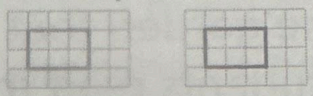
Name _____

Additional Practice 12-1
Partition Regions into Equal Parts

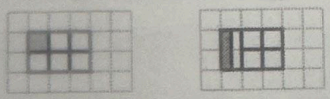
Another Look!

Divide these shapes into 6 equal parts in two different ways.

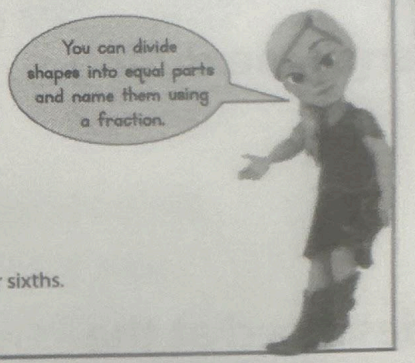


You can draw lines to divide the shapes into equal parts.

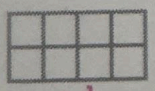
Equal parts do not need to be the same shape, but they must be equal in area.



Both shapes are divided into six equal parts, or sixths.
Each part is one sixth of the area of the shape.
Each part can be written as $\frac{1}{6}$.



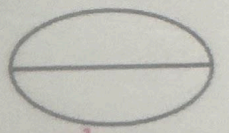
In **1–3**, tell if each shows equal or unequal parts. If the parts are equal, label one of the parts using a unit fraction.

1. 

Equal; $\frac{1}{8}$

2. 

Equal; $\frac{1}{2}$

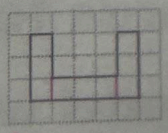
3. 

Equal; $\frac{1}{2}$

In **4–6**, draw lines to divide the shape into the given number of equal parts. Then write the fraction that represents one part.

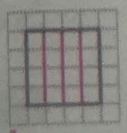
Sample drawings given.

4. 3 equal parts



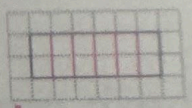
$\frac{1}{3}$

5. 4 equal parts



$\frac{1}{4}$

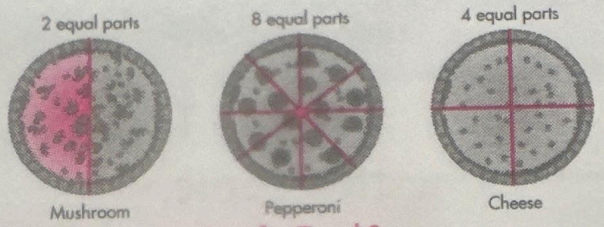
6. 6 equal parts



$\frac{1}{6}$

In 7–9, use the pictures shown below.

7. Mr. Yung orders 3 pizzas. He cuts the pizzas into the number of equal parts shown. Draw lines to show how Mr. Yung could have cut the pizzas.



Sample answers given for 7 and 8.

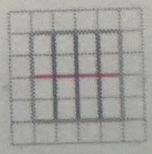
8. Mr. Yung puts onions on the mushroom pizza. He puts onions on $\frac{1}{2}$ of that pizza. Shade the amount of pizza that has onions.

9. Rose eats 1 equal part that Mr. Yung cut from a pizza. She has eaten $\frac{1}{8}$ of the whole pizza. Which pizza did Rose eat?
Pepperoni

10. **Reasoning** Ellen is drawing two polygons. One of the polygons has 3 more angles than the other. What shapes could she be drawing?
Sample answer: Triangle and hexagon

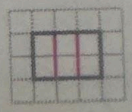
11. **Vocabulary** George cut a cake into 8 equal pieces. What is the unit fraction for the cake?
$\frac{1}{8}$

12. **Higher Order Thinking** Draw a line to divide this square into 8 equal parts. What fraction of the square was 1 part before you drew your line? After you drew your line?
$\frac{1}{4}, \frac{1}{8}$

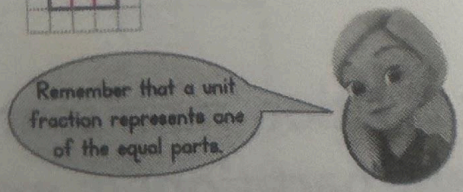


Assessment Practice

13. Draw lines to show how to divide this rectangle into 3 equal pieces. Then select the fraction that represents 1 of the pieces.



Ⓐ $\frac{1}{2}$
● $\frac{1}{3}$
Ⓒ $\frac{1}{6}$
Ⓓ $\frac{1}{8}$



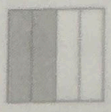
Name _____ Practice Video Tools Game

Additional Practice 12-2
Fractions and Regions

Another Look!

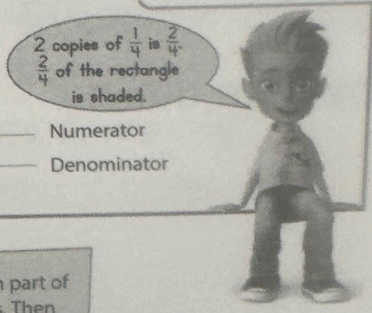
A fraction can be used to name part of a whole.

The denominator shows the total number of equal parts in a whole. The numerator shows how many equal parts are described.



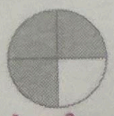
Number of $\frac{1}{4}$-parts shaded → $\frac{2}{4}$ ← Numerator

Total number of equal parts → $\frac{2}{4}$ ← Denominator

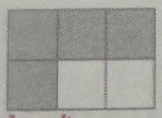


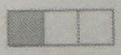
In 1–6, write the unit fraction that represents each part of the whole. Next write the number of shaded parts. Then write the fraction of the whole that is shaded.

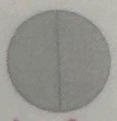
1. 
$\frac{1}{8}$; 7; $\frac{7}{8}$

2. 
$\frac{1}{4}$; 3; $\frac{3}{4}$

3. 
$\frac{1}{3}$; 2; $\frac{2}{3}$

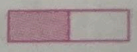
4. 
$\frac{1}{6}$; 4; $\frac{4}{6}$

5. 
$\frac{1}{3}$; 1; $\frac{1}{3}$

6. 
$\frac{1}{2}$; 2; $\frac{2}{2}$

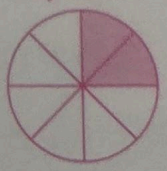
7. Draw a rectangle that shows 2 equal parts. Shade $\frac{1}{2}$ of the rectangle.

Sample rectangle shown.

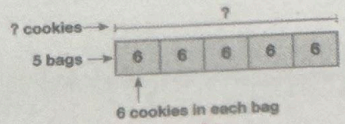


8. Draw a circle that shows 8 equal parts. Shade $\frac{2}{8}$ of the circle.

Sample circle shown.



9. There are 6 cookies in 1 bag. How many cookies are in 5 bags? Use the bar diagram to write and solve an equation.



$5 \times 6 = ?$; 30 cookies

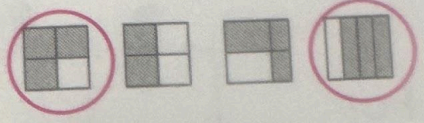
10. A banner is made of 8 equal parts. Five of the parts are green. Three of the parts are yellow. Draw and color the banner.

Check students' drawings.
The banner should be $\frac{5}{8}$ green and $\frac{3}{8}$ yellow.

11. **Make Sense and Persevere** Three friends go bowling. Artie's score is 52 points greater than Matthew's score. Matthew's score is 60 points less than Greg's score. If Greg's score is 122, what is Artie's score?

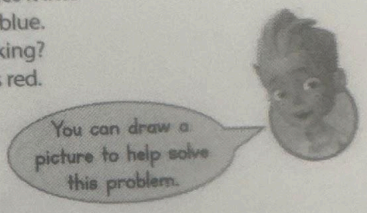
114

12. Circle all the figures that show $\frac{3}{4}$.



13. **Higher Order Thinking** Rashad draws a figure and divides it into equal parts. Two of the parts are red. The other 4 parts are blue. Rashad says that $\frac{2}{4}$ of the figure is red. What error is he making? Explain. Then write the correct fraction of the figure that is red.

Sample answer: Rashad is using the number of blue parts as the denominator. He should use the total number of parts, 6. The correct fraction is $\frac{2}{6}$.

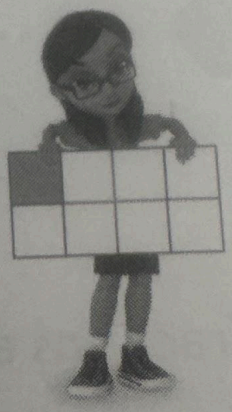


Assessment Practice

14. Write the unit fraction that represents 1 square. Then write the fraction that represents the whole. Select numbers from the box to write the fractions.

1	2	3	4	5	6	7	8

$\frac{1}{8}$; $\frac{8}{8}$



Name _____ Practice Video Tools Games

Additional Practice 12-3
Understand the Whole

Another Look!

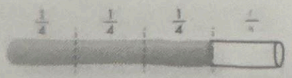
This is $\frac{3}{4}$ of a string cheese snack. How long is the whole string cheese snack?

$\frac{3}{4}$

$\frac{3}{4}$ is 3 lengths of $\frac{1}{4}$. Divide the snack into 3 equal lengths.

The denominator of the fraction tells you how many lengths you need to make the whole.

Four lengths of $\frac{1}{4}$ make $\frac{4}{4}$, or 1 whole. Draw one more fourth. The drawing shows the length of the whole string cheese.

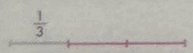


$1 = \frac{4}{4}$

In 1–4, draw a picture of the whole and write a fraction to represent the whole.

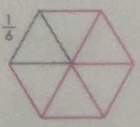
Sample answers shown.

1. $\frac{1}{3}$



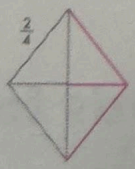
$1 = \frac{3}{3}$

2. $\frac{1}{6}$



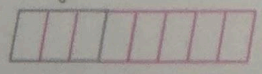
$1 = \frac{6}{6}$

3. $\frac{2}{4}$



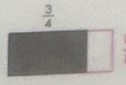
$1 = \frac{4}{4}$

4. $\frac{3}{8}$

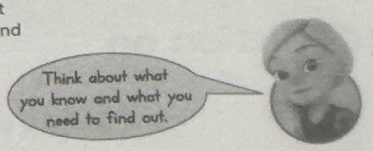


$1 = \frac{8}{8}$

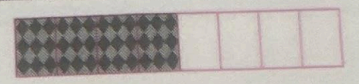
5. Reasoning If the part shown is $\frac{3}{4}$ of a flag, what could the whole flag look like? Draw a picture and write a fraction to represent the whole.



$\frac{4}{4}$; Sample drawing shown.



6. Jorge has $\frac{4}{8}$ of the fabric he needs to make a costume for the party. His fabric is shown. Draw a picture and write a fraction to represent the whole.



$\frac{8}{8}$; Sample drawing shown.

7. Jen's garden is 4 feet wide and 4 feet long. What is the area of Jen's garden?

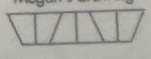
16 square feet

8. Gary has 63 counters. He puts them in an array with 9 columns. How many rows are there?

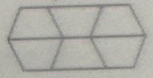
7

9. Higher Order Thinking Megan and Mindy saw a plan for $\frac{2}{6}$ of a playground. They each drew a picture of the whole playground. Which drawing is **NOT** correct? Tell how you know.

Megan's drawing



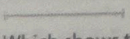
Mindy's drawing



Mindy's drawing; She drew 6 copies of the $\frac{2}{6}$ part as if the part was only $\frac{1}{6}$.

Assessment Practice

10. The picture shows $\frac{3}{4}$ of the distance Pedro lives from school.



Which shows the whole distance?

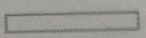
Ⓐ

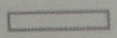
Ⓑ

Ⓒ

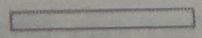
Ⓓ

11. Each of these parts is $\frac{1}{8}$ of a different whole. Which is part of the largest whole?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

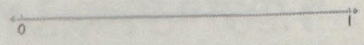
Name _____

Additional Practice 12-4
Number Line: Fractions Less Than 1

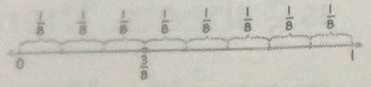
Another Look!

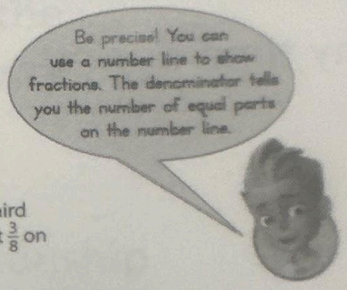
Show $\frac{3}{8}$ on a number line.

Start by drawing a number line from 0 to 1. Put tick marks at the ends. Label the tick marks 0 and 1.



Divide the number line into 8 equal lengths. Each length is $\frac{1}{8}$ of the whole.

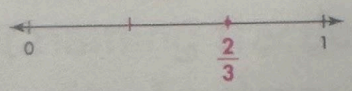




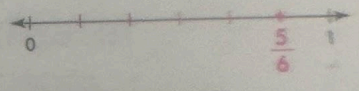
Start at 0. Go to the right until you come to the third tick mark. That mark represents $\frac{3}{8}$. Draw a point at $\frac{3}{8}$ on the line. Label the point $\frac{3}{8}$.

In **1** and **2**, divide the number line into the given number of equal lengths. Then mark and label the given fraction on the number line.

1. 3 equal lengths; $\frac{2}{3}$

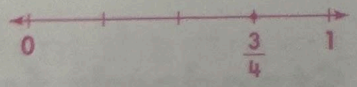


2. 6 equal lengths; $\frac{5}{6}$

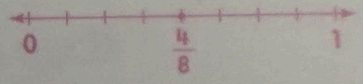


In **3–6**, draw a number line. Divide the number line into equal lengths for the given fraction. Then mark and label the fraction on the number line.

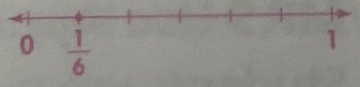
3. $\frac{3}{4}$



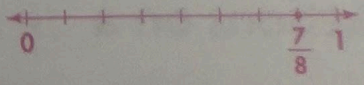
4. $\frac{4}{8}$



5. $\frac{1}{6}$



6. $\frac{7}{8}$



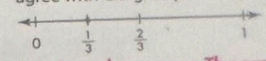
an 1

7. Algebra Ted writes the following equation. Write the number that makes the equation correct.

$824 = 20 + ? + 4$

$? =$ 800

8. Critique Reasoning Craig says that the dot on this number line shows $\frac{1}{3}$. Do you agree with Craig? Explain why or why not.



No; Sample answer: The number line is not divided into equal parts.

9. Higher Order Thinking Eddie is walking on a line that is painted on the sidewalk. It takes Eddie 8 equal-sized steps to get from one end of the line to the other. After Eddie has taken 5 steps, what fraction of the line is behind him? What fraction of the line is still in front of him?

$\frac{5}{8}$; $\frac{3}{8}$

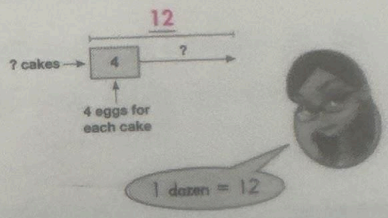
10. enVision® STEM Fossilized footprints have been found within the Hawaii Volcanoes National Park. Hawaii Volcanoes Wilderness is an area within the park. This wilderness area covers about $\frac{1}{2}$ of the park. Draw an area model to show $\frac{1}{2}$.

Check students' work.

11. Marty has 1 dozen eggs. He needs 4 eggs to bake a cake. How many cakes can he bake? Complete the bar diagram and write an equation to represent and solve the problem.

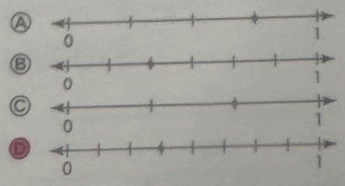
Sample answer:

$12 \div 4 = ?$; He can bake 3 cakes.

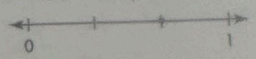


Assessment Practice

12. Which number line has a point at $\frac{3}{8}$?



13. What fraction does the point on this number line represent?



Ⓐ $\frac{1}{3}$

Ⓑ $\frac{1}{4}$

Ⓒ $\frac{2}{2}$

Ⓓ $\frac{2}{3}$

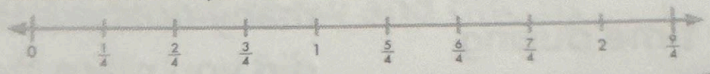
Name _____ Practice Video Tools Games

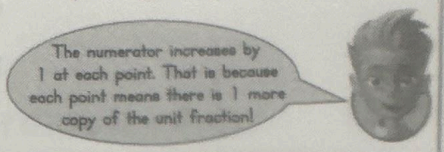
Additional Practice 12-5
Number Line: Fractions Greater Than 1

Another Look!

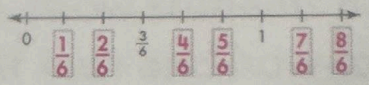
A point on a number line can be named using a fraction.

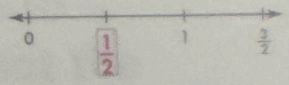
In the fractions below, the denominator shows the number of equal lengths that are between 0 and 1. The numerator shows the number of copies of the unit fraction.

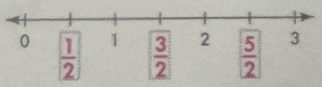


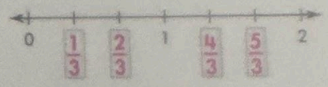


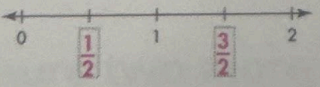
In 1–6, each number line has equal lengths marked. Write the missing fractions.

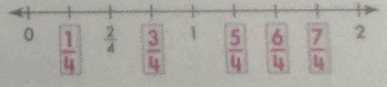
1. 

2. 

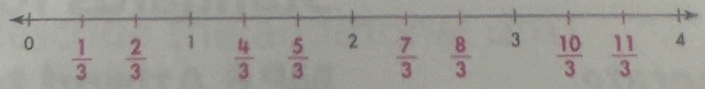
3. 

4. 

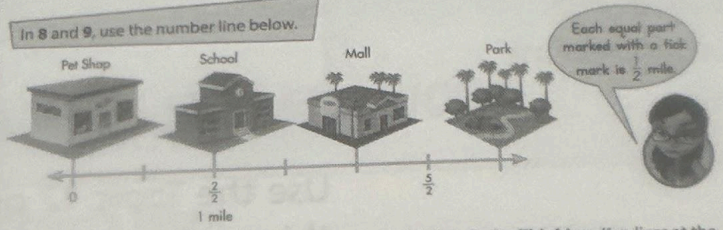
5. 

6. 

7. Divide the number line into thirds. Label each point.



In 8 and 9, use the number line below.



8. How far is the mall from the pet shop? Explain how you know.

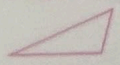
$\frac{4}{2}$ miles; Sample answer: Each equal part is $\frac{1}{2}$ mile and there are 4 equal parts between the pet shop and the mall.

9. **Higher Order Thinking** Ken lives at the point between the school and the pet shop. How far away is Ken's house from the park?

$\frac{5}{2}$ miles

10. Draw a triangle in which all the sides are different lengths.

Sample drawing:



11. **Construct Arguments** Jan said that 2 is between 0 and $\frac{3}{4}$ on a number line. Do you agree? Construct an argument to explain.

No; $\frac{3}{4}$ is between 0 and 1 on the number line. Two is to the right of 1, so 2 is also to the right of $\frac{3}{4}$.

12. Lee marks sixths on a number line. He writes $\frac{5}{6}$ just before 1. What fraction does he write on the first $\frac{1}{6}$ mark to the right of 1?

$\frac{7}{6}$

13. **Algebra** Which factor makes these equations correct?

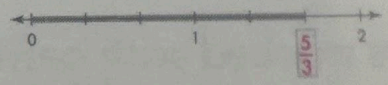
$6 \times ? = 54$ $? \times 9 = 81$

9

Assessment Practice

14. What fraction is represented by the total length marked on the number line? Select the correct fraction from the box.

$\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{4}{3}$ $\frac{5}{3}$



$\frac{5}{3}$

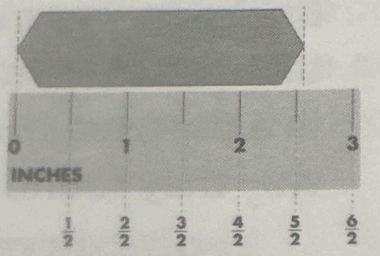
Name _____

Practice Video Tools Games

Additional Practice 12-6
Line Plots and Length

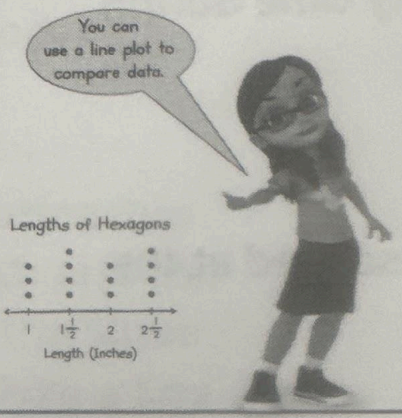
Another Look!

This ruler shows half-inch marks. Franco used the ruler to measure a hexagon to the nearest half inch.

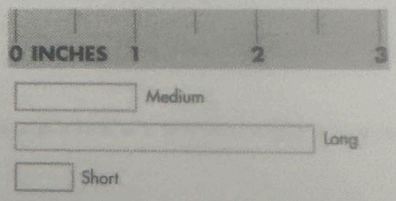


To the nearest half inch, the length of the hexagon is $2\frac{1}{2}$ inches.

Franco recorded the lengths of other hexagons he measured. Then he made a line plot. The most common lengths were $1\frac{1}{2}$ inches and $2\frac{1}{2}$ inches.

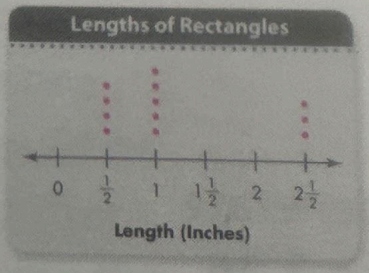


1. Measure the length of each rectangle to the nearest half inch.
   1 inch; $2\frac{1}{2}$ inches; $\frac{1}{2}$ inch



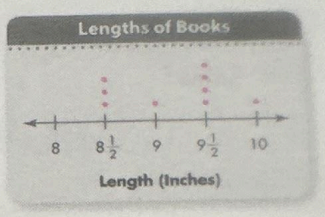
2. Jamal drew 5 of the medium rectangles, 3 of the long rectangles, and 4 of the short rectangles. How many dots, or data points, should be on the line plot?
   12

3. Complete the line plot to show the data.



4. Japera measured the lengths of her books to the nearest half inch and listed their lengths. Complete the line plot to display the lengths of Japera's books.

$8\frac{1}{2}$ in., $9\frac{1}{2}$ in., $8\frac{1}{2}$ in., $9\frac{1}{2}$ in., 10 in., $9\frac{1}{2}$ in., $8\frac{1}{2}$ in., 9 in., $9\frac{1}{2}$ in.



5. Eli has double the number of books that Japera has. How many books does Eli have?

18 books

6. What is the most common length of Japera's books?

$9\frac{1}{2}$ inches

7. **Model with Math** Peter bought 8 paint sets. He gives half of his sets to his sister. Each set has 5 bottles. How many bottles does Peter's sister have? Use math you know to represent the problem.

20 bottles; Sample answer:

$8 \div 2 = 4$; $4 \times 5 = ?$; $4 \times 5 = 20$

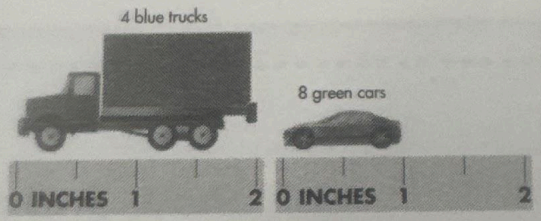
8. **Higher Order Thinking** Dan measures an object to the nearest half inch. He records the length as $4\frac{1}{2}$ inches. Geri measures the same object to the nearest inch. Could Dan and Geri get the same measurement? Explain.

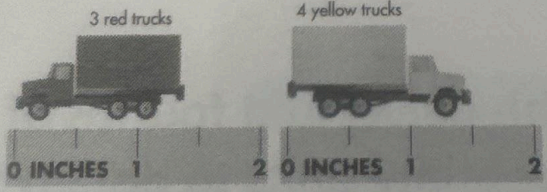
No; Sample answer: If the object is measured to the nearest inch, it will be either 4 inches or 5 inches.

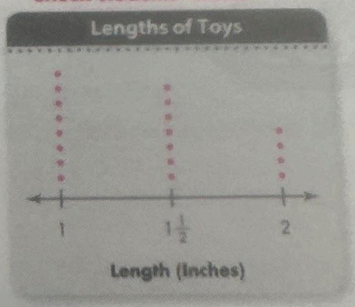
Assessment Practice

9. Robert measured the cars and trucks to the nearest half inch. Measure each and complete the line plot.

Check students' work.





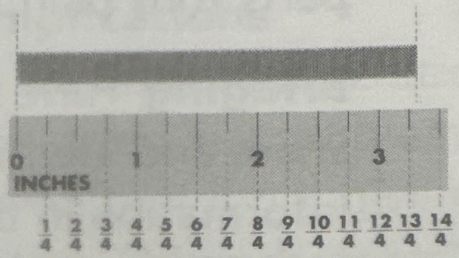


Name _____

Additional Practice 12-7
More Line Plots and Length

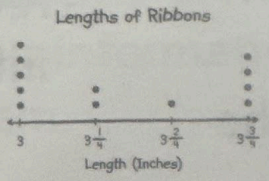
Another Look!

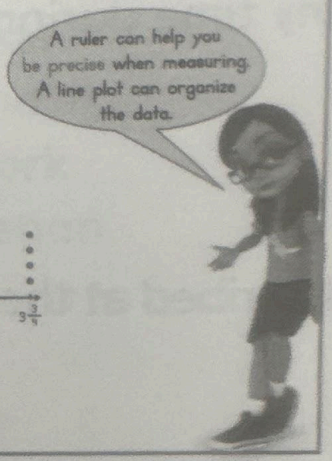
This ruler shows fourth-inch marks. Serena used the ruler to measure a ribbon to the nearest fourth inch.



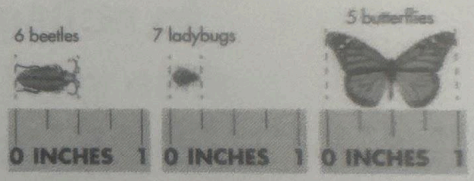
To the nearest fourth inch, the length of the ribbon is $3\frac{1}{4}$ inches.

Serena recorded the measurements of all the ribbons she has. Then she made a line plot.





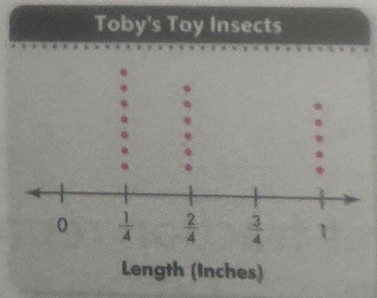
1. Toby's toy insects are shown at the right. Measure each insect to the nearest fourth inch. Record each measurement.
   $\frac{2}{4}$ inch; $\frac{1}{4}$ inch; 1 inch



2. How many dots, or data points, should be on the line plot to show all of Toby's toy insects?
   18

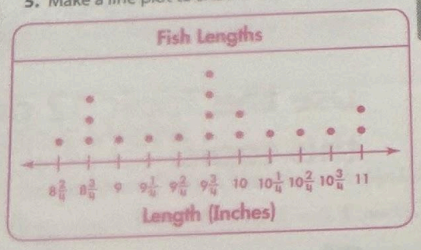
3. Complete the line plot to show the data.

4. How many more dots did you draw for beetles than for butterflies?
   1 more



In 5–7, use the table at the right. The table shows the lengths of fish that scientists studied, to the nearest fourth inch.

5. Make a line plot to show the data.



DATA

Fish Lengths					
$9\frac{1}{4}$ in.	$9\frac{3}{4}$ in.	11 in.	$9\frac{3}{4}$ in.	$8\frac{3}{4}$ in.	10 in.
$8\frac{3}{4}$ in.	$9\frac{2}{4}$ in.	$10\frac{2}{4}$ in.	$8\frac{2}{4}$ in.	$9\frac{3}{4}$ in.	11 in.
$10\frac{1}{4}$ in.	9 in.	10 in.	$8\frac{3}{4}$ in.	$10\frac{3}{4}$ in.	$9\frac{3}{4}$ in.

6. How many dots do you show for $9\frac{3}{4}$ inches? What do these dots represent?

4 dots; The 4 dots represent 4 fish that were each $9\frac{3}{4}$ inches long.

7. **Higher Order Thinking** What is the difference in length between the longest length and the shortest length?

$2\frac{1}{2}$ inches

8. Owen arranges 48 beads into an array. There are 6 rows of beads. How many columns are there?

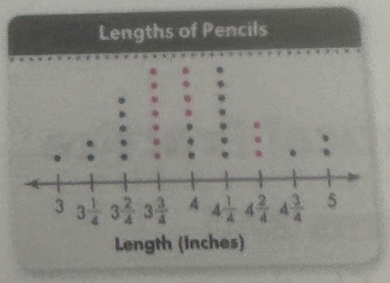
8 columns

9. **Make Sense and Persevere** On Wednesday, Connor spent $65. On Thursday, he spent $130. Connor has $311 left. How much money did Connor have to start?

$506

Assessment Practice

10. Isabella recorded the lengths of the blue pencils in her collection to the nearest fourth inch. Isabella also has 4 red pencils that each measure 4 inches, 3 green pencils that each measure $4\frac{2}{4}$ inches, and 7 orange pencils that each measure $3\frac{3}{4}$ inches. Record the lengths of Isabella's red, green, and orange pencils in the line plot.

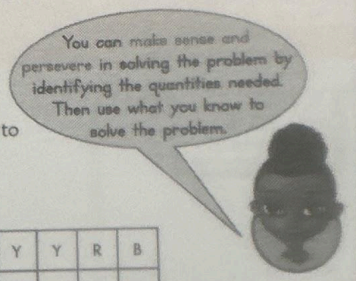


Name _____ Practice Video Tools Games

Additional Practice 12-8
Make Sense and Persevere

Another Look!

Becky divides a rectangle into 8 equal parts. She colors 4 parts yellow. The rectangle has 4 sides and 4 angles. Becky colors 1 part red and the rest blue. What fraction of the rectangle does Becky color blue?



Tell how to make sense of the problem.

- I can identify the quantities given.
- I can understand which quantities are needed to solve the problem.

Use what you know to solve the problem.

The rectangle has 4 sides and 4 angles is extra information. There are 8 equal parts. So, each part is $\frac{1}{8}$ of the whole. There are 3 parts left to color blue: 3 copies of $\frac{1}{8}$ is $\frac{3}{8}$. So, $\frac{3}{8}$ is blue.

Y	Y	R	B
Y	Y	B	B

Make Sense and Persevere

Three friends get to a party at 2:00. They cut a pizza into 4 pieces. The friends each eat one slice of pizza. What fraction of the pizza is left?

1. Tell how to make sense of the problem.
   Sample answer: I can determine the quantities I know and see which are needed to solve the problem.
2. Is there any missing or extra information? Explain.
   Yes; The time the friends get to the party is extra information.
3. Solve the problem. If information you need is missing, make up some reasonable information for the problem. You can draw a picture to help.
   There is $\frac{1}{4}$ of the pizza left. Check students' drawings.

Performance Task

School Banner

Four students are making the banner shown at the right. They have 1 week to finish the banner. Anja makes the green parts. Michael makes the white part. Adeeba makes the same number of parts as Lee.

G	O	W	G	O	G

Green = G
White = W
Orange = O

4. **Make Sense and Persevere** The teacher wants to know what fraction of the banner Lee makes. Is there any extra or missing information?

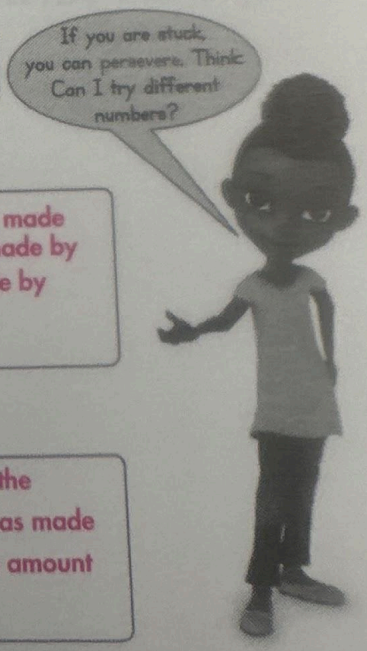
Yes; The time the students have to finish the banner is extra information. There is no missing information.

5. **Reasoning** What fraction of the banner does Anja make?

$\frac{3}{6}$ of the banner

6. **Reasoning** What fraction of the banner does Michael make?

$\frac{1}{6}$ of the banner



7. **Be Precise** Explain how you know the fraction of the banner that is **NOT** made by either Anja or Michael.

Sample answer: I know Anja and Michael have made 4 parts. That leaves 2 parts of the banner not made by Anja or Michael. Each part is $\frac{1}{6}$, so $\frac{2}{6}$ is not made by Anja or Michael.

8. **Construct Arguments** What fraction of the banner does Lee make? Explain.

$\frac{1}{6}$ of the banner; Sample answer: Because $\frac{2}{6}$ of the banner was not made by Anja or Michael, it was made by Lee and Adeeba. They each made the same amount or $\frac{1}{6}$ of the banner.