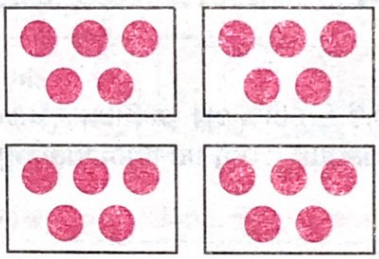
Name _____

4. A bookcase has 4 shelves. Each shelf holds 5 books. How many books are in the bookcase?

Draw counters to model the problem. Then explain how you solved the problem.



20 books; Possible explanation: I drew 5 counters in each group, and then I skip counted by 5s. 5, 10, 15, 20

5. Carlos spent 5 minutes working on each of 8 math problems. Which number sentence shows the total number of minutes Carlos spent on the math problems?

(A) $8 \times 8 = 64$

(B) $7 + 6 = 13$

(C) $5 + 8 = 13$

(D) $5 \times 8 = 40$

6. There are 3 boats on the lake. Six people ride in each boat. How many people ride in the boats? Draw circles to model the problem and explain how to solve it.

18 people

Possible explanations: Students may count the number of circles, add 6 + 6 + 6, or multiply 3 × 6.

Name _____

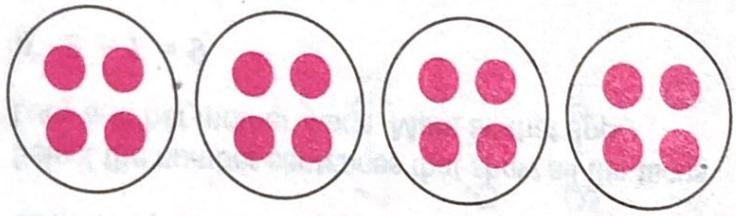
Practice Test

Learning Objective
Interpret whole-number quotients of whole numbers.

1. The coach separated the 18 players at lacrosse practice into 3 different groups. How many players were in each group?

6 players

2. Tyrone took 16 pennies from his bank and put them in 4 equal stacks. How many pennies were in each stack? Show your work.



4 pennies

3. Darius bakes 18 muffins for his friends. He gives each of his friends an equal number of muffins and has none left over.

Part A

Draw a picture to show one way that Darius could have divided the muffins and complete the sentence.

Check students' work. Answers may vary.

Darius gave muffins to Possible answers: 2, 3, 6, 9, or 18 friends.

Part B

Could Darius have divided all of his muffins equally among 4 of his friends? Explain why or why not.

Possible explanation: No, 18 cannot be divided into 4 groups of whole muffins with none left over.

GO ON

Name _____

4. A workbook is 64 pages long. If each chapter is 8 pages long, how many chapters are there?

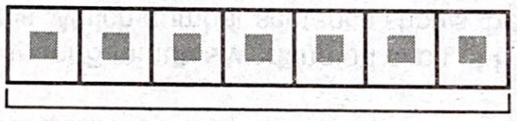
___8___ chapters

5. Elizabeth has 12 horses on her farm. She puts an equal number of horses in each of 3 pens. How many horses are in each pen?

Circle a number that makes the sentence true.

There are [4] 9 36 horses in each pen.

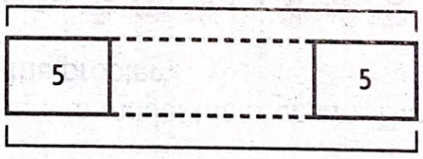
6. There are 7 cars in an amusement park ride. There are 42 people divided equally among the 7 cars. How many people ride in one car?



42 people

___6___ people

7. There were 40 fingers total on the number of gloves Mrs. Edwards knitted. How many gloves did Mrs. Edwards knit?



40 fingers

___8___ gloves

Name _____

Practice Test

Learning Objective
Solve multiplication and division word problems within 100 using drawings and equations.

1. José buys 6 bags of flour. Each bag weighs 5 pounds. How many pounds of flour did José buy?

   ___30___ pounds

2. Marissa is buying a new rug. The rug is 8 feet long and 4 feet wide. What is the area of the rug?

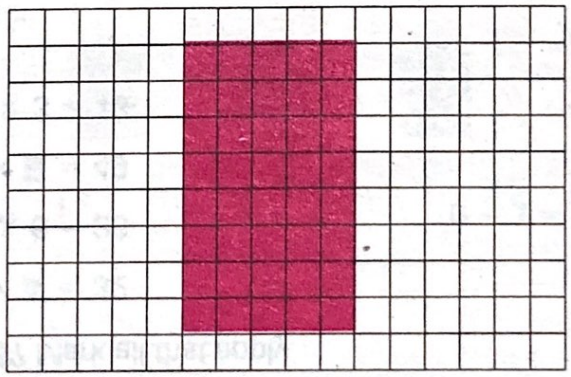
   $8 \times 4 =$ ___32___ square feet

3. Ana used 49 strawberries to make strawberry smoothies. She used 7 strawberries in each smoothie. How many strawberry smoothies did Ana make?

   ___7___ strawberry smoothies

4. Chris plants 40 pumpkin seeds in 5 equal rows. How many seeds does Chris plant in each row?

   Make an array to represent the problem. Then solve the problem.



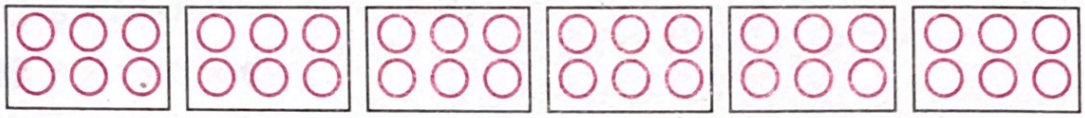
   ___8___ seeds

GO ON

Name _____

5. Mrs. Ruiz sorted spools of thread into 6 boxes. Each box holds 6 spools. How many spools of thread does Mrs. Ruiz have?

Draw circles to model the problem. Then solve. Explain how you solved the problem.



36 spools; Possible explanations: Students may multiply 6 × 6, count by sixes, or multiply 2 × 6 = 12 and triple the product.

6. Ming's garden has an area of 35 square feet. The length of the garden is 7 feet. What is the width of Ming's garden?

$$35 \div 7 = a$$

$$7 \times a = 35$$

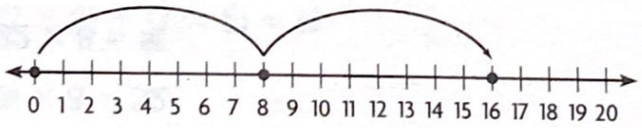
(A) 4 feet

(B) 5 feet

(C) 6 feet

(D) 7 feet

7. Lindsay went hiking for two days in Yellowstone National Park. The first jump on the number line shows how many birds she saw the first day. She saw the same number of birds the next day.



Write the multiplication sentence that the number line shows.

2 × 8 = 16

Name _____

Practice Test

Learning Objective
Determine the unknown whole number in a multiplication or a division equation relating three whole numbers.

1. In which number sentences is the unknown factor 6? Mark all that apply.

   (A) $4 \times \square = 32$

   (B) $\square \times 6 = 36$

   (C) $8 \times \square = 49$

   (D) $\square \times 3 = 18$

2. Devon has 80 books to pack in boxes. She packs 10 books in each box. How many boxes does she need?

   Write an equation using the letter n to stand for the unknown factor. Explain how to find the unknown factor.

   $n \times 10 = 80$. Possible explanation: I can draw an array of 80 squares with 10 squares in each row. There are 8 rows, so $n = 8$. Devon needs 8 boxes.

3. Circle the unknown factor and quotient.

   $8 \times \boxed{\begin{matrix}(6)\\7\\8\end{matrix}} = 48$ $\qquad$ $\boxed{\begin{matrix}(6)\\7\\8\end{matrix}} = 48 \div 8$

4. Keith arranged 40 toy cars in 8 equal rows. How many toy cars are in each row?

   5 toy cars

GO ON

Name _____

5. The camping club wants to rent rafts. Each raft can hold 8 people. Which equation could be used to find how many rafts are needed for 32 people?

(A) $8 \times 32 = \square$

(B) $32 \times \square = 8$

(C) $\square \times 8 = 32$

(D) $32 \times 8 = \square$

6. Which number makes the equation true?

$$36 \div 4 = \square$$

(A) 32

(B) 16

(C) 13

(D) 9

7. Write the number that makes the equation true.

$6 \times$ 4 $= 24$

STOP

Name _____

Practice Test

Learning Objective
Multiply and divide by applying properties of operations as strategies.

1. Break apart the array to show $8 \times 6 = (4 \times 6) + (4 \times 6)$.

2. Nadia has 4 sheets of stickers. There are 8 stickers on each sheet. She wrote this number sentence to represent the total number of stickers.

$$4 \times 8 = 32$$

What is a related number sentence that also represents the total number of stickers she has?

(A) $8 + 4 = \square$

(B) $4 + 4 + 4 + 4 = \square$

(C) $8 \times 8 = \square$

(D) $8 \times 4 = \square$

3. Make true equations. Select a number to complete the equation.

$7 \div 7 =$ 1 $7 \div 1 =$ 7 $0 \div 7 =$ 0

GO ON

Name _____

4. Select the number sentences that show the Commutative Property of Multiplication. Mark all that apply.

(A) $3 \times 2 = 2 \times 3$

(B) $4 \times 9 = 4 \times 9$

(C) $5 \times 0 = 0$

(D) $6 \times 1 = 1 \times 6$

(E) $7 \times 2 = 14 \times 1$

5. Circle groups to show $3 \times (2 \times 3)$.

6. Which number sentences have the same value as 7×5? Mark all that apply.

(A) $7 + (3 + 2) = \square$

(B) $7 \times (3 + 2) = \square$

(C) $(5 \times 4) + (5 \times 3) = \square$

(D) $(7 \times 2) + (7 \times 5) = \square$

Name _____

Practice Test

Learning Objective
Show that division can be represented as an unknown-factor problem.

1. Philip has 30 pennies that he exchanges for nickels. He exchanges 5 pennies for each nickel. How many nickels does Philip get?

   Ring equal groups to model the problem.

   ___6___ nickels

2. There are 56 apples packed in 7 baskets with the same number of apples in each basket. How many apples are in each basket? Explain how you found your answer.

   8 apples; Possible explanation: I divided 56 by 7 to find how many apples are in each basket.

3. There are 35 prizes in 5 equal rows. How many prizes are in each row?

   Complete each equation to represent the problem.

   $5 \times$ ___7___ $= 35$ $35 \div 5 =$ ___7___

   ___7___ prizes

GO ON

Name _____

4. Use the tiles to write the numbers that complete the number puzzle.

3	7	8	12	14	54

×	9	3	2
6	54	18	12
7	63	21	14
8	72	24	16

Explain how you found the number in the circle.

Possible explanation: I had to first find the unknown factor in the multiplication column for row 2. I divided 63 by 9, which gives 7. Then I multiplied 7 × 2 = 14 to find the number in the circle.

5. Circle numbers to complete the related facts.

7
(9)
64
80

× 8 = 72 72 ÷

7
8
(9)
64

= 8

6. Penn has 18 eggs to use in some recipes. Select a way that he could divide the eggs equally among some recipes. Mark all that apply.

- (A) 6 eggs in each of 3 recipes
- (B) 5 eggs in each of 3 recipes
- (C) 2 eggs in each of 9 recipes
- (D) 4 eggs in each of 4 recipes
- (E) 9 eggs in each of 2 recipes
- (F) 3 eggs in each of 6 recipes

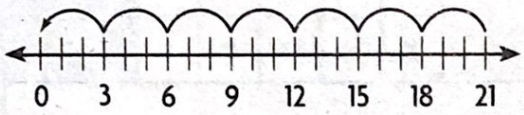
STOP

Name _____

Practice Test

Learning Objective
Multiply and divide within 100, using strategies such as the relationship between multiplication and division.

1. Bella made $21 selling bracelets. She wants to know how many bracelets she sold. Bella used this number line.



Write the division equation that the number line represents.

21 ÷ 3 = 7

2. Etta buys some ribbon and cuts it into 7 pieces that are the same length. Each piece is 9 inches long. How long was the ribbon that Etta bought?

63 inches

3. Complete the chart to show the quotients.

÷	27	36	54	45
9	3	4	6	5

4. Use the numbers to write related multiplication and division facts.

9 45 5

9 × 5 = 45; 45 ÷ 5 = 9; 5 × 9 = 45; 45 ÷ 9 = 5

GO ON

Name _____

5. Each picnic table seats 6 people. How many picnic tables are needed to seat 24 people? Explain the strategy you used to solve the problem.

4 picnic tables; Possible explanation: I used the related multiplication fact $6 \times 4 = 24$.

6. Circle the symbol that makes the multiplication sentence true.

9×6 [> (<) =] $3 \times (3 \times 9)$

7. Select the equations that represent the array. Mark all that apply.

- (A) $3 \times 5 = \square$
- (B) $2 \times \square = 12$
- (C) $\square \div 3 = 5$
- (D) $5 \times \square = 15$
- (E) $12 \div 3 = \square$
- (F) $15 \div 5 = \square$

8. Write related facts for the array. Explain why there are not more related facts.

$6 \times 6 = 36$; $36 \div 6 = 6$; Possible explanation: there are only two equations because both factors are the same.

Name _____

Practice Test

Learning Objective
Solve two-step word problems using the four operations, representing an unknown quantity with a letter.

1. Seth collected 24 toy cars. Then he gave away 3 toy cars to each of his 5 friends. How many toy cars does Seth have left? Explain how you solved the problem.

9; Possible explanation: First, I multiplied $3 \times 5 = 15$ to find the number of cars Seth gave away. Then I subtracted 15 from 24 and got 9, so there are 9 toy cars left.

2. Mrs. Garcia puts 57 cans on a shelf. She puts an equal number of cans in each of 9 rows and puts 3 cans in the last row. How many cans does she put in each of the 9 equal rows?

Choose the equation that can be used to solve the problem.

I can use the equation $(9 \times c) + 3 = 57$.

- $(3 \times c) + 9 = 57$
- $(9 \times c) + 3 = 57$
- $(57 \div 9) + 3 = c$

Solve the problem.

Check students' work.

6 cans

GO ON

Name _____

3. Bella is planning to write in a journal. Some pages will have 1 journal entry on them, and other pages will have 2 journal entries on them. If Bella wants to make 10 entries, how many different ways can she write them in her journal?

4 different ways; $(2 \times 4) + (1 \times 2) = 10$; $(2 \times 3) + (1 \times 4) = 10$; $(2 \times 2) + (1 \times 6) = 10$; $(2 \times 1) + (1 \times 8) = 10$

4. Brian is going camping in 2 weeks and 2 days.

Which equation can be used to find the number of days until Brian goes camping?

(A) $2 + 7 + 2 = c$; $c = 11$ days

(B) $2 \times 7 - 2 = c$; $c = 12$ days

(C) $2 \times 5 + 2 = c$; $c = 12$ days

(D) $2 \times 7 + 2 = c$; $c = 16$ days

5. Eleni bought 3 packs of crayons. She then found 3 crayons in her desk. Eleni now has 24 crayons. How many crayons were in each pack she bought? Explain how you solved the problem.

Possible explanation: First, I subtracted $24 - 3 = 21$. Then I divided 21 by 3 and got 7, so there were 7 crayons in each pack.

STOP

Name _____

Practice Test

Learning Objective
Identify number patterns, including patterns related to properties of operations.

1. Tim says the rule for the pattern shown in the table is "Add 3." Is his rule correct? Explain how you know.

Packages	1	2	3	4	5
Markers	4	8	12	16	20

No, Tim's rule is not correct. Possible explanation: It works for the first pair of numbers 1 + 3 = 4, but it doesn't work for any of the other pairs. The rule should be "Multiply by 4."

2. Select the number sentences that show the Commutative Property of Addition. Mark all that apply.

(A) 14 + 8 = 22

(B) 8 + 14 = 14 + 8

(C) 8 + (13 + 1) = (8 + 13) + 1

(D) 5 + 9 + 8 = 9 + 5 + 8

3. Heather's puppy weighs 23 pounds. He has been gaining 3 pounds every month as he grows. If this pattern continues, how much will the puppy weigh 5 months from now?

38 pounds

4. Helene selected an odd number to be multiplied by the factors in this table. Write *even* or *odd* to describe each product.

×	1	2	3	4	5
odd number	odd	even	odd	even	odd

GO ON

Name _____

5. Chloe bought 4 movie tickets. Each ticket cost $6. What was the total cost of the movie tickets?

$ 24

6. Complete the table. Amir said a rule for the pattern shown in this table is "Multiply by 4." Is he correct? Explain how you know your answer is reasonable.

Cans	2	3	4	5	6
Peaches	8	12	16	20	24

Yes, he is correct. $2 \times 4 = 8$, $3 \times 4 = 12$, $4 \times 4 = 16$, $5 \times 4 = 20$, and $6 \times 4 = 24$. All the pairs of numbers follow the pattern, so the answer is reasonable.

7. Lisa completed the table to describe the product of a mystery one-digit number and each factor in the table.

×	1	2	3	4	5
?	even	even	even.	even	even

Part A

Give all of the possible numbers that could be Lisa's mystery one-digit number.

2, 4, 6, 8

Part B

Explain how you know that you have selected all of the correct possibilities.

Possible explanation: Because the products are all even, the mystery number must also be an even number. I have selected all of the even one-digit numbers.

Name _____

Practice Test

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

1. There are 486 books in the classroom library. Complete the chart to show 486 rounded to the nearest 10.

Hundreds	Tens	Ones
4	9	0

2. Write each number sentence in the box below the better estimate of the sum.

393 + 225 = ☐ 481 + 215 = ☐

352 + 328 = ☐ 309 + 335 = ☐

600	700
309 + 335 = ☐	481 + 215 = ☐
393 + 225 = ☐	352 + 328 = ☐

3. Select the numbers that round to 300 when rounded to the nearest hundred. Mark all that apply.

(A) 238

(B) 250

(C) 283

(D) 342

(E) 359

4. A total of 907 people went to a fishing tournament. Of these people, 626 arrived before noon. Alina estimates that fewer than 300 people arrived in the afternoon. How did she estimate? Explain.

Possible explanation: She rounded to the nearest hundred. First, she rounded 907 to 900 and rounded 626 to 600; then, she subtracted, 900 − 600 = 300.

GO ON

Name _____

5. Select the numbers that round to 100. Select all that apply.

Ⓐ 38
Ⓑ 162
Ⓒ 109
Ⓓ 83

6. Alex and Erika collect shells. The tables show the kinds of shells they collected.

Alex's Shells	
Shell	Number of Shells
Scallop	36
Jingle	95
Clam	115

Erika's Shells	
Shell	Number of Shells
Scallop	82
Clam	108
Whelk	28

Part A

Who collected more shells? About how many more did she collect? Explain how you solved the problem.

Alex; Possible explanation: Estimate the number of shells Alex has (about 260) and Erika has (about 220). Alex has about 40 more.

Part B

Alex and Erika have the greatest number of what kind of shell? How many shells of that kind do they have in all? Show your work.

clam shells; 223 shells

STOP

Name _____

Practice Test

Learning Objective
Add and subtract whole numbers within 1,000.

1. Daniel has 402 pieces in a building set. He uses 186 pieces to build a house. How many pieces does he have left? Show your work.

216 pieces

Use the table for 2–4.

Susie's Sweater Shop	
Month	**Number of Sweaters Sold**
January	402
February	298
March	171

2. The table shows the number of sweaters sold online in three months. How many sweaters were sold in January and February?

700 sweaters

3. How many more sweaters were sold in January than in March?

231 sweaters

4. How many more sweaters were sold in February and March than in January?

67 sweaters

GO ON

Name _____

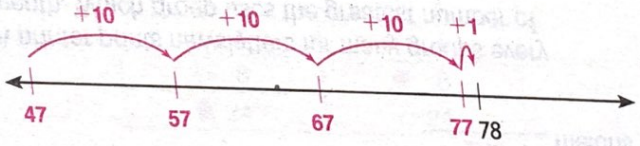
5. Janna buys 2 bags of dog food for her dogs. One bag weighs 37 pounds. The other bag weighs 15 pounds. How many pounds do both bags weigh? Explain how you solved the problem.

52 pounds; Possible explanation: Start with 37 and count on 3 to 40. Then add 15 as 1 ten 5 ones. Remember to subtract the 3 you counted on to start, 5 – 3 = 2, so 52.

6. Choose the property that makes the statement true.

The Identity / Commutative / (Associative) Property of Addition states that you can group addends in different ways and get the same sum.

7. Alexandra has 78 e-mails in her inbox. She deletes 47 e-mails. How many e-mails are left in her inbox? Draw jumps and label the number line to show your thinking.



31 e-mails

8. Luke solves this problem. He says the difference is 214. Explain the mistake Luke made. What is the correct difference?

352 – 148 = _____

Possible explanation: When Luke combined the tens and hundreds to subtract he should have combined the tens and ones. He needed to regroup 1 ten as 10 ones to subtract 48 from 52. Then he would have 0 tens 4 ones left. The difference is 204.

Name _____

Practice Test

Learning Objective
Multiply one-digit whole numbers by multiples of 10 (from 10 to 90) using place value and properties of operations.

1. Select the equations that show the Distributive Property. Mark all that apply.

   (A) $8 \times 20 = 8 \times (10 + 10)$

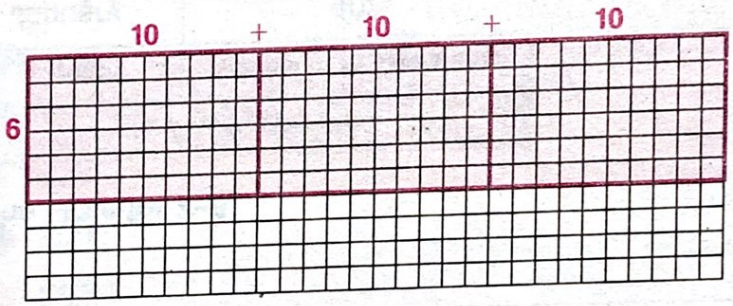
   (B) $5 \times 60 = 5 \times (20 + 40)$

   (C) $30 \times 6 = 6 \times 30$

   (D) $9 \times (4 + 3) = 9 \times 7$

2. The bookstore has 6 shelves of books about animals. There are 30 books on each shelf. How many books about animals does the bookstore have?

   Make a diagram to show how you can use the Distributive Property to find the number of books about animals in the bookstore.



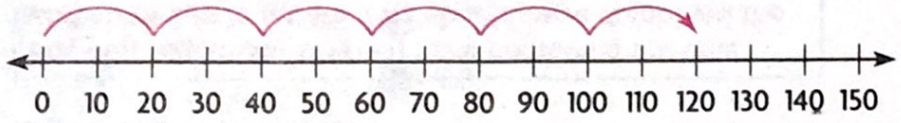
$6 \times (10 + 10 + 10) = (6 \times 10) + (6 \times 10) + (6 \times 10) =$
$60 + 60 + 60 = 180$

180 animal books

GO ON

Name _____

3. Each train can carry 20 cars. Use the number line to find how many cars 6 trains can carry.



120 cars

4. A store has 30 boxes of melons. Each box holds 4 bags. Each bag holds 2 melons. What is the total number of melons in the store?

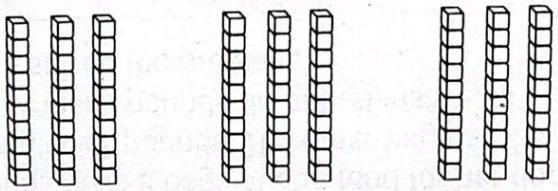
240 melons

5. A printer prints newsletters for many groups every month. Which group uses the greatest number of pieces of paper?

Group	Number of pieces of paper in newsletter	Number of copies of newsletter printed
Garden Ladies	5	70
Book Lovers Club	6	80
Model Train Fans	7	60
Travel Club	8	50

Book Lovers Club

6. Samantha made this multiplication model. Complete the equation that represents the model.



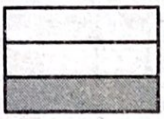
_____ × _____ = _____ 3, 30, 90 or 30, 3, 90

Name _____

Practice Test

Learning Objective
Show that a fraction is a quantity formed when a whole is partitioned into an equal number of parts or a quantity formed using equal parts of the whole.

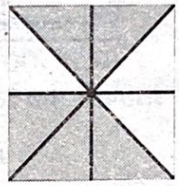
1. What fraction names the shaded part? Explain how you know how to write the fraction.



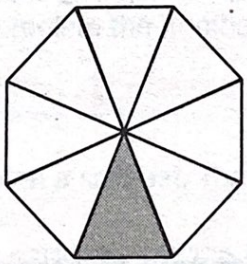
$\frac{1}{3}$; Possible explanation: There are 3 equal parts and 1 part is shaded, so I write 1 on the top and 3 on the bottom.

2. Select a numerator and a denominator for the fraction that names the shaded part of the shape.

Numerator	Denominator
○ 2	○ 3
○ 3	○ 5
● 5	○ 6
○ 6	● 8



3. Omar shaded a model to show the part of the lawn that he finished mowing. What fraction names the shaded part? Explain how you know how to write the fraction.



$\frac{1}{8}$; Possible explanation: There are 8 equal parts and 1 part is shaded, so I write 1 on the top and 8 on the bottom.

GO ON