CRCT Study Guide

Grade 7

Georgia

Criterion-Referenced Competency Tests

Reading

English/Language Arts

Mathematics

Science

Social Studies

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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.

The following section of this guide, "About the CRCT," contains an overview of the CRCT and test-taking strategies to review with your students.

– The content tested on the CRCT is based on Georgia's state-mandated content 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.

This document is intended as a student resource. Photocopying is allowed as needed for student use.

Overview of the CRCT

What is the CRCT?

The Grade 7 CRCT is a state-mandated achievement test that measures the subject areas of Reading, English/Language Arts, Mathematics, Science, and Social Studies.

What does the CRCT measure?

The CRCT is designed to measure student acquisition and understanding of the knowledge, concepts, and skills set forth in the state-mandated content 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
– Provide data for use in Georgia's accountability measures and reports.

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. They are measured on their 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 CRCT website **www.gadoe.org/Curriculum-Instruction-and-Assessment/ Assessment/Pages/CRCT.aspx**.

Since the spring of 2006, performance on the Reading portion of the CRCT has been linked to the Lexile® Framework for Reading. Visit **www.gadoe.org/ Curriculum-Instruction-and-Assessment/Assessment/Pages/Lexile-Framework.aspx** for more information on this national reading measure.

Preparing for the CRCT

Test-Taking Strategies

Weeks Before the Test

Set academic goals with students for the upcoming weeks and months (short and long term). Write down and post students' goals where they can be seen at least once a day.

Help students gather study materials ahead of time.

Set up a place to work that is free of distractions.

Build in time to review what was learned in the last study session.

Divide assignments into manageable chunks. Studying for a long time non-stop is not productive!

Model and have students mark the main idea of each paragraph with a pencil as they read. This will help them focus on what they are reading.

Have students ask questions that arise while they are studying and encourage them to find the answers.

At the end of each study session, review what they have learned.

Day Before the Test

Remind students to get a good night's rest.

Remind students that they can talk to a teacher or parent if they are feeling nervous about the test.

Assure students that this test is only one measure of their knowledge.

During the Test

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

Relax by taking slow, deep breaths.

Read the directions carefully. Make sure you understand what you need to do. If you are not sure, ask the teacher.

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 locations on your answer sheet.

Fill in the corresponding circle fully when you choose your answer. Erase any marks outside of the circle.

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

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. This is a chance for you to show what you know. Do the best you can!

Related Links

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

CGPS/GPS Resources:
www.georgiastandards.org

CRCT Content Descriptions:
www.gadoe.org/Curriculum-Instruction-and-Assessment/Assessment/ Pages/CRCT.aspx

CCGPS/GPS Frameworks:
www.georgiastandards.org

Lexile Framework for Reading:
www.gadoe.org/Curriculum-Instruction-and-Assessment/Assessment/ Pages/Lexile-Framework.aspx

The Study Guides are intended to serve as a resource for parents and students. They contain a few activities and short practice quizzes for each content area. They also provide teachers an additional tool for student practice. The standards identified in the Study Guides address a sampling of the state-mandated content standards. For the purposes of day-to-day classroom instruction, teachers should consult the wide array of resources that can be found at **www.georgiastandards.org.**

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 purpose 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:

❶ **Reading Skills and Vocabulary Acquisition**

❷ **Literary Comprehension**

❸ **Information and Media Literacy**

Activities
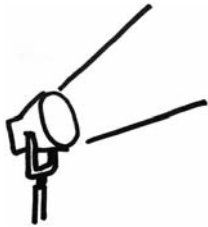
❶ Reading Skills and Vocabulary Acquisition
Common Core Georgia Performance Standards ELACC7.L.4 and ELACC7.L.5

In Grade 7, students need to determine the meanings of unfamiliar and multiple-meaning words using context clues and common Greek and Latin roots and affixes. Students also need to use reference materials to clarify or determine the precise meaning of unfamiliar 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 demonstrate understanding of figurative language (e.g. figures of speech), word relationships, and nuances in word meanings (connotations).

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 × 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 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 each other 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
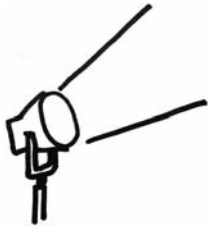
❷ Literary Comprehension

Common Core Georgia Performance Standards ELACC7.RL.1, ELACC7.RL.2, ELACC7.RL.3, ELACC7.RL.4, ELACC7.RL.5, ELACC7.RL.6, and ELACC7.RL.9

How an author crafts a literary text is as significant as what the text literally states. Students must determine themes, provide summaries, and analyze how story elements interact, using explicit textual evidence to support their analyses. Students must also analyze the impact of the author's language and structure on the meaning of a literary text, as well as how the author develops the points of view of different characters. Finally, students should compare and contrast multiple literary texts, such as fictional portrayals versus historical accounts of the same time, place, or character.

The following activities develop skills in this domain:

– For students to analyze the point of view of different characters, they should use a three-column *Character Point of View Sheet*. In the first column of the sheet, there should be statements that express different points of view from the text. In the second column, using specific quotations from the text, students must write which character expresses that point of view. Finally, in the third column, students must describe why this character's point of view is significant in the text and how the author develops it as the story unfolds. Emphasize that students must support any claims they make about a character with concrete textual evidence.

– To help students analyze how story elements interact (characters, plot, setting, theme, and style), have them 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. Finally, have students combine two or more envelopes and make statements about how the elements interact in the story, and how this affects the meaning of the text. 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 analyze the impact of figurative and connotative meanings on literary text, students should analyze stories they read to discover the impact of figurative and connotative meanings in literary text. In addition, students should participate in mini-lessons that focus on the impact of word choice and sound devices such as alliteration and rhyme. Then students should read and listen to sections of the stories and make notes about the author's word choice and style. Finally, students should discuss their observations and try imitating those techniques while writing short stories.

– To help students understand the differences between a fictional portrayal of an event and a historical account, present students with a short realistic fiction story. After reading and discussing the story, ask students to individually or in small groups research the time period and events related to the setting of the story. Students will then present to the class one interesting fact that they discovered about the events or time period. Each group should present a different fact. Record the information on a large sheet of paper that the entire class can see. After the presentations, lead the class in a discussion about how the short story and the real-life facts compare. Discuss what is the same and what is different.

Activities
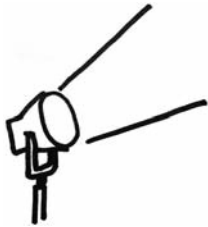
❸ Information and Media Literacy

Common Core Georgia Performance Standards ELACC7.RI.1, ELACC7.RI.2, ELACC7.RI.3, ELACC7.RI.4, ELACC7.RI.5, ELACC7.RI.6, ELACC7.RI.7, ELACC7.RI.8, and ELACC7.RI.9

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 analyze the development of central ideas, the ways in which individuals, events, and ideas in a text interact, as well as the figurative, connotative, and technical meanings of words and phrases. Students must also analyze the structure authors use to organize a text, how authors distinguish their point of view from that of others, and if authors support their arguments and claims with sound reasoning and evidence. Because a great deal of informational texts are in a multi-media format, students must also be able to compare and contrast different media versions of text and determine how each format impacts the portrayal of the subject.

The following activities develop skills in this domain:

–   To help students analyze the interactions between individuals, events, and ideas, students will be asked to examine a historical piece of writing. A good example would be an informational article about the events leading up to World War I. Ask students to map out the series of events that led to the start of the war. Ask students questions such as: *How did the interaction between the events and people contribute to the problems during this time period? How does the author present the series of events? What evidence does the author provide to show what contributed to the start of the war?*

–   To help students analyze the way an author develops an argument throughout a piece of writing and how the author organizes a text, 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 "Central Idea." Remind students that the central idea may be implied rather than directly stated. Next, students should label three more text boxes underneath the Central Idea box, labeled "Supporting Claims," 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 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 will select one of their favorite advertising campaigns of that period to make a presentation. This presentation should include why the advertisement is propaganda, providing examples to justify their reasons.

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 sentence from the passage BEST describes why black pepper and hot chili most likely ended up sharing a common name?**
  A   Widely used to season food in the Americas, the chili has a spicy quality similar to that of black pepper.
  B   Peppercorns from *Piper nigrum* can be black, white, or green.
  C   The word "chili" comes from the Nahuatl (na-WHA-tull) people of southern Mexico and Central America, who called it *chilli* or *xilli*.
  D   These days, both black pepper and chili peppers are used throughout the world.

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 **Which sentence would be LEAST important in a summary of the *Peppercorns from Asia* section?**
  A   Black pepper has been valuable in Europe for a long time.
  B   Black pepper comes from *Piper nigrum*, which is native to India.
  C   *Piper nigrum* comes in different colors, including black, white, and green.
  D   When pepper became too expensive, explorers sought a more direct route to India.

7   **Which of these BEST describes how the author organizes the *Worlds Crossing* section?**

A   The author uses sequential order to demonstrate steps in a complex process.

B   The author uses chronological order to show events in the order they took place.

C   The author describes the most important events first to highlight key information.

D   The author compares and contrasts key ideas to show both sides of an argument.

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**	*Analyze the interaction between events. (ELACC7.RI.3)*
		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, among other things, 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**	*Cite textual evidence to support an analysis. (ELACC7.RI.1)*
		The correct answer is **Choice (A) Widely used to season food in the Americas, the chili has a spicy quality similar to that of black pepper.** This sentence explains that chili and black pepper have a similar spicy quality, so they ended up sharing a common name. Choices (B) and (C) are incorrect because they only describe specific characteristics of each spice. Choice (D) is incorrect because it only refers to the popularity of both spices today.
3	**B**	*Analyze the development of a central idea. (ELACC7.RI.2)*
		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. (ELACC7.RI.6)* 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), and (C) are incorrect. The passage does not try to persuade the reader of any of the ideas presented in these choices.
5	**C**	*Analyze the interaction between events. (ELACC7.RI.3)* 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. The fifth paragraph 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	**C**	*Provide an objective summary. (ELACC7.RI.2)* The correct answer is **Choice** (**C**) ***Piper nigrum* comes in different colors, including black, white, and green.** This is not a key detail in the *Peppercorns from Asia* section. Choices (A), (B), and (D) are incorrect because each of these sentences provides key information regarding the history of black pepper.

Number	Correct Answer	Explanation
7	**B**	*Analyze the structure an author uses to organize a text. (ELACC7.RI.5)*
		The correct answer is **Choice** (**B**) **The author uses chronological order to show events in the order they took place.** This sentence accurately describes the use of chronological order in the Worlds Crossing section. The section begins by describing where pepper comes from, and follows its growing popularity in the world to the point where Europeans seek a cheaper way to buy it. Choice (A) is incorrect because, although the section is in sequential order, it is not to demonstrate steps in a process. Choice (C) is incorrect because the most important events are not described first. Choice (D) is incorrect because nothing is compared or contrasted in this section.
8	**C**	*Cite textual evidence to support an analysis. (ELACC7.RI.1)*
		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 because 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**	*Determine technical meanings. (ELACC7.RI.4)*
		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 do not accurately fit into the context of the sentence.

Number	Correct Answer	Explanation
10	**C**	*Use context as a clue to the meaning of a word. (ELACC7.L.4a)* 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
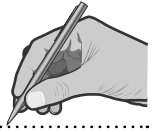
English/Language Arts

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:

❶ Grammar/Sentence Construction

❷ Research/Writing Process

Activities
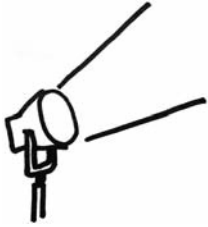
❶ Grammar/Sentence Construction

Common Core Georgia Performance Standards ELACC7.L.1, ELACC7.L.2, and ELACC7.L.3

Within the Grammar/Sentence Construction domain, students understand and control the rules of standard English grammar and usage when writing or speaking. Students understand and can explain how phrases and clauses function in sentences and can use various sentence types to express differing relationships among ideas. They can also recognize and correct misplaced and dangling modifiers. Students are able to control the conventions of standard English punctuation to separate coordinate adjectives with commas. They are able to spell grade-level words correctly. Finally, students are able to express ideas with precise and concise language while recognizing and eliminating wordiness and redundancy.

The following activities develop skills in this domain:

–   To gain an understanding of how dangling modifiers or misplaced modifiers can interfere with communication, students should analyze the sentences below. In pairs, the students should read the sentences to each other and imagine the weird situations that result from the errors. After students have read all six sentences, they should briefly review the concept that a modifier must be placed carefully so that it clearly applies to the word or phrase that it modifies. In most cases, a modifier should be placed next to whatever it modifies. Finally, partners should work together to rewrite the sentences, rewording them to correct any dangling or misplaced modifiers.

–   *Running through the woods, a slippery stone tripped me.*
–   *Old and dilapidated, the baby was sleeping in a playpen.*
–   *The robbery victim was found tied to a chair by police.*
–   *While watching the parade, a large helium balloon hit a lamppost.*
–   *Famous for potholes and broken pavement, I ride my bike down the alley.*
–   *Fierce, beautiful, and wild, Mr. Johnson took many photos of the lions.*

–   To become proficient at using and punctuating a series of adjectives before a noun, students need to understand that the adjectives can either be coordinate or cumulative. Coordinate adjectives are adjectives in a series that separately modify the same noun, as for example in, "the large, colorful tablecloth." Both "large" and "colorful" modify tablecloth separately. They can be rearranged as "the colorful, large tablecloth" and still make sense. Cumulative adjectives, however, do not modify the noun separately. In the case of cumulative adjectives, the noun closest to the noun creates a single unit, as for example in "lace tablecloth." In the phrase "large lace tablecloth" then, "large" modifies the cumulative unit of "lace tablecloth." As a check, try switching the adjectives around again. Clearly the phrase "lace large tablecloth" is awkward and does not seem to make sense. That is because

these adjectives are cumulative. Once the adjectives have been identified as coordinate or cumulative, they are easy to punctuate. Coordinate adjectives should be separated by commas but cumulative adjectives do not need commas, as in "large, colorful tablecloth" or "large lace tablecloth." Another trick students can use is to place "and" between the adjectives. If the phrase makes sense, the adjectives are coordinate and need a comma, as in "the large and colorful tablecloth." If the phrase does not make sense, as in "the large and lace tablecloth," the adjectives are not coordinate and therefore no comma is needed. Students can practice with the following items. They should write "Coordinate" before each set of coordinate adjectives. They should write "Cumulative" before each set of cumulative adjectives.

1. _____ *black leather jacket*
2. _____ *small tidy office*
3. _____ *red cotton shirt*
4. _____ *polite skillful worker*
5. _____ *valuable antique car*
6. _____ *beautiful friendly host*

After students have identified the adjectives above as "coordinate" or "cumulative," they will punctuate the phrases correctly. They should keep in mind that coordinate adjectives should be separated by commas. However, cumulative adjectives should not be separated by commas.

Activities
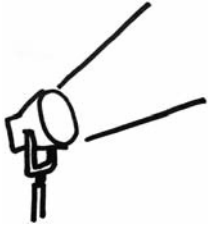
❷ Research/Writing Process

Common Core Georgia Performance Standards ELACC7.W.1, ELACC7.W.2, ELACC7.W.3, ELACC7.W.4, ELACC7.W.7, and ELACC7.W.8

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 practice supplying effective supporting details to support a main point in a piece of writing, students work with partners or a small group with any one of the generalizations listed below. 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.*

– Formal writing, such as is used in reports, research projects, and compositions, is different from informal writing and spoken language. To gain an understanding of how to maintain formal style for reports and other types of formal writing, students should keep in mind that formal writing generally does not contain colloquial (conversational or slang) language or contractions. Formal writing also generally avoids directly addressing the reader. Students can practice with the items on the next page. They should write "Informal" next to any sentence that contains informal language or "formal" next to any sentence that does not contain informal language.

1. _____ *The scientists reported that they've made a lot of new discoveries this past year.*

   _____

2. _____ *Most students believe that the school should increase the time between classes.*

   _____

3. _____ *You should keep in mind that many students participate in afterschool activities.*

   _____

4. _____ *Plus, studies have shown you have tons of energy when you exercise regularly.*

   _____

5. _____ *The principal asked teachers to limit the amount of weekend homework.*

   _____

6. _____ *I'm really pumped about your idea to start a school newspaper next year.*

   _____

After students have identified the sentences above as "formal" or "informal," they will rewrite the informal sentences on the line below each sentence, correcting areas of informal language.

Practice Quiz

1 **Which of these correctly explains how the underlined words function in the sentence?**

> Mrs. Wilder gave the group leaders a sheet of instructions for completing the project.

A   as the direct object
B   as the indirect object
C   as an independent clause
D   as the subject of the sentence

2 **Which of these is the BEST way to combine these sentences to make the relationship among the ideas clear?**

> Carl enjoyed the new novel by an author named Linda Garvey. It was Linda Garvey's first novel. Carl found the story interesting. He also thought it was very well written.

A   Carl enjoyed Linda Garvey's first novel, which he thought was interesting and well-written.
B   Carl found Linda Garvey's first novel enjoyable, and he found it interesting and well-written.
C   Carl enjoyed Linda Garvey's first novel, which had an interesting story, and it was also well-written.
D   Carl found the new novel, which was Linda Garvey's first novel, to be both interesting and also well-written.

3 **Which of these sentences should be revised to make the relationship among the ideas clear to the reader?**
A   Covered with a thin layer of snow, Diane thought the yard looked like a frosted cake.
B   Impressed by Charlie's hard work, Ms. Jennings recognized him with a special award.
C   Worried about his orchestra audition, Jack found it very difficult to fall asleep last night.
D   At the end of a long week, Dolores finds it relaxing to work in her small flower garden at home.

4 **Which sentence uses commas correctly?**
A   The brave, skillful firefighters worked hard to put out the wildfire.
B   My best friend used to live in that little, brick house across the street.
C   That restaurant is famous for its delicious, homemade pies and cakes.
D   A large, stray dog was found wandering around the neighborhood today.

5 **Which revision of the sentence BEST expresses the ideas without ineffective wordiness?**

> Sam said that he would make an effort and try to remember not to forget to bring all of the required materials that he needed to class.

A Sam said that he would try to remember not to forget to bring the required materials to class.

B Sam said that he would make an effort to remember to bring the materials that he needed to class.

C Sam said that he would try to make an effort to remember to bring the required materials to class.

D Sam said that he would make an effort not to forget to bring the required materials that he needed to class.

6 **Which sentence should be added to the beginning of the paragraph to BEST clarify the author's purpose?**

> Dear Principal Garcia:
>
> As you know, North Hills students currently have thirty minutes to eat lunch. This may sound reasonable, but there are many reasons why half an hour is not enough time. Before going to the lunch room, students must race to their lockers to put away materials and then to the restrooms to wash. With the hallways and restrooms crowded by hundreds of students, this usually takes several minutes. Once in the cafeteria, some students must wait in line up to ten minutes to get their lunches. By this time, students have very little time to eat and no time to relax before returning to class.
>
> Sincerely,
> A Concerned Student

A The students at North Hills Middle School need your help to solve a very serious problem.

B The lunch period at North Hills Middle School is too short and needs to be at least fifteen minutes longer.

C Many students at North Hills Middle School think that our current daily schedule needs to be changed.

D Students at North Hills Middle School are unhappy with the lunch period because they have little time to socialize.

7   **Which of these sentences should be removed from the paragraph because it is not relevant to the topic?**

> ¹Mosquitoes may seem like simple little pests, but they actually have complex systems for finding their prey. ²Mosquitoes have chemical and visual sensors that detect the carbon dioxide given off by mammals and birds as they breathe. ³For many years, people have tried to keep mosquito populations under control. ⁴Additionally, 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 words should be added to sentence 4 to BEST link the ideas in the paragraph?**

> ¹Most people in the world are right handed. ²That means that they use their right hands to write and do most other things that require precise movement. ³However, about one out of every ten people is left handed. ⁴ _____, they naturally use their left hands to write, throw, and perform other similar activities. ⁵Scientists are not sure why some people favor their left hands instead of their right hands. ⁶Unfortunately left-handed people often have to adjust to a world mostly designed for right-handed people.

A   Unlike right-handed people
B   Based on their unique abilities
C   After a long period of special training
D   To be different from right-handed people

9   **Which concluding sentence should be added to the end of the paragraph to BEST support the information presented?**

> 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 **Terrance is writing a research paper on early settlers in Georgia. Which resource would be BEST for locating reliable information about the topic?**
A   a novel about a family that lived in colonial Georgia
B   an online discussion group focused on Georgia history
C   a diary from an early resident of colonial Georgia
D   an article from the newsletter of a Georgia history club

Solutions

| Number	Correct Answer	Explanation
1	**B**	*Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. Explain the function of phrases and clauses in general and their function in specific sentences. (ELACC7.L.1a)*
		The correct answer is **Choice (B) as the indirect object.** In this sentence, *the group leaders* is not the direct object of the verb, therefore choice (A) is incorrect. The direct object is *a sheet of instructions* as it receives the action of the verb *gave.* The underlined phrase *the group leaders* answers the question "to whom" did she give the instructions, therefore, the phrase functions as the indirect option, choice (B). Choice (C) is incorrect because the underlined phrase cannot stand on its own as a sentence and is therefore not an independent clause. The subject of the sentence is *Mrs. Wilder* not the underlined phrase, therefore choice (D) is incorrect.
2	**A**	*Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas. (ELACC7.L.1b)*
		The correct answer is **Choice (A) Carl enjoyed Linda Garvey's first novel, which he thought was interesting and well-written.** Choice (A) combines all of the elements of the sentences into one clear, concise sentence. Choice (B) is incorrect because it needlessly repeats the idea that Carl *found the novel … and he found it.* Choice (C) is incorrect because it needlessly adds an independent clause to express the second part of Carl's thoughts *(and it was …).* Choice (D) is incorrect because it is wordy *(to be)* and repetitious *(both … also).*

Number	Correct Answer	Explanation
3	**A**	*Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. Place phrases and clauses within sentences, recognizing and correcting misplaced and dangling modifiers. (ELACC7.L.1c)* The correct answer is **Choice** (**A**) **Covered with a thin layer of snow, Diane thought the yard looked like a frosted cake.** The sentence in choice (A) is written so that the clause *Covered with a thin layer of snow* appears to be modifying *Diane* rather than *the yard* as the writer intended. By contrast, the modifying clauses in choices (B), (C), and (D) all clearly refer to the subjects *Charlie, Jack,* and *Dolores.*
4	**A**	*Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. Use a comma to separate coordinate adjectives (e.g., It was a fascinating, enjoyable movie but not He wore an old [,] green shirt). (ELACC7.L.2a)* The correct answer is **Choice** (**A**) **The brave, skillful firefighters worked hard to put out the wildfire.** The adjectives *brave* and *skillful* each modify the noun *firefighters* separately, so the adjectives are coordinate and need to be separated by a comma. As a test, the comma can be replaced by the word "and" with the sentence still making sense. The order of the adjectives can also be switched without changing the meaning. Choice (B) is incorrect because *brick house* becomes a unit that is described by the adjective *little,* and therefore needs no comma. The order of the adjectives could not be switched around to *brick, little house* as this would not make sense. Choice (C) is incorrect because *homemade pies and cakes* are a unit modified by the adjective *delicious.* The order of the adjectives could not be switched around to "homemade, delicious pies and cakes" as this would not make sense. Choice (D) is incorrect because *stray dog* is a unit modified by *large.* The order of the adjectives could not be switched around to *stray, large dog* as this would not make sense.

Number	Correct Answer	Explanation
5	**B**	*Use knowledge of language and its conventions when writing, speaking, reading, or listening. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy. (ELACC7.L.3a)*
		The correct answer is **Choice** (**B**) **Sam said that he would make an effort to remember to bring the materials that he needed to class.** Choice (B) revises the sentence to state the ideas as clearly and concisely as possible without wordiness and/or redundancy. Choice (A) is incorrect because the sentence retains redundancy *(remember not to forget).* Choice (C) is incorrect because it retains redundancy *(try to make an effort).* Choice (D) is incorrect because it retains redundancy *(required materials that he needed).*
6	**B**	*Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (ELACC7.W.4)*
		The correct answer is **Choice** (**B**) **The lunch period at North Hills Middle School is too short and needs to be at least fifteen minutes longer.** Choice (B) clearly states the purpose of the letter (to request that the lunch period be extended). Choice (A) is incorrect because the sentence states that the student need help solving a problem but does not identify the problem or propose a solution. Choice (C) is incorrect because the sentence is vague about the problem and the solution. Choice (D) is incorrect because while it identifies the problem vaguely (students are unhappy with the lunch period), it does not give enough detail to identify the purpose of the letter or possible solutions to the problem.

Number	Correct Answer	Explanation
7	**C**	*Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. (ELACC7.W.2b)*
		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	**A**	*Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. (ELACC7.W.2c)*
		The correct answer is **Choice (A) Unlike right-handed people.** Choice (A) relates back to the previous description of right-handed people and ties it to the description of left-handed people given in the sentence. Choice (B) is incorrect because it does not clarify the relationship of the ideas in the previous sentences as they do not describe unique abilities of left-handed people. Choice (C) is incorrect because it does not clarify the relationship of the ideas in the previous sentences as they do not relate to a period of training. Choice (D) is incorrect because it does not clarify the relationship of the ideas in the previous sentences as they do not indicate a desire by left-handed people to be different from right-handed people.

Number	Correct Answer	Explanation
9	**D**	*Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. Provide a concluding statement or section that follows from and supports the information or explanation presented. (ELACC7.W.2f)*
		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	**C**	*Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. (ELACC7.W.8)*
		The correct answer is **Choice** (**C**) **a diary from an early resident of colonial Georgia.** Choice (C) would likely provide relevant and credible information about the topic (*early settlers in Georgia*). Choice (A) is incorrect because novels are fictional, and authors are not always historically accurate in fictional works. Choice (B) is incorrect because information in an online discussion group reflects the beliefs of the posters and is usually not checked for accuracy. Choice (D) is incorrect because the newsletters of clubs and similar organizations are not always thoroughly checked for accuracy and may reflect the biases of the group.
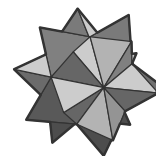
Mathematics

Mathematics

By the end of Grade 7, students will understand how to apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers; solve real-life and mathematical problems using numerical and algebraic expressions and equations; use properties of operations to generate equivalent expressions; draw, construct, and describe geometrical figures and describe the relationships between them. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume; use random sampling to draw inferences about a population. Draw informal comparative inferences about two populations. Investigate chance processes and develop, use, and evaluate probability models.

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

❶ Number and Operations

❷ Geometry

❸ Algebra

❹ Data Analysis and Probability

The Standards for Mathematical Practices are integrated across the four domains.

Mathematical Practices are listed with each grade's mathematical content standards to reflect the need to connect the mathematical practices to mathematical content in instruction.

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding

(comprehension of mathematical concepts, operations, and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently, and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

Activities
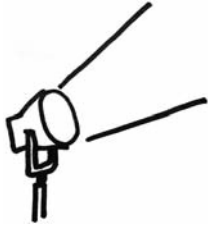
❶ Number and Operations

Common Core Georgia Performance Standards MCC7.NS.1, MCC7.NS.2, MCC7.NS.3, and MCC7.EE.3

Within the Number and Operations domain, students apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers and solve real-life and mathematical problems using numerical and algebraic expressions and equations.

– Students will use the commutative, associative, and distributive properties to simplify and solve expressions.

Review the commutative, associative, and distributive properties.

Commutative – Change the order, e.g., $5 \times 9 \times 6 = 5 \times 6 \times 9$
Associative – Change the grouping, e.g., $(5 \times 9) \times 6 = 5 \times (9 \times 6)$
Distributive – Distribute a common factor, e.g., $(5 \times 9) + (5 \times 6) = 5(9 + 6)$

Give students expressions such as the ones below and challenge them to use at least one of the properties to make the expression easier to solve.

$1.5 \times 0.7 \times 4$ (Could use commutative to change to $1.5 \times 4 \times 0.7$ so multiplying 6×0.7 instead of 1.05×4.)

$(2.5 \times 0.6) \times 5$ (Could use associative to change to $2.5 \times (0.6 \times 5)$ so multiplying 2.5×3 instead of 1.5×5.)

$(0.09 \times 3.6) + (0.09 \times 5.4)$ (Could use distributive to change to $0.09(3.6 + 5.4)$ so multiplying 0.09×9 instead of doing two multiple digit multiplications to get $0.324 + 0.486$.)

Discuss as a class how using the properties of operations made the expressions easier to solve.

– Students will use a number line to understand subtraction as the additive inverse and to find the distance between two rational numbers.

Give each student a number line from ⁻10 to 10 and a set of small counters such as beans.

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⁻10 ⁻9 ⁻8 ⁻7 ⁻6 ⁻5 ⁻4 ⁻3 ⁻2 ⁻1  0  1  2  3  4  5  6  7  8  9  10
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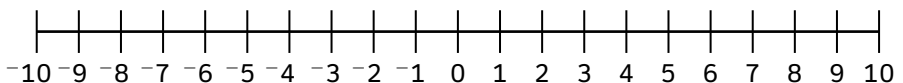
Use the problem ⁻3 − (⁻4) as example and show that subtracting ⁻4 is the same as adding its opposite; 4. Have the students follow along by placing a bean on ⁻3 and then deciding which way to move (subtract sign

has you move to the left on the number line, but the negative in front of the 4 has you switch directions again to the right so it is the same as adding 4 to ⁻3).

Have the students use this technique to solve problems such as the following by rewriting the problem as the additive inverse and then solving.

5 − (⁻1)
⁻6 − 3
8 − 9
⁻2 − (⁻7)

Next, show that the absolute value of the difference between the two numbers is the same as the distance between them on the number line. Give the students two different numbers, such as ⁻6 and 2, and have them place a counter on each number. Have them count the number of spaces between the two numbers (8) and then subtract the two numbers ⁻6 − 2 = ⁻8 and find the absolute value (8). Have them repeat this process with other number pairs.

– 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	

On this day...	On Euler it was...	So in Fahrenheit it was...
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 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:

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

Activities
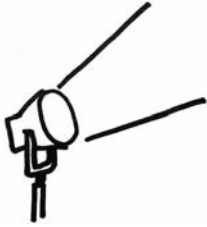
❷ Geometry

Common Core Georgia Performance Standards MCC7.G.1, MCC7.G.2, MCC7.G.3, MCC7.G.4, MCC7.G.5, and MCC7.G.6

Within the Geometry domain, students will draw, construct, and describe geometrical figures and describe the relationships between them and solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

The following activities develop skills in this domain:

– To work with the radius and area of circles, students should explore the real-world situation illustrated by the diagram below. A farmer buys a new system to water crops that uses a rotating steel arm, which sprays water over a circular area. The arm rotates around a center point of an existing square field. The arm will reach exactly to the edges of the square. The square field measures 100 feet along each edge. Students will answer the following questions:

  – *What is the length of the arm?*
  – *What is the area watered by the system?*
  – *What area of the square field will NOT be watered?*
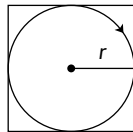
– To establish the relationship between the circumference of a circle, its diameter, and pi, discuss the way a bicycle odometer works. Explain that a bicycle odometer measures how far a bike has traveled by counting how many times the wheel goes around. Thinking of the common measurements of a circle (radius, diameter, circumference), students will describe which measurement represents how far the bike has moved when the wheel has gone around exactly once. Since different bikes have different tire sizes, the odometer has to be set up for the proper tire size or its measurements will be wrong. Discuss why this is the case. Next, give students a chart with columns for *Diameter, Radius, Circumference,* $\frac{Diameter}{Radius}$, and $\frac{Circumference}{Diameter}$. Students will fill out the chart for each of the following common diameters of bicycle tires: 16 in., 20 in., 24 in., 26 in., and 27 in. Students will describe what pattern they see when the diameter is divided by the radius. Repeat for the circumference divided by the diameter.

– To work with measurements of circles, students should gather circumference measurements of common objects using string. They will first brainstorm several circular objects in their surroundings for which they are able to measure circumference using string, such as a tire, lampshade, frying pan, clock, or trash can. Students will explain why it might be difficult to measure the radius or diameter of an object (e.g., hard to pinpoint the center, cannot measure inside a solid, etc.). Give students expressions they can use to find the diameter and radius once they have measured the circumference:

$d = C \div \pi$, where d = diameter, C = circumference, and $\pi \approx 3.14$
$r = d \div 2$, where r = radius and d = diameter

Students will substitute the values for C they measured and find the values for the diameter and radius. They should create a table to record the circumference, diameter, and radius of each object.

– Scale drawings are a geometric concept that links ratios and proportion with objects in the real world. An example of this can be found in scaled drawings of a house.
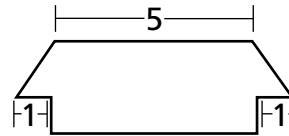
Scale Drawing
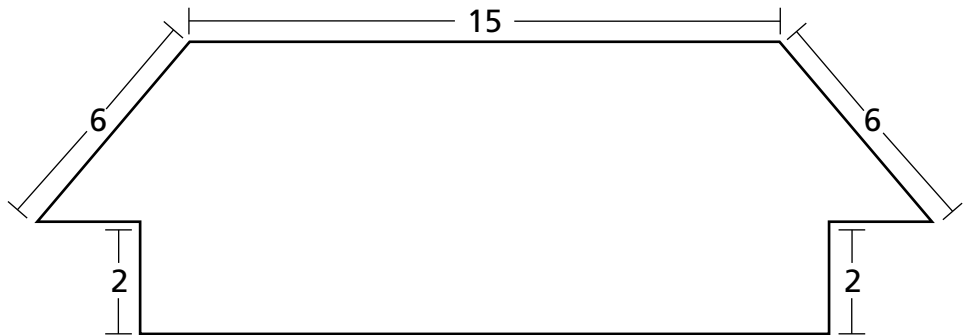
Students should first find the corresponding sides in the two figures, then calculate the ratio of corresponding sides using given lengths. Finally, they should find any missing lengths of sides, using the ratio of corresponding sides for both figures.

Activities
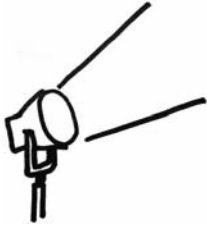
❸ Algebra

Common Core Georgia Performance Standards MCC7.EE.1, MCC7.EE.2, MCC7.EE.4, MCC7.RP.1, MCC7.RP.2, and MCC7.RP.3

The Algebra domain addresses students' ability to use properties of operations to generate equivalent expressions and solve real-life and mathematical problems using numerical and algebraic expressions and equations.

The following activities develop skills in this domain:

– To use variables for unknown quantities in algebraic expressions, students should explore real-life situations that can be expressed mathematically, for instance, the relative age of siblings. Say Ali is 9 years old and Bart is 13. That means that Bart is 4 years older than Ali, which can be expressed as: $n + 4$, where n is Ali's age. Similarly, if Bart's allowance is twice as much as Ali's plus another $5, the expression $2x + 5$, where x is Ali's allowance, would represent Bart's allowance. Brainstorm with students to come up with more examples.

– Students will investigate simple algebraic expressions by solving application problems. Offer students the following scenario: The Camping Club is planning a series of camping trips. The club will provide equipment and organize transportation. Participants must bring enough food and water for the trip and be prepared to carry a backpack with all necessary equipment and food. The club would like to develop formulas to provide members an easy way to figure out how much weight they will need to carry for each trip. Consider the following to create the formulas:

 – Trips between April 15 and September 15 will use warm-weather gear (lighter tent and sleeping bag), which weighs 21 lbs, including the backpack.
  – Trips between September 16 and April 14 will use cold-weather gear (heavier tent and sleeping bag), which weighs 27 lbs, including the backpack.
  – Students should plan to bring 1.75 lbs of food per day (water will be filtered along the way).
  – Trips longer than 4 days will require an extra 7 lbs of gear (extra fuel for cooking and more cooking gear).

  Formulas should allow members to figure out how much weight they will need to carry depending on when the trip occurs and how long it lasts. Students will use the formulas they create to determine how much weight each camper will be carrying at the start of each of the following trips:

  – Second week of August—Black Rock Mountain State Park—2-day trip
  – First week of September—Unicoi State Park—3-day trip

....

- Third week of November—Fort Mountain State Park—4-day trip
- First week of December—Vogel State Park—7-day trip

- Finding and using percents is a frequently used algebraic skill. For a real-world application of this concept, students should imagine they are running a music store and calculate a variety of discounts, taxes, percent increases, and percent decreases. Students will use the following information to answer the questions.

  - A CD costs $16.50. *How much will it cost if you are given a 14% discount?*
  - A customer is buying a portable CD player that costs $65.00, and the state tax is 5%. *How much does the customer owe?*
  - Your sales were $4,500 in July and $4,650 in August. *By what percent did your sales increase from July to August?*
  - Your costs were $4,650 in August and $2,940 in September. *By what percent did your costs decrease from August to September?*

- Understanding when to use proportions, how to set up proportion equations, and how to solve proportion equations are important skills in Grade 7. Students should practice these steps with the following activity.

  - Students should estimate the height of the school flagpole.
  - Students should stand a meter stick on the ground and measure the length of the shadow it casts.
  - While the flagpole is much higher than the meter stick, the proportion between the flagpole (*f*) and its shadow (*fs*) and the proportion between the meter stick (*m*) and its shadow (*ms*) are the same.
  - Students should use this concept to create the equation $\frac{f}{fs} = \frac{m}{ms}$.
  - The unknown variable in the equation is the flagpole (*f*).
  - Student should solve for the length of the flagpole (*f*).

- Most 7th graders are likely to be familiar with percentage discounts given at department store sales. Students will relate this real-world topic to writing, evaluating, and solving equations using one variable.

McMurphy's Third-Annual Sidewalk Sale

Item	Percentage Discount	Sale Price	Original Price
Sandals	15%	$38.25	
T-shirts — plain	30%		
T-shirts — printed	10%		
Year-end Denim Collection — 5 pairs of jeans	25%		

Using the information in this chart from a store's sidewalk sale, students will be able to complete the following questions. Recording their answers in the chart when applicable will aid them in solving later questions.

- Using equations with one variable, describe two ways that the original price for the sandals can be determined.
- During the store's sale, a pair of sandals before taxes cost $38.25. Write an equation that represents this. Then solve to determine the original price.
- A person decides to buy a pair of sandals and a Denim Collection. If she had purchased them before the sale, she would have paid $189.00 before taxes. Using the answer from question two, write equations that allow you to solve for the sale price and the original price of the Denim Collection. Then determine the total price she would have paid for the two items during the sale.
- The original price for printed T-shirts is $5.00 more than the original price for plain T-shirts. A student wants to buy two of each type of T-shirt at the sale price. Write an equation that represents this using only one variable.
- During the sale, the final price for the items in No. 4 comes to approximately $58.00. What are the original prices and sale prices of each type of T-shirt?

Teachers will provide students with one or both of the following real-world scaffolding applications as a culmination of the activity:

- Show students quick ways to figure out sale prices in their minds. For example, at a 25% off sale, divide the original price by 4 to find out how much you'll be saving.
- Have students practice figuring out how much to tip at restaurants using both algebraic equations and mental math (for example, 15%, 18%, and 20% tips).

- To increase awareness of how to represent proportional relationships by equations and understanding and depicting their graphs, 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 there 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? Use your rule to write an equation for finding the number of cookies.

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 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? Use your rule to write an equation for finding the number of cookies.

Students will then describe in their own words the difference between the results in Scenario 1 and Scenario 2. Have the students compare the equations they wrote for each scenario and the graphs. Students should discuss how they are similar and how they are different. Use questioning to guide students' thinking.

Activities
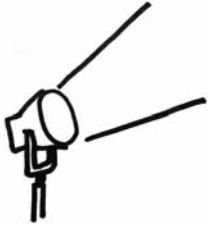
❹ Data Analysis and Probability

Common Core Georgia Performance Standards MCC7.SP.1, MCC7.SP.2, MCC7.SP.3, MCC7.SP.4, MCC7.SP.5, MCC7.SP.6, MCC7.SP.7, and MCC7.SP.8

Within the Data Analysis and Probability domain, students use random sampling to draw inferences about a population and draw informal comparative inferences about two populations. They will investigate chance processes and develop, use, and evaluate probability models.

The following activities develop skills in this domain:

– Finding the likelihood of an event occurring (given that all outcomes are equally likely) is a key skill in determining probability. To develop this skill, students should determine the probabilities of choosing a red shirt in the following situation:

   Step One: A drawer starts with only 1 red shirt.
   Step Two: 4 red shirts and 5 white shirts are added.
   Step Three: 3 red shirts and 3 white shirts are added.
   Step Four: 3 red shirts and no white shirts are added.
   Step Five: No red shirts and 3 white shirts are added.

   Students should explain in their own words:

   – *What the probability of 1 in Step One means*
   – *What the probability of $\frac{1}{2}$ in Step Two means*
   – *Why the probability of choosing a red shirt did not change in Step Three*
   – *Why the probability of choosing a red shirt increased in Step Four*
   – *Why the probability of choosing a red shirt decreased in Step Five*

– Samples are used to estimate answers to real-life questions in all levels of statistical analysis. To understand how sampling works, students should estimate the percentage of vowels in this passage of *The Declaration of Independence,* using the percentage of vowels in:

   – The first line
   – The first two lines
   – The first four lines

T	H	E		D	E	C	L	A	R	A	T	I	O	N		O	F		I
N	D	E	P	E	N	D	E	N	C	E	:	W	H	E	N		I	N	
T	H	E		C	O	U	R	S	E		O	F		H	U	M	A	N	
E	V	E	N	T	S		I	T		B	E	C	O	M	E	S		N	E
C	E	S	S	A	R	Y		F	O	R		O	N	E		P	E	O	P
L	E		T	O		D	I	S	S	O	L	V	E		T	H	E		P
O	L	I	T	I	C	A	L		B	A	N	D	S		W	H	I	C	H
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A	S	S	U	M	E		A	M	O	N	G		T	H	E		P	O	W
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S	P	E	C	T		T	O		T	H	E		O	P	I	N	I	O	N
S		O	F		M	A	N	K	I	N	D		R	E	Q	U	I	R	E
S		T	H	A	T		T	H	E	Y		S	H	O	U	L	D		D
E	C	L	A	R	E		T	H	E		C	A	U	S	E	S		W	H
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P	A	R	A	T	I	O	N	—	T	.		J	E	F	F	E	R	S	O	N

Students should explain, in their own words, why it makes sense that the estimate should get closer to the true percentage as the number of lines sampled increases.

– Students will create tree diagrams to represent compound events, and use them to identify the outcomes.

You are ordering a breakfast combo and have two choices to make:

– You get a bagel with either butter or cream cheese.
– You get either juice or tea.

Make a tree diagram to show the different breakfast combinations you can choose, and then fill in the blanks to finish the following sentence:

There were _____ drink options for each of _____ bagel options, which gave a total of _____ options.

You order juice and have two choices to make:

– You can have orange, apple, or tomato juice.
– You can have small, medium, or large.

Make a tree diagram to show the different choices you can make for size and kind of juice. Then fill in the blanks to finish the following sentence:

There were _____ juice options and _____ size options, which gave a total of _____ options.

At lunch you order a sandwich and have three choices to make:

– You can have either ham or turkey.
– You can have either cheddar cheese or Swiss cheese.
– You can have either mustard or mayonnaise.

Make a tree diagram to show the different combinations you can choose. Then fill in the blanks to finish the following sentence:

There were _____ meat options, _____ cheese options, and _____ condiment options, which gave a total of _____ options.

At dinner you order the daily special and have three choices to make:

– You can have corn, steamed spinach, or carrots.
– You can have French fries, mashed potatoes, or a baked potato.
– You can have chicken, steak, or ham.

Make a tree diagram to show the different dinner combinations you have to choose from, and then fill in the blanks to finish the following sentence:

There were _____ vegetable options, _____ potato options, and _____ meat options, which gave a total of _____ options.

Students should be able to explain how they used their tree diagrams to find the number of options.

– Calculating probabilities of independent events may be used in predicting different kinds of weather for tomorrow based on this forecast:

> *We have a 60% chance of sunshine, a 20% chance of clouds, and a 20% chance of rain. The temperature should be in the low 80s, with a 10% chance of being between 75 and 80 degrees, an 80% chance of being between 80 and 85 degrees, and a 10% chance of being between 85 and 90 degrees.*

Students will assume that the temperature probabilities and the probabilities of sun/cloud/rain are independent and use them to find the probability that tomorrow's weather will be:

1 77 degrees and sunny
2 87 degrees and rainy
3 81 degrees and cloudy

Finally, students choose three weather conditions (a combination of temperature and sun, cloud, rain) that they think will have different probabilities of occurring than those above. Students should use the individual probabilities to explain why they think the compound probability will be different. Then they should find the actual probability.

Practice Quiz

1   **Dottie needs to learn a total of 24 vocabulary words. She has learned 75% of the words.**

   How many of her vocabulary words did she learn so far?
   A   3
   B   6
   C   18
   D   21

2   **Carlos made a scale model of his house. The actual width is 30 feet, and the actual length is 45 feet.**

   If the model has a width of 6 inches, what is the length of his model?
   A   4 inches
   B   5 inches
   C   7 inches
   D   9 inches

3   **A student randomly chooses one pen from a box containing 1 black, 3 red, and 6 blue pens.**

   What is the probability that the student chooses a blue pen?

   A $\frac{1}{6}$

   B $\frac{4}{6}$

   C $\frac{6}{10}$

   D $\frac{6}{4}$

4   **Tammy is 2 years older than twice the age of her brother. The sum of their ages is 17.**

   If *x* represents the age of her brother, which equation represents this situation?
   A $2x + 2 = 17$
   B $2(x + 2) = 17$
   C $x + 2(x + 2) = 17$
   D $x + (2x + 2) = 17$

5 **Look at the cylinder.**
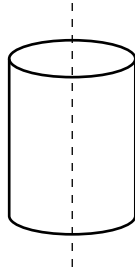
The cylinder is sliced in half, as shown by the dotted line.

Which shape is the cross section that is formed?
A circle
B cone
C rectangle
D sphere

6 **Eva transports tents across a lake using a boat that can hold a maximum of 1,000 pounds. Eva weighs 100 pounds, and each tent weighs 50 pounds. The inequality below can be used to find the number of tents, t, the boat can hold with Eva onboard.**

$50t + 100 \leq 1,000$

What is the maximum number of tents the boat can hold with Eva onboard?
A 17
B 18
C 19
D 22

7 **Bryan bought $3\frac{1}{4}$ pounds of peaches and $4\frac{3}{8}$ pounds of mangos. He paid $0.89 a pound for the peaches and $1.26 a pound for the mangos.**

How much more did Bryan pay for the mangos than the peaches? Round your answer to the nearest cent.
A $2.62
B $2.73
C $5.51
D $8.40

8   **Which decimal is equivalent to $\frac{5}{6}$?**

   A   0.82

   B $0.8\overline{3}$

   C $1.1\overline{6}$

   D   1.20

9   **The total amount of money, *m*, earned by washing cars at a school fund raiser is proportional to the number of cars, *c*, washed at a constant price, *p*.**

   Which equation represents this relationship?

   A $m = c + p$

   B $m = c - p$

   C $m = \frac{c}{p}$

   D $m = cp$

10 **A bakery sells chocolate, vanilla, and strawberry cakes. All of the cakes are filled with either fruit or cream AND topped with either glaze or powdered sugar.**

   How many different types of cakes does the bakery sell?

   A   7

   B   9

   C   12

   D   24

Solutions

Number	Correct Answer	Explanation
1	**C**	*Use proportional relationships to solve multistep ratio and percent problems. (MCC7.RP.3)*

The correct answer is **Choice** (**C**) **18.** To find the answer, write a proportion: $\frac{x}{24} = \frac{75}{100}$. To make the problem easier to solve, reduce $\frac{75}{100}$ to $\frac{3}{4}$. Solve $\frac{x}{24} = \frac{3}{4}$ by multiplying the numerator and denominator by 6: $\left(\frac{3}{4}\right)\left(\frac{6}{6}\right) = \frac{18}{24}$, so $x = 18$. Alternatively, find $\frac{3}{4}$ of 24: $\left(\frac{3}{4}\right)\left(\frac{24}{1}\right) = \frac{72}{4} = 18$. Choice (A) is incorrect, and it seems to indicate a combination of misreading and calculation error. Choice (B) is incorrect, because 6 is the number of words she has *not* learned, and suggests the student misread the problem. Choice (D) is incorrect: 21 is not 75% of 24 and would seem to indicate a calculation error.

Number	Correct Answer	Explanation
2	**D**	*Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. (MCC7.G.1)*

The correct answer is **Choice** (**D**) **9 inches.** Use a proportion to solve the problem: $\frac{30}{45} = \frac{6}{x}$. To make the problem easier to solve, reduce $\frac{30}{45}$ to $\frac{2}{3}$. Then multiply each side by 3x to get $2x = 18$. Divide both sides by 2 to get $x = 9$. Choice (A) is incorrect and is the result of setting up the proportion incorrectly as $\frac{30}{45} = \frac{x}{6}$. Choice (B) is incorrect because it is the scale factor used, not the length of the model. Choice (C) is incorrect and is the result of estimating 45 divided by the given value of 6.

Number	Correct Answer	Explanation
3	**C**	*Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. (MCC7.SP.7a)*

The correct answer is **Choice** (**C**) $\frac{6}{10}$**.** There are a total of 10 pens and 6 of them are blue. Choice (A) is incorrect because it shows 1 blue pen chosen from the 6 blue pens. Choice (B) is incorrect because it shows the portion of non-blue pens to blue pens. Choice (D) is incorrect because it shows the ratio of blue pens to non-blue pens.

Number	Correct Answer	Explanation
4	**D**	*Solve word problems leading to equations of the form* p*x* + q = r *and* p*(x* + q*)* = r, *where* p, q, *and* r *are specific rational numbers. (MCC7.EE.4a)*
		The correct answer is **Choice** (**D**) **x** + (**2x** + **2**) = **17.** If *x* is the age of Tammy's brother, then Tammy is twice her brother's age (2*x*) plus two years, or (2*x* + 2). The sum of their ages is 17, which is represented as *x* + (2*x* + 2) = 17. Choice (A) is incorrect because 2*x* + 2 represents only Tammy's age rather than the sum of Tammy's age and her brother's age. Choices (B) and (C) are incorrect because 2(*x* + 2) suggests a misapplication of the distributive property (placing 2 outside the parentheses) when attempting to represent Tammy's age as "2 years older than twice the age of her brother." Choice (B) also fails to represent the sum of their ages.
5	**C**	*Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. (MCC7.G.3)*
		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	**B**	*Solve word problems leading to inequalities of the form* p*x* + q > r *or* p*x* + q < r, *where* p, q, *and* r *are specific rational numbers. (MCC7.EE.4b)*
		The correct answer is **Choice** (**B**) **18.** By subtracting 100 from both sides of the inequality, it becomes $50t \leq 900$, which reduces to $t \leq 18$. Choice (A) is incorrect and results from subtracting the constant and the coefficient of *t* from both sides of the equation before dividing by 50 or by misreading the inequality symbol as *less than* rather than *less than or equal to.* Choice (C) is incorrect and results from mistakenly subtracting the coefficient of *t*, 50. Choice (D) is incorrect and results from mistakenly adding 100 to both sides of the inequality before dividing by 50.

Number	Correct Answer	Explanation
7	**A**	*Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.) (MCC7.NS.3)*
		The correct answer is **Choice (A) $2.62.** It is the difference between the amount paid for the mangos and the peaches. The difference is found by converting the weight of each fruit to a decimal and multiplying by its cost. (Peaches = 3.25 pounds times $0.89; Mangos = 4.38 pounds times $1.26). The next step is to subtract the total cost of the peaches ($2.89) from the total cost of the mangos ($5.51) for a difference of $2.62. Choice (B) is incorrect because the fractions are incorrectly converted to decimals using the numerator for the tenth place and the denominator for the hundredth place. Choice (C) is incorrect because only the cost of the mangos is computed. Choice (D) is incorrect because the total cost of each fruit is added rather than subtracted.
8	**B**	*Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. (MCC7.NS.2d)*
		The correct answer is **Choice (B) $0.8\overline{3}$** because 5 divided by 6 is $0.8\overline{3}$ in which the 3 continually repeats. Choice (A) is incorrect because instead of adding another 0 after the tenths place, the remainder is used for the hundredths place. Choice (C) is incorrect because 6 is divided into 5 one time and then the 5 subtracted from the 6 with the remainder of the division solved correctly. Choice (D) is incorrect because the denominator is divided by the numerator.
9	**D**	*Represent proportional relationships by equations. (MCC7.RP.2c)*
		The correct answer is **Choice (D) *m = cp,*** because the relationship between the total amount of money earned and the number of cars washed can be expressed as *m = cp.* Choices (A), (B), and (C) are incorrect, because the equations do not represent proportional relationships.

Number	Correct Answer	Explanation
10	**C**	*Represent for compound events using methods such as organized lists, tables, and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. (MCC7.SP.8b)*
		The correct answer is **Choice** (**C**) **12.** Multiplication can be used to find the total number of combinations. Since there are three cake options, two filling options, and two topping options, the total number of combinations is $3 \times 2 \times 2 = 12$. Choice (A) is incorrect and results from adding the number of options together instead of multiplying them. Choices (B) and (D) are incorrect and may result from calculation error.
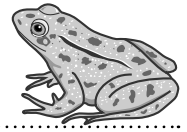
Science

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:

❶ **Cells and Genetics**

❷ **Interdependence of Life**

❸ **Evolution**

The *Characteristics of Science* standards are integrated throughout the domains. These standards are co-requisites for understanding the content of each science domain.

The *Characteristics of Science* standards refer to the understanding of 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. The *Characteristics of Science* standards also refer to understanding how science knowledge grows and changes and the processes that drive those changes.

Activities
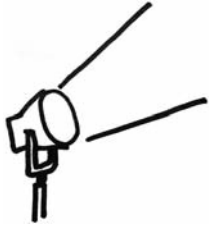
❶ Cells and Genetics
Georgia Performance Standards S7L2 and S7L3

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 and understandings 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 parts of a city. 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
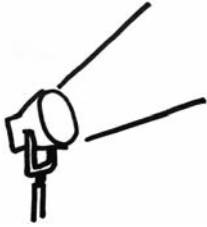
❷ Interdependence of Life
Georgia Performance Standards S7L1 and S7L4

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 and understandings 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, 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. To help students become familiar with the organisms in the biome, students will conduct a census or inventory of the plants they can observe in their biome. Basic research can be done using a textbook, using resources found on the Internet, or in the classroom, while in-depth plant life research can be done in local parks, forests, and backyards. Once students have created their census, they 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 categorize whether the interaction is positive, negative, or neutral for each of the two organisms involved in the relationship, so that students understand whether the relationship is competitive or mutually beneficial. 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
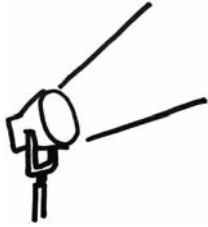
❸ Evolution

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 and understandings 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 trace left by a once-living thing, for example, organisms with parts that have been replaced by inorganic matter such as minerals, or tracks left by the travels of living organisms. A good example is petrified wood, which was once a living tree, but over thousands of years, the wood has been replaced by 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.
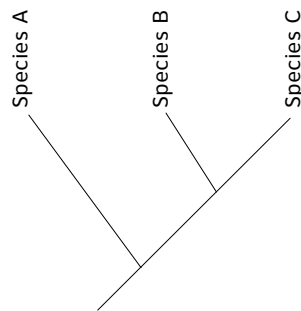
After completion of the cladogram, students will compare their work to classmates' based on the following questions:

– *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.

– To better understand how Earth's species have changed over time, students will examine the discovery of the fossil *Tiktaalik*, 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 does 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 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   nucleus
   B   cytoplasm
   C   chloroplast
   D   cell membrane

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. Choices (A) and (B) are incorrect because deserts do not receive enough precipitation to support the growth of tall trees. 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. (S7L4a)* 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 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	**A**	*Relate cell structures (cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria) to basic cell functions. (S7L2b)*
		The correct answer is **Choice** (**A**) **nucleus.** The nucleus directs all cellular activities through directions held in DNA. Choices (B), (C), and (D) are incorrect because they have distinct functions that are directed by the nucleus.
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

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:

❶ Geography

❷ Government/Civics

❸ Economics

❹ History

Activities
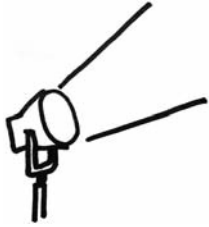
❶ Geography

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, South Sudan, 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:
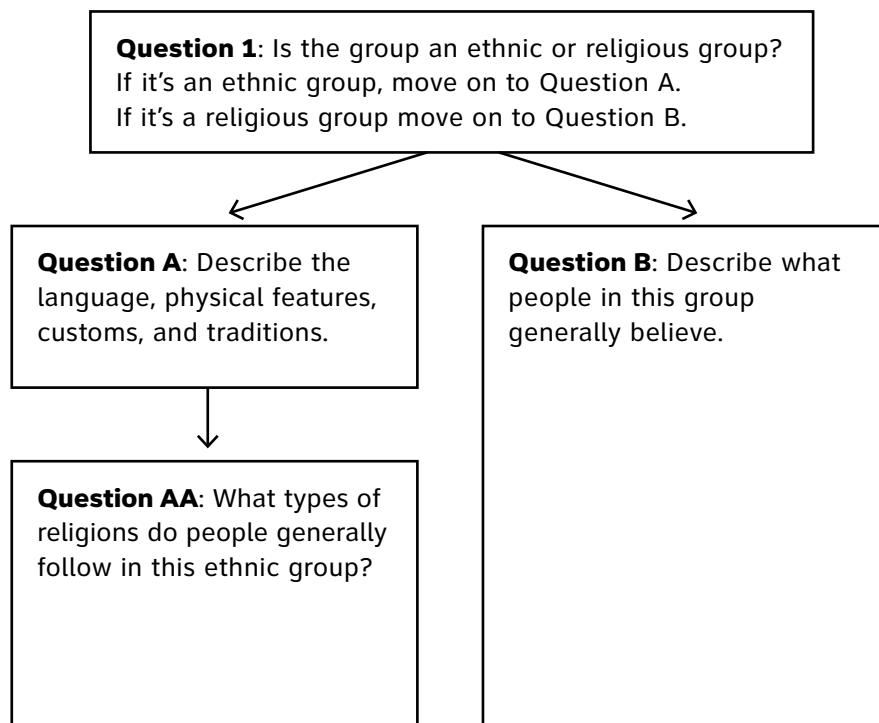
Ethnic Groups	Religious Groups

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.

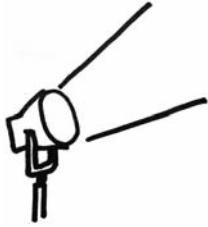**Question AA**: What types of religions do people generally follow in this ethnic group?

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:

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 × 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.

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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:

Only
PRESIDENTIAL

Only
PARLIAMENTARY

BOTH
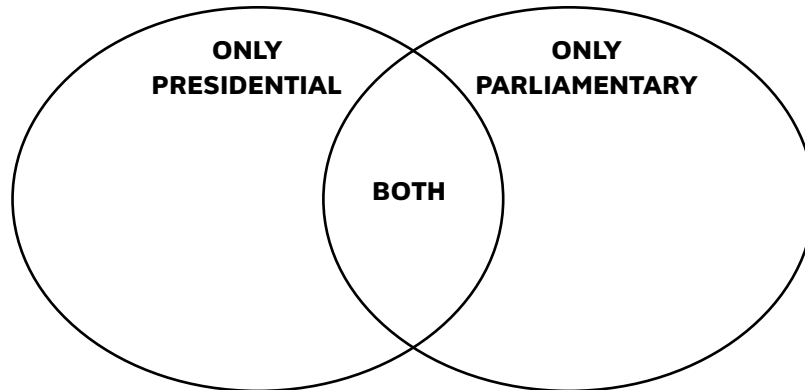
Group students into pairs to research the two predominant forms of democratic governments. Pairs will decide who will research which type, and use library resources, grade-appropriate texts, and age-appropriate Internet sites to gather facts. First, each student will complete one half of the diagram. 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
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 × 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
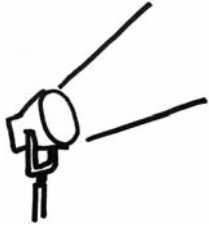
❸ Economics

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 Gross Domestic Product (GDP).

The following activities develop skills in this domain:

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*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 (https://www.cia.gov/library/publications/the-world-factbook/index.html). 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 https://www.cia.gov/library/publications/the-world-factbook/index.html):

– *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.

Activities
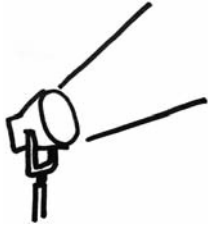
❹ History

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   Southwest Asia
(Middle East)

Both
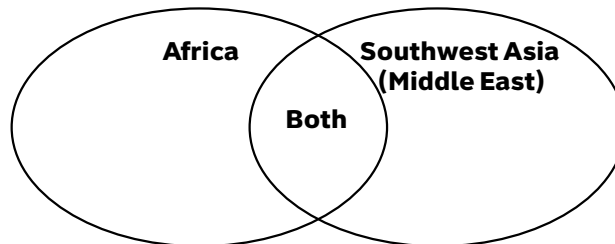
Africa-SS7H1b; Southern and Eastern Asia-SS7H3a

– 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 board 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. Teachers will 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?**
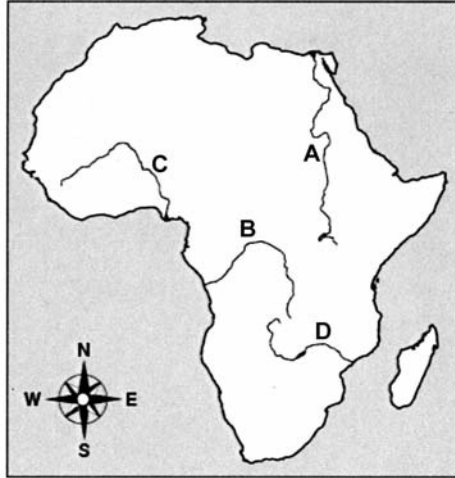
A   A
B   B
C   C
D   D

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.**

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┌──────────┐                                    ┌──────────┐
│  Pure    │  ★          Mixed        ★         │  Pure    │
│ Command  │                                    │  Market  │
└──────────┘  ↑                        ↑        └──────────┘
          Saudi Arabia              Turkey
```

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.
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 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.
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. (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 countries with a higher literacy rate usually have a higher gross domestic product (GDP) than countries with a low literacy rate.
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.