Teacher Guide

Sample Items

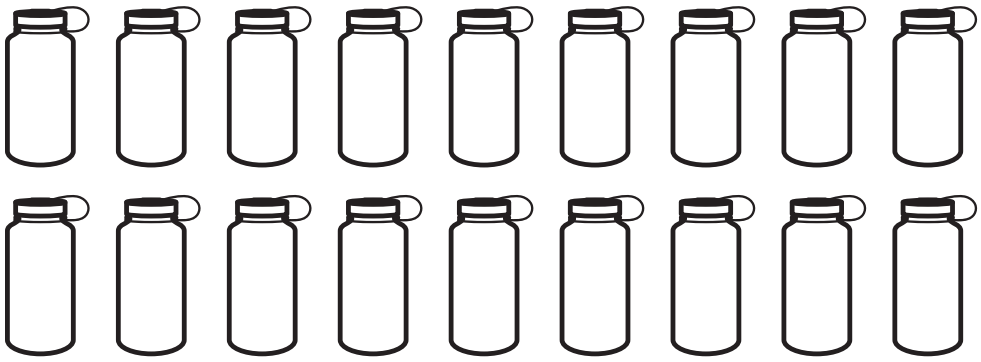
Mathematics

Grades 6 & 7

Mathematics Grade 6

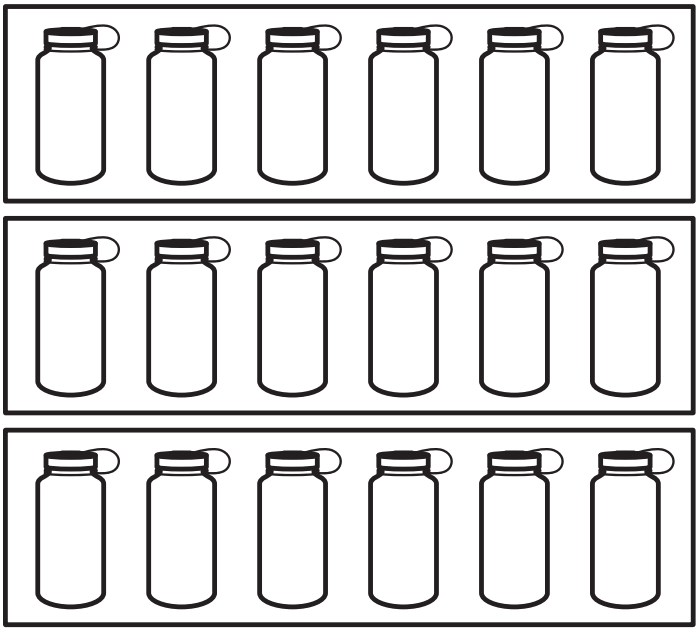
Item 1

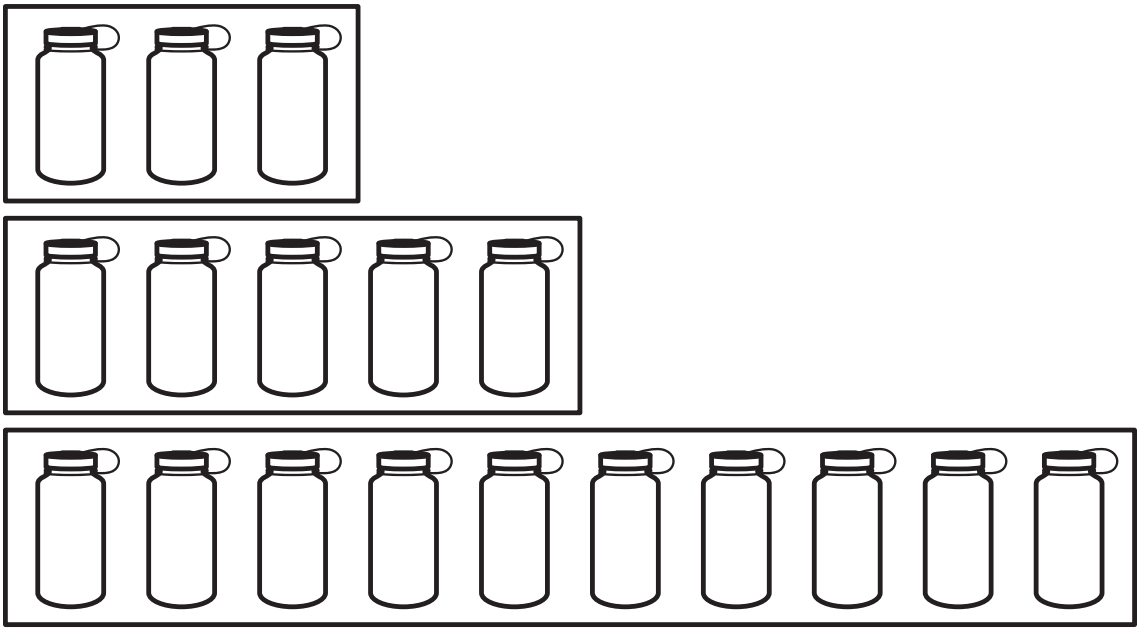
Mrs. Whitaker had 18 water bottles.



Mrs. Whitaker divided the water bottles into 3 equal groups.

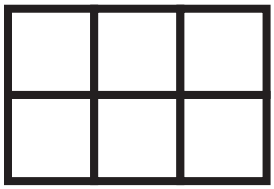
Which picture shows the water bottles divided into 3 equal groups?

O 

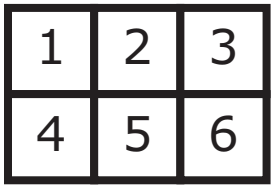
O 

Item 2

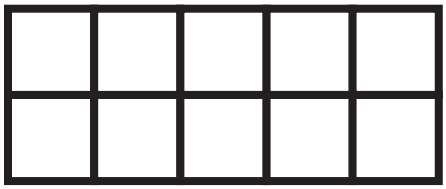
The area of a rectangle is the space inside the rectangle. This rectangle has been divided into unit squares.



You can count the number of unit squares inside a rectangle to find its area.



There are 6 unit squares inside the rectangle, so the area is 6 square units.This is a different rectangle that has been divided into unit squares.



What is the area of this rectangle in square units?

O 3 square units

O 10 square units

Item 3

The mean is the average of a set of data.

This list shows the number of cups of water 5 students drank.

4, 5, 6, 7, 8

To find the mean, first add together the numbers.

$$4 + 5 + 6 + 7 + 8 = 30$$

The total number of cups of water these students drank was 30.

The last step to find the mean is to divide the total number of cups of water by the number of students.

$$30 \div 5 = 6$$

The mean number of cups of water students drank was 6.

This is a different list that shows the number of cups of juice 7 students drank.

1, 1, 1, 2, 2, 3, 4

The total number of cups of juice these students drank was 14.

The last step to find the mean is to divide the total number of cups of juice by the number of students.

Which equation shows the last step to find the mean number of cups of juice students drank?

- $14 \div 2 = 7$
- $14 \div 7 = 2$
- $14 + 7 = 21$

Item 4

Lee painted 4 equal-sized walls in 12 hours.

$$4 : 12$$

Lee painted each wall at the same rate.

How long did it take Lee to paint 1 wall?

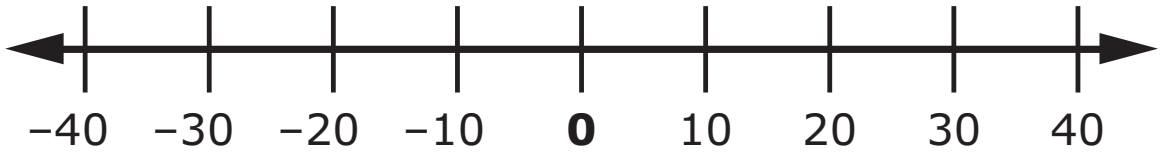
O 3 hours

O 4 hours

O 8 hours

Item 5

This number line shows positive and negative numbers.



The numbers to the right of 0 are positive.

The numbers to the left of 0 are negative.

The students in a class played a game. For incorrect answers, they lost points. Martin's final score was less than 0 points in the game.

Use the small object to show a point on the number line that could represent Martin's final score.

O The student provided the correct answer.

O The student did not provide the correct answer.

Mathematics Grade 7

Item 1

This tally chart shows the number of coins Charlie had in his pocket.

Coins in Charlie's Pocket

Coin	Number of coins
Nickel	𝍸
Penny	𝍸 ||

Which coin did Charlie have more of?

O nickel

O penny

Item 2

When a negative number is multiplied by a negative number, the answer is always a positive number.

$$(-) \times (-) = (+)$$

This is a multiplication problem.

$$(-3) \times (-7) = (___)$$

Start by multiplying 3 by 7 to solve this problem. The answer is 21. Then look at the symbols before the numbers 3 and 7. The answer is positive since both numbers have negative symbols.

$$(-3) \times (-7) = (+21)$$

This is a different multiplication problem.

$$(-9) \times (-4) = (___)$$

What does $(-9) \times (-4)$ equal?

O -36

O -13

O $+36$

Item 3

A variable is a letter or symbol that stands for an unknown quantity.

Andy had 45 books. He had 30 novels. The rest of the books were comic books.

This equation can be used to figure out how many comic books Andy had.

$$30 = 45 - c$$

The variable **c** in this equation stands for the number of comic books Andy had.

How many comic books did Andy have?

O 15 comic books

O 30 comic books

O 75 comic books

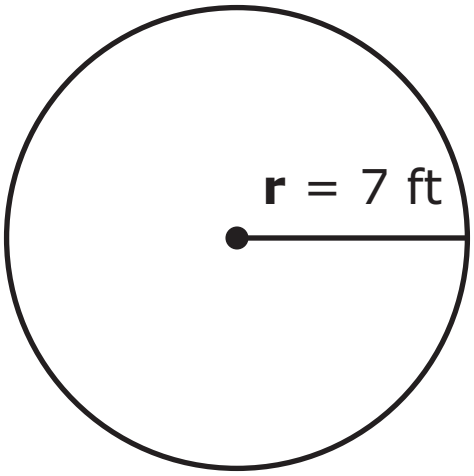
Item 4

This is the formula for finding the area of a circle.

$$\text{Area} = \pi \times r \times r$$

The variable **r** in this formula stands for the radius.

This circle has a radius of 7 feet.



What is the area of this circle in square feet?

- o 7π square feet
- o 14π square feet
- o 49π square feet

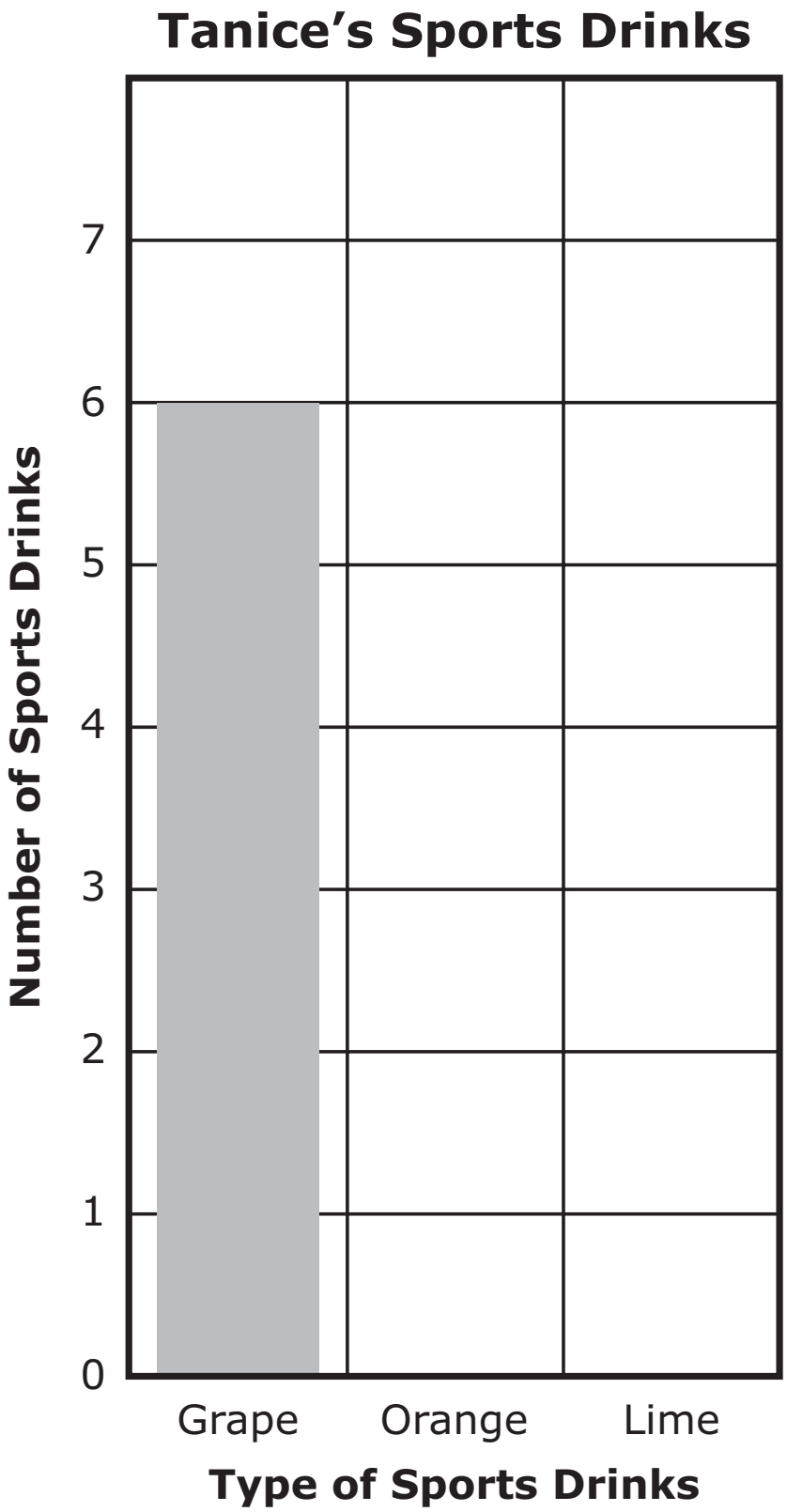
Item 5

This data table shows the numbers of different types of sports drinks in Tanice's refrigerator.

Tanice's Sports Drinks

Type of sports drink	Number of sports drinks
Grape	6
Orange	2
Lime	5

This incomplete bar graph can be used to show the same information as the data table.



The data table and bar graph show that Tanice had 6 grape sports drinks.

The data table shows that Tanice had 2 orange sports drinks.

Two tiles need to be moved into the column labeled “Orange” in the bar graph.

Now use the tiles to show how many lime sports drinks Tanice had. You may not need all of the tiles.

O The student provided the correct answer.

O The student did not provide the correct answer.

msaa
Multi-State Alternate Assessment