, who called it _chilli_ or _xilli_.

A   to show that they refer to scientific ideas
B   to show that they refer to historical periods
C   to show that they are important to the passage
D   to show that they are from a different language

7   **Which of these BEST describes how the information in the second paragraph of the "Worlds Crossing" section is organized?**
A   steps in a process
B   chronological order
C   order of importance
D   compare and contrast

8   **Which sentence from the passage BEST supports the idea that chilies did not replace black pepper?**
A   At the time, black pepper was the most valuable spice in the world.
B   Only the wealthy could afford to use black pepper to season their food.
C   Today, black pepper is the most widely traded spice in the world.
D   People in the United States use, on average, more than a quarter pound of black pepper per person per year.

9   **What is the meaning of the word _duties_ as used in the sentence?**

> Cities along the trade routes charged "customs <u>duties</u>" or tolls for the right to ship goods through their territories.

A   agents
B   fees
C   pledges
D   roads

10   **What does the word _potent_ mean in the sentence?**

> Capsaicin is also very <u>potent</u>. It is about 100 times hotter than _piperine_, the chemical that makes black pepper spicy.

A   fresh
B   heavy
C   strong
D   useful

Solutions

Number	Correct Answer	Explanation
1	**D**	*Distinguishes between the concepts of theme in a literary work and the author's purpose in an expository text. (ELA7R1a)* The correct answer is **Choice (D) They wanted an easier way to import black pepper.** The second sentence of the passage states, "A new sea route to India would have meant easier access to black pepper." Choice (D) is correct because it restates this idea, providing one reason the European explorers tried to find a sea route to India. Choices (A), (B), and (C) are incorrect. They were not motivations for European explorers to find a sea route to India.
2	**A**	*Distinguishes between the concepts of theme in a literary work and the author's purpose in an expository text. (ELA7R1a)* The correct answer is **Choice (A) Black pepper has been used as a spice for at least 4,000 years.** This topic sentence presents the main idea on which the whole paragraph focuses. All the sentences that follow this first sentence present information about black pepper's 4,000 years of use as a spice. Choices (B), (C), and (D) are detail sentences.
3	**B**	*Relates a literary work to information about its setting or historical moment. (ELA7R1c)* The correct answer is **Choice (B) It provided a cheap substitute for an expensive spice.** The passage explains that black pepper was the most valuable spice in the world, yet it was expensive and not widely available during Columbus's time. Choice (A) is incorrect, as the passage does not describe chili in this way. Choices (C) and (D) are incorrect because, while they are reasons that the discovery of the chili was important for Europe, they are not the main reason.

Number	Correct Answer	Explanation
4	**D**	*Examine the author's purpose in writing. (ELA7RC2e)*
		The correct answer is **Choice (D) to explain the relationship between chilies and peppercorns.** After reading the passage, the reader has a good understanding of the relationship between chilies and peppercorns. The author's purpose is what the author hopes to accomplish through the description in the passage and has a close relationship with the main ideas. Choices (A), (B), or (C) are incorrect. The passage does not try to persuade the reader of any of the ideas presented in these choices.
5	**C**	*Relates a literary work to information about its setting or historical moment. (ELA7R1c)*
		The correct answer is **Choice (C) Customs duties added to the cost of importing black pepper.** This is the best choice due to the direct and specific explanation about the influence of customs duties. Paragraph five specifically states that the great interest in profiting from the spice trade led to customs duties along the trade routes. Customs duties drove the price of black pepper up, Choices (A) and (B) are incorrect because they are not mentioned in the passage as reasons why black pepper became so expensive in Europe. Choice (D) is incorrect because it is a result of the high cost of black pepper rather than a cause.
6	**D**	*Recognizes and uses the features of disciplinary texts (e.g., charts, graphs, photos, maps, highlighted vocabulary). (ELA7RC2f)*
		The correct answer is **Choice (D) to show that they are from a different language.** Authors often italicize foreign words or phrases. Choices (A) and (B) are incorrect. The passage never uses the words *chilli* and *xilli* in a way that shows they are scientific ideas or historical periods. Choice (C) is incorrect. Although authors sometimes use italics to emphasize particular words or ideas, the author does not use these words emphatically in this case.

Number	Correct Answer	Explanation
7	**B**	*Applies knowledge of common organizational structures and patterns (i.e., logical order, cause and effect relationships, comparison and contrast, transitions). (ELA7R1c)*
		The correct answer is **Choice (B) chronological order.** This paragraph describes how access to black pepper has changed from the 1800s to the present day. Choices (A), (C), and (D) are incorrect because they do not describe the organizational structure of this paragraph.
8	**C**	*Identifies events that advance the plot and determines how each event explains past action(s) or foreshadows future action(s). (ELA7R1e)*
		The correct answer is **Choice (C) Today, black pepper is the most widely-traded spice in the world.** This answer provides the best evidence that chilies never replaced black pepper by showing the widespread trade in black pepper today. Choices (A) and (B) are incorrect since these answers focus on the past expense of black pepper. Choice (D) is incorrect as it focuses on black pepper consumption only in the United States.
9	**B**	*Determines word meanings through the use of definition, example, restatement, or contrast. (ELA7R2d)*
		The correct answer is **Choice (B) fees.** The passage provides several clues to help determine that this is the correct choice. The verb "charged" must be followed by something that can be charged. The author also directly defines the word "duties" with the synonym "tolls." In working on this question, students should realize that "customs," "duties," and "tolls" are synonyms. Choices (A), (C), and (D) are incorrect because they don't make sense in the context of the sentence.

Number	Correct Answer	Explanation
10	**C**	*Determines the meaning of unfamiliar words using context clues (e.g., contrast, cause and effect, etc.). (ELA7R2a)*
		The correct answer is **Choice** (**C**) **strong.** The context is critical for figuring out what *potent* means. The sentence that follows the word *potent* states that capsaicin "is about 100 times hotter than *piperine.*" Choices (A), (B), and (D) are incorrect, as the sentence does not describe capsaicin as *fresh*, *heavy*, or *useful*.

English/Language Arts

Chapter 2

English/Language Arts

By the end of Grade 7, students have a good command of different modes of writing, including persuasion, as well as an understanding of how each mode is used. Students have increased their ability to use descriptive words and complex sentences. They continue to gain proficiency in critiquing their own and others' writing constructively, gaining practice with editing and proofreading.

The English/Language Arts activities focus on some of the concepts that are assessed on the Grade 7 CRCT domains. These domains are as follows:

1 **Grammar/Sentence Construction**

2 **Research/Writing Process**

Activities
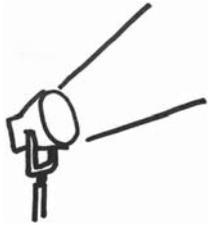
❶ Grammar/Sentence Construction

Georgia Performance Standard ELA7C1

Within the Grammar/Sentence Construction domain, students increase their ability to write clearly, coherently, and with appropriate use of writing and style conventions. They provide variety in their writing by using simple, compound, and compound-complex sentences as appropriate, applying guidelines of punctuation. They use standard subject-verb agreement, correct verb tenses, traditional transitional structures, correct spelling and application of homonyms, appropriate comparative and superlative forms of adjectives, and appropriate use of commas and semicolons (simple, complex, compound, compound-complex and split dialogue).

The following activities develop skills in this domain:

–   Teams of two or three student detectives work together to locate incorrect verb tense forms in the following mystery story. Timing is important in solving this mystery, so each team must be alert to detect incorrect verb tenses. Then they must work together to rewrite the story, using the correct forms.

> As soon as I opened the door to the animal hospital this morning, I notice first thing that the kangaroo was missed. The door to his cage has been pried open. No kangaroo can I found—anywhere. Then I notice that the monkeys are missed, too. Two cages are empty, and District Inspector Caldwell has been coming to check our shop in an hour! I become worried that a thief had sneaked in during the night and carrying off two of our most valuable pets. I am furious at first; then I calmed down and begin to think things through. The monkeys have managed to open the door to their cage before. Besides, in the past, they always have like teasing the kangaroo. "Where," I asked myself, "might the monkeys take the kangaroo—just for a joke?" In a minute, I know the answer: the storage closet. I run to the door and flung it open. There, sleeping happily in a soft, furry pile, were two monkeys and a kangaroo. I quickly snatched them up and tuck them safely into the cages just as Inspector Caldwell arrives.

–   To assist students in revising their writing, help them prepare and maintain a personal or classroom style guidebook. The idea is to keep a user-friendly record of the writing guidelines that students in the class are likely to use most often, instead of having to use a large, published style guide. Use a loose-leaf notebook and keep it in a place that is easily accessible for all the students in the class to consult while they edit and revise. Each page of the book will contain style guidelines for a particular issue on which students are likely to need guidance. For instance, the first page can contain guidelines for capitalization; another, for use of quotation marks; still another, for end punctuation, and so forth. For each item, students will write the guideline and then give an example. Class members should decide together which guidelines

are useful enough to go into the book. The process of reviewing guidelines and choosing which are most useful will, in itself, provide a good review.

– To become proficient at using and punctuating compound and complex sentences, students need to be able to identify independent clauses and adverbial clauses. Students can review these two concepts with the following reminders: An independent clause contains a related subject and verb; it states a complete thought. For instance, *We need a dictionary*. A compound sentence is made up of two independent clauses joined by a coordinating conjunction: *and*, *but*, *or*, *nor*, *for*, or *so*. An adverbial clause, on the other hand, is a type of dependent clause, which means it does not state a complete thought. Although it has a related subject and verb, it must be combined with an independent clause to make up a full sentence. Adverb clauses can tell *when*, as in, *when I reached home*; state a condition, such as, *if they arrive quickly*; give a reason, such as, *because I was happy*; or express opposition, as in, *although we were first in line*. Students can practice with the following items. They should write Compound before each sentence with two joined independent clauses. They should write Complex before each sentence with an independent clause and an adverb clause.

1 _____ Cell phones are very popular, and the new ones offer special features.

2 _____ If old cell phones are discarded, they pile up in our landfills.

3 _____ Some people give away their used phones, or they send them to a recycling shop.

4 _____ When recyclers take cell phones, they can turn them into many different products.

5 _____ Although some recyclers receive as many as 15,000 used cell phones every day, that is only a small portion of the cell phones that are thrown away.

6 _____ If people saw the huge boxes of old cell phones going to landfills, they would be more careful about recycling.

After students identify each sentence above as compound or complex, they will punctuate the sentences correctly. They should keep in mind that in a compound sentence, a comma is placed just before the coordinating conjunction. In a sentence with an introductory dependent clause, the comma comes just after the final word of that clause.

Activities
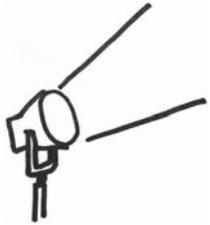
❷ Research/Writing Process

Georgia Performance Standards ELA7W1, ELA7W2, and ELA7W4

In Grade 7, students continue to gain proficiency in expressing their ideas in writing and sharing what they have learned. They utilize appropriate organizational patterns, and they use transitional structures to assure coherence. They use appropriate supporting details to develop a main idea, while excluding extraneous and inconsistent details. They provide a sense of closure in their writing.

The following activities develop skills in this domain:

– To gain an understanding of ways in which different organizational patterns help writers develop an idea, students will read the following paragraph, noting the order in which details are presented.

> Ben's pet ferret, Rocky, keeps him laughing and also very busy. Rocky is lively and curious, but he causes problems. He is happiest when he is digging under things to find out what's underneath. Last week, when no one was home, Rocky got bored in his cage. He sneaked out, climbed up on the kitchen counter and tipped a big bottle of soda off the counter. It smashed to the floor, burst open, and sent bubbly, foaming, dark soda all over the walls and the ceiling. It was Rocky's misdeed, but Ben needed to find a good solution. He filled Rocky's cage with soft toys, a dish of water, a ferret hammock, and even a big box of dried rice, where Rocky can dig to his heart's content. Now Rocky will stay safely in the cage whenever Ben can't keep a close eye on his pet.

After reading the above paragraph, students need to decide which organizational pattern has been used: rule and example, definition, comparison and contrast, or problem and solution. Students can then work with partners to rewrite the story, this time using the organizational pattern of cause and effect or time order.

– To practice supplying effective supporting details to support a main point in a piece of persuasive writing, students work with partners or a small group with any one of the generalizations listed on the next page. They should brainstorm at least five supporting points that could be developed into a paragraph. During the brainstorming session, a volunteer should take notes and underline the ideas that seem most convincing. They should be alert to any ideas that are inconsistent with the main point or that seem unrelated to it. Then the group should decide on one topic and work together to write a paragraph, arranging their best supporting evidence first, followed by the rest in order of importance. They need to agree on a final, closing statement that makes clear how the supporting details persuade readers to agree with the main idea.

1 The computer is a great tool for learning about current events.

2 Practice does not always make perfect.

3 When at first you don't succeed, try again.

4 Everyone likes a good joke.

5 Anyone can be a hero.

– For extra practice with transitions in sentences, students should take word groups like those in the following lists and join them together with an appropriate word or phrase. Each sentence in Group A should be combined with the corresponding sentence in Group B. When students have finished the exercise, they should list the transitional words or phrases they have used. Next to each transition, they should write what type of relationship it expresses: cause and effect, comparison and contrast, providing an example, sequence, etc.

Group A	Group B
I was planning to finish homework early.	I fell asleep when I got home.
Ginny had to wear her thick boots.	The sidewalk was very snowy.
Tad likes folk songs.	His grandmother used to sing "Red River Valley"
First, you wash your hands.	You rub on a dab of hand lotion.

Practice Quiz

1 **Which of these is a compound sentence?**
   A   Lori baked six dozen cookies, and she sold them at the bake sale.
   B   As Juan walked to school, he noticed a nest of baby birds in a tree.
   C   Sheila has tennis practice on Monday and soccer practice on Friday.
   D   Nate wore his warm jacket because the weatherperson predicted snow.

2 **Which sentence uses correct subject-verb agreement?**
   A   Either John or Sherry are required to be there.
   B   Each one of them have been awarded for their efforts.
   C   The ship's captain and crew is preparing for the journey.
   D   Only one person out of twenty is qualified to make the Math team.

3 **Which sentence is written correctly?**
   A   Last week, my Family and I moved from Clark Street to Avon Street.
   B   Last week, my family and I moved from Clark Street to Avon Street.
   C   Last Week, my family and i moved from Clark street to Avon street.
   D   Last week, my family and I moved from Clark street to Avon street.

4 **Which sentence uses the correct punctuation?**
   A   "I'll paddle in the front my brother said and you paddle in the back."
   B   "I'll paddle in the front, my brother said, and you paddle in the back."
   C   "I'll paddle in the front," my brother said, "and you paddle in the back."
   D   "I'll paddle in the front my brother," said, "and you paddle in the back."

5 **What is the superlative adjective in the sentence?**

   My loving grandmother made the prettiest hand-sewn quilt for our happy family.

   A   loving
   B   prettiest
   C   happy
   D   hand-sewn

6 **What organizational method is used in the paragraph?**

> Because blue light has one of the shortest wavelengths, it hits the particles in the atmosphere and reflects off of them. This scatters the blue light all around the sky. When you look up, this scattered blue light reaches your eyes, making the sky look blue during daytime hours.

A   cause and effect
B   chronological order
C   question and answer
D   similarity and difference

7 **Which sentence should be removed from the paragraph?**

> [1]Mosquitoes may seem like simple little pests, but they actually have complex systems for finding their prey. [2]Mosquitoes have chemical and visual sensors that detect the carbon dioxide given off by mammals and birds as they breathe. [3]For many years, people have tried to keep mosquito populations under control. [4]Additionally, mosquitoes have heat sensors that help them track down living things whose body temperatures are warmer than the surrounding air.

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

8 **Which sentence should be the beginning of a second paragraph?**

> [1]The Monterey Peninsula is called "Steinbeck Country" for good reason. [2]John Steinbeck, one of this country's foremost authors, lived in and wrote about the Monterey Peninsula and his hometown of Salinas. [3]*Cannery Row* is a humorous and very detailed view of life in and around Monterey's sardine-canning factories in the 1940s. [4]Works by other authors have also reflected the everyday lives of people in the authors' communities. [5]William Faulkner is well known for his stories of southern living in his fictitious Yoknapatawpha County, which he created from his life in Mississippi. [6]Charles Dickens, a famous British novelist, wrote colorful sketches of the people he met in England during the 19th century.

A   sentence 2
B   sentence 3
C   sentence 4
D   sentence 5

9 **Which sentence provides the BEST closure to the paragraph?**

> Most people are familiar with the distinctive appearance and reputation of a skunk. Even if they have never smelled one, most people know that these striped creatures give off a strong and unpleasant odor. However, it might be surprising to know that skunks do not give off this musky odor all the time. In fact, these tolerant and shy animals usually use their powerful spray only when they feel threatened.

A The skunk's unique musk has been used in some perfumes.
B The spray of a skunk is so strong that it can be smelled up to a mile away.
C Amazingly, some of the skunk's natural enemies have adapted to the smell.
D Despite their reputation, skunks will leave you alone if you do not bother them.

10 **Which detail BEST supports the topic sentence?**

> Earth is home to many different environments.

A Deserts, rain forests, oceans, and mountains make up much of our natural world.
B Deep sea divers have discovered treasures along the floors of many oceans.
C Fossils are proof that plants and animals lived billions of years ago.
D Scientists believe the moon has a hard, rocky surface.

Solutions

Number	Correct Answer	Explanation
1	**A**	*Identifies and writes simple, compound, complex, and compound-complex sentences correctly, punctuating properly, avoiding fragments and run-ons, adding or deleting modifiers, combining or revising sentences. (ELA7C1a)*
		The correct answer is **Choice** (**A**) **Lori baked six dozen cookies, and she sold them at the bake sale.** This is a compound sentence, made up of two simple sentences joined by a coordinating conjunction. Choice (B) is incorrect because it is a simple sentence with an introductory adverb clause. Choice (C) is incorrect because it is a simple sentence with a prepositional phrase. Choice (D) is incorrect because it is a simple sentence ending in a dependent clause.
2	**D**	*Uses standard subject-verb and pronoun-antecedent agreement. (ELA7C1c)*
		The correct answer is **Choice** (**D**) **Only one person out of twenty is qualified to make the Math team.** The subject, *person*, agrees with the verb, *is*. Choice (A) is an incorrect answer because with the *either/or* construction, the subject that sits closest to the verb must agree with the verb: *Either John or Sherry is required...* (not *are required*). Choice (B) is incorrect because *Each one* is singular, so it should be followed by the singular verb *has*. Choice (C) is incorrect because it has a compound subject: *captain and crew*. So the correct sentence would be *The ship's captain and crew are preparing....*

Number	Correct Answer	Explanation
3	**B**	*Produces final drafts/presentations that demonstrate accurate spelling and the correct use of punctuation and capitalization. (ELA7C1h)*
		The correct answer is **Choice (B) Last week, my family and I moved from Clark Street to Avon Street.** This sentence correctly shows initial capital letters for the first word in the sentence and for both words in each street name. Choice (A) is incorrect because *family* is not a proper noun; it should not be capitalized. Choice (C) is incorrect. *Week* should not be capitalized, but both instances of the pronoun *I* should be capitalized, and the word *street* should be capitalized. Choice (D) is incorrect because the word *street* should be capitalized each time it appears.
4	**C**	*Demonstrates appropriate comma and semicolon usage (compound, complex, and compound-complex sentences, and split dialogue). (ELA7C1f)*
		The correct answer is **Choice (C) "I'll paddle in the front," my brother said, "and you paddle in the back."** Choice (C) correctly punctuates split dialogue. Split dialogue is the statement of one person or character that is "split" by the author's explanation of who is talking. The parts of the dialogue must together form a complete sentence, and the intervening explanation (of who is talking) must be set off by commas. Choice (A) is incorrect because it does not split the quoted sentence to allow for the explanatory words. Choice (B) is incorrect; although commas are inserted, the quotation is not closed before the explanatory words and reopened afterwards. Choice (D) is incorrect because the words *my brother* are incorrectly punctuated as if they were part of the quotation.
5	**B**	*Demonstrates correct usage of comparative and superlative forms of adjectives and adverbs. (ELA7C1e)*
		The correct answer is **Choice (B) prettiest.** The superlative degree of an adjective is the form that ends in −*est* and modifies a noun to the highest degree, for example, *the highest* or *the slowest.* Choices (A), (C), and (D) are incorrect answers because they do not imply any degree of comparison.

. . . .

Number	Correct Answer	Explanation
6	**A**	*Uses traditional structures for conveying information (e.g., chronological order, cause and effect, similarity and difference, and posing and answering a question). (ELA7W1c)*
		The correct answer is **Choice (A) cause and effect.** The words *because*, *when*, and *making* all signal a series of cause-and-effect relationships. Short wavelengths *cause* blue light to "hit particles in the atmosphere," and these collisions have two *effects*: The blue light "reflects off" of the particles and "scatters the blue light." "When" (meaning *if*) someone looks upward so that "scattered blue light" enters his or her eyes (a *cause*), the daytime sky appears blue (an *effect*). Choice (B) is incorrect because the entire passage is not ordered chronologically. Specifically, no one actually looks up into the sky after blue light has scattered. Choice (C) is incorrect because the passage includes neither a *question* nor an *answer*. Choice (D) is incorrect because the passage does not describe any similarities or differences.
7	**C**	*Excludes extraneous details and inconsistencies. (ELA7W2e)*
		The correct answer is **Choice (C) sentence 3.** Although the paragraph is actually about ways in which mosquitoes detect prey, *sentence 3* goes off on a different tack, discussing people's efforts to control mosquito populations. Choices (A), (B), and (D) are incorrect answer choices because they are each relevant to the main idea of the paragraph.
8	**C**	*Revises manuscripts to improve the organization and consistency of ideas within and between paragraphs. (ELA7W4c)*
		The correct answer is **Choice (C) sentence 4.** The paragraph begins with a focus on John Steinbeck and the area where he lived and wrote. *Sentence 4*, however, shifts to the broader idea of how other authors have also written about their local communities. Choices (A), (B), and (D) are incorrect because it would make sense to create a new paragraph when this shift to other authors occurs.

Number	Correct Answer	Explanation
9	**D**	*Provides a sense of closure to the writing. (ELA7W2g)* The correct answer is **Choice** (**D**) **Despite their reputation, skunks will leave you alone if you do not bother them.** The paragraph focuses on skunks' reputation for being smelly even though they only give off a strong scent when threatened. Choices (A), (B), and (C) are incorrect because they do not provide an appropriate closure related to the focus of the paragraph.
10	**A**	*Develops the topic with supporting details. (ELA7W2d)* The correct answer is **Choice** (**A**) **Deserts, rain forests, oceans, and mountains make up much of our natural world.** This sentence provides specific examples to support the idea that many different environments can be found on Earth. Choices (B), (C), and (D) are incorrect because they focus on just one natural environment or feature of the natural world.

Mathematics

Chapter 3

Mathematics

By the end of Grade 7, students will understand and use rational numbers, including signed numbers. Students will solve linear equations with one variable. They will describe, sketch, and construct plane figures, use and apply properties of similar plane figures, and demonstrate an understanding of transformations of the figures. Properties of geometric shapes in space will be examined, and students will describe and sketch solid figures, including their cross sections. In the Algebra domain, students will represent and describe relationships between variables in tables, graphs, and formulas, as well as analyze the characteristics of linear relationships. Lastly, students will represent and analyze data using graphical displays, measures of central tendency, and measures of variation.

The Mathematics activities focus on some of the concepts that are assessed on the Grade 7 CRCT Mathematics domains. These domains are as follows:

1 **Number and Operations**

2 **Geometry**

3 **Algebra**

4 **Data Analysis and Probability**

The *Mathematical Process Skills* are integrated throughout the domains. These are skills used to acquire and apply content knowledge.

Mathematical Process Skills refer to students' dexterity in applying concepts and skills in the context of authentic problems, and understanding concepts rather than merely following a sequence of procedures. Process skills are used to acquire and apply content knowledge. Process skills include solving problems that arise in mathematics and other contexts; reasoning and evaluating mathematical arguments; communicating mathematically; making connections among mathematical ideas and to other content areas; and representing mathematical ideas in multiple ways.

Activities
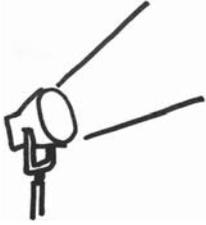
❶ Number and Operations
Georgia Performance Standard M7N1

Within the Number and Operations domain, students learn the meaning of positive and negative rational numbers and use them in computation. Students will learn to find the absolute value of a number and understand it as the distance from zero on a number line. They will be able to compare and order rational numbers, including repeating decimals. Students will be able to add, subtract, multiply, and divide positive and negative rational numbers, and use these skills to solve problems with rational numbers.

The following activities develop skills in this domain:

–   Students will use the four basic operations with rational numbers to set the alarms of clocks that are set by turning dials. The dials on each alarm clock can only be turned clockwise, but can be turned any fraction of a rotation. The table for each clock is labeled with the wake-up time that results from turning the big dial or small dial one whole rotation.

Alarm Clock A

One rotation of the big dial adds $\frac{1}{2}$ hour to the wake-up time.

One rotation of the small dial adds $\frac{1}{3}$ hour to the wake-up time.

Alarm starts at	If you turn the big dial…	…and the small dial…	The alarm will go off at
12:00 A.M.	14 times	2 times	
12:00 A.M.		0 times	5:20 A.M.
12:00 A.M.	$10\frac{1}{2}$ times	$2\frac{1}{2}$ times	
12:00 A.M.			8:05 A.M.
12:00 A.M.			8:55 A.M.

Alarm Clock B

One rotation of the big dial adds $\frac{2}{5}$ hour to the wake-up time.

One rotation of the small dial adds $\frac{3}{8}$ hour to the wake-up time.

Alarm starts at	If you turn the big dial...	...and the small dial...	The alarm will go off at
12:00 A.M.	20 times	2 times	
12:00 A.M.		0 times	6:24 A.M.
12:00 A.M.	$12\frac{1}{5}$ times	$3\frac{3}{5}$ times	
12:00 A.M.			7:45 A.M.
12:00 A.M.			9:15 A.M.

Alarm Clock C

One rotation of the big dial adds $\frac{7}{10}$ hour to the wake-up time.

One rotation of the small dial adds $\frac{5}{12}$ hour to the wake-up time.

Alarm starts at	If you turn the big dial...	...and the small dial...	The alarm will go off at
12:00 A.M.	13 times	1 time	
12:00 A.M.		0 times	6:18 A.M.
12:00 A.M.	$9\frac{1}{2}$ times	$2\frac{2}{3}$ times	
12:00 A.M.			7:35 A.M.
12:00 A.M.			9:25 A.M.

– To conceptualize the absolute value of a number as the distance it is from zero on a number line, each student will create a timeline with 0 as the year of his or her birth, then record various events in American history. The date of each event will be rewritten as the number of years before or after the student's birth. Students can use *|Event Year – Birth Year|* to find the new dates. Dates before their births will be labeled B.M. (Before Me) and dates after their births will be labeled A.M. (After Me).

1776:	The Declaration of Independence is written.
1788:	On January 2, the Constitution is unanimously ratified in Georgia.
1789:	George Washington is inaugurated as America's first president.
1803:	The Louisiana Purchase doubles the size of the United States for three cents an acre.
1969:	American Neil Armstrong becomes the first person to walk on the moon.
1996:	The XXVI (26th) Summer Olympics are held in Atlanta, Georgia.
2004:	One of NASA's Mars Rovers lands on Mars and begins collecting detailed information about the planet.
2005:	George W. Bush begins his second term as the President of the United States.
2007:	Barry Bonds hits his 756th home run to beat Hank Aaron's all-time record, set in 1976.
2008:	On November 4, Barack Obama is elected to be the 44th President of the United States.

After making the relabeled timeline, students will answer these questions:

1 How many years before your birth was the Constitution ratified by the State of Georgia?
2 How many years passed between Georgia ratifying the Constitution and the Louisiana Purchase?
3 How many years passed between the Louisiana Purchase and Armstrong's walk on the moon?
4 How many years passed between the XXVI Summer Olympics and the election of George W. Bush to a second term as President?
5 Which operations could be used to find the answer when both dates are B.M. or both are A.M.? Which could be used when one date is B.M. and the other is A.M.?

– To practice ordering rational numbers, students will order the value of several stocks after the first day of trading on the fictional Park City Stock Exchange (PCSE). The stocks all start the day at the same price (middle column) and the price changes over the course of the day are given in the right column.

Start Price and Total Change of Stocks on the PCSE

Stock	Start Price	Change ($)
Jet Oil Co.	$10	+2.16
Atlantic Electric, Inc.	$10	$+2\frac{1}{4}$
Loose Leaf Book Publishers	$10	$-1\frac{1}{9}$
Pinnacle Electronics	$10	$-1\frac{1}{10}$
Pink Advertising	$10	$+2\frac{1}{6}$
Java Roasters	$10	$+\frac{1}{10}$
Old Thyme Spices	$10	+1.09
Millennium Software	$10	−1.11
Comfy Mattress Co.	$10	$-1\frac{1}{11}$
Shred Skis	$10	+2.26

After listing the stocks in order from highest price to lowest price at the end of the first day of trading, students answer these questions:

1 How did you order the numbers given in different forms?
2 Did you find the actual price at the end of the day or just use the price increases given in the right column? If you only used the price increases, why didn't you think it was necessary to find the actual prices?
3 Which stock fell more, Millennium Software or Comfy Mattress Co.? By how much? Write your answer in decimal form.
4 What is the difference between the new values of Atlantic Electric, Inc. and Pinnacle Electronics? Write your answer in fraction form.

Activities
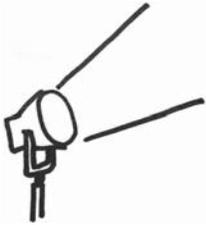
❷ Geometry

Georgia Performance Standards M7G1, M7G2, M7G3, and M7G4

Within the Geometry domain, students are expected to construct plane figures that meet given conditions. Students will perform basic constructions using a compass and straightedge or other appropriate technology. Constructions students will be able to perform include copying a segment, copying an angle, bisecting a segment, bisecting an angle, constructing perpendicular lines (including the perpendicular bisector of a line segment), and constructing a line parallel to a given line through a point not on the line. Students will learn that many constructions are based on the creation of congruent triangles. Students will demonstrate understanding of transformations, including translations, dilations, rotations, reflections, and, given a figure in the coordinate plane, determine the coordinates resulting from those transformations. Students will relate symmetry to appropriate transformations, as well as use the properties of similarity and apply them to geometric figures. Students will understand the meaning of similarity, visually comparing geometric figures for similarity, and describing similar figures in terms of corresponding parts. They will understand the relationships among the scale factor, length ratio, and area ratio of similar figures, as well as use them to determine unknown side lengths and areas of similar geometric figures. Students will understand congruence of geometric figures as a special case of similarity (that congruent figures are similar figures with the same size and shape). Students will further develop their understanding of solids by describing three-dimensional figures formed under translations and rotations of plane figures through space. They will sketch, model, and describe cross sections of cones, cylinders, pyramids, and prisms.

The following activities develop skills in this domain:

– To develop the connection between two-dimensional plane figures and three-dimensional solids, students will predict and create the solids formed by rotating plane figures around an axis. Students will need cardboard, straws, and aluminum foil.

– First, students should cut four congruent right triangles, four congruent rectangles, and four congruent semicircles out of the cardboard.
– Second, students should tape one triangle to the straw, with one of the legs (not the hypotenuse) attached to the straw. Students will then rotate the straw and visualize what solid the rotating triangle forms. Students will then tape the remaining triangles around the straw, and wrap the aluminum foil around the frame to complete the three-dimensional figure.

Students will repeat the same activity with the rectangles and semicircles. After completing the activity with the given plane figures, students should think of solids that could not be formed by rotation of a plane figure around an axis.

– To develop students' sense of transformations in the coordinate plane, students will play a game in which the board is a portion of the coordinate plane, and the pieces are plane figures that move around the board by transformations. Students should make a 10 x 10 grid, highlight the middle lines as the *x-* and the *y*-axes, cut out the five pieces of each color shown in the sample below, and start with them in the given positions.
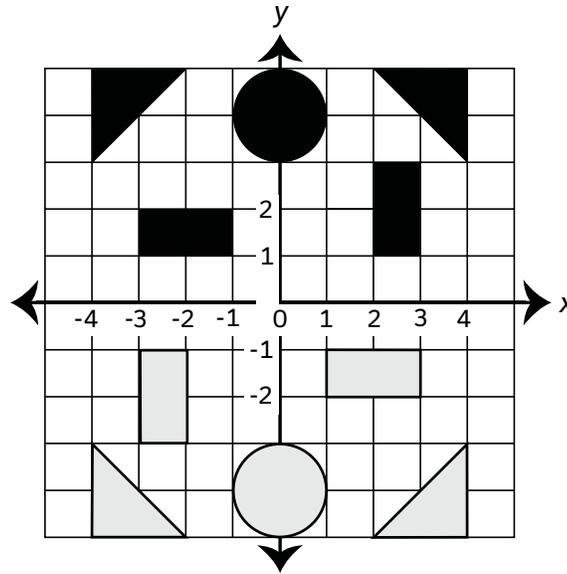
The goal of the game is to capture all of your opponent's pieces. The rules are:

– On any turn only one piece can be moved:

– Rectangles can rotate 90°, 180°, or 270° about the origin, but cannot move in any other way. (Note: To challenge students, describe the rotations as −90°, −180°, and −270° rotations. Point out that when a degree is positive, the object is moved in a counterclockwise direction. When it is negative, the object is moved in a clockwise direction. Students should experiment until they see that pairs of rotations [−90° and 270°, 90° and −270°, and 180° and −180°] make the object rotate to the exact same position on the grid.)
– Triangles can translate horizontally and vertically a total of three units or reflect across the *y*-axis.
– Circles can translate one unit horizontally or vertically.
– Only rectangles can move over another piece.

– A player cannot have two pieces occupying the same square.
– If a player places any part of one of his or her pieces on top of any part of one of his or her opponent's pieces of the same shape, he or she captures that piece.

- If a player places any part of one of his or her pieces on any part of one of his or her opponent's pieces of a different shape, the opponent's piece is frozen until the player's piece moves on.

Students will make a table to use as a transformation log. They will record the type of transformation in the left column, the coordinates before the transformation in the middle column, and the coordinates after the transformation in the right column. They should identify the relationship between each pair of coordinates and explain how this relationship is associated with the transformation recorded. For example, if the transformation was a horizontal translation, the values of the *y*-coordinates would not change, but the values of the *x*-coordinates would. In evaluating a horizontal translation, students should also note the similarity to a reflection across the *y*-axis and the inverse relationship to a vertical translation.

- To understand the relationship between the length and area ratios of similar figures, students will make squares out of graphing paper. Resources are available online to print out graph paper with specified grid dimensions. After printing out graph paper with 1-cm squares, students will make squares with sides measuring 1 cm, 2 cm, 3 cm, 4 cm, 6 cm, and 9 cm in length (one each). By seeing how many of the smaller squares will fit into the larger one, students will determine the area ratios of:

  - the 2-cm square to the 1-cm square
  - the 4-cm square to the 2-cm square
  - the 3-cm square to the 1-cm square
  - the 6-cm square to the 3-cm square
  - the 9-cm square to the 3-cm square

  Students will then use these ratios to determine the areas of all of the squares based on the 1-sq cm area of the 1-cm square.

- To practice bisecting an angle and measuring the resulting angles, students should estimate the angle a ship needs to turn toward its destination by bisecting a straight 180° angle with a line. The students will then repeat this twice, bisecting the resulting angle and getting closer each time to the proper path toward the island. The boat in the picture is traveling east (toward 0°).
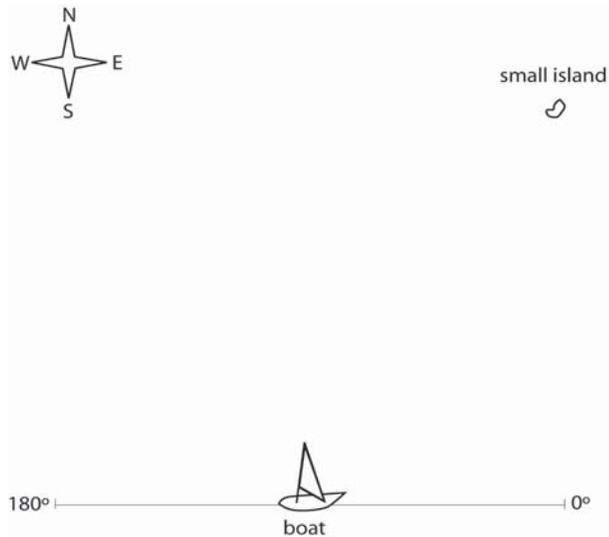
- To estimate the angle the boat needs to turn, relative to 0°, students will:

  1 Bisect the straight angle shown with a vertex at the location of the boat.
  2 Bisect the resulting angle with the island in the interior of the angle. Find the measurement of the bisector and label it.
  3 Bisect the resulting angle with the island in the interior of the angle. Use the fact that a bisector cuts an angle in half to label the measurement of the resulting angle. Find the measurement of the bisector and label it.

 Students then use the two angles the island lies between to estimate the angle the boat should turn. Finally, students respond to these questions:

  1 How could you get a more accurate reading?
  2 Is there a limit to how accurate the estimate can be?

  The activity can be repeated by setting up an identical picture with the island in a different location.

Activities
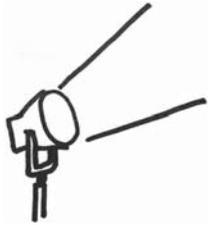
❸ Algebra

Georgia Performance Standards M7A1, M7A2, and M7A3

The Algebra domain addresses students' ability to represent and evaluate quantities using algebraic expressions. Students will translate verbal phrases to algebraic expressions; simplify and evaluate those expressions using commutative, associative, and distributive properties; and add and subtract linear expressions. Students will understand and apply linear equations in one variable. Given a problem, students will know how to define a variable, write an equation, solve the equation, and interpret the solution. To do this, students will use the addition and multiplication properties of equality to solve one- and two-step linear equations. Students will understand different kinds of relationships between two variables. They will represent, describe, and analyze relations from tables, graphs, and formulas, as well as describe how changes in one variable affect the related variable. They will describe patterns in the graphs of proportional relationships, both direct *(y = kx)* and inverse *(y = k/x)*. Students will also learn to plot points on the full coordinate plane.

The following activities develop skills in this domain:

– To practice plotting points on a coordinate plane, students should plot the points where a taxicab has picked up and dropped off customers throughout the day. Avenue numbers will be on the *x*-axis and street numbers on the *y*-axis. North streets will have positive *y*-values and south streets will have negative *y*-values. East avenues will have positive *x*-values and west avenues will have negative *x*-values. Students will translate the taxicab coordinates, such as East 9th Avenue and North 8th Street, to standard algebraic coordinates (9, 8). Zero Avenue and Zero Street are at the origin. Students will then plot and label the ten pick-ups and drop-offs listed below:

  – 10:00 A.M.: Pick up customer at South 10th Street and West 4th Avenue
  – 10:25 A.M.: Drop off customer at South 9th Street and East 8th Avenue
  – 12:40 P.M.: Pick up customer at North 1st Street and East 2nd Avenue
  – 1:20 P.M.: Drop off customer at South 13th Street and West 11th Avenue
  – 2:05 P.M.: Pick up customer at South 11th Street and West 5th Avenue
  – 2:25 P.M.: Drop off customer at South 3rd Street and East 1st Avenue
  – 3:30 P.M.: Pick up customer at North 6th Street and West 6th Avenue
  – 4:30 P.M.: Drop off customer at South 8th Street and East 8th Avenue
  – 5:10 P.M.: Pick up customer at North 10th Street and Zero Avenue
  – 6:00 P.M.: Drop off customer at Zero Street and East 12th Avenue

  For each trip, students will count the number of blocks the cab traveled horizontally and vertically. They will use the table on the next page to calculate the fare for each trip and the total amount of money the cab driver made that day. Students will also account for distances between trips, during

which the cab driver drove without a paying passenger. For each block that the cab driver drove without a rider, he or she lost $0.05. This should also be included in the chart as a loss, or a negative number.

Trip	Horizontal Blocks	Vertical Blocks	Cab Fare ($2.50 initial fare + $0.25 per block)	Money lost while driving without a paying passenger ($0.05 per block)
1				
2				
3				
4				
5				

– Solving two-step equations can be used to convert fictional temperature units to Fahrenheit to decide when seasons occur on a different planet.

– Euler is a planet in the Alpha Centauri system where the seasons and months have the same names as ours, but the seasons do not occur in the same months. In addition, temperatures are measured using a unit called a Galois. The equation that can be used to convert temperatures in Galois (G) to temperatures in Fahrenheit (F) is:

$$G = 194 - 4.5F$$

The temperature on Euler was measured on one day in each month and is given in the table below.

On this day...	On Euler it was...	So in Fahrenheit it was...
January 3	23° G	
February 3	50° G	
March 3	60° G	
April 3	25° G	
May 3	0° G	
June 3	−60° G	
July 3	−120° G	
August 3	−143° G	
September 3	−120° G	
October 3	−100° G	
November 3	−75° G	
December 3	−4° G	

On Euler, in which months do winter, spring, summer, and fall occur?

- To increase awareness of the difference between a directly proportional relationship and an inversely proportional relationship, students will consider the following two situations, make tables, graph the results, and answer the questions.

Scenario 1
- You have invited all your friends to your birthday party, and every friend who is coming will bring 4 cookies. How many cookies will be at your party if 1 friend comes? How many cookies will there be if 2 friends come? Make a table for the number of cookies at your party if up to 6 friends attend. Using your results in the table, develop a general rule for finding the number of cookies, *y*, at your party for any number of friends that come, *x*. Graph the ordered pairs. Does your general rule work with the results on your graph? What happens to the number of cookies at your party as the number of guests goes up?

Scenario 2
- You buy a box of 30 cookies for your birthday party and invite all of your friends. How many cookies will each person get if there is only 1 guest? How many cookies will each person get if there are only 2 guests? Make a table for the number of cookies each person gets if the number of guests is 3, 4, 5, 6, 10, and 15. Using your results in the table, develop a general rule for finding the number of cookies per person, *y*, at your party for any number of friends that come, *x*. Graph the ordered pairs. Does your general rule work with the results on your graph? What happens to the number of cookies each person can have as the number of guests increases?

Students will then describe in their own words the difference between the results in Scenario 1 and Scenario 2. Let students know that one relationship is called *directly proportional* and the other relationship is called *inversely proportional*. Students should discuss which scenario they think might be *directly proportional* and why, as well as which scenario they think might be *inversely proportional* and why. Use questioning to guide students' thinking.

Activities
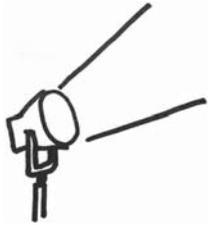
❹ Data Analysis and Probability

Georgia Performance Standard M7D1

Within the Data Analysis and Probability domain, students pose questions, collect data, represent and analyze the data, and interpret results. Students will practice formulating questions and collecting data from a census of at least 30 objects and from samples of varying sizes. Students examine and analyze data by constructing frequency distributions, using measures of central tendency (mean, median, and mode) and measures of variation (range, quartiles, interquartile range), and learn to recognize outliers. Students will compare measures of central tendency and variation from samples to those from a census, and observe that sample statistics are more likely to approximate the population parameters as sample size increases. Further analysis will be conducted with appropriate graphs, including pictographs, histograms, bar graphs, line graphs, circle graphs, line plots, box-and-whisker plots, and scatter plots. By the end of Grade 7, students will be able to analyze and draw conclusions about data, including describing the relationship between two variables.

The following activities develop skills in this domain:

−   To see the significance of the range of a data set, students will study two data sets with identical means but different ranges. Students should plot the locations of Kevin's and Darryl's shots-on-goal during a hockey game on the figure below:
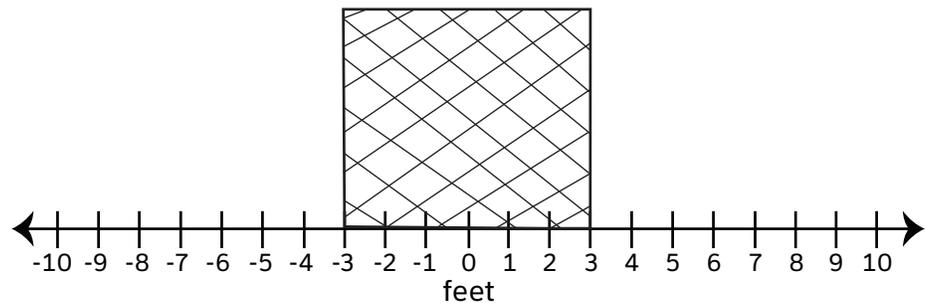
The middle of the goal is 0 on the number line. The measures given in the following table correspond to the distance to the left (negative) or right (positive) from the middle of the goal for each of ten shots.

Shot	Kevin (feet from the center)	Darryl (feet from the center)
1	−7	−2
2	2	2
3	6	1
4	0	0
5	−5	2
6	4	2
7	5	−4
8	4	2
9	−8	−1
10	−1	−2

Students will plot Kevin's shots and Darryl's shots, and then answer the following questions:

1 Calculate the mean distances from the center of the net for both Kevin and Darryl. What does this tell you?
2 How many goals did Darryl make? How many goals did Kevin make?
3 Calculate the range of Kevin's and Darryl's distances from the center. What does this tell you about each player's shots?
4 Although he made fewer goals, Kevin's average distance from the center of the goal is the same as Darryl's. How does the range help explain this?
5 What do you think the range of a data set tells you?
6 Now consider James and Skyler; both shoot with an average distance of 1 foot from the middle of the goal. However, Skyler's shots have a range of 13 feet, and James' have a range of only 4 feet. Who is more accurate? How does the range tell you this without the need to look at their shots as we did with Kevin and Darryl?

− Students will further their understanding of the measures of central tendency by comparing the mean and median to visually located data centers. For each data set, students will plot the data points on a number line and then answer the questions.

Age of 10 Respondents at Local HS Basketball Game

Person	1	2	3	4	5	6	7	8	9	10
Age	15.2	14.1	17.7	17.4	15.5	16.4	18.0	16.2	16.2	16.9

- Where is the approximate center of this data set? Circle that point or area on the number line.
- Calculate the mean and median and locate them on your number line.
- Compare the mean and median to the center that you visually estimated.

Age of 10 Respondents at a Local Music Store

Person	1	2	3	4	5	6	7	8	9	10
Age	26	35	32	24	21	18	32	29	28	19

- Where is the approximate center of this data set? Circle that point or area on the number line.
- Calculate the mean and median and locate them on your number line.
- Compare the mean and median to the center that you visually estimated.

Age of 10 Respondents at a Local Grocery Store

Person	1	2	3	4	5	6	7	8	9	10
Age	26	82	31	79	25	94	25	33	21	20

- Where is the approximate center of this data set? Circle that point or area on the number line.
- Calculate the mean and median and locate them on your number line.
- Compare the mean and median to the center that you visually estimated.

Students should first answer questions 1–4:
1 What do you think the center of a data set is?
2 What do the mean and median of a data set tell you? (Hint: the mean and median are called measures of central tendency.)
3 In which of the three data sets were there outliers?
4 For which kind of data set is the median a better measure of central tendency? (Hint: use your answer from No. 3.)

Then students should make box-and-whisker plots for each data set and answer questions 5–7:
5 What does the middle line in a box-and-whisker plot tell you?
6 What do the boxes tell you?
7 Use your answers from No. 5 and No. 6 to explain how a box-and-whisker plot can give you information about the center of a data set without needing to look at the actual numbers.

- To enhance understanding of box-and-whisker plots, students will compare them to histograms of the same data set. First students will create histograms for the three temperature data sets using the following ranges:

– Values greater than 5 and less than or equal to 10
– Values greater than 10 and less than or equal to 15
– Values greater than 15 and less than or equal to 20
– Values greater than 20 and less than or equal to 25
– Values greater than 25 and less than or equal to 30

Temperature on 15 days in City A (**in Celsius**)

| 13 | 19 | 16 | 11 | 21 | 23 | 16 | 6 | 29 | 18 | 12 | 23 | 17 | 28 | 9 |

Temperature on 15 days in City B (**in Celsius**)

| 7 | 14 | 13 | 9 | 12 | 27 | 12 | 8 | 11 | 21 | 6 | 11 | 17 | 14 | 13 |

Temperature on 15 days in City C (**in Celsius**)

| 27 | 22 | 22 | 16 | 24 | 23 | 13 | 27 | 7 | 24 | 23 | 28 | 22 | 29 | 21 |

Students will then use the histograms they've created to answer questions 1 and 2:

1 The temperature data set for City A is known as a symmetric data set. What do you think it means to say that a data set is symmetric? (What does it say about the location of the data values? Are the numbers evenly spread out?)

2 The temperature data sets for City B and City C are known as asymmetric data sets. What do you think it means to say that a data set is asymmetric?

Students should then create box-and-whisker plots for each data set and answer questions 3 and 4:

3 If you were given only the box-and-whisker plots, would you be able to tell whether the data sets were symmetric or asymmetric? If so, describe what a symmetric data set's box-and-whisker plot would look like and what an asymmetric data set's box-and-whisker plot would look like.

4 In the histograms, the taller the bar, the more values that fall into that range. In a box-and-whisker plot, does a wider box mean more values fall into that range? If not,
   a. What does it mean?
   b. Can you tell how many data values fall into a range on a box-and-whisker plot?

Practice Quiz

1   **Which list shows the numbers in ascending order?**

A $-3\frac{1}{2}, -3\frac{2}{3}, 3\frac{3}{4}, -3.23, -3.52, 3.71$

B $-3.23, -3.52, 3.71, -3\frac{1}{2}, -3\frac{2}{3}, 3\frac{3}{4}$

C $-3\frac{2}{3}, -3.23, -3\frac{1}{2}, -3.52, 3.71, 3\frac{3}{4}$

D $-3\frac{2}{3}, -3.52, -3\frac{1}{2}, -3.23, 3.71, 3\frac{3}{4}$

2   **The list represents the gas mileage of 15 different vehicles.**

31, 27, 12, 23, 45, 24, 48, 19, 34, 17, 29, 22, 29, 24, 39

Which box-and-whisker plot BEST represents this list?

A

12 18 24 30 36 42 48

B

1 6 12 24 36 48

C

1 12 24 36 48

D

12 18 24 30 50
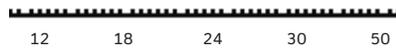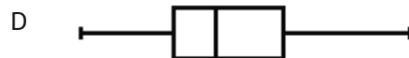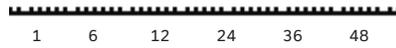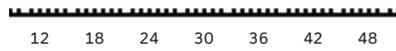
3   **Kurt made this construction with a compass and a straightedge.**
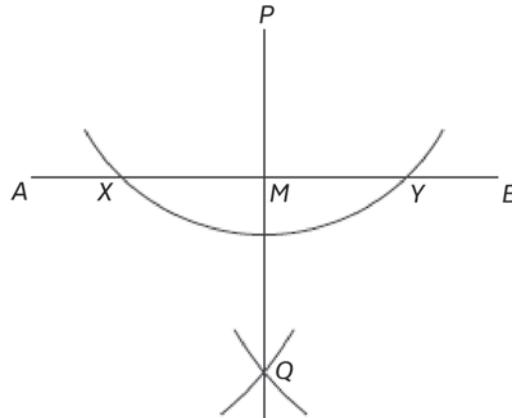
Which construction did Kurt make?
A   copy of a line segment
B   bisector of a line segment
C   a line parallel to a given line through a point not on the line
D   a line perpendicular to a given line through a point not on
    the line

4   **In this figure, *A'B'C'D'* is a transformation of *ABCD*.**
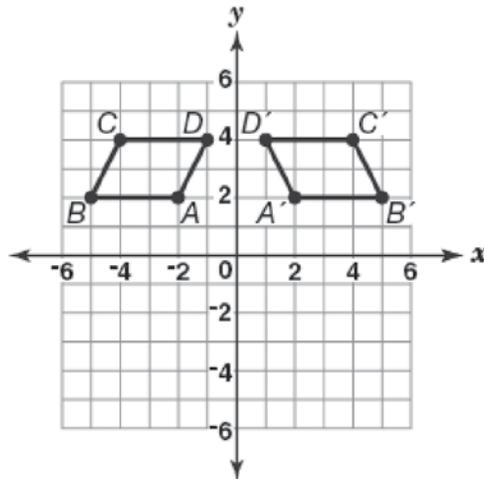
Which type of transformation is *A'B'C'D'*?
A   dilation
B   rotation
C   reflection
D   translation

5   **Look at the cylinder.**
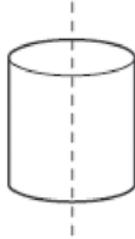
The cylinder is sliced in half, shown by the dotted line. Which shape is the cross section that is formed?
A   circle
B   cone
C   rectangle
D   sphere

6   **The cost to rent a boat is $10. There is also a charge of $2 for each person. Which expression represents the total cost to rent a boat for *p* persons?**
A $10 + 2p$
B $10 - 2p$
C $2 + 10p$
D $2 - 10p$

7   **Aaron has 5 fewer than 3 times the number of baseball cards that Sam has. Aaron has 31 baseball cards. The equation represents this situation.**

$3x - 5 = 31$

Which does *x* represent in this equation?
A   the number of cards Sam has
B   the number of cards Aaron has
C   how many more cards Aaron has than Sam
D   how many cards Sam and Aaron have together

8 **Look at the table.**

x	y
-1	-8
0	-5
1	-2
2	1

What happens to *y* when *x* increases by 2?
A   *y* decreases by 3
B   *y* decreases by 6
C   *y* increases by 3
D   *y* increases by 6

9 **The number of hours, *h*, it takes to wash *c* number of cars at a school fundraiser is inversely proportional to the number of students, *s*, needed to wash the cars. Which expression represents this relationship?**

A $h = c \times s$

B $h = c \times s^2$

C $h = \frac{s}{c}$

D $h = \frac{c}{s}$

10 **The list shows the ages of 8 people.**

23, 33, 35, 27, 38, 25, 24, 19

What is the median age?
A   25
B   26
C   27
D   28

Solutions

Number	Correct Answer	Explanation
1	**D**	*Compare and order rational numbers, including repeating decimals. (M7N1b)*

The correct answer is **Choice** (**D**) **−3 $\frac{2}{3}$, −3.52, −3 $\frac{1}{2}$, −3.23, 3.71, 3 $\frac{3}{4}$.** The larger the absolute value of a negative number, the smaller the number. Choices (A) and (B) are incorrect and result from ordering the fractions and decimals separately by absolute value. Choice (C) is incorrect, and may result from ordering the numbers by absolute value and calculating the absolute value of $-3\frac{2}{3}$.

Number	Correct Answer	Explanation
2	**A**	*Solve problems using rational numbers. (M7N1d)*

The correct answer is **Choice** (**A**). The minimum is 12 and the maximum is 48. The only box-and-whisker plot that shows this is Choice (A). Choice (B) is incorrect only showing a correct maximum of 48 but showing an incorrect minimum. Choice (C) is incorrect only showing a correct maximum of 48 but showing an incorrect minimum. Choice (D) is incorrect only showing a correct minimum of 12 but showing an incorrect maximum.

Number	Correct Answer	Explanation
3	**D**	*Perform basic constructions using both compass and straightedge, and appropriate technology. Constructions should include copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. (M7G1a)*

The correct answer is **Choice** (**D**) **a line perpendicular to a given line through a point not on the line.** The arc that crosses points *X* and *Y,* as well as the two arcs that cross at point *Q,* are two steps in the bisection of an angle. Bisecting a straight line angle creates a line perpendicular to it. Choice (A) is incorrect and may result from concluding on sight that line segment *PQ* is the same length as line segment *AB.* Choice (B) is incorrect and may result from concluding on sight that line segment *PQ* has cut line segment *AB* in half. Choice (C) is incorrect and may result from confusing parallel and perpendicular.

Number	Correct Answer	Explanation
4	**C**	*Demonstrate understanding of translations, dilations, rotations, and reflections, and relate symmetry to appropriate transformations. (M7G2a)*
		The correct answer is **Choice (C) reflection.** Parallelogram *ABCD* is reflected across the *y*-axis to become parallelogram *A'B'C'D'*. Choice (A) is incorrect because the figure would have changed size, and not orientation, under a *dilation*. Choice (B) is incorrect. A 270-degree *rotation* would put the image in quadrant I, but the coordinates of the vertices would not be different. Choice (D) is incorrect because the figure has changed orientation, which does not happen under a *translation*.
5	**C**	*Sketch, model, and describe cross sections of cones, cylinders, pyramids, and prisms. (M7G4b)*
		The correct answer is **Choice (C) rectangle.** If a cylinder is cut perpendicular to its circular sides, the resulting cross section is a rectangle. Choice (A) is incorrect, and is the resulting horizontal cross section of a cylinder, not the vertical cross section. Choices (B) and (D) are incorrect. A cross section of a solid is a plane figure, and cannot be another solid, such as a cone or sphere.
6	**A**	*Translate verbal phrases to algebraic expressions. (M7A1a)*
		The correct answer is **Choice (A) 10 + 2p.** The rental cost is constant, at $10. The additional $2 per person charge will vary depending on the number of people, *p*, for a variable charge of 2*p* that would need to be added to the initial cost of $10. Choices (C) and (D) are incorrect because they multiply the variable number of people, *p*, by the constant, 10. Choice (B) is incorrect because it subtracts 2*p* from 10 when it should be adding it to get the total cost of the boat rental for *p* people.

. . . .

Number	Correct Answer	Explanation
7	**A**	*Given a problem, define a variable, write an equation, solve the equation, and interpret the solution. (M7A2a)*
		The correct answer is **Choice (A) the number of cards Sam has.** A variable always represents the unknown quantity, and the unknown quantity in this case is the number of cards Sam has. Choice (B) is incorrect, and may result from thinking that Aaron must be represented on the left side of the equation because the numbers representing his cards came first in the problem setup. Choices (C) and (D) are both incorrect. Although both are unknowns, neither exists as a single variable or number in this equation.
8	**D**	*Describe how change in one variable affects the other variable. (M7A3c)*
		The correct answer is **Choice (D) y increases by 6,** because the table shows that when x increases by 2 from −1 to 1 and from 0 to 2, y increases by 6. Choice (A) is incorrect, and likely results from misreading the effect of a one-unit increase in x from −1 to 0 as decreasing y from 8 to 5. Choice (B) is incorrect, and may result from misreading the increase from −8 to −2 as a decrease from 8 to 2. Choice (C) is incorrect and likely results from mistakenly giving the amount y increases for a one-unit change in x.
9	**D**	*Describe patterns in the graphs of proportional relationships, both direct ($y = kx$) and inverse ($y = k/x$). (M7A3d)*
		The correct answer is **Choice (D) $h = \frac{c}{s}$.** To say that h is inversely proportional to s is to say that s increases as h decreases. The only equation that yields that relationship is Choice (D). Choices (A) and (B) are incorrect, and use the correct form for a proportional relationship, rather than for an inversely proportional relationship. Choice (C) is incorrect, and results from using the correct equation form for an inversely proportional relationship, but placing s in the numerator rather than the denominator.

Number	Correct Answer	Explanation
10	**B**	*Analyze data using measures of central tendency (mean, median, and mode), including recognition of outliers. (M7D1c)*
		The correct answer is **Choice** (**B**) **26.** When there is an even number of values in a data set, the median is the mean of the two middle numbers when the values are in order. The two middle numbers here are *25* and *27*, and the median is $\frac{25+27}{2}$. Choices (A) and (C) are incorrect, and result from choosing either the lower or upper middle numbers, rather than finding the mean of the two. Choice (D) is incorrect and results from confusing the mean of the data set with the median.
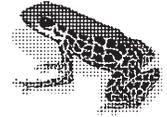
Science

Science

Students in Grade 7 use observations to explain diversity of living organisms and how the organisms are classified. They use different models to represent systems such as cells, tissues, and organs. Students use what they know about ecosystems to explain the cycling of matter and energy. The concepts of natural selection and fossil evidence are also used in explanations of their observations on the diversity of living organisms. Grade 7 students write instructions, describe observations, and show information in graphical form. When analyzing the data they collect, students can recognize relationships in simple charts and graphs and find more than one way to interpret their findings. The students replicate investigations and compare results to find similarities and differences.

The middle school life science course is designed to give students the necessary skills for a smooth transition from elementary life science standards to high school biology standards. The purpose is to give all students an overview of common strands in life science including, but not limited to, diversity of living organisms, structure and function of cells, heredity, ecosystems, and biological evolution.

The Science activities focus on some of the concepts that are assessed on the Grade 7 CRCT Science domains. These domains are as follows:

1 **Cells and Genetics**

2 **Interdependence of Life**

3 **Evolution**

The *Characteristics of Science* skills are integrated throughout the domains. These skills are corequisites for understanding the content of each science domain.

Characteristics of Science refer to understanding the process skills used in the learning and practice of science. These skills include testing a hypothesis, keeping records, using correct safety procedures, using appropriate tools and instruments, applying math and technology, analyzing data, interpreting results, and communicating scientific information. *Characteristics of Science* also refer to understanding how science knowledge grows and changes, and the processes that drive those changes.

Activities
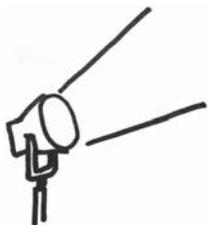
❶ Cells and Genetics
Georgia Performance Standards S7L2 and S7L3

Within the Cells and Genetics domain, students are expected to recognize cells as the basic building blocks of organisms, and to understand their structure and function. Students should explain that tissues, organs, and organ systems serve the needs cells have for oxygen, food, and waste removal. Genetic content knowledge includes an awareness of the importance of genes and chromosomes in the process of inheriting a specific trait, and the mechanisms of reproduction. Students should know that through selective breeding, small differences can accumulate in successive generations with the end result of producing plants and animals with desired traits.

The following activities develop skills in this domain:

– For students to visualize how the cell membrane regulates what comes in and out of the cell, students will use a balloon, a cardboard box with a lid, vanilla, and water. The balloon will represent the cell membrane; the cardboard box will represent the outside of the cell; vanilla will represent small molecules; and water will represent large molecules. Students will create two experimental setups. In the first setup students will place a teaspoon of vanilla extract inside an uninflated balloon, tie a knot at the end to seal it, place it in a cardboard box, and cover the box with the lid. In the second setup, students will fill an uninflated balloon with water, tie a knot at the end to seal it, place it in a cardboard box, and cover the box with the lid. Students will predict what will happen to the experimental setup in both trials. Both setups should be left to sit for twenty minutes, after which students should answer the following questions during a class discussion:

  – *What observations did you make after opening each box?*
  – *Did anything leave the balloons?*
  – *If something did leave the balloons, why?*

  After answering the questions, the students should relate their findings to how a cell membrane is selectively permeable. Remember that cell membranes allow only certain things in and out.

– To create an analogy of how life functions on the cellular level, students should create a chart that matches cell organelles with specific, real-world jobs that have the same function. The ideal chart will include a column for "organelle," "function of organelle," and "real-world job." After completing the chart, students will match the organelles with real-world jobs. Students should determine places that are important in any city because they provide the functions identified. Students should draw the city and be creative in the naming of the city and the illustrations (e.g., a mitochondrion-shaped power station). After completion of the drawing, students should present their work

to a group of peers as if they were at a scientific conference. Students will then write a report that explains their drawing and how it relates to the function of specific organelles. Students should also include the following:

– *Basic information about the city*
– *A description of each organelle with its corresponding part of the city*
– *Reasons behind choosing each analogy*
– *What would happen if one part of the city malfunctioned*

– In order to help students better understand the role of genes in the process of inheriting a specific trait, students will play *Create-A-Kid*, a game using quarters and a list of traits. Sample traits could include eye shape, earlobe type, face shape, and nose shape. For each trait there should be two possibilities (e.g., attached earlobes or free ear lobes) with one representing the dominant trait (capital letter B) and the other representing the recessive trait (lowercase letter b). Students should create a chart with columns for heads, tails, genotype, and phenotype. The genotype represents the actual genes of the organism (BB, Bb, or bb), and the phenotype represents the physical appearance of the organism (dominant trait for BB and Bb and the recessive trait for bb only). Follow the chart below:

Trait	Dominant (Heads)	Recessive (Tails)	Flip of first parent	Flip of second parent	Genotype	Phenotype
Earlobe type	Free (B)	Attached (b)	B	b	Bb	Free earlobes

Students will work in pairs, with one student playing the role of the mother and the other student playing the role of the father. Each student should have a coin, which will represent the gene pair for a trait. The coin flip represents the action of passing one allele in the gene pair to the offspring. Each parent will flip his or her coin and record the result in the chart. A different set of letters should be used for each trait, with a capital letter representing the dominant allele and a lowercase letter representing the recessive allele for a given trait. Teachers should provide a list of the traits that shows a picture of both forms of each trait. After completion of the activity, students will create a picture of the offspring that shows the phenotypes for each trait in the chart. Students should answer the following questions during a class discussion:

– *What is the role of a gene in the process of inheriting a specific trait?*
– *What is the difference between genotype and phenotype?*
– *Is it possible to know the genetic composition of an organism by simply looking at it? Why or why not?*

Activities
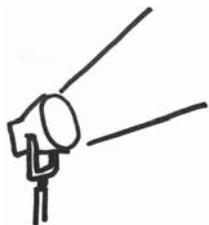
❷ Interdependence of Life
Georgia Performance Standard S7L4

Within the Interdependence of Life domain, students will investigate the diversity of living organisms and how they can be compared scientifically. In addition, students are expected to describe Earth's major biomes and understand environmental influences that affect both individuals and populations. Complex interactions among producers and consumers serve to define food webs and their ultimate dependence on sunlight.

The following activities develop skills in this domain:

– To further understand types of ecosystems and biomes, students will do research based on Antarctica. Antarctica is a desert biome even though it is covered in ice, because of its lack of annual precipitation. Students should watch a movie in class or at home like *March of the Penguins*, which examines the life and reproductive cycles of Emperor penguins in Antarctica, or some other documentary that explores the animal life cycle in Antarctica. While watching the movie, students should answer the following questions:

  – *How would you describe the desert biome of Antarctica?*
  – *How does the desert biome differ from the biome in which you live?*
  – *How have the animals adapted to the desert biome in Antarctica?*
  – *What types of predators are found in Antarctica?*
  – *What would happen if there were a major climatic change in Antarctica due to global warming? Would the animals still be able to survive?*

  At the end of the movie, students should do research on the biome they live in, a temperate deciduous forest. Basic research can be done in a textbook, on the Internet, or in the classroom, while in-depth plant life research can be done in local parks, forests, and backyards. Students should then create a dichotomous key by creating a chart of local plants and trees that can be used to identify unfamiliar plant and tree species.

– To demonstrate that sunlight is the ultimate source of energy for most organisms, students will conduct an experiment on the effects of sunlight on plants. Plants are a type of producer because they make their own food during photosynthesis. Animals—the consumers—receive energy indirectly from the Sun by eating producers. Students should design an experiment using two plants of their choice. Both experimental setups should be identical except that the control group will be placed in direct sunlight and the experimental group will be kept in darkness. Students will create a chart with the following columns: date, height of plant, appearance of plant, and total growth. Students should make and record observations on the chart at

the same time every other day for two weeks. After the experiment, students should answer the following questions:

– *Was there any difference between the two plants after days 6, 10, and 14?*
– *Which plant showed the most growth?*
– *Why did that plant do better?*
– *What would be the effect of no sunlight on plants and consumers?*
– *Why are producers at the base of energy pyramids?*

– To help students understand relationships between organisms, students should start with a chart that names the types of relationships: commensalism, mutualism, predation, and competition. The chart should display if the interaction is positive, negative, or neutral for each of the two organisms involved in the relationship. The students will create skits for each relationship type. An example would have one student eating a sandwich and discarding the crusts, while the second student picks up the crusts to eat: an example of commensalism. One of the prepared skits will then be presented to the class as part of the game, *What Type of Relationship?* Students will wait until the end of the skit to guess what type of relationship is being demonstrated. At the end of the skits, students will be able to answer the following questions:

– *How do all of the types of relationships differ?*
– *What do all types of relationships have in common?*
– *How do these types of relationships affect humans?*

Activities
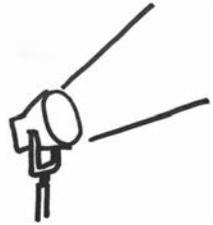
❸ Evolution
Georgia Performance Standard S7L5

Within the Evolution domain, students are expected to understand how traits change over time, and how this affects adaptation and survival of a species. In addition, students should know that evidence for the long history of changing life forms can be found in the many layers of sedimentary rock.

The following activities develop skills in this domain:

– To help students understand how natural selection shapes life, students will play the game called *The Kudzu Caterpillar*. Teachers should provide a background explanation of how Kudzu has affected trees and other organisms in Georgia. Students should understand that this activity is intended to replicate the effects of altering the environment on predators' ability to spot prey. Students will place two large pieces of paper, one brown and the other green, on a table one foot apart. Students will then cut out twenty-five caterpillar shapes of each color. The brown piece of paper represents Georgia's trees prior to the Kudzu invasion, and the green piece of paper represents Georgia's trees after the invasion. Students will place the cutout caterpillars on the paper as shown in the first trial in the chart below (green caterpillars on the brown paper). Students will pick up, one at a time, as many caterpillars as they can in twenty seconds. They should use the following chart to track data, and then proceed through each trial.

Trial	Observations	Green Caterpillars "Eaten"	Brown Caterpillars "Eaten"
Brown paper with green caterpillars			
Brown paper with brown caterpillars			
Brown paper with brown and green caterpillars			
Green paper with green caterpillars			
Green paper with brown caterpillars			
Green paper with green and brown caterpillars			

. . . .

After completing the game, students should be able to answer the following questions in a report to present to the class:

– *During pre-invasion Georgia, which caterpillars would be more likely to be eaten by predators?*
– *During post-invasion Georgia, which caterpillars would be more likely to be eaten by predators?*
– *What adaptation allowed the successful caterpillars to survive?*
– *How does natural selection explain this phenomenon?*
– *What would happen to the caterpillar population if the trees were suddenly covered in red soot?*

– To see how scientists learn about the past, students will look closely at the fossil record. A fossil is a once-living thing that has turned into inorganic matter. A good example is petrified wood, which was once a living tree, but over thousands of years, the wood has been turned into stone. Animal bones and plant life become fossils that give evidence of species that once lived. Usually, if a species cannot adapt to its surroundings, it becomes extinct. Students should research organisms such as whales, bats, and horses to see how these species have evolved over time. Students will pick one organism after their initial research to create a cladogram (diagram below), after teachers have shown them how to make one. A cladogram shows a common ancestor and the species that have evolved over time, including those that are now extinct.
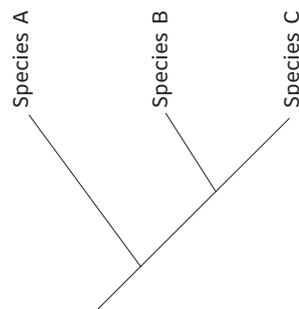
After completion of the cladogram, students will compare their work to classmates' based on the following questions:

– *How does the structure of your cladogram differ from your classmates'?*
– *What determines the structure of a cladogram?*
– *How do cladograms help scientists who study evolution?*

– To demonstrate how evolution can happen rapidly, students will research the flu virus. Students should research major flu epidemics in humans, and then participate in a panel discussion to share their findings, and discuss why a new flu vaccine is needed every year to be effective.

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–   To better understand how Earth's species have changed over time, students will examine the discovery of the fossil *Tiktaalic*, a fish-like creature with simple limbs. Provide students books, magazine articles, or bookmarked webpages about *Tiktaalik*. Students will better understand what this fossil tells us about evolution by going on an information quest in which they answer the following questions and record their research on an information sheet similar to the one below:

– *How old is* Tiktaalik*? What geological era is it from? Were tetrapods (birds, dinosaurs, reptiles, mammals) around at that time?*
– *What kind of environment did* Tiktaalik *live in?*
– *How did* Tiktaalik's *limbs and other features help it survive in its environment?*
– *What features does it share with bony fish? With tetrapods?*
– *Did the discoverers predict that such a creature had to exist? Why? How did they know where to look for it?*

The *Tiktaalik*

Age:
Geological era:
Were tetrapods also alive during this era?
Describe the environment:
Describe *Tiktaalik's* survival features:
Features in common with bony fish:
Features in common with tetrapods:

The Discoverers

Why was *Tiktaalik* predicted to exist?
Where was the fossil of *Tiktaalik* searched for?
Why?

Conclude this information quest with a discussion about how *Tiktaalik* is a transitional fossil, and how it or a similar creature may be the common ancestor of all tetrapods. Include in the discussion the following questions:

....

– *How does* Tiktaalik *help in demonstrating that physical characteristics of organisms have changed over successive generations?*
– *How could* Tiktaalik *be evidence that species on Earth have evolved due to natural selection?*
– *How was the discovery of* Tiktaalik *in sedimentary rock provide evidence for the long history of changing life forms?*

Practice Quiz

1   **What is the original source of energy in a food web?**
    A   air
    B   soil
    C   sunlight
    D   water

2   **In which biomes are tall trees able to grow?**
    A   desert and taiga
    B   desert and tundra
    C   taiga and temperate forest
    D   tundra and temperate forest

3   **Which of these correctly describes how matter moves through a food web?**
    A   producers→first-level consumers→decomposers→
        second-level consumers
    B   decomposers→first-level consumers→second-level consumers→
        producers
    C   producers→first-level consumers→second-level consumers→
        decomposers
    D   decomposers→second-level consumers→producers→
        first-level consumers

4   **Which of these BEST describes why most organisms look similar to their parents?**
   A   The organisms and their parents have similar genes.
   B   The organisms and their parents consume similar foods.
   C   The organisms and their parents have similar survival skills.
   D   The organisms and their parents live in similar environments.

5   **A student removed a small plant from his garden, but he did not remove all of the small plant's roots. A new plant grew from the roots that were left by the old plant.**

   Which of these is true about the two plants?
   A   The two plants will be identical to each other.
   B   The two plants will be different from each other.
   C   The new plant will not be able to produce offspring.
   D   The new plant was produced through sexual reproduction.

6   **Bees carry pollen from one flower to another when they gather nectar.**

   Which of these BEST describes the relationship between the bee and the flower?
   A   The bee and the flower both benefit.
   B   Neither the bee nor the flower benefit.
   C   The bee benefits but the flower does not.
   D   The flower benefits but the bee does not.

7   **Sometimes people get bacterial infections that do not respond to medications, such as antibiotics, that are used to treat bacterial infections.**

   Which statement BEST describes why the antibiotics do not get rid of the bacterial infections?
   A   People have become immune to the antibiotics.
   B   Bacteria have genes that protect them from the antibiotics.
   C   Bacteria absorb the antibiotic, causing it to be less effective.
   D   People eat foods that cause the antibiotic to be less effective.

8   **Which of these is an example of selective breeding?**
   A   mold is grown in a lab and used to make medicines
   B   sheep are cloned to produce more of the same type of sheep
   C   genes are inserted into bacteria to make many copies of the gene for a certain trait
   D   hens that lay the most eggs are crossed with healthy roosters to produce many healthy offspring

9   **Which of these cell structures functions in a similar way to a car engine?**
   A   chloroplast
   B   cytoplasm
   C   mitochondria
   D   nucleus

10   **Which of these correctly describes levels of organization found in the human body?**
   A   The brain is less complex than nerve cells.
   B   Bladder cells are more complex than bladder tissue.
   C   The digestive system is less complex than the stomach.
   D   The muscular system is more complex than muscle tissue.

Solutions

Number	Correct Answer	Explanation
1	**C**	*Explain in a food web that sunlight is the source of energy, and that this energy moves from organism to organism. (S7L4b)* The correct answer is **Choice (C) sunlight.** The Sun's energy provides a catalyst for photosynthesis that produces energy for plants and animals. Choices (A), (B), and (D) are incorrect because *air*, *soil*, and *water* do not provide energy for biological processes.
2	**C**	*Describe the characteristics of Earth's major terrestrial biomes (e.g., tropical rain forest, savanna, temperate, desert, taiga, tundra, and mountain) and aquatic communities (e.g., freshwater, estuaries, and marine). (S7L4e)* The correct answer is **Choice (C) taiga and temperate forest.** A taiga and a temperate forest receive enough precipitation to allow tall trees to grow. Answer choices (A) and (B) are incorrect because deserts do not receive enough precipitation to support the growth of tall trees. Answer choice (D) is incorrect because tundras do not receive enough precipitation to support the growth of tall trees.
3	**C**	*Demonstrate in a food web that matter is transferred from one organism to another and can recycle between organisms and their environments.* The correct answer is **Choice (C) producers→first-level consumers→second-level consumers→decomposers.** This correctly shows how matter transfers through a food web. Choice (A) is incorrect because decomposers do not transfer matter to second-level consumers. Choice (B) is incorrect because decomposers do not transfer matter to first-level consumers. Choice (D) is incorrect because decomposers do not transfer matter to second-level consumers.

Number	Correct Answer	Explanation
4	**A**	*Explain the role of genes and chromosomes in the process of inheriting a specific trait. (S7L3a)* The correct answer is **Choice (A) The organisms and their parents have similar genes.** Sexually reproducing organisms receive half of their genes from each parent, so they have similarities, including physical traits, to both parents. Choices (B), (C), and (D) are incorrect because they have little effect on physical appearance aside from weight and grooming.
5	**A**	*Compare and contrast that organisms reproduce asexually and sexually (bacteria, protists, fungi, plants, and animals). (S7L3b)* The correct answer is **Choice (A) The two plants will be identical to each other.** By leaving a section of roots, the plant reproduced by vegetative propagation, an asexual process. Since only one parent's genes were passed on, the original plant and offspring are genetically identical. Choice (B) is incorrect because it describes a plant that is produced through sexual reproduction. Choice (C) is incorrect because the new plant will be most likely be able to produce offspring. Choice (D) is incorrect because the new plant was produced through asexual reproduction.
6	**A**	*Categorize relationships between organisms that are competitive or mutually beneficial. (S7L4d)* The correct answer is **Choice (A) The bee and the flower both benefit.** The symbiotic relationship between the bee and flower is called *mutualism* because the bee receives nourishment from the flower, and the flower gets pollinated by the bee. Choice (B) is incorrect because it does not represent a symbiotic relationship. Choices (C) and (D) are incorrect because they represent commensalism, not mutualism.

Number	Correct Answer	Explanation
7	**B**	*Describe ways in which species on Earth have evolved due to natural selection. (S7L5b)*
		The correct answer is **Choice** (**B**) **Bacteria have genes that protect them from the antibiotics.** The bacteria have a mutation that naturally protects them from being affected by the antibiotic and through natural selection, the number of this type of bacteria has increased. Choice (A) is incorrect because people do not develop immunity to antibiotics; bacteria do. Choice (C) is incorrect because the action of absorbing the antibiotic is not likely to make the antibiotic ineffective. Choice (D) is incorrect because it is not likely that foods will cause the antibiotic to be less effective.
8	**D**	*Recognize that selective breeding can produce plants or animals with desired traits. (S7L3c)*
		The correct answer is **Choice (D) hens that lay the most eggs are crossed with healthy roosters to produce many healthy offspring.** Selective breeding occurs when humans select which organisms to breed in order to produce desired traits in the offspring. Choices (A), (B), and (C) do not involve selective breeding.
9	**D**	*Relate cell structures (cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria) to basic cell functions. (S7L2b)*
		The correct answer is **Choice** (**D**) **nucleus.** The nucleus directs all cellular activities through directions held in DNA. Choices (A), (B), and (C) are incorrect because they have distinct functions that are directed by the nucleus with no control.
10	**D**	*Explain that cells are organized into tissues, tissues into organs, organs into systems, and organ systems into organisms. (S7L2c)*
		The correct answer is **Choice** (**D**) **The muscular system is more complex than muscle tissue.** Organs are composed of muscle tissue and the muscular system is composed of organs. Choice (A) is incorrect because the brain is more complex than nerve cells. Choice (B) is incorrect because bladder cells are less complex than bladder tissue. Choice (C) is incorrect because the digestive system is more complex than the stomach.

Social Studies

Chapter 5

Social Studies

Grade 7 is the second year of world region studies that began in Grade 6. This year the focus is on Africa, Southwest Asia (Middle East), and Southern and Eastern Asia. The four domains, Geography, Government/Civics, Economics, and History, are taught within each region. As in Grade 6, Geography remains the primary domain of study. In this domain, students will make the connection between human and physical geographic characteristics and a region's ability to successfully develop. In the Government/Civics domain, students will be introduced to various types of governments. They will explore how these governments distribute power and offer political participation opportunities to their citizens. In the Economics domain, students build on economic concepts with which they are already familiar. They apply these concepts to particular regions by examining the economic system of each area. Finally, the History domain gives students an opportunity to analyze the effects of important people and events in each region and their effects on the contemporary issues of today.

The Social Studies activities focus on some of the topics that are assessed in the Grade 7 CRCT Social Studies domains. These domains are as follows:

1 **Geography**

2 **Government/Civics**

3 **Economics**

4 **History**

Activities
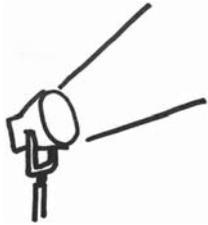
❶ Geography

Georgia Performance Standards SS7G1, SS7G2, SS7G3, SS7G4, SS7G5, SS7G6, SS7G7, SS7G8, SS7G9, SS7G10, SS7G11, and SS7G12

In Grade 7 Geography, students will examine both the physical and human characteristics of geography and how they relate to a region's success. The focus is on Africa, Southwest Asia (Middle East), and Southern and Eastern Asia. Students will be asked to complete a variety of tasks including locating on a world map specific topographical features (mountain ranges, deserts, bodies of water, etc.) along with major countries in the region. They will also evaluate the causes and effects of various environmental issues in the regions studied, such as deforestation, pollution, desertification, and acid rain. The students will be able to explain why people choose to live in specific areas based on climate, natural resource distribution, and physical geographic features. The students will also be able to describe various cultural characteristics of a region, including making distinctions between ethnic and religious groups.

The following activities develop skills in this domain:

*Africa-SS7G1a, b; Southwest Asia (Middle East)-SS7G5a, b;
Southern and Eastern Asia-SS7G9a, b*

– Students will successfully locate selected world features and countries. First, students will complete an individual study map with partners, and then demonstrate their geographic knowledge in a class game, *Where in the World Is…?* Distribute blank outline maps of the world. Students will work with a partner to mark the following locations:

Africa: Sahara, Sahel, savanna, tropical rain forest, Congo River, Niger River, Nile River, Lake Tanganyika, Lake Victoria, Atlas Mountains, Kalahari Desert, Democratic Republic of the Congo (Zaire), Egypt, Kenya, Nigeria, South Africa, and Sudan

Southwest Asia (Middle East): Euphrates River, Jordan River, Tigris River, Suez Canal, Persian Gulf, Strait of Hormuz, Arabian Sea, Red Sea, Gaza Strip, Afghanistan, Iran, Iraq, Israel, Saudi Arabia, and Turkey

Southern and Eastern Asia: Ganges River, Huang He (Yellow River), Indus River, Mekong River, Yangtze (Chang Jiang) River, Bay of Bengal, Indian Ocean, Sea of Japan, South China Sea, Yellow Sea, Gobi Desert , Taklimakan Desert, Himalayan Mountains, Korean Peninsula, China, India, Indonesia, Japan, North Korea, South Korea, and Vietnam

Before playing the game, allow students, pairs, or groups time to review and study their completed maps.

Where in the World Is...?
- Write each of the above locations on separate slips of paper.
- Hang two outline wall maps of the world on the board—one for each team.
- Divide the class into two teams.
- Have a person from each team come up to their wall map.
- Draw a slip, and tell the two students to imagine that a person from their class is in this particular location.
- Tell them the name of the place. Then, when you say *Where in the world is* (*student's name*)?, they will each immediately go to their team's map and mark the location.
- Check their answers. If they are both correct, they both earn a point. If a team is incorrect, subtract a point from that team's score.
- Continue playing the game until all features and countries have been correctly identified.

Numerous plays of the game, throughout the year, will assist students in reviewing their knowledge of geographic locations.

Africa-SS7G2a, b, c; Southwest Asia (Middle East)-SS7G6a;
Southern and Eastern Asia-SS7G10a, b

- Students will better understand specific environmental issues and their often associated impacts on population and economies throughout the world by participating in a discussion and completing an individual action plan.

Introduce the activity by showing pictures of various environmental problems throughout the world such as water and air pollution, soil quality and deforestation, desertification, unequal distribution of water, and flooding. Obtain the pictures from grade-level texts, library resources, and age-appropriate Internet websites. Students will suggest what each picture is showing, where it might be located, what likely caused the problem, and possible effects the environmental issue has upon population and economy. Write student responses on the board. Once students have visual images, address each of the following specific regional issues:

Africa
- The effects of water pollution and unequal distribution of water on irrigation, trade, industry, and drinking water
- The relationship between poor soil and deforestation in sub-Saharan Africa
- The impact of desertification on the environment from the Sahel to the rain forest

Southwest Asia (Middle East)
- The effects of water pollution and unequal distribution of water on irrigation and drinking water

Southern and Eastern Asia
– The causes and effects of pollution in the Yangtze and Ganges Rivers
– The causes and effects of air pollution and flooding in India and China
Create informational/reference charts for each of the preceding six discussions. Students will choose one of the issues discussed in class. They will reinforce their understanding of the specific aspects of the issue by designing an action plan that presents a way this problem and its effects might be solved or lessened. Have the students make a poster that presents their action plan. Display the posters in an environmental awareness/Earth Day-type presentation.

Region
Issue
Key points from class discussion:
–
–
–
–
–
–
–
–
–
–

Africa-SS7G3; Southwest Asia (Middle East)-SS7G7b;
Southern and Eastern Asia-SS7G11b

– To help students understand the important role that physical geography plays in the lives of people, they will complete a group project which analyzes a particular region based on several factors. Divide the students into groups. Assign each group one of the following areas: Africa, Southwest Asia (Middle East), or Southern and Eastern Asia. Distribute two blank maps of the assigned region to each member of the group.

First, groups will examine the population distribution of their regions and discuss where people live (and don't live) in their particular region. Groups will gather information from library resources, grade-level texts, and age-appropriate Internet sites. Students will use one blank map and create a population distribution map.

Next, groups will use the second blank map and create a physical characteristics map, answering the appropriate question relating to their

region's geography:

- Africa: *Where are the Sahara, Sahel, savanna, and tropical rain forests located on the continent?*
- Southwest Asia (Middle East): *Where are deserts and rivers located?*
- Southern and Eastern Asia: *Where are mountains, deserts, and water features located?*

Then, groups will compare and combine information from their maps. Each group member will write a short essay about their thoughts regarding:

- *How does geography affect where people choose to live?*
- *How does geography affect how people travel?*
- *How does geography affect the types of work people do?*

An example of the thought process could be that in the Southwest Asia (Middle East) region, more people live along the rivers than in the desert. This is because people need water to sustain their own lives and also to grow food.

Each group will present their maps and conclusions to the class. After the presentations are completed, lead a class discussion comparing and contrasting conclusions among the regions studied. The activity will conclude with students creating regional displays of their maps and writings.

Africa-SS7G4a, b; Southwest Asia (Middle East)-SS7G8a, b, c;
Southern and Eastern Asia-SS7G12a, b

- Students will understand the difference between an ethnic group and a religious group by participating in a discussion, information gathering, and a culminating class activity. Lead a discussion about ethnic groups and religious groups using the following definitions:

  - Ethnic groups: Groups that share many common characteristics, such as language, physical features, customs, and traditions

  - Religious groups: Groups that share a common belief system, but are not necessarily composed of a single ethnic group

To apply their knowledge and experience, ask the students to give examples of different ethnic and religious groups. Organize the students' responses on a T-chart similar to the one that follows:

Ethnic Groups	Religious Groups

Create student partnerships and assign each a different group to research from the following lists:

– Africa: Arabs, Ashanti, Bantu, Swahili
– Southwest Asia (Middle East): Arabs, Persians, Kurds, Jews, Muslims, Christians
– Southern and Eastern Asia: Buddhists, Hindus, Muslims, followers of Shintoism, followers of Confucianism

Some students will be assigned ethnic groups; others will be assigned religious groups. Do not inform students which they have. Allow research to guide their discovery. Partners will gather information about their assignment using grade-appropriate library materials, classroom texts, and Internet sites. Students will complete a chart similar to the one that follows:

Question 1: Is the group an ethnic or religious group?
If it's an ethnic group, move on to Question A.
If it's a religious group move on to Question B.

Question A: Describe the language, physical features, customs, and traditions.

Question B: Describe what people in this group generally believe.

**Question AA**: What types of religions do people generally follow in this ethnic group?
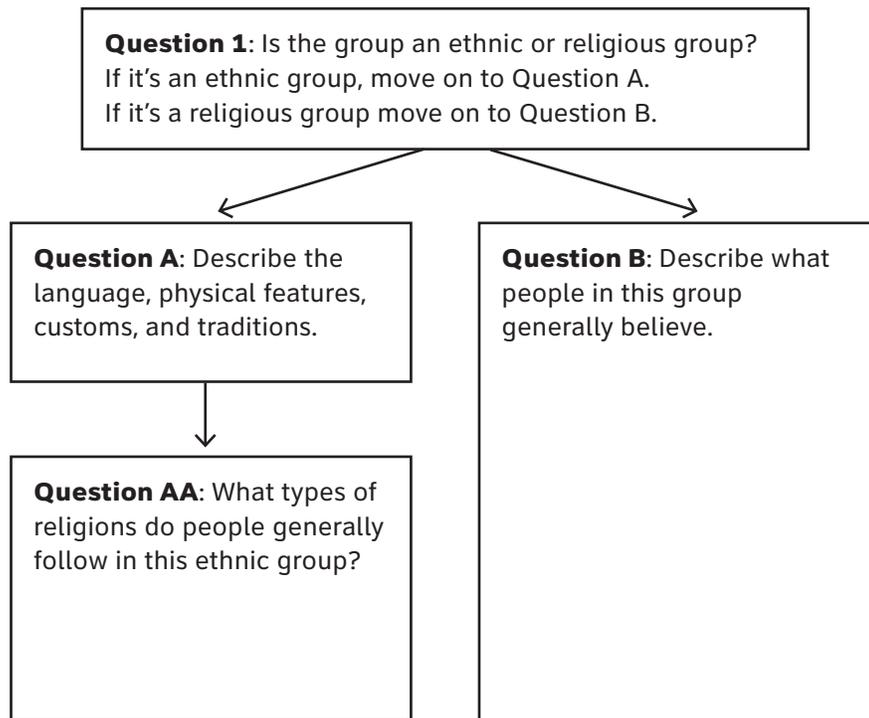
Partners will present their findings to the class. Students will take notes during the presentation in an Ethnic and Religious Group journal. This journal will be used throughout the year for review.

Activities
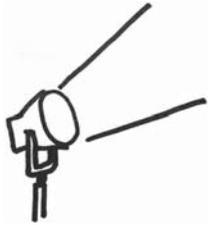
❷ Government/Civics

Georgia Performance Standards SS7CG1, SS7CG2, SS7CG3, SSG7CG4, SSG7CG5, SSG7CG6, and SSG7CG7

While studying the Government/Civics domain in Grade 7, students will learn about the various types of governments established in Africa, Southwest Asia (Middle East), and Southern and Eastern Asia. They will study how these governments distribute their power and the level to which the citizens of the countries are able to participate in the political process. Students should already be familiar with the democratic form of government in the United States and the governments of the regions studied in Grade 6. During this course of study, students will discover the ways that governments operate in Africa, Southwest Asia (Middle East), and Southern and Eastern Asia.

The following activities develop skills in this domain:

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*Africa-SS7CG1a; Southwest Asia (Middle East)-SS7CG4a;
Southern and Eastern Asia-SS7CG6a*

– Students will better comprehend how governments distribute power through a teacher-directed mini-lesson and by playing *Facts Identification Bingo*. Define the terms *federal*, *unitary*, and *confederation*. Explain and describe how governments distribute power in each system. Prepare for the game by making fact cards, including anything mentioned in the lesson, for each power distribution method. Make at least eight cards for each government system. Each student will create a 5 x 5 bingo card similar to the one that follows:

Sample Bingo Card

		FREE		

Distribute to each student twenty-five colored paper tiles to be used as markers. (For each play of the game, one marker is placed on the "FREE" space). Students will create their cards by randomly writing the words *federal*, *unitary*, and *confederation* eight times each until all spaces are filled. The goal is to get bingo: five markers either across the row, diagonally through the center, or down a column.

To play the game, draw the top card from the pile and read a fact. The students will place a marker on the appropriate square on their cards. For example, if you read "This type of government is a union of states for a common purpose," the students should put a marker on one of their "confederation" squares. Keep reading the fact cards until someone yells out "bingo!" Check that there is indeed a winner by reading through the facts and having the student identify which fact belonged to each word in the bingo line. This will ensure that he or she matched the correct term with the correct fact, as well as provide review time. To play additional rounds, students can keep their own cards, rotate their cards around the room, or distribute them randomly.

This activity and the bingo game can also be adapted for oligarchic, autocratic, and democratic forms of citizen participation or the two predominant forms of democratic governments.

*Africa-SS7CG1b; Southwest Asia (Middle East)-SS7CG4b;
Southern and Eastern Asia-SS7CG6b*

– Students will have a better understanding of how citizens participate in various world governments by creating a study guide and writing an opinion essay. Provide students with a chart similar to the one that follows:

Determining citizen participation	Definition	Citizen's role regarding voting and personal freedoms
Autocratic		
Oligarchic		
Democratic		

Teach a mini-lesson about the three ways to classify a citizen's role in voting and personal freedoms in a government. As the lesson progresses, students will complete the two columns of the chart. Review the information from the chart and have students suggest which way to classify citizen participation by what is being described by each fact. Next, students will write a short opinion essay explaining which type of system they would like to live under. (For the discussion that follows, ensure that all three ways to classify citizen participation are represented in the collective essays.) Conclude the activity with a class discussion during which students defend their essays and opinions, while others have the opportunity to ask questions.

*Africa-SS7CG1c; Southwest Asia (Middle East)-SS7CG4c;
Southern and Eastern Asia-SS7CG6c*

– Students will better comprehend the two different types of democracies (parliamentary and presidential) by designing informational posters and completing a Venn diagram similar to the one that follows:
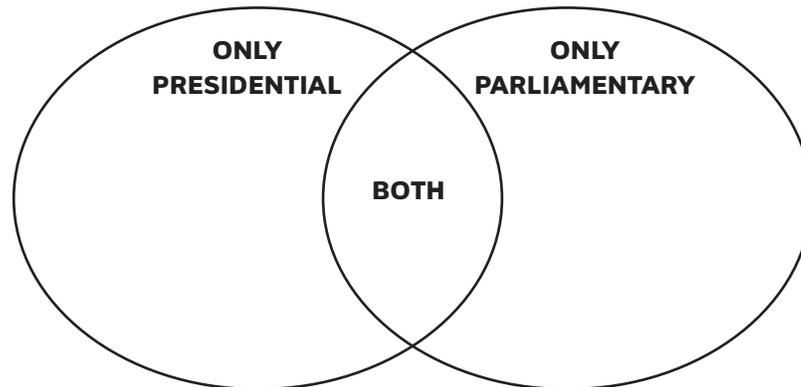
Group students into pairs to research the two predominant forms of democratic governments. Pairs will decide who will research which type, and use library resources, grade-appropriate texts, and age-appropriate Internet sites to gather facts. First, each student will complete one half of the diagram. Then, the pair will come back together to examine their entries and complete the overlap with common facts.

Conduct a class review and create a composite diagram. First, draw a large Venn diagram on the board. Students will make suggestions for the completion of the class diagram with facts from their own research or charts. The activity will conclude with students designing a poster that features facts about each type of democracy in pictures. Students will use their own drawings and current event pictures from newspapers, magazines, and Internet printouts. Display the Venn diagrams and posters in a school Democracy Exhibit.

Africa-SS7CG2a; Southwest Asia (Middle East)-SS7CG5a;
Southern and Eastern Asia-SS7CG7a

− Students will better understand the structures of different national governments by completing a chart similar to the following:

Country	Form of leadership	How the leader is selected	Role of the citizen in terms of voting rights and personal freedoms
Sudan			
Kenya			
South Africa			
Iran			
Saudi Arabia			
Israel			
India			
China			
Japan			

Students will work in groups to complete the chart, doing necessary research to fill in the appropriate information for each country. Once every group has completed its chart, the class will come together to discuss the results of each group's research.

Following the discussion, allow individuals, pairs, or groups time to review and study their charts prior to playing a class game. To set up the game, write questions about each of the countries on 3 x 5 cards. Use facts, such as the examples below, from the charts students created:

– *Israel is a parliamentary democracy. How is the leader selected?*
– *The leader of Saudi Arabia inherits the throne. What type of government does that country have?*

Write the answers on the backs of the cards. To play the game, divide the class into two teams. A student from each team will come to the front of the class. Choose a card from the stack, and read the question aloud. Each player will write a short answer to the question on the board or chart paper. A point is awarded to each team that correctly answers the question. Continue with the game until all students have had a chance to play. Charts will be used throughout the year for review.

Activities
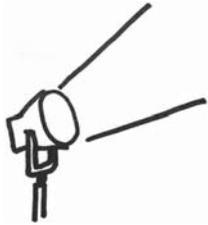
❸ Economics

Georgia Performance Standards SS7E1, SS7E2, SS7E3, SS7E4, SS7E5, SS7E6, SS7E7, SS7E8, SS7E9, and SS7E10

Students studying the Grade 7 Economics domain will evaluate the economic systems found in the regions of Africa, Southwest Asia (Middle East), and Southern and Eastern Asia. Through an analysis of the three different types of economic systems (traditional, command, and market), students will come to realize that most countries have mixed economies—usually some combination of the latter two systems. Students will see the importance of voluntary trade to a nation's economy and will learn about the effects of actions that both hinder and encourage free trade, such as tariffs, quotas, embargoes, specialization, and currency exchange. As they analyze the economies in these regions, they'll see the importance of investing in both human capital and capital goods as a way to increase a country's GDP.

The following activities develop skills in this domain:

Africa-SS7E1a, b, c; Southwest Asia (Middle East)-SS7E5a, b, c;
Southern and Eastern Asia-SS7E8a, b, c

– Students will get a better understanding of worldwide economic systems by participating in a class discussion, completing research about one of nine countries, and working with the class to determine where countries belong on an economic continuum. Review the three types of economic systems: traditional, command, and market. Emphasize the fact that most countries have a mixture of both command and market economies. Review the following three economics questions:

  – *Who decides what goods are produced?*
  – *Who decides how goods are produced?*
  – *Who decides for whom goods are produced?*

  Following the discussion, assign groups one of the following countries to research:

  Africa
  – South Africa
  – Nigeria

  Southwest Asia (Middle East)
  – Israel
  – Saudi Arabia
  – Turkey

Southern and Eastern Asia
− China
− Japan
− India
− North Korea

Groups will use the results of their research to determine where their country should be placed on an economic continuum.

Pure Command	Mixed	Pure Market

Have one representative of each group go to the board and place the name of the country on the continuum where the group believes it belongs. Each group should provide support for the placement of its country (the government makes most decisions about what to produce, or individuals make most decisions about how goods are produced). Once all countries have been placed on the continuum, the discussion should conclude with an emphasis that placement on the continuum is determined by the answers to the three economic questions: *Who decides what goods are produced?*, *Who decides how goods are produced?*, and *Who decides for whom goods are produced?*

Africa-SS7E2a; Southwest Asia (Middle East)-SS7E6a, b;
Southern and Eastern Asia-SS7E9a, b

− Students will better understand specialization, tariffs, quotas, and embargoes by applying the terms to nations being studied. Begin the activity with a review and discussion about the following economic terms: *specialization*, *tariff*, *quota*, and *embargo*. Organize the students into groups, and assign each group one of the following countries: South Africa, Nigeria, Israel, Saudi Arabia, Turkey, China, India, Japan, or North Korea.

 Each group should create a poster showing how its country engages in voluntary trade. On the left side of the poster, students should draw or paste pictures of their country's five biggest exports. On the right side of the poster, students should list their country's five biggest imports. Students can find this information in The CIA World Factbook (www.cia.gov/library/publications/the-world-factbook/). Groups should present their posters to the class, and posters should be hung around the classroom.

Country	
Exports	**Imports**

Give each group four index cards. Students will look at the posters hung around the classroom and fill in their cards as follows. On the first index card, each group will give an example of one country that would be a good trading partner for its country. Each group will support its choice by explaining what its country could export to the partner country and what its country could import from the partner country. On the next index card, each group will give a specific example of how its country might place a tariff on the goods from another country. On the third index card, each group will give an example of how its country might impose quotas on the goods from another country. On the last index card, each group will give an example of why their country might place an embargo on the goods from another country. As a class, students will discuss examples and include reasons why one country might place a tariff, a quota, or an embargo on goods from another country. The discussion will include comparing and contrasting tariffs, quotas, and embargoes.

Index cards should be collected. Throughout the year, index cards can be used to play a game to reinforce learning. One person from each team can go up to the board, the teacher can read one of the specific examples on the index cards, and students should write on the board whether the example is describing a tariff, a quota, an embargo, or specialization.

Africa-SS7E3a, b, c, d and SS7G4c; Southwest Asia (Middle East)-SS7E7a, b, c, d and SS7G8e; Southern and Eastern Asia-SS7E10a, b, c, d and SS7G12c

–   Students will better understand the factors that influence economic growth by creating a group poster for a specific country and comparing it with group posters about other countries. Assign groups one of the following countries to research: Nigeria, South Africa, Israel, Saudi Arabia, Turkey, Iran, India, China, North Korea, and Japan.

Discuss the definitions of GDP (gross domestic product), GDP per capita (GDP per person), and human capital. Each group will answer the following questions as they complete their research using age- and grade-appropriate reference materials and Internet websites
(such as www.cia.gov/library/publications/the-world-factbook/):

– *What are my country's GDP and GDP per capita?*
– *How does my country invest in human capital (education and training)?*
– *How does my country invest in capital (factories, machinery, and technology)?*
– *What natural resources does my country have, and what does it do with those natural resources?*
– *What is the role of entrepreneurship in my country?*
– *How do these investments affect my country's GDP?*
– *If my country wanted to improve its GDP, in what should it invest? Explain your answer. (Students may look at literacy rates, levels of education, etc.)*

The poster that each group makes will explain and illustrate the answers to each of the preceding questions. Display the posters in the class. Students will tour the displays and take brief informational notes in social studies journals about each country. Then, students will gather together again in their groups, discuss their notes, and determine which of the other countries' economies are the most similar to and the most different from their country's economy. Each group will report its answers to the rest of the class, and the answers of each group will be discussed.

*Africa-SS7E3c; Southwest Asia (Middle East)-SS7E7c;
Southern and Eastern Asia-SS7E10c*

–   Students will better understand the factors that influence economic growth by locating particular countries and examining the distribution of natural resources. On chart paper or the board, list the countries of Nigeria, South Africa, Israel, Saudi Arabia, Iran, India, China, and Japan. As a class, apply geographic understandings and locate the eight nations on world and

regional maps. Assign a group to each of the eight nations. The groups will research the presence or absence of natural resources for their countries using appropriate Internet resources, grade-level texts, and other age-appropriate reading materials. African nation groups may research diamonds, gold, uranium, and oil. Middle Eastern nation groups may research oil. Each group will write a summary of what it found about the availability of natural resources next to the name of its country on the chart paper or board. Summaries should include but not be limited to:

– Saudi Arabia and Iran are among the top five nations with large oil reserves.
– Saudi Arabia and Iran are among the top five oil-producing nations in the world.
– Israel imports 99% of the oil it needs.
– Nigeria is among the top ten oil-exporting nations with large reserves.
– South Africa is the leading producer of gold.
– South Africa is among the top five diamond-producing nations.
– Uranium deposits of great value have recently been found in Nigeria.
– Japan has few natural resources and imports most of its raw materials.
– China and India are among the top five coal-producing nations in the world.

Groups will use their research and summaries in a class discussion to explain how they believe the presence or absence of particular resources has affected economic development of their country and countries in general. Students will rank their countries with a number between 1 and 5, with 1 being the country they believe has the highest GDP per capita and 5 being the country they believe to have the lowest GDP per capita. Groups will test their hypotheses by finding the GDP per capita of all countries and explaining why the GDPs are or are not as they expected.

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Activities
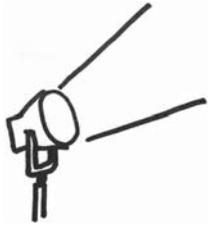
❹ History

Georgia Performance Standards SS7H1, SS7H2, and SS7H3

Students continue their study of world history in Grade 7. While studying the History domain, students will explore each region's milestone events and achievements beginning with European exploration and continuing to the present day. The students will make connections between these historical events and modern issues in each region. Rather than chronologically, as most history is taught, these topics are meant to be addressed with a cause-and-effect approach. This will help students see how specific events in history have influenced each region's people, government, language, and culture over time.

The following activities develop skills in this domain:

Africa-SS7H1a; Southwest Asia/Middle East-SS7H2a

–   Students will compare and contrast the reasons for conflict and change within the regions of Africa and Southwest Asia (Middle East) by conducting group research and participating in a class discussion. Divide the class into two groups. Assign one group Africa and the other group Southwest Asia (Middle East). Each group will work together to answer the following questions:

   Africa
 – *How did Europe divide Africa when it colonized the continent?*
 – *How were these boundaries different than the way the continent was organized before?*
 – *How did the people native to the continent feel about these boundaries? Explain your answer.*
 – *What were the results of these new boundaries? How did the people respond to them? Why?*

   Southwest Asia (Middle East)
 – *How did Europe divide Southwest Asia after the breakup of the Ottoman Empire?*
 – *How were these boundaries different than the way the region was organized before?*
 – *How did the people living in this region feel about these boundaries? Explain your answer.*
 – *What were the results of these new boundaries? How did the people respond to them? Why?*

   Once the groups have finished, they will present their research to the class. Encourage students to use charts, graphs, illustrations, and other visual media to explain their findings. As each group makes its presentation, have

the rest of the class take notes in social studies journals. After the presentations, spend time comparing and contrasting the information for both regions. Ask the students to think about how the reasons for conflict and civil war in each region were alike and different. With the students, complete a Venn diagram similar to the one below on the board or a large piece of poster paper.

How were the reasons for conflict and civil war in each region alike and different?

Africa

Both

Southwest Asia
(Middle East)
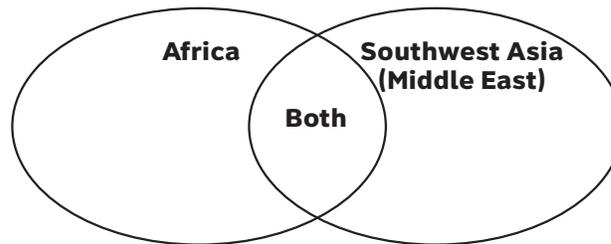
Africa-SS7H1b; Southern and Eastern Asia-SS7H3a

–   Students will better understand nationalism and the desire for independence of various Asian and African countries (South Africa, Kenya, Nigeria, India, and Vietnam) by participating in a class discussion and completing a small group project. Begin the discussion by explaining the definition of *nationalism*. Include in the definition that nationalism is:

    – A desire to be liberated from rule by another country's government
    – A devotion and loyalty to one's own country

    Have the students discuss how these desires might influence a colony to declare independence from its ruling country. Write these suggestions on chart paper or the chalkboard for reference. Once you have finished discussing nationalism, assign students to one of the five previously mentioned countries. Students will use grade-appropriate library materials, textbooks, and age-appropriate Internet sites to research their countries. Each student will complete his or her country's row on a chart similar to the one that follows:

Country	What country controlled the nation prior to independence?	What led to growing nationalism in the country?	Who led the independence movement?	How was independence achieved?
South Africa				
Kenya				
Nigeria				
India				
Vietnam				

Once the charts are completed, groups will report their findings to the class. Students will complete their charts from the presentation information. To reinforce understanding, students should compare and contrast all of the independence movements and describe how nationalism led to independence in all of the nations.

Southwest Asia (Middle East)-SS7H2b

– Students will gain a better understanding of the formation of the modern state of Israel by analyzing reasons for its establishment, developing a study guide, and expressing their understanding through art. Distribute, to each student, a note card that has one of the following four question pairs written on it:

  – *What is the Jewish religious connection to the land of Israel? How did this influence the establishment of the modern state of Israel in 1948?*
  – *What was the Holocaust? How did this influence the establishment of the modern state of Israel in 1948?*
  – *What is anti-Semitism? How did this influence the establishment of the modern state of Israel in 1948?*
  – *What is Zionism? How did Zionism in Europe influence the establishment of the modern state of Israel in 1948?*

Instruct the students to find the answers to their questions by researching age-appropriate Internet websites, library resources, and grade-appropriate texts and reading materials. Group students with classmates who researched the same question pair. Each group will discuss their information and decide on a collective answer. A representative from each group will present their

answer to the class. During the presentations, each student will take notes and create a study chart similar to the one below:

Factor	Influence
What is the Jewish religious connection to the land of Israel?	How did this influence the creation of the modern state of Israel in 1948?
What was the Holocaust?	How did this influence the creation of the modern state of Israel in 1948?
What is anti-Semitism?	How did this influence the creation of the modern state of Israel in 1948?
What is Zionism?	How did this influence the creation of the modern state of Israel in 1948?

Students will conclude this activity by setting up a class Museum of Historical Art by choosing a Factor/Influence and creating an artistic representation of the information. Students' representations may be collages, montages, dioramas, bulletin boards, cartoons, paintings, or sketches.

Southern and Eastern Asia-SS7H3d

–   Students will gain a better understanding of the historical background and impact of Communism in China through participation in a series of informational sessions. The class will study and discuss specific people and events over the course of a four-session series. Provide background

information during the sessions. Students will take notes in a journal, and they will be encouraged to ask questions and make connections, promoting their ability to explain events and their significance.

The first session will introduce Mao Zedong, focusing on his role in bringing Communism to China. Teachers will address the following questions:

– *Who was Mao Zedong?*
– *How did he come to power in China?*
– *How did he hear about Communism?*
– *Why did he think this type of government was a good idea for China?*
– *How did he start this type of government?*
– *What do the Chinese people think of Mao Zedong?*

At the end of the session, students will write one paragraph in their journals that describes the impact of Communism in China in terms of Mao Zedong.

The focus of session two will be the Great Leap Forward. Teachers will provide information about the following points:

– *When did the Great Leap Forward start?*
– *What role did Mao Zedong play in the Great Leap Forward?*
– *What was the Great Leap Forward?*
– *What was life in China like before this event?*
– *How did this event change life in China?*

At the end of the session, students will write one paragraph in their journals that describes the impact of Communism in China in terms of the Great Leap Forward.

Session three will cover the Cultural Revolution. Teacher information will include the following questions:

– *What was the Cultural Revolution?*
– *When did it occur?*
– *How did it impact the people of China?*
– *Did anyone benefit from this revolution?*
– *Was anyone hurt?*
– *What was China like before this event?*
– *What was China like afterwards?*

At the end of the session, students will write one paragraph in their journals that describes the impact of Communism in China in terms of the Cultural Revolution.

The final session will focus on Tiananmen Square and address the following questions:

– *What is Tiananmen Square?*
– *What significant event took place there?*
– *When did this event occur?*
– *Who was involved?*
– *What impact did this event have on the people of China?*

At the end of the session, students will write one paragraph in their journals that describes the impact of Communism in China in terms of Tiananmen Square.

To conclude the activity, students will make their own China scrapbook with at least one page for each of the session's topics. Encourage students to use a variety of art, words, grade-level resources, and age-appropriate Internet resources to demonstrate their understanding of the significant people and events. Scrapbooks will be added to the classroom's library as study guides.

Practice Quiz

1 **Which environmental problem has been caused by deforestation in Africa?**

   A   lack of clean air
   B   lack of fertile soil
   C   lack of fresh water
   D   lack of warm weather

2 **After the breakup of the Ottoman Empire, European powers partitioned Southwest Asia (Middle East).**

   What has been a result of the artificial boundaries they created?

   A   regional peace
   B   regional wealth
   C   regional conflict
   D   regional pollution

3 **Which of these is a reason for continuing conflicts in Southwest Asia (Middle East)?**

   A   the discovery of gold
   B   historical claims to the same land
   C   the destruction of the rain forest
   D   competition between agricultural industries

4   **Which letter on the map indicates the location of the Niger River?**
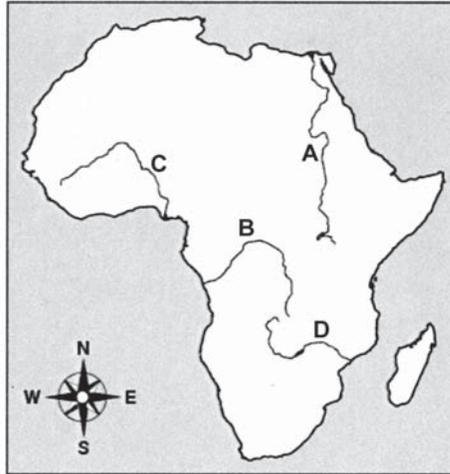
A   A
B   B
C   C
D   D

5   **Israel has a literacy rate of 97%. Afghanistan has a literacy rate of 28%.**

Which statement is MOST LIKELY true?

A   Israel has a larger population.
B   Israel has fewer manufacturing centers.
C   Israel has a higher standard of living.
D   Israel has a lower gross domestic product (GDP).

6   **What is the difference between a religious group and an ethnic group?**

A   People in a religious group speak the same language.
B   People in a religious group share a common belief system.
C   People in a religious group live in the same country.
D   People in a religious group follow the same political leaders.

7   **In Israel, citizens elect members of the legislature, and the legislature chooses the head of government. What type of government does Israel have?**

A   autocracy
B   monarchy
C   presidential democracy
D   parliamentary democracy

8   **Which statement describes the Republic of India's federal form of government?**

A   One dictator holds all governmental power.
B   A group of religious authorities holds all governmental power.
C   Power is divided between the national government and regional authorities.
D   Power is divided between the executive and legislative branches of government.

9   **Look at the chart.**

Why does Turkey have more of a market economy than Saudi Arabia?

A   In Turkey, the government makes more business decisions.
B   In Turkey, individual citizens make more business decisions.
C   In Turkey, tradition mainly determines what goods are produced.
D   In Turkey, religious authorities mainly determine what goods are produced.

10 **Which of these must be present for international trade to be successful?**

A   a system for raising taxes
B   a system for securing borders
C   a system for exchanging currencies
D   a system for imposing protective tariffs

Solutions

Number	Correct Answer	Explanation
1	**B**	*Explain the relationship between poor soil and deforestation in sub-Saharan Africa. (SS7G2b)*

The correct answer is **Choice** (**B**) **lack of fertile soil**. Deforestation is the cutting down of forests in order to use the land for agricultural purposes. When mass amounts of trees are cut down, a number of consequences naturally result. First, there's less vegetation to hold the soil down. Fertile topsoil is easily blown away by the wind. Second, the natural cycle of life, with vegetation decomposing into the soil, is lost—thus soil fertility is dramatically decreased. Choice (A) is incorrect because pollution has not been caused by deforestation in Africa. Choice (C) is incorrect because the amount of fresh water is not affected by the presence of forests. Choice (D) is incorrect because warm weather in an area would not decrease after deforestation.

Number	Correct Answer	Explanation
2	**C**	*Explain how European partitioning in the Middle East after the breakup of the Ottoman Empire led to regional conflict. (SS7H2a)*

The correct answer is **Choice** (**C**) **regional conflict**. Because various ethnic groups were forced by artificial boundaries to form one country, tensions resulted. For example, the boundaries of present-day Iraq enclose three rival ethnic groups that remain in conflict: Kurd, Sunni, and Shia Muslims. Choice (A) is incorrect because Southwest Asia (Middle East) has not experienced peace as a result of the artificial boundaries. Choice (B) is incorrect because grouping people without regard to their traditional ethnic boundaries will not result in regional wealth. There's no correlation between the two. Choice (D) is incorrect because there's no correlation between physical boundaries of countries and the amount of pollution in an area.

Number	Correct Answer	Explanation
3	**B**	*Describe how land and religion are reasons for continuing conflicts in the Middle East. (SS7H2c)*

The correct answer is **Choice** (**B**) **historical claims to the same land**. Israelis and Palestinians have been involved in an ongoing dispute over land. Choices (A), (C), and (D) are incorrect because the dispute is centered on land claims and religion.

Number	Correct Answer	Explanation
4	**C**	*Locate on a world and regional political-physical map: the Sahara, Sahel, savanna, tropical rain forest, Congo River, Niger River, Nile River, Lake Tanganyika, Lake Victoria, Atlas Mountains, and Kalahari Desert. Note: Even though the text of the standard changed the item does measure. (SS7G1a)* The correct answer is **Choice** (**C**) **C**. The Niger River is a principal river in western Africa that empties into the Gulf of Guinea via a delta in Niger. Choices (A), (B), and (D) are incorrect because they point to the Nile River, the Congo River, and the Zambezi River, respectively.
5	**C**	*Evaluate how the literacy rate affects the standard of living. (SS7G8e)* The correct answer is **Choice** (**C**) **Israel has a higher standard of living**. There is a direct correlation between literacy rates and standards of living. Choice (A) is incorrect because a higher literacy rate does not have anything to do with population size. Choice (B) is incorrect because Israel does have more industry than Afghanistan. Training in these industrial centers may lead to a higher literacy rate. Choice (D) is incorrect because it is the opposite of the correct answer. Higher standard of living—not lower—is the result of higher literacy rates.
6	**B**	*Explain the differences between an ethnic group and a religious group. (SS7G12a)* The correct answer is **Choice** (**B**) **People in a religious group share a common belief system**. Choice (A) is incorrect because sharing the same language is a characteristic of an ethnic group, not a religious group. Choices (C) and (D) are incorrect because religious groups are not defined by political borders and do not necessarily follow the same political leaders.

Number	Correct Answer	Explanation
7	**D**	*Compare the parliamentary democracy of the State of Israel, the monarchy of the Kingdom of Saudi Arabia, and the theocracy of the Islamic Republic of Iran, distinguishing the form of leadership and the role of the citizen in terms of voting rights and personal freedoms. (SS7CG5a)*
		The correct answer is **Choice** (**D**) **parliamentary democracy**. In a parliamentary democracy, the people vote for the legislature, and the legislature chooses the head of government. Choice (A) is incorrect because an autocracy is a government system in which one person holds all power. Choice (B) is incorrect because in a monarchy, the government leader, also known as a monarch, would not be elected or appointed by the legislative body. Instead, a monarch inherits the throne. Choice (C) is incorrect because in a presidential democracy, the people directly vote for the head of government.
8	**C**	*Compare and contrast the federal republic of The Republic of India, the communist state of The People's Republic China, and the constitutional monarchy of Japan, distinguishing the form of leadership and the role of the citizen in terms of voting rights and personal freedoms. (SSCG7a)*
		The correct answer is **Choice** (**C**) **Power is divided between the national government and regional authorities**. In a true federal government, this is how power is divided—between a central power (national government) and lower powers (regional, state, or local governments). Choice (A) is incorrect because with a dictatorship there is no division of power like there is in a federal government. Instead, the dictator has sole authority and control of every aspect of the government. Choice (B) is incorrect because this is not how power is handled in a federal form of government. Instead, this describes how power is organized in a theocracy. Choice (D) is incorrect because in a federal government, power is divided between different levels of government (national/state/local) and not between the various branches of one level of government (executive/judicial/legislative).

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Number	Correct Answer	Explanation
9	**B**	*Compare and contrast the economic systems in Israel, Saudi Arabia, and Turkey. (SS7E5c)*
		The correct answer is **Choice** (**B**) **In Turkey, individual citizens make more business decisions**. In a market economy, it's the consumers who make the decisions about what will and will not be sold by businesses. They do this through their buying power. If something is in demand, businesses will sell it. If it's not in demand, businesses will not sell it. This is what drives the market. Choice (A) is incorrect because a true market economy is driven by consumer choices and not by government intervention. Choice (C) is incorrect because it's the choices of consumers that drive a market economy and not necessarily their cultural traditions. Choice (D) is incorrect because religious authorities do not determine the goods that are produced in a market economy. Consumers decide what is produced by what they choose to buy and not to buy.
10	**C**	*Explain why international trade requires a system for exchanging currencies between nations. (SS7E2b)*
		The correct answer is **Choice** (**C**) **a system for exchanging currencies**. In order for countries using different currencies to develop trading partnerships, there must be a system in place to establish fair rates of exchange for those currencies. Choices (A) and (B) are incorrect because they do not address the issue of international trade. Choice (D) is incorrect because the typical effect of protective tariffs is to limit international trade.