

New York NYSTP 2015 Grade 3 Math  
Exam & Answer Key Materials  
Pages 2 - 40



Our Students. Their Moment.

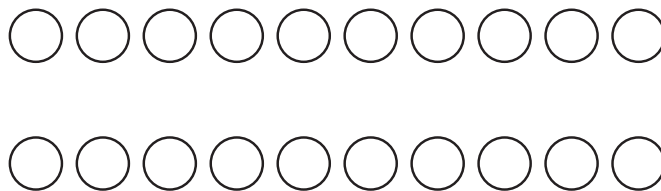
**New York State Testing Program  
Grade 3 Common Core  
Mathematics Test**

**Released Questions**

**July 2015**

**1**

Which expression could be used to find the total number of circles shown below?



- A**  $2 + 20$
- B**  $2 \times 20$
- C**  $2 + 10$
- D**  $2 \times 10$

**Key: D**

**Primary CCLS: 3.OA,1**

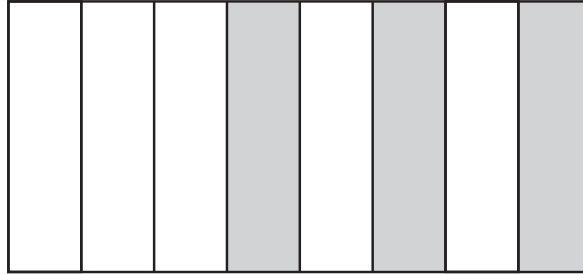
Interpret products of whole numbers, e.g., interpret  $5 \times 7$  as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as  $5 \times 7$ .

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 84%**

**2**

Amar and his friends made a flag for their clubhouse. They divided the flag into equal sections and colored 3 of the sections gray. The flag is shown below.



What fraction of the flag is gray?

- A**  $\frac{1}{3}$
- B**  $\frac{3}{8}$
- C**  $\frac{3}{5}$
- D**  $\frac{5}{8}$

**Key: B**

**Primary CCLS: 3.NF.1**

Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 92%**

**6**

Alexis read 63 pages of a book in seven days. She read an equal number of pages each day. The equation below can be used to find the total number of pages she read each day.

$$63 \div 7 = \underline{\quad? \quad}$$

What is the total number of pages Alexis read each day?

- A** 8
- B** 9
- C** 56
- D** 70

**Key: B**

**Primary CCLS: 3.OA,4**

Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations  $8 \times ? = 48$ ,  $5 = ? \div 3$ ,  $6 \times 6 = ?$ .

**Secondary CCLS: 3.OA,3**

**Percentage of Students Statewide Who Answered Correctly: 81%**

**8**

Selena had 204 stamps in her collection. She bought 47 more stamps. If she gave 38 stamps to her brother, how many stamps does Selena have now?

- A** 119
- B** 195
- C** 213
- D** 289

**Key: C**

**Primary CCLS: 3.OA,8**

Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 77%**

**11**

The tally chart below shows the favorite seasons of Mr. Slater's students.





### OUR FAVORITE SEASONS

Season	Number of Students
Spring	
Summer	
Fall	
Winter	


Which picture graph correctly shows the data?

### OUR FAVORITE SEASONS

**A**





Season	Number of Students
Spring	
Summer	
Fall	
Winter	

#### KEY


 = 2 students

### OUR FAVORITE SEASONS

**C**





Season	Number of Students
Spring	
Summer	
Fall	
Winter	

#### KEY


 = 2 students

### OUR FAVORITE SEASONS

**B**





Season	Number of Students
Spring	
Summer	
Fall	
Winter	

#### KEY


 = 2 students

### OUR FAVORITE SEASONS

**D**

Season	Number of Students
Spring	
Summer	
Fall	
Winter	

#### KEY

 = 2 students

**Key: D**

**Primary CCLS: 3.MD,3**

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one-and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 53%**

144030038\_3

**13**

What is 637 rounded to the nearest ten?

- A** 600
- B** 630
- C** 640
- D** 647

**Key: C**

**Primary CCLS: 3.NBT,1**

Use place value understanding to round whole numbers to the nearest 10 or 100.

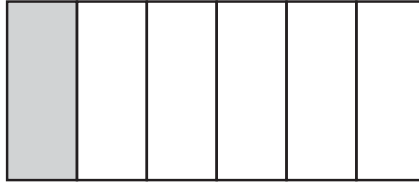
**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 73%**



**14**

Nadia was working on a math problem. She was asked to shade parts of the figure so that  $\frac{5}{6}$  of the figure below was shaded.



What should Nadia do to complete the math problem?

- A** Nadia should shade two more parts of the figure.
- B** Nadia should shade three more parts of the figure.
- C** Nadia should shade four more parts of the figure.
- D** Nadia should shade five more parts of the figure.

**Key: C**

**Primary CCLS: 3.NF,1**

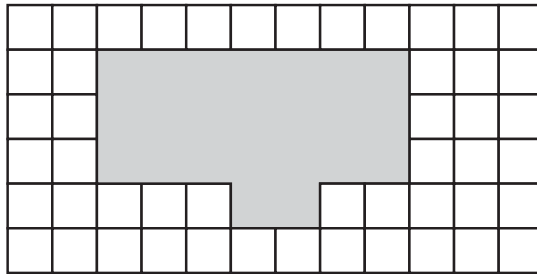

Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .

**Secondary CCLS: 3.G,2**

**Percentage of Students Statewide Who Answered Correctly: 80%**

**16**

What is the area, in square units, of the shaded shape on the grid below?

**KEY** = 1 square unit

- A** 22
- B** 23
- C** 28
- D** 72

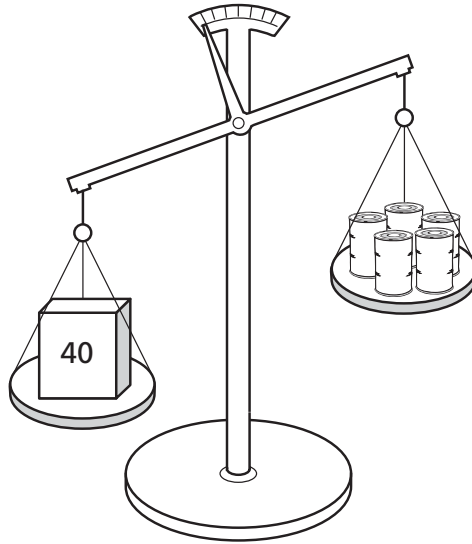
**Key: B****Primary CCLS: 3.MD,7,d**

Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

**Secondary CCLS: None****Percentage of Students Statewide Who Answered Correctly: 66%**

**17**

The picture below shows that one box is heavier than 5 identical cans.



The box has a mass of 40 kilograms. What could be the mass, in kilograms, of 1 can?

- A** 40
- B** 10
- C** 8
- D** 6

**Key: D**

**Primary CCLS: 3.MD,2**

Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.










**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 43%**


**20**

Mr. Stone asked each of his students to name one favorite hobby. He made the picture graph shown below to display the data.

### STUDENTS' FAVORITE HOBBIES

Hobby	Number of Students
Drawing	 
Reading	  
Sports	   

#### KEY

 = 2 students

Which table represents the same data as the picture graph?

**A**

STUDENTS' FAVORITE HOBBIES	
Hobby	Number of Students
Drawing	4
Reading	6
Sports	8

**C**

STUDENTS' FAVORITE HOBBIES	
Hobby	Number of Students
Drawing	2
Reading	3
Sports	4

**B**

STUDENTS' FAVORITE HOBBIES	
Hobby	Number of Students
Drawing	8
Reading	6
Sports	4

**D**

STUDENTS' FAVORITE HOBBIES	
Hobby	Number of Students
Drawing	4
Reading	5
Sports	6

**Key: A**

**Primary CCLS: 3.MD,3**

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one-and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 76%**

134030032\_1

**25**

Which expression has the same value as  $(8 \times 5) + (8 \times 3)$ ?

- A**  $8 \times 8$
- B**  $8 \times 15$
- C**  $16 + 8$
- D**  $13 + 11$

**Key: A**

**Primary CCLS: 3.OA,5**

Apply properties of operations as strategies to multiply and divide. Examples: If  $6 \times 4 = 24$  is known, then  $4 \times 6 = 24$  is also known. (Commutative property of multiplication.)  $3 \times 5 \times 2$  can be found by  $3 \times 5 = 15$ , then  $15 \times 2 = 30$ , or by  $5 \times 2 = 10$ , then  $3 \times 10 = 30$ . (Associative property of multiplication.) Knowing that  $8 \times 5 = 40$  and  $8 \times 2 = 16$ , one can find  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (Distributive property.)

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 74%**

134030020\_3

**28**

Alex sorted 20 toy cars into 4 groups with the same number of cars in each group. Which expression represents the number of toy cars in each group?

- A**  $20 \times 4$
- B**  $20 + 4$
- C**  $20 \div 4$
- D**  $20 - 4$

**Key: C****Primary CCLS: 3.OA,2**

Interpret whole-number quotients of whole numbers, e.g., interpret  $56 \div 8$  as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as  $56 \div 8$ .

**Secondary CCLS: None****Percentage of Students Statewide Who Answered Correctly: 70%**

144030025\_1

**30**

A certain dance class has 42 dancers. The teacher wants to place the class into six equal groups. Which number sentence could be used to find the number of dancers that will be in each group?

- A**  $6 \times \underline{\quad? \quad} = 42$
- B**  $6 \div \underline{\quad? \quad} = 42$
- C**  $42 + 6 = \underline{\quad? \quad}$
- D**  $42 - 6 = \underline{\quad? \quad}$

**Key: A****Primary CCLS: 3.OA,6**

Understand division as an unknown-factor problem. For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.

**Secondary CCLS: None****Percentage of Students Statewide Who Answered Correctly: 74%**

144030044\_3

**31**

Noel read 90 minutes each day for 6 days. Tyra read 60 minutes each day for 8 days. What is the difference, in minutes, between the total amount of time Noel read and the total amount of time Tyra read?

- A** 30
- B** 40
- C** 60
- D** 80

**Key: C**

**Primary CCLS: 3.NBT,3**

Multiply one-digit whole numbers by multiples of 10 in the range 10 – 90 (e.g.,  $9 \times 80$ ,  $5 \times 60$ ) using strategies based on place value and properties of operations.

**Secondary CCLS: 3.MD,1**

**Percentage of Students Statewide Who Answered Correctly: 33%**

144030011\_1

**32**

Mr. Bachu bought 24 pounds of potting soil. Which sentence could describe the potting soil Mr. Bachu bought?

- A** He bought 6 bags that weigh 4 pounds each.
- B** He bought 5 bags that weigh 4 pounds each.
- C** He bought 4 bags that weigh 20 pounds each.
- D** He bought 10 bags that weigh 14 pounds each.

**Key: A**

**Primary CCLS: 3.OA,3**

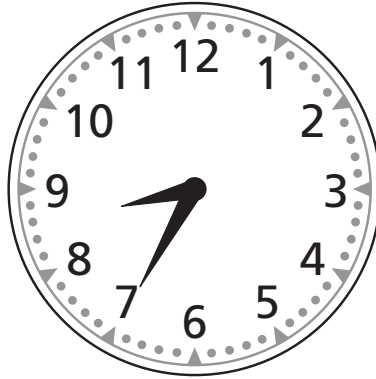
Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 71%**

**33**

Pedro left home this morning at the time shown on the clock below.



Tina left home 20 minutes after Pedro left. Carlos left home 18 minutes after Tina left. At what time did Carlos leave home this morning?

- A** 7:57 a.m.
- B** 8:13 a.m.
- C** 8:38 a.m.
- D** 9:13 a.m.

**Key: D**

**Primary CCLS: 3.MD.1**

Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 48%**



**34**

Mrs. Allen made 8 pitchers of fruit punch for a party. She used 2 liters of water to make each pitcher of fruit punch. How many liters of water did Mrs. Allen use in all?

- A** 4
- B** 6
- C** 10
- D** 16

**Key: D****Primary CCLS: 3.MD,2**

Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

**Secondary CCLS: None****Percentage of Students Statewide Who Answered Correctly: 64%**

**37**

The table below shows the number of tickets for the school play that were sold each day.

**SCHOOL PLAY TICKETS**

Day	Number of Tickets Sold
Thursday	238
Friday	361
Saturday	249
Sunday	328

On which day does the number of tickets sold round to 300, when rounded to the nearest hundred?

- A** Thursday
- B** Friday
- C** Saturday
- D** Sunday

**Key: D**

**Primary CCLS: 3.NBT,1**

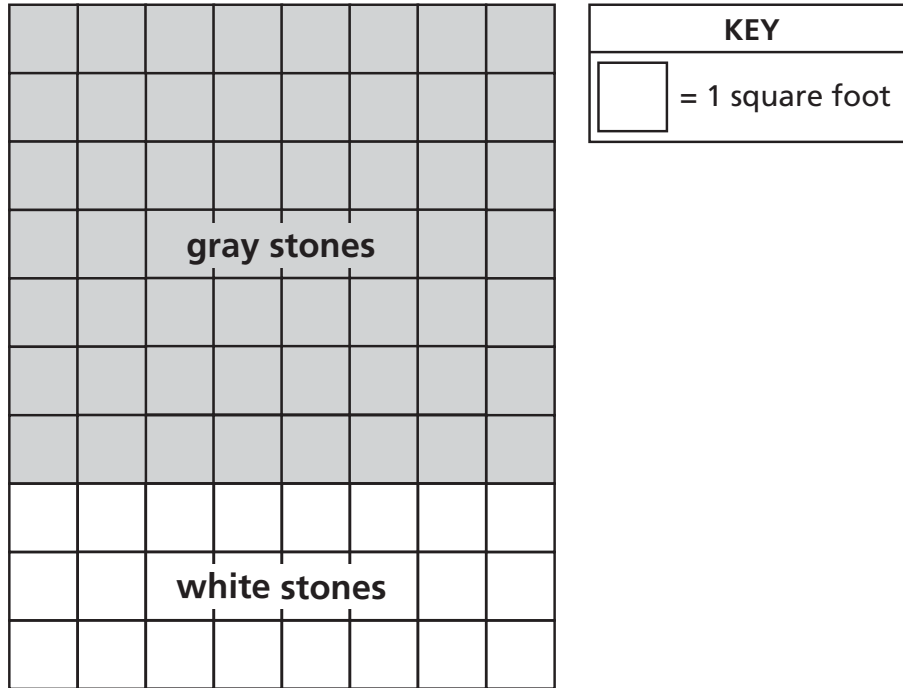
Use place value understanding to round whole numbers to the nearest 10 or 100.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 65%**

**38**

Paul has gray and white paving stones in his patio. A diagram of his patio is shown below.



Which equation can be used to find the total area, in square feet, of Paul's patio?

- A**  $(8 \times 7) + (8 \times 3) = \underline{\quad ? \quad}$
- B**  $(8 + 7) \times (8 + 3) = \underline{\quad ? \quad}$
- C**  $(10 \times 7) + (10 \times 3) = \underline{\quad ? \quad}$
- D**  $(10 + 7) \times (10 + 3) = \underline{\quad ? \quad}$

**Key: A**

**Primary CCLS: 3.MD,7,c**

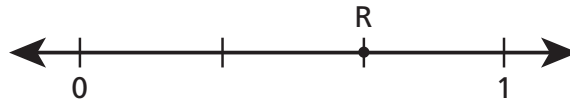
Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths  $a$  and  $b + c$  is the sum of  $a \times b$  and  $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.

**Secondary CCLS: 3.OA,3**

**Percentage of Students Statewide Who Answered Correctly: 77%**

**39**

Which fraction represents the location of point R on the number line below?



**A**  $\frac{1}{3}$

**B**  $\frac{2}{4}$

**C**  $\frac{2}{3}$

**D**  $\frac{3}{4}$

**Key: C**

**Primary CCLS: 3.NF,2,b**

Represent a fraction  $a/b$  on a number line diagram by marking off a lengths  $1/b$  from 0. Recognize that the resulting interval has size  $a/b$  and that its endpoint locates the number  $a/b$  on the number line.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 67%**

**40**

The school store sells pencils in packages of 4. Zoe bought enough packages to have 28 pencils. The equation below can be used to determine the number of packages Zoe bought.

$$4 \times \underline{\quad ? \quad} = 28$$

What is the total number of packages that Zoe bought?

- A** 6
- B** 7
- C** 24
- D** 32

**Key: B**

**Primary CCLS: 3.OA,4**

Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations  $8 \times ? = 48$ ,  $5 = ? \div 3$ ,  $6 \times 6 = ?$ .

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 83%**

**45**

Rick has 15 muffins. He will give each of his three children one muffin each day. The equation below can be used to find the total number of days he can give the muffins to his children before they are gone.

$$15 \div \underline{\quad?} = 3$$

What is the total number of days Rick can give the muffins to his children?

- A** 4
- B** 5
- C** 12
- D** 18

**Key: B**

**Primary CCLS: 3.OA,3**

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 88%**

134030038\_4

**47**

Which number sentence could also be used to find the missing number in the equation  $10 \times \underline{\quad ? \quad} = 60$ ?

**A**  $60 \times 10 = \underline{\quad ? \quad}$

**B**  $60 - 10 = \underline{\quad ? \quad}$

**C**  $60 + 10 = \underline{\quad ? \quad}$

**D**  $60 \div 10 = \underline{\quad ? \quad}$

**Key: D**

**Primary CCLS: 3.OA,6**

Understand division as an unknown-factor problem. For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 78%**

134030058\_3

**48**

Which number sentence is true?

**A**  $\frac{2}{2} = \frac{2}{6}$

**B**  $\frac{4}{6} = \frac{2}{2}$

**C**  $\frac{1}{2} = \frac{3}{6}$

**D**  $\frac{2}{6} = \frac{1}{2}$

**Key: C**

**Primary CCLS: 3.NF,3,b**

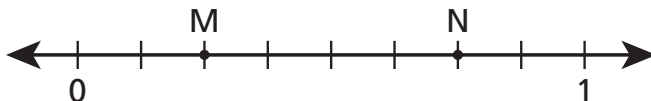
Recognize and generate simple equivalent fractions, e.g.,  $\frac{1}{2} = \frac{2}{4}$ ,  $\frac{4}{6} = \frac{2}{3}$ . Explain why the fractions are equivalent, e.g., by using a visual fraction model.

**Secondary CCLS: None**

**Percentage of Students Statewide Who Answered Correctly: 60%**

**49**

On the number line below, the distance from 0 to 1 represents a whole.



What fraction of the whole represents the distance from point M to point N?

**Answer** \_\_\_\_\_

Complete the number line below so that each part represents  $\frac{1}{4}$  of the distance from 0 to 1.



**Primary CCLS: 3.NF,2,a**

Represent a fraction  $\frac{1}{b}$  on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into  $b$  equal parts. Recognize that each part has size  $\frac{1}{b}$  and that the endpoint of the part based at 0 locates the number  $\frac{1}{b}$  on the number line.

**Secondary CCLS: None**

**Statewide Average Points Earned: 0.92 out of 2**



49

On the number line below, the distance from 0 to 1 represents a whole.



What fraction of the whole represents the distance from point M to point N?

Answer

$\frac{4}{8}$

Complete the number line below so that each part represents  $\frac{1}{4}$  of the distance from 0 to 1.



### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. An accurate fraction of the whole is given for the distance between M and N ( $\frac{4}{8}$ ) in the first half. Then, the number line in the second half is appropriately segmented so that each part represents  $\frac{1}{4}$  of the distance from 0 to 1.

**50**

An art teacher is planning a painting project for her classes. She made the table below to show how much paint she would need for each class.

**PAINT FOR ONE CLASS**

Color	Amount Needed (pints)
Red	4
Yellow	2
Blue	3

What is the total number of pints of paint that will be needed for her five classes?

***Show your work.***

***Answer*** \_\_\_\_\_ pints

**Primary CCLS: 3.OA,3**

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**Secondary CCLS: 3.OA,1**

**Statewide Average Points Earned: 1.17 out of 2**

An art teacher is planning a painting project for her classes. She made the table below to show how much paint she would need for each class.

**PAINT FOR ONE CLASS**

Color	Amount Needed (pints)
Red	4
Yellow	2
Blue	3

What is the total number of pints of paint that will be needed for her five classes?

**Show your work.**

$$\begin{array}{r} 4 \times 5 = 20 \\ 2 \times 5 = 10 \\ 5 \times 3 = 15 \\ \hline 45 \end{array}$$

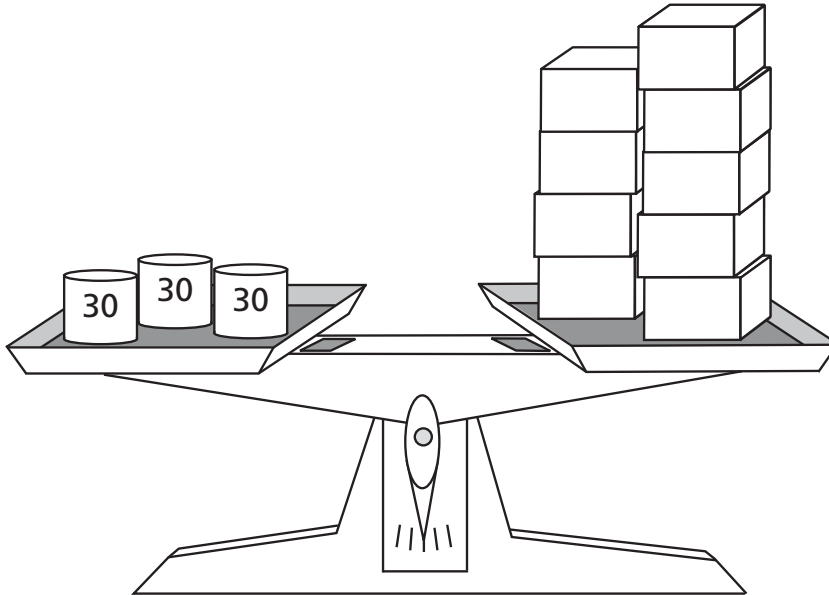
**Answer** 45 pints

**Score Point 2 (out of 2 points)**

This response contains the correct solution (45) and demonstrates a thorough understanding of the mathematical concepts in the task. The pints for each paint color are multiplied by the total number of classes ( $4 \times 5 = 20$ ,  $2 \times 5 = 10$ ,  $5 \times 3 = 15$ ). The sums are added to find the total number of pints needed for the five classes ( $20 + 10 + 15 = 45$ ).

**51**

The picture below shows that 3 cans have the same mass as 9 identical boxes. Each can has a mass of 30 grams.



What is the mass, in grams, of each box?

**Show your work.**

**Answer** \_\_\_\_\_ grams

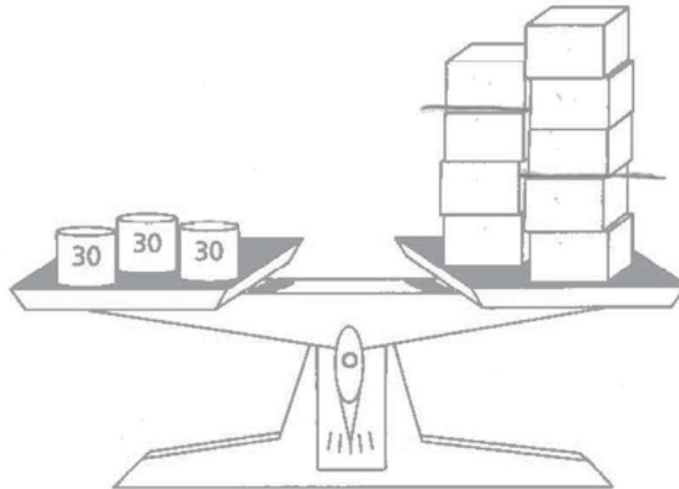
**Primary CCLS: 3.OA,3**

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**Secondary CCLS: None**

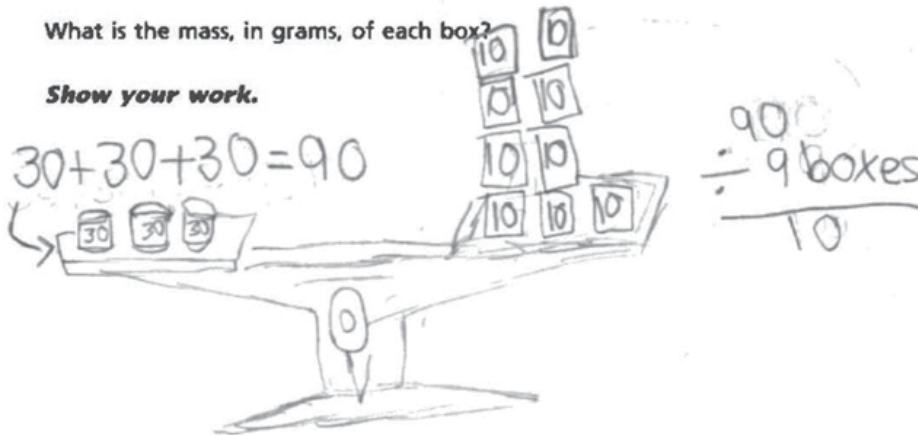
**Statewide Average Points Earned: 1.01 out of 2**

The picture below shows that 3 cans have the same mass as 9 identical boxes.  
Each can has a mass of 30 grams.



What is the mass, in grams, of each box?

*Show your work.*



Answer: 10 grams

### Score Point 2 (out of 2 points)

This response contains the correct solution (10) and demonstrates a thorough understanding of the mathematical concepts embodied in the task. The total mass for the 3 cans is calculated ( $30 + 30 + 30 = 90$ ) and then divided by the number of boxes since both sides have equal mass ( $90 \div 9 = 10$ ) to arrive at the correct solution.

**52**

Ryan played a computer game three times. His score on each of the first two games is shown in the table below.

**COMPUTER GAME SCORES**

Game	Ryan	
1	215	
2	225	
3		
	714	Total

Ryan's total score for all 3 games was 714. What was Ryan's score in game 3?

**Show your work.**

**Answer** \_\_\_\_\_

**Primary CCLS: 3.OA,8**

Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**Secondary CCLS: None**

**Statewide Average Points Earned: 1.13 out of 2**

Ryan played a computer game three times. His score on each of the first two games is shown in the table below.

### COMPUTER GAME SCORES

Game	Ryan
1	215
2	225
3	274
	714
	Total

Ryan's total score for all 3 games was 714. What was Ryan's score in game 3?

**Show your work.**

$$\begin{array}{r}
 215 \\
 225 \\
 + 274 \\
 \hline
 714
 \end{array}$$

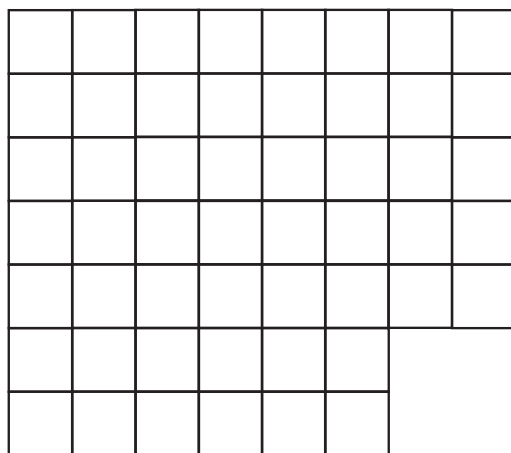
**Answer.** 274


### Score Point 2 (out of 2 points)

This response contains the correct solution (274) and demonstrates a thorough understanding of the mathematical concepts in the task. The response demonstrates use of an inverse operation to find the score of Game 3. The correct solution of 274 is found using addition of the three scores to total 714 ( $215 + 225 + 274 = 714$ ).

**53**

Ms. Chen tiled her kitchen and bathroom floors. The total area of **both** floors she tiled was 92 square feet. The diagram below shows the tiles on the kitchen floor.

**KITCHEN FLOOR**

KEY	
	= 1 square foot

What is the area, in square feet, of the bathroom floor?

**Show your work.**

**Answer** \_\_\_\_\_ square feet

**Primary CCLS: 3.MD,6**

Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

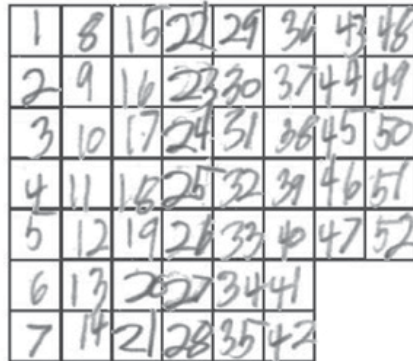
**Secondary CCLS: 3.MD,5,b**


**Statewide Average Points Earned: 0.88 out of 2**



Ms. Chen tiled her kitchen and bathroom floors. The total area of both floors she tiled was 92 square feet. The diagram below shows the tiles on the kitchen floor.

**KITCHEN FLOOR**



KEY	
	= 1 square foot

What is the area, in square feet, of the bathroom floor?

**Show your work.**

$$\begin{array}{r} 92 \\ - 52 \\ \hline 40 \end{array}$$

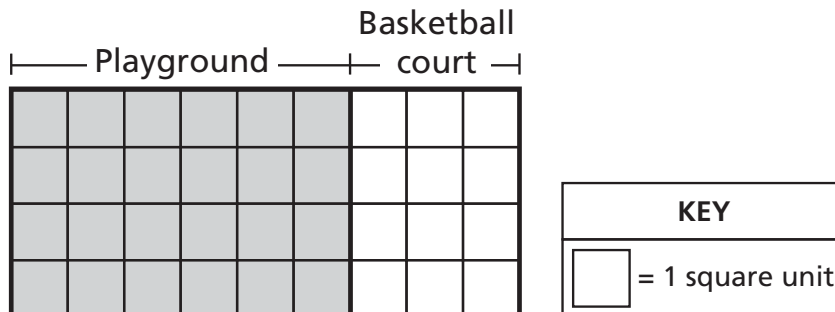
**Answer** 40 square feet

**Score Point 2 (out of 2 points)**

This response contains the correct solution (40) and demonstrates a thorough understanding of the mathematical concepts in the task. The kitchen floor tiles are counted up (1, 2, 3 . . . 50, 51, 52) using the grid spaces to find 52 total kitchen tiles. The kitchen floor area is subtracted from the total area of both floors to find the area of the bathroom floor ( $92 - 52 = 40$ ).

**55**

The grid below shows a playground and a basketball court at a park.



What is the area of the playground?

**Answer** \_\_\_\_\_ square units

What is the total area of both the playground and the basketball court?

**Answer** \_\_\_\_\_ square units

Fill in the blanks to show how the number sentence below can be used to find the total area of the playground and the basketball court.

**Answer**  $(4 \times \underline{\quad}) + (4 \times \underline{\quad}) = 4 \times (\underline{\quad} + \underline{\quad})$

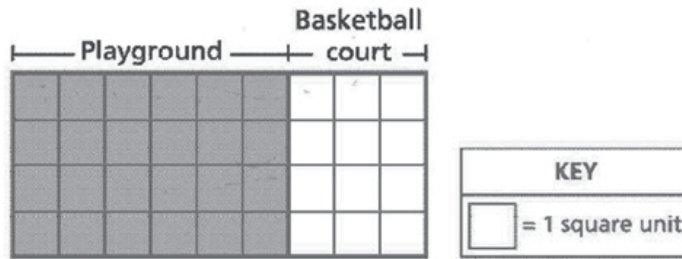
**Primary CCLS: 3.MD,7,c**

Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths  $a$  and  $b + c$  is the sum of  $a \times b$  and  $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.

**Secondary CCLS: None**

**Statewide Average Points Earned: 1.93 out of 3**

The grid below shows a playground and a basketball court at a park.



What is the area of the playground?

**Answer** 24 square units

What is the total area of both the playground and the basketball court?

**Answer** 36 square units

Fill in the blanks to show how the number sentence below can be used to find the total area of the playground and the basketball court.

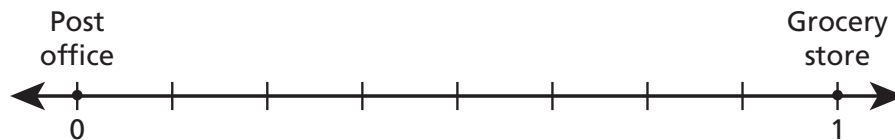
**Answer**  $(4 \times \underline{6}) + (4 \times \underline{3}) = 4 \times (\underline{6} + \underline{3})$

### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The correct area of the playground is provided (24) and the combined area of the playground and basketball court is also correct (36). The number sentence is filled in correctly using the distributive property  $[(4 \times 6) + (4 \times 3) = 4 \times (6 + 3)]$ .

**56**

Amy and Barney live on a road between the post office and the grocery store. The post office and the grocery store are 1 mile apart. The road is represented by the number line below.



- Amy lives  $\frac{2}{8}$  mile from the post office.
- Barney lives  $\frac{3}{8}$  mile from Amy's house.

Draw and label points for Amy's house and Barney's house on the number line. Use labels A for Amy and B for Barney.

How far does Barney live from the post office?

**Answer** \_\_\_\_\_ mile

**Primary CCLS: 3.NF,2,b**

Represent a fraction  $a/b$  on a number line diagram by marking off a lengths  $1/b$  from 0. Recognize that the resulting interval has size  $a/b$  and that its endpoint locates the number  $a/b$  on the number line.

**Secondary CCLS: None**

**Statewide Average Points Earned: 1.42 out of 3**

Amy and Barney live on a road between the post office and the grocery store. The post office and the grocery store are 1 mile apart. The road is represented by the number line below.



- Amy lives  $\frac{2}{8}$  mile from the post office.
- Barney lives  $\frac{3}{8}$  mile from Amy's house.

Draw and label points for Amy's house and Barney's house on the number line. Use labels A for Amy and B for Barney.

How far does Barney live from the post office?

$$\frac{5}{8}$$

Answer  $\frac{5}{8}$  mile

### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. Points A and B are correctly plotted and labeled on the number line. The correct solution of  $\frac{5}{8}$  of a mile is provided for the second part.

## 2-Point Holistic Rubric

### Score Points:

2 Points	<p>A two-point response includes the correct solution to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task.</p> <p>This response</p> <ul style="list-style-type: none"><li>• indicates that the student has completed the task correctly, using mathematically sound procedures</li><li>• contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures</li><li>• may contain inconsequential errors that do not detract from the correct solution and the demonstration of a thorough understanding</li></ul>
1 Point	<p>A one-point response demonstrates only a partial understanding of the mathematical concepts and/or procedures in the task.</p> <p>This response</p> <ul style="list-style-type: none"><li>• correctly addresses only some elements of the task</li><li>• may contain an incorrect solution but applies a mathematically appropriate process</li><li>• may contain the correct solution but required work is incomplete</li></ul>
0 Points*	<p>A zero-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.</p>

\* Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

### 3-Point Holistic Rubric

#### Score Points:

3 Points	<p>A three-point response includes the correct solution(s) to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task.</p> <p>This response</p> <ul style="list-style-type: none"> <li>• indicates that the student has completed the task correctly, using mathematically sound procedures</li> <li>• contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures</li> <li>• may contain inconsequential errors that do not detract from the correct solution(s) and the demonstration of a thorough understanding</li> </ul>
2 Points	<p>A two-point response demonstrates a partial understanding of the mathematical concepts and/or procedures in the task.</p> <p>This response</p> <ul style="list-style-type: none"> <li>• appropriately addresses most, but not all, aspects of the task using mathematically sound procedures</li> <li>• may contain an incorrect solution but provides sound procedures, reasoning, and/or explanations</li> <li>• may reflect some minor misunderstanding of the underlying mathematical concepts and/or procedures</li> </ul>
1 Point	<p>A one-point response demonstrates only a limited understanding of the mathematical concepts and/or procedures in the task.</p> <p>This response</p> <ul style="list-style-type: none"> <li>• may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete</li> <li>• exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning</li> <li>• reflects a lack of essential understanding of the underlying mathematical concepts</li> <li>• may contain the correct solution(s) but required work is limited</li> </ul>
0 Points*	<p>A zero-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.</p>

\* Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

## 2015 2- and 3-Point Mathematics Scoring Policies

Below are the policies to be followed while scoring the mathematics tests for all grades:

1. If a student does the work in other than a designated “Show your work” area, that work should still be scored. (Additional paper is an allowable accommodation for a student with disabilities if indicated on the student’s Individual Education Program or Section 504 Accommodation Plan.)
2. If the question requires students to show their work, and the student shows appropriate work and clearly identifies a correct answer but fails to write that answer in the answer blank, the student should still receive full credit.
3. In questions that provide ruled lines for students to write an explanation of their work, mathematical work shown elsewhere on the page should be considered and scored.
4. If the student provides one legible response (and one response only), teachers should score the response, even if it has been crossed out.
5. If the student has written more than one response but has crossed some out, teachers should score only the response that has **not** been crossed out.
6. Trial-and-error responses are **not** subject to Scoring Policy #5 above, since crossing out is part of the trial-and-error process.
7. If a response shows repeated occurrences of the same conceptual error within a question, the student should **not** be penalized more than once.
8. In questions that require students to provide bar graphs,
  - in Grades 3 and 4 only, touching bars are acceptable
  - in Grades 3 and 4 only, space between bars does **not** need to be uniform
  - in all grades, widths of the bars must be consistent
  - in all grades, bars must be aligned with their labels
  - in all grades, scales must begin at 0, but the 0 does **not** need to be written
9. In questions requiring number sentences, the number sentences must be written horizontally.
10. In pictographs, the student is permitted to use a symbol other than the one in the key, provided that the symbol is used consistently in the pictograph; the student does not need to change the symbol in the key. The student may **not**, however, use multiple symbols within the chart, nor may the student change the value of the symbol in the key.
11. If students are not directed to show work, any work shown will not be scored. This applies to items that do not ask for any work and items that ask for work for one part and do not ask for work in another part.
12. Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted). This is not to be confused with a score of zero wherein the student does respond to part or all of the question but that work results in a score of zero.