



# Third Grade Math

This packet includes four sections that cover the major content for 3<sup>rd</sup> grade math. Each section includes pages of notes and practice for each topic. For additional support, visit KCS TV on YouTube for instructional videos that accompany each section.

The following content is included in this packet:

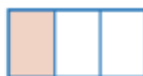
	Topic			
	<b>I. Geometry</b>	<b>II. Understanding the Relationship Between Multiplication and Division</b>	<b>III. Understanding Fractions</b>	<b>IV. Understanding Area</b>
Activity 1	Identify Shapes	Connecting Multiplication and Division	Describing Parts of a Whole with Fractions	Finding the Area of Rectangles
Activity 2	Describe Shapes Based on Their Attributes	Using a Multiplication Table	Understand Fractions on a Number Line	Solving Problems Involving Area
Activity 3	Classifying Shapes Based on Their Attributes	Solving Word Problems Using Multiplication or Division	Understanding and Finding Equivalent Fractions	Solving Word Problems About Area

**Objective: Develop understanding that fractions are numbers.**

**Fractions** are numbers that tell about equal parts of a whole. A fraction is named by the number of equal parts. One of three equal parts is one third. One of four equal parts is one fourth, and so on. One third and one fourth are fractions.

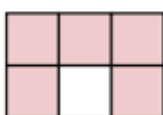
$\frac{1}{3}$   
1 — numerator  
3 — denominator

There are two parts to a fraction. The bottom number is the **denominator**. It tells how many equal parts are in the whole. The top number is the **numerator**. It tells how many equal parts you have.



$\frac{1}{3}$   
 1 part shaded  
 3 equal parts in the whole

**Example**



- There are 6 equal parts.
- Each part is one sixth.
- 5 parts are shaded.
- 5 sixths of the whole is shaded.
- This shows the fraction  $\frac{5}{6}$ .

**Example**

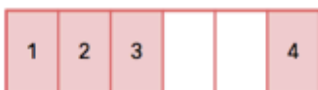
Draw a rectangle with  $\frac{4}{6}$  of it shaded.

Explain how you decided what to draw.

First I thought about how many equal parts are in  $\frac{4}{6}$ . There are 6 equal parts, so I drew 6 rectangles in a row to make one big rectangle with 6 equal parts.

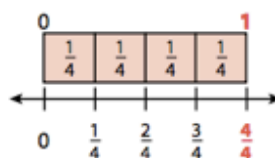


Then I looked at the numerator. The 4 tells me that I should shade 4 parts. Since they are all the same, I can shade any 4. Here is the same rectangle with 4 parts shaded.



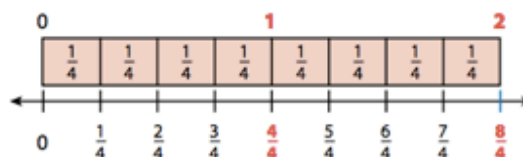
This rectangle has 4 out of 6 equal parts shaded, so  $\frac{4}{6}$  of the rectangle is shaded.

You can count fractions on a number line just like you can count whole numbers.



You can also use number lines to show fractions greater than 1.

To do this, mark off each section between pairs of whole numbers (like 0 and 1 and 1 and 2), into the same number of equal parts. Then count the fractions.



The distance from zero to 2 on the number line can be named as 2, or  $\frac{8}{4}$ .

**Example**

The number line shows just the section from 0 to 1.

That is one whole.



There are 6 equal parts in this section.

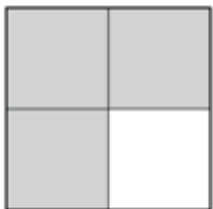
Each part is  $\frac{1}{6}$  of the whole.

To label the marks, count like you do with whole numbers.

## Describing Parts of a Whole with Fractions

Write the fraction of the figure that is shaded.

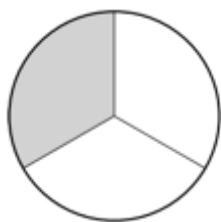
### Activity 1



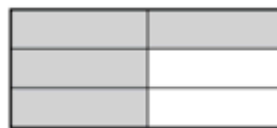
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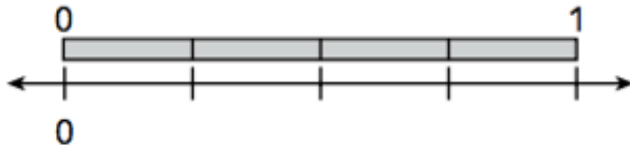
Draw a circle that shows 4 equal parts. Then shade to show  $\frac{2}{4}$ .

Draw a rectangle that shows 3 equal parts. Then shade to show  $\frac{2}{3}$ .

Draw a square that shows 8 equal parts. Then shade to show  $\frac{3}{8}$ .

**Use this number line to answer problems**

Activity 2



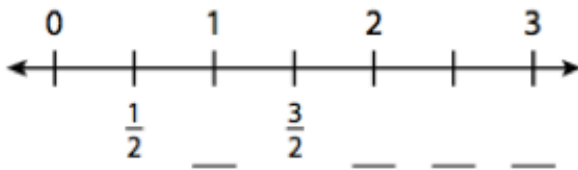
How many equal parts are there in this whole? \_\_\_\_\_

What fraction does each part show? \_\_\_\_\_

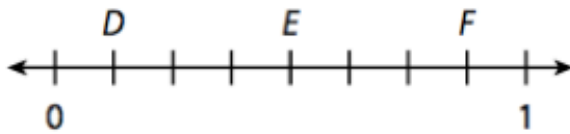
Label the marks on the number line.

What is another name for 1? \_\_\_\_\_

**Write the missing labels on the number line.**



**Use this number line to solve problems**



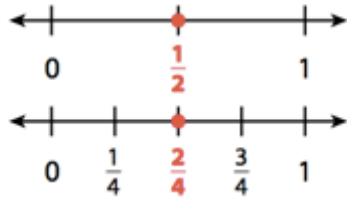
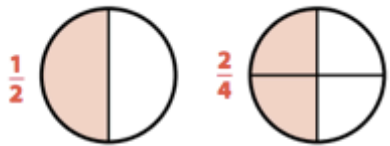
*D* is \_\_\_\_\_.

*E* is \_\_\_\_\_.

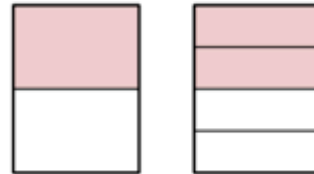
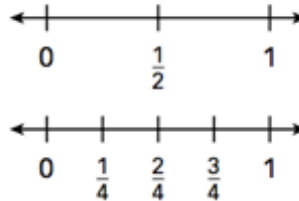
*F* is \_\_\_\_\_.

## Activity 3

Two fractions are equal if they name the same amount of the whole. Different fractions that name the same amount of the whole are called **equivalent fractions**.



### Example



$\frac{1}{2}$  and  $\frac{2}{4}$  are at the same place on the number lines.

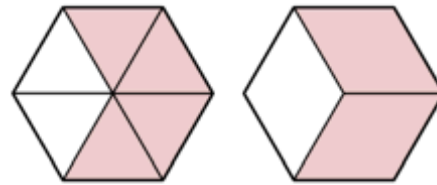
$\frac{1}{2}$  is equivalent to  $\frac{2}{4}$ .

Both rectangles have the same amount of shading.

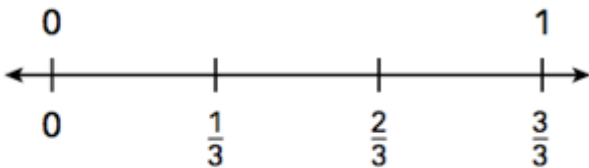
$\frac{1}{2}$  is equivalent to  $\frac{2}{4}$ .

Look at the fractions shown by the shaded hexagons. Write equivalent fractions for the shaded parts.

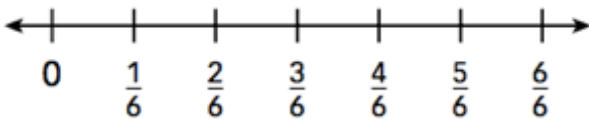
$$\frac{\square}{\square} = \frac{\square}{\square}$$



**Solve. Use the number lines to identify equivalent fractions in problems**



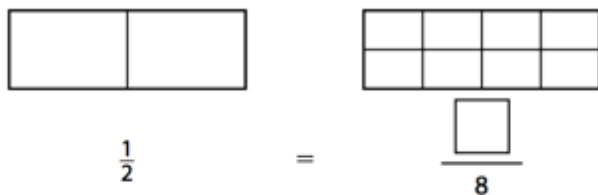
$$\frac{2}{6} = \underline{\hspace{2cm}}$$



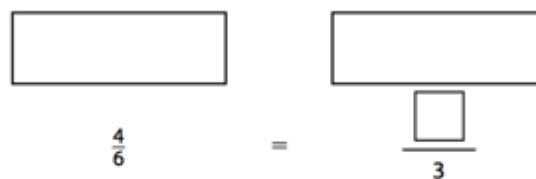
$$\frac{2}{3} = \underline{\hspace{2cm}}$$

Activity 3 continued

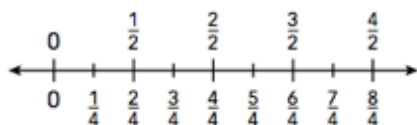
Shade the bars to show equivalent fractions. Then fill in the blanks to write equivalent fractions.



Draw lines and shade to show equivalent fractions. Then fill in the blanks to write equivalent fractions.



Use the number line.

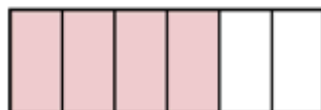


Which fraction is equivalent to  $\frac{6}{4}$ ?

- A**  $\frac{2}{3}$                       **C**  $\frac{3}{2}$   
**B**  $\frac{4}{6}$                       **D** 2

Mrs. White is painting the fence in her yard. After painting  $\frac{4}{6}$  of the fence she stops for lunch. Which fraction is equivalent to  $\frac{4}{6}$ ?

- A**  $\frac{1}{3}$   
**B**  $\frac{3}{2}$   
**C**  $\frac{2}{6}$   
**D**  $\frac{2}{3}$



What is a fraction equivalent to  $\frac{4}{4}$ ? Explain how you know.

## Answer Key for Topic 3- Understanding Fractions

### Activity 1 Answers

1. 45    2. 80

3. 50    4. 21

5. 48    6. 100

### Activity 2 Answers

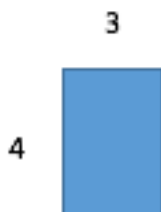
1.  $5 \times 5 = 25$     2.  $10 \times 12 = 120$

3. 10 feet    4. 20 cm

5. Possible answers:



6. Possible answers:



### Activity 3 Answers

1. 6    2. 24

3. 8    4. 8

5. 9    6. 7

7. Answers may vary.

8. Answers may vary.