CHAPTER 3

fraction

equal parts

denominator

numerator

Lesson 11

UNDERSTAND FRACTIONS 3.NF.A.1

INTRODUCTION

Real-World Connection

Jill drew a square on the pavement to play a game. She divided the square into 4 equal parts. Jill will stand on one part. On what fraction of the square will Jill stand? On what fraction of the square will the other players stand? Let's practice the skills in the Guided Instruction and Independent Practice and see how Jill solves her problem at the end of the lesson!

What I Am Going to Learn

- How to use models to represent fractions
- How to identify fractions from a model
- How to use models to compare the size of fractions

## What I May Already Know 1.NBT.B.2, 2.G.A.2

- I know how numbers represent different amounts.
- I know how to divide shapes into equal-sized sections.

Vocabulary in Action

- A fraction is a number that names a part of the whole.
- The total number of equal parts is the denominator. It is the bottom number in a fraction.
- The numerator is the number of parts that are being counted. It is the top number in a fraction.

EXAMPLE

What fraction is shown by the shape below?
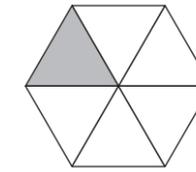
The shape is divided into 6 equal parts, so the denominator is 6.

One part is shaded, so the numerator is 1.

The fraction of the shape that is shaded is $\frac{1}{6}$.

TIPS AND TRICKS

The numerator of a fraction is the top number and the denominator is the bottom number.

EXAMPLE

Which rectangles have $\frac{2}{3}$ shaded?

A   B   C   D
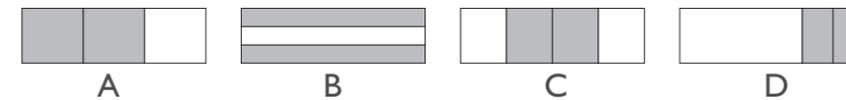
- A shape that has $\frac{2}{3}$ shaded will have 3 equal parts with 2 parts shaded.
- Rectangle A is divided into 3 equal parts. Two parts are shaded. So, rectangle A shows $\frac{2}{3}$.
- Rectangle B is divided into 3 equal parts. Two parts are shaded. So, rectangle B shows $\frac{2}{3}$.
- Rectangle C is divided into 4 equal parts. So, rectangle C does not show $\frac{2}{3}$.
- Rectangle D is divided into 3 parts, but the parts are not equal. So, rectangle D does *not* show $\frac{2}{3}$.

THINK ABOUT IT

Why might a rectangle have to be divided into equal parts?

GUIDED INSTRUCTION

A wall is going to be painted in stripes. Fractions can be used to say how much of the wall has been painted.

1. Write the fraction that stands for the shaded part of the rectangle.
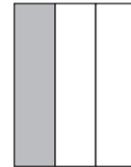
   Step One How many equal parts is the rectangle divided into? This is the denominator.

   The rectangle is divided into 3 equal parts. The denominator is 3.

   Step Two How many parts are shaded? This is the numerator.

   One part is shaded. The numerator is 1.

   Step Three Write the fraction. The denominator is on the bottom and the numerator is on the top.

   The fraction $\frac{1}{3}$ stands for the shaded part of the rectangle.

2. Three friends have ribbons that are the same length.

   Jon cut his ribbon into sixths.

   Gabe cut his ribbon into eighths.

   Melissa cut her ribbon into fourths.

   Whose pieces of ribbon are the longest?

   Step One Draw the cuts to represent Jon's ribbon. Each piece is $\frac{1}{6}$ of the whole.

▶ **TURN AND TALK**

How can you write a fraction for the unshaded part of the rectangle?

▶ **TURN AND TALK**

Who has the shortest pieces of ribbon?
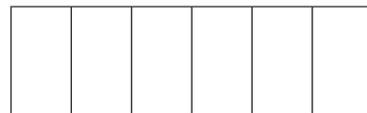
Step Two Draw the cuts to represent Gabe's ribbon. Each piece is $\frac{1}{8}$ of the whole.

Step Three Draw the cuts to represent Melissa's ribbon. Each piece is _____ of the whole.

Step Four Determine whose pieces of ribbon are the longest.

_____'s pieces of ribbon are the longest.

3. Which models show $\frac{3}{8}$ shaded? Select the **two** correct answers.

A   B   C

D   E
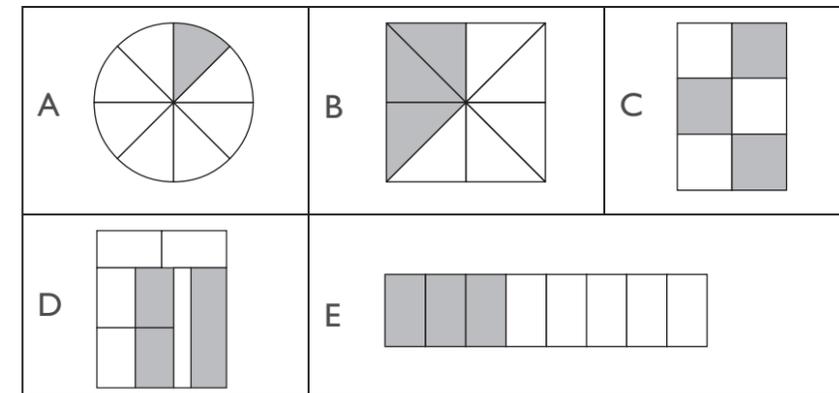
◀ **TIPS AND TRICKS**

You know from the question that two of the answers are correct. Decide which answers could not be correct. Cross those out and test the other answer choices until you find two that are correct.

▶ **SKETCH IT**

Draw a sketch of your classroom wall to help you write a fraction.

Color in the traffic signal that shows how you are doing with the skill.

I am stuck.

I almost have it.

I understand the skill.

How Am I Doing?

What questions do you have?

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Look at one wall of your classroom. Write a fraction that stands for the amount of the classroom wall that is covered by a chalk board, whiteboard, or windows. What fraction of the classroom wall is not covered?

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How can you use a fraction to determine how much of a pencil has been used?

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INDEPENDENT PRACTICE

Answer the questions.

1. Which fraction describes the shaded part of the circle?

    Ⓐ $\frac{2}{6}$

    Ⓑ $\frac{6}{4}$

    Ⓒ $\frac{4}{6}$

    Ⓓ $\frac{6}{2}$

◀ **HINT, HINT**

The numerator (top number) is the number of shaded parts.

2. What fraction of the triangle is shaded? Write your answer in the box.

3. Circle the number that correctly completes the statement.

    The denominator is

    1

    5

    6

    7

◀ **HINT, HINT**

The denominator of a fraction is the total number of equal parts of the whole.

WORK SPACE

4. Draw a line to match each fraction with its model.

$\frac{1}{4}$

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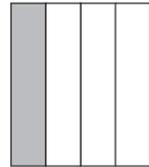
$\frac{1}{3}$
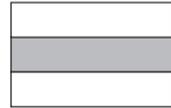
$\frac{2}{4}$

5. Use the numbers in the box to show the fraction of the circle that is shaded.

The numbers cannot be used more than once. Write each number in the appropriate box.

| 2 | 3 | 4 | 6 | 8 |
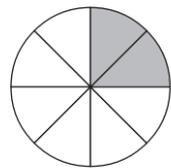
6. **Part A**

Marco orders a large pizza. He eats $\frac{1}{4}$ of the pizza.

Ali orders a small pizza. She eats $\frac{1}{4}$ of the pizza.

Who ate more pizza?

Write your answer in the box.

Part B

Explain how you found your answer.

7. **Part A**

A bulletin board is split into 3 sections. The shaded area shows the part of the bulletin board that is filled.
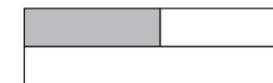
James says that $\frac{1}{3}$ of the bulletin board is filled. Cara says that James is not correct. Explain who is correct.

SKETCH IT

Drawing a picture or model can help you solve a problem.

WORK SPACE

EXIT TICKET

Now that you have mastered recognizing and modeling fractions, let's solve the problem in the Real-World Connection.

Jill drew a square on the pavement to play a game. She divided the square into 4 equal parts. Jill will stand on one part. On what fraction of the square will Jill stand? On what fraction of the square will the other players stand?

Draw a picture to solve the problem.

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