MCC3.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.

1. Sally is putting 32 muffins on 8 plates. Each plate has the same number of muffins. What expression shows how many muffins are on each plate?

2. Jon has 24 oranges. He puts 6 oranges in each bag. What expression shows how many bags John needs?

**3.** Write a problem story that matches  $42 \div 7$ .

**4.** Explain why your problem matches  $42 \div 7$ .

**5.** Write a problem story that matches  $27 \div 3$ .

**6.** Explain why your problem story matches  $27 \div 3$ .

7. There are 56 students sitting at 8 tables. Each table has the same number of students. What expression can tell the number of students at each table.

8. Ruben wants to buy 18 tennis balls. There are 3 balls in each can. What expression can tell the number of cans Ruben will need to buy?

MCC3.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.

- 1. Hannah has 3 bags of marbles. In each bag are 6 marbles.
  - a. Draw a picture to match to problem.

- b. How many marbles does Hannah have? \_\_\_\_\_
- 2. There are 16 stamps arranged into 4 equal rows.
  - a. Draw an array to match the problem.

- b. How many stamps are in each row? \_\_\_\_\_
- 3. Five friends are at the school fair. They have 25 ride tickets that they will share evenly. Each friend gets the same number. For 3a–3d, choose Yes or No to indicate whether each number sentence could be used to find the number of tickets each friend gets.

**a.** 
$$25 \times 5 =$$

**b.** 
$$25 \div 5 = \boxed{\phantom{0}}$$

**c.** 
$$5 \times \boxed{} = 25$$

**d.** 
$$5 \div \boxed{} = 25$$

NO

- **4.** Ms Donovan sets up her classroom with 4 rows of desks. Each row has 5 desks.
  - **a.** Draw an array to show how many desks Mrs. Donovan has in her classroom.

- b. How many desks are there in all?
- 5. Sherri has 24 inches of yarn. She cuts the yarn into pieces that are each 6 inches long.
  - a. Write an equation to show how many pieces of yarn Sherri has.
  - **b.** How many pieces of yarn does Sherri have? \_\_\_\_\_
- **6.** Roger's father has 6 pieces of wood. Each piece is 8 inches long. For 6a–6d, choose Yes or No to indicate whether each number sentence could be used to find how many inches of wood Roger's father has.
  - **a.**  $8 \times 6 =$

YES NO

**b.**  $8 \div 6 = \boxed{\phantom{0}}$ 

YES NO

c.  $\times 6 = 8$ 

YES NO

**d.**  $\div$  6 = 8

YES NO

MCC3.OA.5 Apply properties of operations as strategies to multiply and divide.

1. For each expression in 1a–1d, answer Yes or No if the expression is equivalent to the product of 8 and 12.

a. 
$$8 \times (6 + 6)$$

YES NO

**b.** 
$$6 \times (8 + 6)$$

YES NO

**c.** 
$$(4 \times 2) + (6 \times 2)$$

YES NO

**d.** 
$$6 \times (4 + 4) + 6 \times (4 + 4)$$

YES NO

2. a. What is the missing number in the equation?

$$3 \times 10 = \underline{\hspace{1cm}} \times 3$$

b. Explain how you know.

- **3.** a. What is one way to find  $5 \times 2 \times 4$ ?
  - **b.** What is another way to find  $5 \times 2 \times 4$ ?

**4.** If you know that  $6 \times 15 = 75$ , how can you find  $15 \times 6$ ?

5. You want to find  $9 \times 2 \times 3$ . Would you start by finding  $9 \times 2$  or  $2 \times 3$ ? Explain why.

- **6.** Rosie wants to find  $5 \times 12$ . She breaks apart 12 into 10 + 2. Then she writes  $5 \times (10 + 2)$  as  $(5 \times 10) + 2$ .
  - a. What mistake did Rosie make?
  - **b.** What is  $5 \times 12$ ? How do you know?

MCC3.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.

- 1. Jeremy bought 9 water bottles with a \$20 bill. Each water bottle cost \$2. How much change should Jeremy receive?
  - **a.** Write an equation to match the problem. Use the letter *c* to stand for the missing number.
  - b. Solve the problem. Explain how you found the answer.

- 2. Isabel and Hank build birdhouses. Isabel builds 3 birdhouses every day. Hank builds 2 birdhouses every day. How many birdhouses can they build in 5 days?
  - a. Isabel says they can build 15 birdhouses in 5 days. Is her answer reasonable? Explain how you know.
  - **b.** Write an equation to match the problem. Use the letter *b* to stand for the missing number.
  - c. Solve the problem. Explain how you found the answer.

- 3. A box of light bulbs costs \$5. Each box holds 4 light bulbs. How much money will Fran spend to buy 8 light bulbs?
  - **a.** Write an equation to match the problem. Use the letter m to stand for the missing number.
  - b. Solve the problem. Explain how you found the answer.
- 4. Jerome needs 65 balloons for a party. He already has 18 red balloons and 13 blue balloons. How many more balloons does Jerome need?
  - **a.** Write an equation to match the problem. Use the letter *b* to stand for the missing number.
  - b. Solve the problem. Explain how you found the answer.
  - **c.** Explain how you could use an estimate to check that your answer is reasonable.

MCC3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

1. 118

**2.** 731

**3.** 1,552

4. 2,219

**5.** 6,382

**6.** 925

7. Which of these numbers, when rounded to the nearest 10, is 780? Circle all that round to 780.

784

789

773

776

758

8. Explain how to use place value to round 286 to the nearest 10.

### Round each number to the nearest hundred.

**9.** 210

**10.** 2,547

**11.** 1,472

**12.** 889

**13.** 2,149

**14.** 7,975

**15.** Ryan says that 472 rounded to the nearest 10 is 500. Did Ryan make a mistake? Explain.

- 16. Which of these is equal to 360. Circle all that are equal to 360.
  - $4 \times 90$
- $80 \times 4$
- $12 \times 30$
- $40 \times 9$

- 50 × 7
- $6 \times 60$
- $40 \times 8$
- $5 \times 60$

MCC3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

5. What is 
$$438 + 194$$
?

6. What is 
$$703 + 167$$
?

**7. a.** Find the sum. 
$$243 + 239$$
.

#### Subtract.

**12.** What is 
$$487 - 158$$
?

**A** 321

**B** 329

C 331

**D** 339

**13.** What is 901 - 76?

A 825

**B** 835

C 925

**D** 975

- **14.** Lilly says that 512 392 is 280.
  - a. How can Lily use addition to check her answer?
  - b. Explain how you know that Lily's answer is incorrect.
  - c. What is the correct answer?

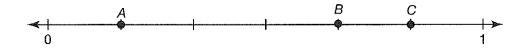
**MCC3.NF.2b** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **b.** Represent a fraction  $\frac{a}{b}$  on a number line diagram by marking off a lengths  $\frac{1}{b}$  from 0. Recognize that the resulting interval has size  $\frac{a}{b}$  and that its endpoint locates the number  $\frac{a}{b}$  on the number line.

1. Bridget divides a number line into eight equal parts.



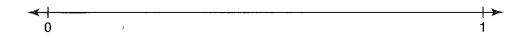
- a. Draw and label a point to show  $\frac{5}{8}$ .
- **b.** Explain how you knew where to draw the point for  $\frac{5}{8}$ .

2. Look at the letters on the number line.

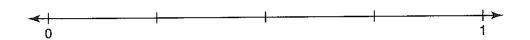


Which letter on the number line shows  $\frac{5}{6}$ ? Explain how you know.

3. Divide the number line between 0 and 1 into four equal parts. Then draw and label a point to show  $\frac{2}{4}$ .



**4. a.** Draw and label a point to show  $\frac{3}{4}$  on the number line.



**b.** Explain how you knew where to draw the point for  $\frac{3}{4}$ .

5. a. Divide the number line between 0 and 1 into three equal parts.



- b. What fraction names the size of each equal part?
- **c.** Draw and label a point at  $\frac{2}{3}$  on the number line.
- 6. a. Divide the number line between 0 and 1 into six equal parts.

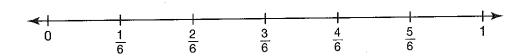


**b.** Explain how you used tick marks to show sixths on the number line.

**c.** Draw and label a point to show  $\frac{3}{6}$  on the number line.

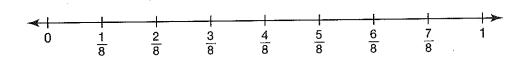
MCC3.NF.3a Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

1. a. Draw and label a point to show  $\frac{1}{2}$  on the number line.



**b.** What fraction with a denominator of 6 is equal to  $\frac{1}{2}$ ? How do you know?

2. a. Draw and label a point to show  $\frac{1}{4}$  on the number line.



**b.** What fraction with a denominator of 8 is equal to  $\frac{1}{4}$ ?

3. Grant shaded a circle to show  $\frac{1}{2}$ .

Grant's Circle



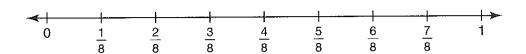
#### **Your Circle**



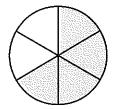
a. The circle on the right shows fourths. Shade it to show a fraction equal to  $\frac{1}{2}$ .

**b.** What fraction with a denominator of 4 is equal to  $\frac{1}{2}$ ?

**4.** a. Draw and label a point to show  $\frac{3}{4}$  on the number line.



- **b.** Explain how you knew where to draw the point for  $\frac{3}{4}$ .
- c. What fraction with a denominator of 8 is equal to  $\frac{3}{4}$ ?
- **5.** Rachel shaded a circle to show  $\frac{4}{6}$ .



**a.** Shade the circle below to show a fraction equal to  $\frac{4}{6}$ .



**b.** What fraction of your circle is shaded?

**6.** Abby and Will each shaded a fraction of a rectangle.

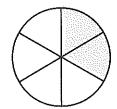
Abby:	
Will:	

- a. What fraction did Abby shade?
- b. What fraction did Will shade?
- **c.** Are the two fractions equal? How do you know?

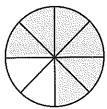
**MCC3.NF.3b** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Recognize and generate simple equivalent fractions, e.g.,  $\frac{1}{2} = \frac{2}{4}$ ,  $\frac{4}{6} = \frac{2}{3}$ . Explain why the fractions are equivalent, e.g., by using a visual fraction model.

1. Which model shows a fraction equivalent to  $\frac{3}{6}$ ?

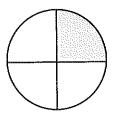
A



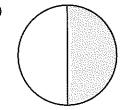
C



В



D



2. a. Which of these fractions are equivalent to  $\frac{6}{8}$ .

 $\frac{4}{6}$ 

<u>8</u> 12  $\frac{2}{4}$ 

 $\frac{3}{4}$ 

<u>9</u> 12

b. Draw models to show why the fractions are equivalent.

**3.** a. Name a fraction that is equivalent to  $\frac{1}{3}$ .

**b.** Explain why the fraction you named is equivalent to  $\frac{1}{3}$ . Use both words and a drawing.

**4. a.** Which of these fractions are equivalent to  $\frac{2}{8}$ .

 $\frac{3}{12}$ 

4/12

 $\frac{1}{4}$ 

 $\frac{2}{4}$ 

 $\frac{3}{6}$ 

b. Draw models to show why the fractions are equivalent.

**5. a.** Which of these fractions are equivalent to  $\frac{1}{2}$ .

 $\frac{4}{6}$ 

 $\frac{3}{6}$ 

 $\frac{2}{3}$ 

2/1

 $\frac{4}{8}$ 

**b.** Use the number line to show why the fractions are equivalent.



- **6. a.** Name a fraction that is equivalent to  $\frac{4}{6}$ .
  - **b.** Explain why the fraction you named is equivalent to  $\frac{4}{6}$ . Use both words and a drawing.
- 7. Miguel ate  $\frac{2}{4}$  of an apple. April ate an equivalent fraction of an apple. Which could be the fraction that April ate?

**A**  $\frac{2}{8}$ 

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

 $c_{\frac{3}{6}}$ 

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

MCC3.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.

1. Use the information in the tally chart to complete the picture graph.

#### **Favorite Sports of Third Graders**

Sport	Tally
Baseball	#
Football	
Soccer	

#### **Favorite Sports of Third Graders**

	-
Baseball	
Football	
Soccer	
<b>Key:</b> s	tands for 2 students

How many more students picked soccer as their favorite sport than baseball? Tell how you know.

The picture graph below shows how the third-grade students at a school get to school each day. Use the picture graph for questions 2 and 3.

#### Ways to Get to School

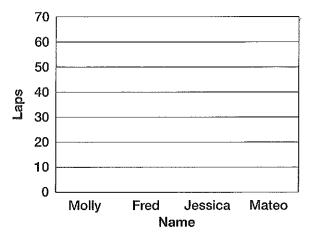
Bus	000000
Bike	O
Walk	00
Car	0000

**Key:** Stands for 6 students

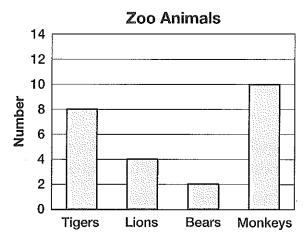
- 2. How many fewer students walk to school than ride in a car?
- 3. How many more students take the bus to school than walk or bike?

**4.** The table shows the number of laps that 4 children swam last week. Use the information in the table to complete the bar graph. Each square on the bar graph stands for 10 laps.

Name	Laps
Molly	50
Fred	40
Jessica	45
Mateo	<b>3</b> 0 <sup>7</sup>



The bar graph below shows the number of some of the animals at a zoo. Use the bar graph for questions 5 and 6.



- 5. How many fewer bears are at the zoo than tigers?
- **6.** Lions and tigers are large cats. How many more large cats are at the zoo than monkeys?