

Grade 5 Mathematics

SAMPLE ITEMS

Introduction

The South Carolina Department of Education provides districts and schools with tools to assist in delivering focused instruction aligned with the South Carolina College- and Career-Ready Standards (SCCCRS). This document contains a set of twenty SC READY test items that have been written to align with the South Carolina College- and Career-Ready Standards. These items were reviewed for content and bias prior to being field tested and approved for release to the public.

Purpose

This document is intended to be a resource for educators; it is not designed to be a practice test for students. The sample items are examples of college- and career-ready assessment items. These items were chosen to reflect the increased rigor of assessing the South Carolina College- and Career-Ready Standards which includes the Mathematical Process Standards. SC READY assesses content standards in a variety of ways. This document does not include all item types or standards.

Item Information Format

Standard Alignment	SCCCR
Standard Description	text from SCCCR
Answer Key	correct answer
Depth of Knowledge	cognitive demand
Estimated Difficulty	estimate based on student responses

Links

South Carolina College- and Career-Ready Standards

<https://ed.sc.gov/instruction/standards-learning/mathematics/standards/>

Norman Webb's Depth-of-Knowledge for the Four Content Areas

<http://www.webbalign.org/Webbs-DOK-Levels-Summary.pdf>

1. A chemical's temperature is 121.346° Fahrenheit. Rounded to the nearest tenth in degrees Fahrenheit, which measure represents the temperature of the chemical?
 - A. 121.0°
 - B. 121.3°
 - C. 121.4°
 - D. 122.0°

SC READY MATH Sample Item

1	Standard Alignment	5.NSBT.4
	Standard Description	Round decimals to any given place value within thousandths.
	Answer Key	B
	Depth of Knowledge	1
	Estimated Difficulty	Medium Difficulty

2. Amanda has a rock that has a mass of 26.745 grams. What is the mass, in grams, of Amanda's rock when rounded to the nearest hundredth?
- A. 26.70
 - B. 26.74
 - C. 26.75
 - D. 27.00

SC READY MATH Sample Item

2	Standard Alignment	5.NSBT.4
	Standard Description	Round decimals to any given place value within thousandths.
	Answer Key	C
	Depth of Knowledge	1
	Estimated Difficulty	Medium Difficulty

3. An equation is shown.

$$3\frac{1}{5} - \frac{9}{20} = \square$$

Which mixed number makes the equation true?

- A. $1\frac{1}{4}$
- B. $2\frac{8}{15}$
- C. $2\frac{3}{4}$
- D. $3\frac{5}{20}$

SC READY MATH Sample Item

3

Standard Alignment 5.NSF.1

Standard Description

Add and subtract fractions with unlike denominators (including mixed numbers) using a variety of models, including an area model and number line.

Answer Key

C

Depth of Knowledge

2

Estimated Difficulty

High Difficulty

4. What is the value of $1\frac{4}{5} + 3\frac{1}{3}$?

A. $4\frac{2}{15}$

B. $4\frac{5}{8}$

C. $5\frac{2}{15}$

D. $5\frac{5}{8}$

SC READY MATH Sample Item

4

Standard Alignment 5.NSF.1

Standard Description

Add and subtract fractions with unlike denominators (including mixed numbers) using a variety of models, including an area model and number line.

Answer Key

C

Depth of Knowledge

1

Estimated Difficulty

High Difficulty

5. Kara had 24 raffle tickets to sell. She sold $\frac{1}{6}$ of her tickets on Monday and $\frac{3}{4}$ of her tickets on Tuesday. What fraction of Kara's total raffle tickets did she sell on Monday and Tuesday?
- A. $\frac{11}{24}$
- B. $\frac{11}{12}$
- C. $\frac{2}{5}$
- D. $\frac{1}{6}$

SC READY MATH Sample Item	Standard Alignment	5.NSF.2
	Standard Description	Solve real-world problems involving addition and subtraction of fractions with unlike denominators.
	5 Answer Key	B
	Depth of Knowledge	2
	Estimated Difficulty	Medium Difficulty

6. Andrea runs a half marathon. She runs for $1\frac{4}{5}$ hours and she walks for $\frac{3}{4}$ hour. How many hours does it take Andrea to complete the half marathon?

- A. $1\frac{7}{9}$
- B. $1\frac{11}{20}$
- C. $2\frac{7}{9}$
- D. $2\frac{11}{20}$

SC READY MATH Sample Item	6	Standard Alignment	5.NSF.2
		Standard Description	Solve real-world problems involving addition and subtraction of fractions with unlike denominators.
		Answer Key	D
		Depth of Knowledge	2
		Estimated Difficulty	High Difficulty

7. Taj has 3 ounces of salt to make different recipes. He puts $\frac{1}{4}$ ounce of the salt in each recipe. If Taj uses all of the salt, how many recipes can he make?
- A. $\frac{1}{12}$
- B. $\frac{3}{4}$
- C. $3\frac{1}{4}$
- D. 12

SC READY MATH Sample Item	7	Standard Alignment	5.NSF.7.b
		Standard Description	Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations. Interpret division of a whole number by a unit fraction and compute the quotient.
		Answer Key	D
		Depth of Knowledge	2
		Estimated Difficulty	High Difficulty

8. A teacher uses $\frac{1}{5}$ of the students in a class to make 3 equal groups. What fraction of the students in the class is in each group the teacher made?
- A. $\frac{1}{15}$
- B. $\frac{1}{8}$
- C. $\frac{3}{5}$
- D. $\frac{5}{3}$

SC READY MATH Sample Item

8	Standard Alignment	5.NSF.7
	Standard Description	Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.
	Answer Key	A
	Depth of Knowledge	2
	Estimated Difficulty	High Difficulty

9. Rachel wrote the two number patterns shown.

- Pattern X starts with the number 3 and follows the rule “Add 5.”
- Pattern Y starts with the number 9 and follows the rule “Add 5.”

Which statement is true about Rachel’s two number patterns?

- A. The number in Pattern X will always be 6 less than the corresponding number in Pattern Y.
- B. The number in Pattern X will always be 6 more than the corresponding number in Pattern Y.
- C. The number in Pattern X will always be 5 more than the corresponding number in Pattern Y.
- D. The number in Pattern X will always be 3 times more than the corresponding number in Pattern Y.

SC READY MATH Sample Item

9	Standard Alignment	5.ATO.3
	Standard Description	Investigate the relationship between two numerical patterns.
	Answer Key	A
	Depth of Knowledge	2
	Estimated Difficulty	Medium Difficulty

10. Richard and Sebastian each make a number pattern. The table shows the first four numbers in Richard's and Sebastian's number patterns.

Two Number Patterns

Term	Richard's Pattern	Sebastian's Pattern
1	7	1
2	10	6
3	13	11
4	16	16

Which two sets of ordered pairs correctly show Richard's and Sebastian's number patterns?

- A. Richard's number pattern: (1, 7) (2, 10) (3, 13) (4, 16)
Sebastian's number pattern: (1, 1) (2, 6) (3, 11) (4, 16)
- B. Richard's number pattern: (7, 1) (10, 6) (13, 11) (16, 16)
Sebastian's number pattern: (1, 7) (6, 10) (11, 13) (16, 16)
- C. Richard's number pattern: (7, 3) (10, 3) (13, 3) (16, 3)
Sebastian's number pattern: (1, 5) (6, 5) (11, 5) (16, 5)
- D. Richard's number pattern: (1, 7) (2, 17) (3, 30) (4, 46)
Sebastian's number pattern: (1, 1) (2, 7) (3, 18) (4, 34)

SC READY MATH Sample Item

10

Standard Alignment 5.ATO.3.b

Standard Description Investigate the relationship between two numerical patterns.
Translate the two numerical patterns into two sets of ordered pairs.

Answer Key A

Depth of Knowledge 2

Estimated Difficulty Medium Difficulty

11. Dominic plots a point on a coordinate grid.

- The x-coordinate is 6.
- The y-coordinate is less than the x-coordinate.

Which ordered pair could be Dominic's point on the coordinate grid?

- A. (5, 6)
- B. (6, 5)
- C. (6, 7)
- D. (7, 6)

SC READY MATH Sample Item

11 Standard Alignment 5.G.1

Standard Description Define a coordinate system.

Answer Key B

Depth of Knowledge 2

Estimated Difficulty Low Difficulty

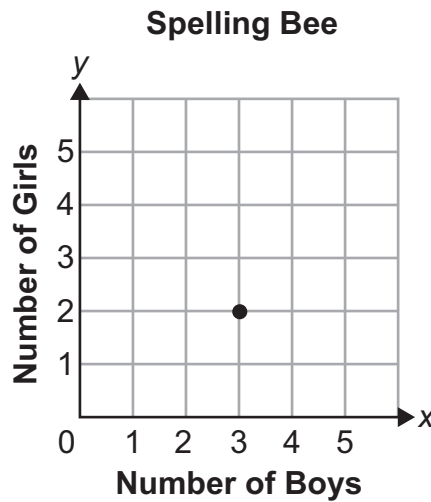
12. Which statement explains how to begin to plot the point at (5, 9) on a coordinate plane?
- A. Start at the origin and move 5 units up.
 - B. Start at the origin and move 5 units to the right.
 - C. Start at the origin and move 9 units to the right.
 - D. Start at the origin and move 9 units to the left.

SC READY MATH Sample Item

12

Standard Alignment	5.G.1.c
Standard Description	Define a coordinate system. The first number in an ordered pair is the x-coordinate and represents the horizontal distance from the origin.
Answer Key	B
Depth of Knowledge	3
Estimated Difficulty	Medium Difficulty

13. The point on the coordinate plane represents the students from Mika's school competing in the spelling bee.



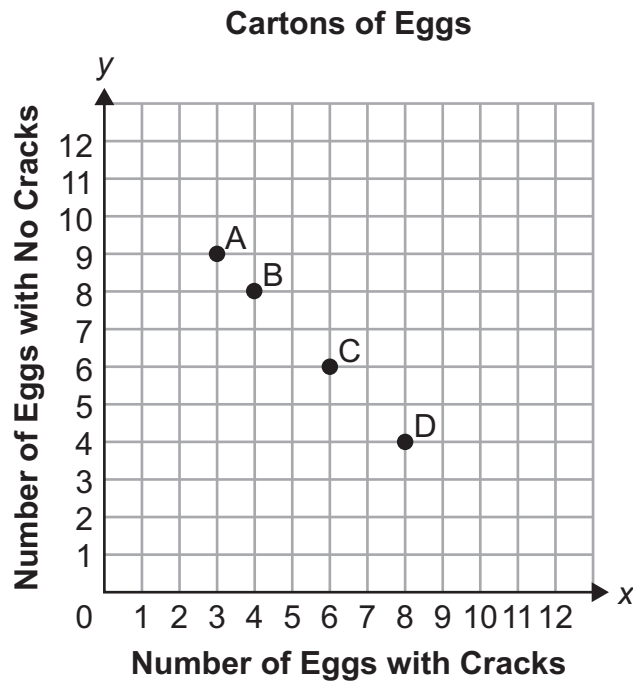
What does the ordered pair (3, 2) represent?

- A. There are 2 boys and 3 girls competing in the spelling bee.
- B. There are 5 boys and 2 girls competing in the spelling bee.
- C. There are a total of 5 students competing in the spelling bee and 3 of the students are girls.
- D. There are a total of 5 students competing in the spelling bee and 3 of the students are boys.

SC READY MATH Sample Item

13	Standard Alignment	5.G.2
	Standard Description	Plot and interpret points in the first quadrant of the coordinate plane to represent realworld and mathematical situations.
	Answer Key	D
	Depth of Knowledge	2
	Estimated Difficulty	Medium Difficulty

14. The coordinate grid shows four points that represent egg cartons at a grocery store.



Which point represents the egg carton with the highest number of eggs with cracks?

- A. point A
- B. point B
- C. point C
- D. point D

SC READY MATH Sample Item

14

Standard Alignment 5.G.2

Standard Description Plot and interpret points in the first quadrant of the coordinate plane to represent realworld and mathematical situations.

Answer Key D

Depth of Knowledge 2

Estimated Difficulty Medium Difficulty

- 15.** A parallelogram has 4 sides and each pair of opposite sides are parallel. A rhombus is a parallelogram in which all the sides are equal in length.

Which statement must be true?

- A. All parallelograms are also rhombuses.
- B. Some rhombuses are not parallelograms.
- C. Each pair of opposite sides of a rhombus are parallel.
- D. All the sides of a parallelogram are equal in length.

SC READY MATH Sample Item

15

Standard Alignment	5.G.3
Standard Description	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.
Answer Key	C
Depth of Knowledge	3
Estimated Difficulty	High Difficulty

16. A polygon is a regular polygon if

- all the sides are the same length, and
- all the angles are the same measure.

Which polygon is a regular polygon?

- A. a rhombus without right angles
- B. a triangle with all sides the same length
- C. a trapezoid with one set of parallel sides
- D. a rectangle with two different side lengths

SC READY MATH Sample Item	16	Standard Alignment	5.G.3
		Standard Description	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.
		Answer Key	B
		Depth of Knowledge	2
		Estimated Difficulty	Medium Difficulty

17. Ramona throws a baseball as far as she can a number of times. All of Ramona's attempts are between 114 and 120 feet. Which possible distance, in **yards**, can Ramona throw a baseball?
- A. 10
 - B. 39
 - C. 117
 - D. 228

SC READY MATH Sample Item

17

Standard Alignment	5.MDA.1
Standard Description	Convert measurements within a single system of measurement: customary (i.e., in., ft., yd., oz., lb., sec., min., hr.) or metric (i.e., mm, cm, m, km, g, kg, mL, L) from a larger to a smaller unit and a smaller to a larger unit.
Answer Key	B
Depth of Knowledge	2
Estimated Difficulty	High Difficulty

18. Karissa’s puppy weighs 6 pounds. How many **ounces** does Karissa’s puppy weigh?

- A. 10
- B. 16
- C. 22
- D. 96

SC READY MATH Sample Item

18

Standard Alignment 5.MDA.1

Standard Description

Convert measurements within a single system of measurement: customary (i.e., in., ft., yd., oz., lb., sec., min., hr.) or metric (i.e., mm, cm, m, km, g, kg, mL, L) from a larger to a smaller unit and a smaller to a larger unit.

Answer Key D

Depth of Knowledge 1

Estimated Difficulty Medium Difficulty

19. A school builds a fence around all of the sides of a playground. Which measurement represents the amount of fence around the playground?
- A. area
 - B. perimeter
 - C. mass
 - D. volume

SC READY MATH Sample Item	Standard Alignment	5.MDA.4
	Standard Description	Differentiate among perimeter, area and volume and identify which application is appropriate for a given situation.
	19 Answer Key	B
	Depth of Knowledge	2
	Estimated Difficulty	Low Difficulty

20. Sabrina fills her fish tank with water. Which type of measurement can be used to describe the amount of water in the fish tank?
- A. volume
 - B. mass
 - C. perimeter
 - D. area

SC READY MATH Sample Item	Standard Alignment	5.MDA.4
	Standard Description	Differentiate among perimeter, area and volume and identify which application is appropriate for a given situation.
	20 Answer Key	A
	Depth of Knowledge	2
	Estimated Difficulty	Medium Difficulty