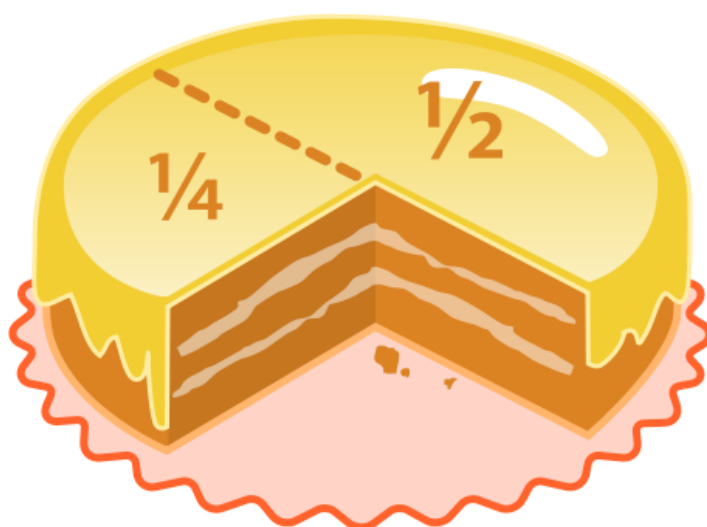


# Number Theory Unit Plan

## Fractions

### Grade 3



**Kristine Sorgenfrei**

Schoolcraft Learning Community

[kristinesorgenfrei@gmail.com](mailto:kristinesorgenfrei@gmail.com)

**and Kristine Gustafson**

It's a Surprise!

[keg.8993@gmail.com](mailto:keg.8993@gmail.com)

## **Executive Summary**

This unit is designed to give third graders an introduction to fraction ideas. We brought together ideas and lessons from the Rational Number Project Abridged for Third Grade, Reteaching Math: Fractions and Decimals, Investigations, files from Teachers Pay Teachers, and our own creativity. The unit is designed with 15 lessons that would cover a normal math period. Addresses Minnesota Mathematics Standards 3.1.3.1, 3.1.3.2, and 3.1.3.3 and is designed to help students with the MCA questions on fractions. We included many activities that use manipulatives and many games.

### **Minnesota Standards Addressed:**

Understand meanings and uses of fractions in real-world and mathematical situations.

#### **Benchmarks:**

3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

3.1.3.2: Understand that the size of a fractional part is relative to the size of the whole. *For example:* One-half of a small pizza is smaller than one-half of a large pizza, but both represent one-half.

3.1.3.3: Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.

### **MCA Sampler Items:**

12. Cory has 2 red crayons and 1 blue crayon. What fraction of Cory's crayons is red?

A:  $\frac{1}{3}$

B:  $\frac{1}{2}$

C:  $\frac{2}{3}$

D  $\frac{3}{2}$

13. Gavin has 4 green apples and 4 red apples. Tara has 4 green apples and 8 red apples. Who has a greater fraction of green apples?

A: Gavin, because  $\frac{4}{8}$  is greater than  $\frac{4}{12}$

B: Tara, because  $\frac{4}{12}$  is greater than  $\frac{4}{8}$

C: Tara, because 12 is greater than 8

D: They both have the same fraction of green apples.

14. Ellen has a vase of flowers.  $\frac{1}{8}$  are red.  $\frac{1}{3}$  are blue.  $\frac{1}{6}$  are purple.  $\frac{1}{4}$  are yellow. Which is the greatest fraction?

A:  $\frac{1}{8}$

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

C:  $\frac{1}{6}$   
D:  $\frac{1}{4}$

## Table of Contents

Lesson	Title	Page
Pre-Test		6
Lesson 1	Gallery Walk-Exploring Fractions	9
Lesson 2	Exploring with Fraction Circles (RNP L1)	13
Lesson 3	Modeling with Fraction Circles (RNP L2)	16
Lesson 4	Modeling with Fraction Circles (RNP L2.5)	19
Lesson 5	Modeling with Fraction Circles (RNP L3)	23
Lesson 6	Comparing Paper Folding to Circles (RNP L4)	26
Lesson 7	Connecting Models with Symbols (RNP L5)	34
Lesson 8	Comparing Unit Fractions (RNP L6)	41
Lesson 9	Comparing fractions with like numerators and like denominators (RNP L6.5)	46
Lesson 10 Fractions of a Whole	The Fabulously Fruity Candy Company - Fruit-O-Bars (Reteaching Fractions)	50

Lesson 11 Fractions of a Set	A New Candy - Fruit Drops! (Reteaching Fractions)	58
Lesson 12 Fractions of a Set	Using the Chip Model (RNP L13)	68
Lesson 13	Fraction Cookie Game (Investigations Unit 7)	73
Lesson 14	Fractions on a Number Line	77
Lesson 15	Fraction Golf	81
End-of-Unit Assessment		84
Resource Citations		87

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Pre-Assessment

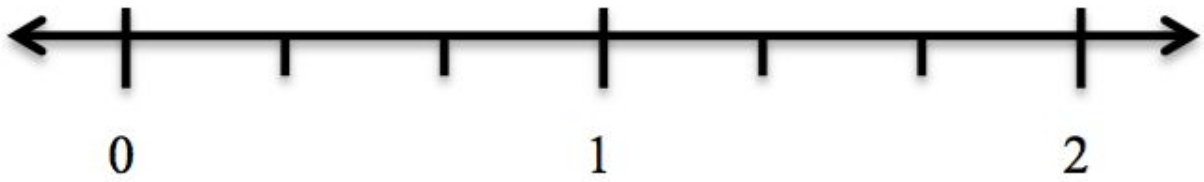
1. What fraction is shown?



2. What are 2 ways to show  $\frac{1}{3}$ ?

3. Gabe has a marble collection.  $\frac{1}{8}$  are red.  $\frac{1}{3}$  are blue.  $\frac{1}{6}$  are purple.  $\frac{1}{4}$  are yellow. Which is the greatest fraction?

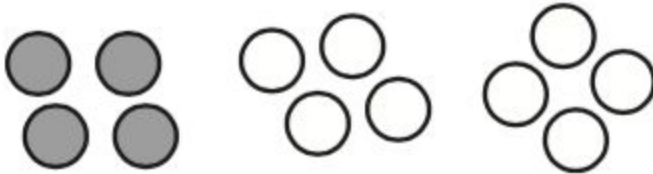
4. Show  $\frac{1}{3}$  on the number line below:



5. Show  $\frac{1}{2}$  and  $\frac{3}{4}$  on the number line below:



6. What fraction is shown with this set?



7. Circle the larger fraction:

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

8. Kristi has 3 blue pens and 1 green pen. What fraction of Kristi's pens are green?

9. Matt has 4 oreos and 4 monster cookies. Garrett has 4 oreos and 8 monster cookies. Who has the greater fraction of oreos?

10. Kristine made brownies and has 3 friends coming to join her. How can she divide the pan evenly?





## **Lesson 1**

### **Exploring Fractions in a Gallery Walk**

**Standard: 3.1.3.1:** Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

**Learning Targets:** I can record my notices and wonders about the images around the room.

I can compare and contrast the images around the room.

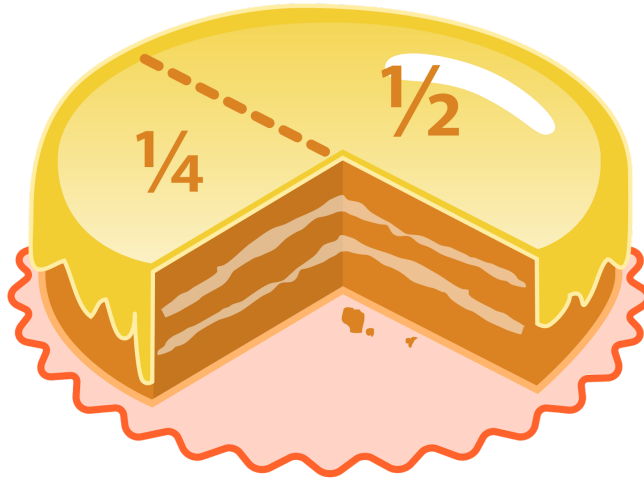
**Materials:** gallery walk protocol, images of fractions in different forms posted on anchor charts, chart paper for recording notices/wonders

**Launch:** The teacher will start by describing the protocol for a gallery walk. The protocol instructions will be posted somewhere in the room for students to follow. Have students read each step of the protocol. Ask for questions and then split students into groups of 4. Have a student read the learning targets out loud so that students know what their jobs are for the day.

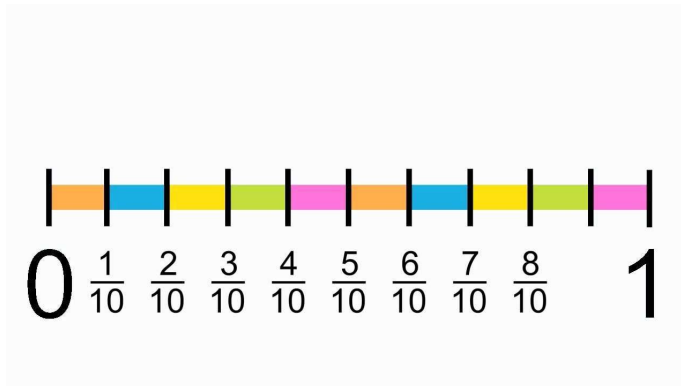
**Explore:** Students will be split into groups of 4 (or however many images are available). The groups will start at an image and record everything they notice or wonder about it on the anchor chart. Each group will have around 2 minutes at each image and groups will rotate to each image.

**Share:** After each group has visited every image have them come together to share some of their notices and wonders for individual images. After students have shared some for the individual notices/wonders, have them compare and contrast all of the images. Post anchor charts in front of room where students can see all of them and record students' compare and contrast thoughts on another sheet of chart paper.

**Summarize:** The objective for this lesson is for students to gain an understanding of fractions in different forms. A fraction might look like a pizza, a set of objects, a number line, or a number of other things. If students are struggling to understand that these are all fractions help guide them here with questions. Check in with students on the learning targets by a thumb-o-meter. Students should notice the part and whole relationship and fractions can be expressed with numerals or words.



[https://en.wikipedia.org/wiki/Fraction\\_\(mathematics\)](https://en.wikipedia.org/wiki/Fraction_(mathematics))



[https://www.youtube.com/watch?v=k5C5PdZ\\_Yys](https://www.youtube.com/watch?v=k5C5PdZ_Yys)

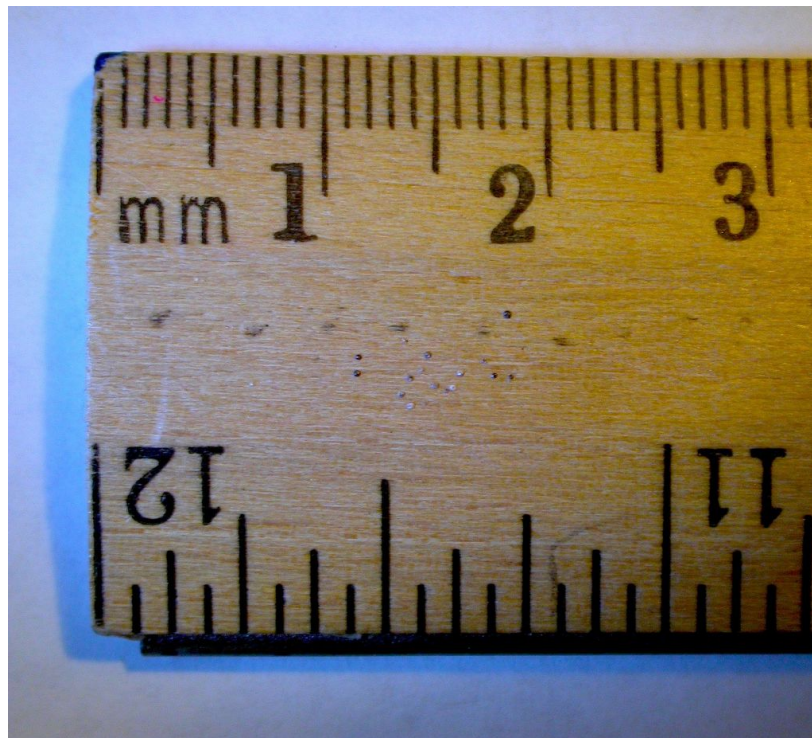
$$\frac{3}{4}$$

[https://commons.wikimedia.org/wiki/File:3\\_4\\_fraction.svg](https://commons.wikimedia.org/wiki/File:3_4_fraction.svg)



- \* 1-1/3 cups all-purpose flour
- \* 1/4 teaspoon baking soda
- \* 1/4 teaspoon salt
- \* 1/2 cup unsalted butter, melted
- \* 2/3 cup packed brown sugar
- \* 1/3 cup white sugar
- \* 2 teaspoons vanilla extract
- \* 2/3 egg
- \* 2/3 egg yolk
- \* 1-1/3 cups semisweet chocolate chips

<http://kuramasflame.deviantart.com/art/Chocolate-Chip-Cookie-Recipe-128104152>



<https://www.flickr.com/photos/iliahi/408971482>

## **Lesson 2**

### **Exploring Fraction Circles**

Lesson adapted from Rational Number Project, Grade 3 Revised.

**Standards:** 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

**Learning Targets:**

I can describe how many fraction pieces fill a whole.













**Materials:** Fraction Circle sets (1 per pair), Student Page A, Transparency 1

**Launch:** Give pairs of students a set of fraction circles. Have them start by pulling out the fractions and sorting the pieces. Ask them “how many blues cover a black piece?” Give students time to physically cover the black piece with blues then have a group share. Then ask “which is bigger 1 brown or 1 grey?” and “How many pinks cover one yellow?” Ask these types of questions until students are gaining an understanding of how the pieces are related.

**Explore:** Students will work with their partners to complete Student Page A.

**Share:** Show Transparency 1 to students and pass out one copy to each pair. Work through this page as a class to check the students’ understanding of fraction pieces. Have students share their answers for the problems with the class.

**Summarize:** Have students look at transparency 1 and make the connection that fractions can be represented in many ways.

## Exploring with the Fraction Circles

1. \_\_\_\_\_ browns equal 1 whole circle.
2. 1 whole circle equals \_\_\_\_\_ pinks.
3. \_\_\_\_\_ reds equal 1 whole circle.
4. \_\_\_\_\_ pinks equal 1 brown.
5. 1 brown equals \_\_\_\_\_ reds.
6. 1 brown is (less than, equal to, greater than) 1 pink.
7. 1 red is (less than, equal to, greater than) 1 brown.
8. 1 yellow is (less than, equal to, greater than) 1 brown.
9. 1 yellow and 1 brown and 1 \_\_\_\_\_ equals 1 whole circle.
10. 1 yellow equals 1 brown and 2 \_\_\_\_\_.
11. 3 pinks and 1 \_\_\_\_\_ equal 1 whole circle.
12. \_\_\_\_\_ grays and 1 blue and 1 yellow equals 1 whole circle.
13. 2 grays and \_\_\_\_\_ blue equals 1 yellow.
14. 1 pink equals \_\_\_\_\_ reds.
15. 4 \_\_\_\_\_ equal 1 yellow.

## **Lesson 3**

### **Naming $\frac{1}{2}$ and $\frac{1}{3}$**

Standards: 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

Learning Targets: I can name fractions using symbols and words.  
I can model  $\frac{1}{2}$  and  $\frac{1}{3}$  using fraction circles.

Materials: Warm Up, Student Page A,

Launch: Post the launch activity on the board for students to see. Students work with a partner to answer the two questions using their fraction circles. When students have had some time to find the answer to the warm up, the teacher will move into the launch of today's work. Today's lesson is giving students the background on how to name fractions and what  $\frac{1}{2}$  and  $\frac{1}{3}$  looks like. The teacher will have a set of fraction circles that can be displayed to the class (i.e. doc cam, or Smart Board). Model taking the black circle and placing two yellow pieces on it to cover it. Ask, "How many yellows equal the black circle? Are the 2 parts covering the black circle equal?" Students will answer that two yellows fill a black. Tell them that a yellow is one-half of a black. A yellow covers one-half of a black. Have the students take out their blue piece. Ask them "How can we divide this into two equal parts? Which color will divide the blue piece into two?" Give students time to find that they grey pieces will divide the blue in two. Then ask, "Are the 2 parts equal? 1 gray is 1 of 2 equal parts; what fraction of the blue piece is 1 gray?" Have the students turn and tell their partner what 1 gray would be one-half of the blue. Continue with other models of  $\frac{1}{2}$  until students seem to be understanding. Use the yellow as the unit or whole. Then, model  $\frac{1}{3}$  using the black circle as the unit and divide it using 3 brown pieces. Say "3 brown pieces cover one black. What is one brown piece called?" Students should turn and discuss what it would be called with their partner. Have a group share what they would call it until someone can name it as a third. Model  $\frac{1}{3}$  using 1 yellow, 1 brown and 1 blue as the yellow.

Explore: Students will work on Student Page A with a partner. They should just work on saying the fractions to their partner and not writing them.

Share: Walk through the first three problems from Student Page A with the class as a whole. Have a different pair of students share their answers for each one.

Summarize: The teacher will record on chart paper with the students providing the answers what  $\frac{1}{2}$  and  $\frac{1}{3}$  looks like as a fraction circle model and written as 1-half and 1-third. Students should see the written form of 1-half and 1-third as typed and  $\frac{1}{2}$  and  $\frac{1}{3}$  in a few different fraction circle models.



Find two different ways to cover 1 yellow piece.

Find two different ways to cover 1 brown piece.

Work with a partner to complete this activity. Use your fraction circles. Say the fraction name to each other when asked.

1. Take out one yellow piece. This is the unit or the whole you will divide into equal parts.

How many blues cover one yellow piece? \_\_\_\_\_

1 blue is \_\_\_\_\_ of one yellow.

(Say the fraction name)

2. Take out one brown piece. This is the unit or the whole you will divide into equal parts.

How many pinks cover one brown piece? \_\_\_\_\_

1 pink is \_\_\_\_\_ of one brown.

(Say the fraction name)

3. One yellow piece is the unit or whole you will divide into equal parts.

How many pinks cover one yellow piece? \_\_\_\_\_

1 pink is \_\_\_\_\_ of one yellow.

(Say the fraction name)

4. What color piece is 1-half of one blue? \_\_\_\_\_

5. What color piece is 1-third of one yellow? \_\_\_\_\_

6. What color piece is 1-half of one black circle? \_\_\_\_\_

7. What color piece is 1-third of one black circle? \_\_\_\_\_

8. What color piece is 1-third of one orange piece? \_\_\_\_\_

9. What color piece is 1-half of one pink piece? \_\_\_\_\_

## **Lesson 4**

### **Naming Fractions, $\frac{1}{4}$**

**Standards:** 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

**Learning Targets:** I can name fractions using symbols and words.  
I can model  $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$  using fraction circles.

**Materials:**

**Launch:** Have the warm up available for all students to see on board. Have students get their fraction circles ready and start working on the warm up with their partner. After everyone has had a chance to try the warm up, have students divide the black circle into 4 equal parts. Ask them “what fraction of the black circle is one blue piece?” Students should be able to say that a blue piece is 1-fourth. Then ask “If yellow is my unit or whole, what color divides it into fourths?” Have students explore this question, and then ask them to do the same with the brown as a unit or whole. Have students turn and talk with their partner about the question “How can all of these pieces (the blue, gray, and red) all be 1-fourth?” Finally, show the students the black circle with two blues and one yellow on it. Say “one blue must be 1-third because it is one of three pieces covering the whole.” Have some students share why this statement is not true.

**Explore:** Students will work on Student Page A and B with a partner during the explore time.

**Share:** Have a large square on the board representing the pan of brownies from problem 9. Have a pair of students share how they made 3 equal parts. Ask if anyone else did it differently and have them share. Ask students this problem to discuss with a group of 4 (2 pairs of students join). Have them discuss this problem: Lianna said that 1 red piece is one-third; Rodrigo said 1 red is one-fourth. Who is correct? After giving students a significant amount of time to discuss this problem have each group share what they thought.

**Summarize:** Students should understand how 1-fourth is written, said, and what it looks like in a fraction circle model.

Find two different ways to cover 1 yellow piece.

Find two different ways to cover 1 brown piece.

The class will work together in groups or in pairs on these problems. Answers are to be given orally or by drawing a picture. On some of the problems children may want to use the fraction circles to help solve the problem.

1. The yellow piece is the unit.

How many grays cover the yellow piece? \_\_\_\_\_

1 gray is \_\_\_\_\_ of the yellow.

(Say the word)

2. The blue piece is the unit.

How many reds cover the blue piece? \_\_\_\_\_

1 red is \_\_\_\_\_ of the blue.

(Say the word)

3. The brown piece is the unit.

How many reds cover the brown piece? \_\_\_\_\_

1 red is \_\_\_\_\_ of the brown.

(Say the word)

4. What color is 1-fourth of one black circle? \_\_\_\_\_

5. What color is 1-third of one black circle? \_\_\_\_\_

6. Draw a picture of a round pizza. Show on your drawing the pizza cut into 2 fair shares.

Each fair share is \_\_\_\_\_ of the whole pizza.

(Say the fraction name)

7. Here is a picture of a candy bar that someone has started to cut into pieces. Draw lines in to finish cutting the candy bar into equal parts.



The small piece of candy is \_\_\_\_\_ of the whole candy bar.  
(Say the fraction name)

8. Karla has a large chocolate cookie. Draw a picture of Karla's cookie. Show on your drawing how she could divide the cookie into 4 fair shares.

Each part is \_\_\_\_\_ of the whole cookie.  
(Say the fraction name)

9. William has a square pan of brownies. Draw a picture of William's pan of brownies. Show on your drawing how William could divide the pan of brownies into 3 fair shares.

Each part is \_\_\_\_\_ of the whole pan of brownies.  
(Say the fraction name)

## **Lesson 5**

### **Denominators Greater Than 4**

**Standards:** 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

**Learning Targets:** I can name fractions using symbols and words.  
I can model fractions using fraction circles.

**Materials:** fraction circles, anchor chart

**Launch:** Have students work on the warm up. When done, have students cover the yellow piece as the unit or whole with six equal pieces. Have each pair check with another pair to make sure they have the same thing. Ask if anyone could name one of these red pieces. If no one can name one red as 1-sixth, explain to them that one red is 1-sixth of the yellow. Then, show students an anchor chart with the columns: number of equal parts the unit is divided into, word name, and picture. Start by filling in 2-6 with the crew, and including 2 pictures for each row. Then have groups of around 4 try to figure out 7, 8, 9, 10, 12, and 15. Have each group share their fraction name and pictures with the class and write them on the anchor chart.

**Explore:** Have students work on Student Page A with a partner.

**Share:** Call on a few students to name fractions from the work page in order to check for understanding. Ask students, “Two of the colors I am thinking of equal one yellow. What color is it? What fractional name can I give each piece?” Have students share with their partner and then call on a student to share their thinking.

**Summarize:** Students should be able to name and model fractions at least up to fourths, and should be exposed to them through fifteenths.

Find the piece that is 1-half  
of each of these pieces:

- 1- yellow
- 1- blue
- 1- brown
- 1-orange



## Naming Fraction Amounts Using Circles

Use fraction circles to find the names of the different fraction pieces.

I. The black circle is the unit. What fraction name can you give these pieces?

1 yellow \_\_\_\_\_ 1-half \_\_\_\_\_ 1 brown \_\_\_\_\_

1 blue \_\_\_\_\_ 1 gray \_\_\_\_\_

1 white \_\_\_\_\_ 1 green \_\_\_\_\_

1 red \_\_\_\_\_ 1 pink \_\_\_\_\_

II. Now make 1 yellow unit. What fraction name can you give these pieces?

1 blue \_\_\_\_\_ 1 gray \_\_\_\_\_

1 pink \_\_\_\_\_ 1 red \_\_\_\_\_

III. Change the unit to 1 blue. What fraction name can you give these pieces?

1 gray \_\_\_\_\_ 1 red \_\_\_\_\_

IV. Change the unit to 1 orange. What fraction name can you give these pieces?

1 purple \_\_\_\_\_ 1 green \_\_\_\_\_

## **Lesson 6**

### **Intro to Paper Strip Model**

**Standards:** 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

3.1.3.2: Understand that the size of a fractional part is relative to the size of the whole. *For example:* One-half of a small pizza is smaller than one-half of a large pizza, but both represent one-half.

**Learning Targets:** I can model fractions using the paper strip model.

I can name fractions such as  $\frac{1}{4}$  and  $\frac{2}{3}$ .

**Materials:** paper strips, fraction circles

**Launch:** Have students start by working on the warm up. As an intro to paper strips, start by showing the students how to fold into different equal parts. Students should all have a good number of paper strips at their desks and more available as well. Start by showing fourths by folding it in half once and then half again. Have them unfold and see how many parts they got. Then show thirds by making an “s” shape and folding. Unfold and show that there are 3 equal parts. On a new strip have students fold it in thirds and then half. Don’t have them unfold but say, “tell your partner how many equal parts you think you will have.” Have them unfold and see if they were correct. Have them try to make sixths by folding the paper in half and then thirds. Ask the students if this works, and why. Show 1-fourth on the fraction circles so that the class can see. Have the students make 1-fourth on their paper strips. Walk around the room and assist students as needed. Ask how these models are the same. Have students share some notices with a partner then call on some to share with the crew. Do the same with 1-third having students show it on a paper strip. Make sure to write these fraction names somewhere next to them. Next, have students shade in another third on their paper strips. Ask them how many thirds they have now. They should say 2-thirds. Emphasize that this is 1-third and 1 more third and now we have 2-thirds. Record this next to the others. Draw a square and shade in 3-fourths. Have students tell their partners the name of this fraction. Record 3-fourths and 1-fourth+1-fourth+1-fourth on the board. Have students make this on their paper strips.

**Explore:** Students work on the student work pages D and G-J. Students will most likely not finish these pages today but can bring them home to work on as homework.

**Share:** Tell students to find a way to represent 0 with paper strips. Tell them to try to be creative in their thinking. Partners will share their representation of 0 with the class. How are paper strips the same as fraction circles and how are they different? Have students share this with their peers around them and have some students share aloud.

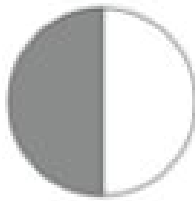
Summarize: Fractions have many different representations as you may recall our fraction gallery walk, fraction circles from yesterday, and fraction strips from today. Fractions represent some part of a whole where the parts are all of equivalent size.

Name the red piece in three different ways by changing the unit. What different units did you use?

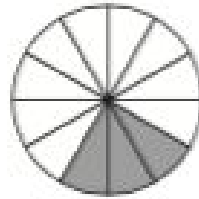
Directions:

You'll need paper strips for folding. For any four of the figures shown below, fold paper strips to model the fraction that the figure models. After you have folded and shaded your paper, write on it the fraction you have shown (use words, not symbols).

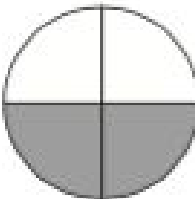
1.



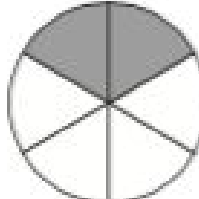
5.



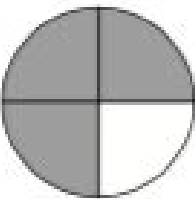
2.



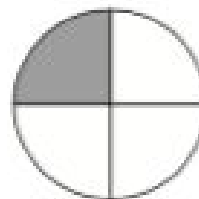
6.



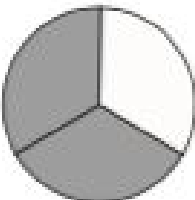
3.



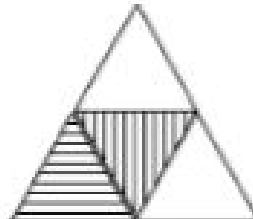
7.



4.

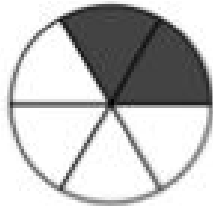


8.



For each diagram, fill in the blanks to tell about the diagram.

a.

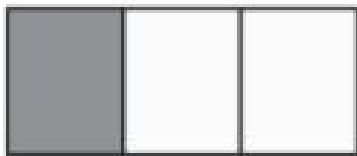


Number of equal parts \_\_\_\_\_

Number of equal parts shaded \_\_\_\_\_

The fraction shaded is \_\_\_\_\_-sixth

b.

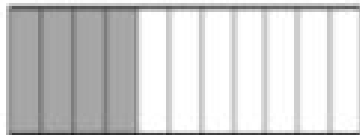


Number of equal parts \_\_\_\_\_

Number of equal parts shaded \_\_\_\_\_

The fraction shaded is 1- \_\_\_\_\_

c.



Number of equal parts \_\_\_\_\_

Number of equal parts shaded \_\_\_\_\_

The fraction shaded is \_\_\_\_\_

d.

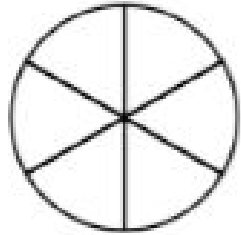


Number of equal parts \_\_\_\_\_

Number of equal parts shaded \_\_\_\_\_

The fraction shaded is \_\_\_\_\_

e.

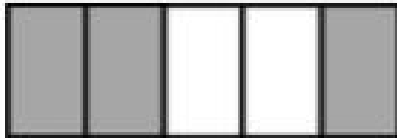


Number of equal parts \_\_\_\_\_

Number of equal parts shaded \_\_\_\_\_

The fraction shaded is \_\_\_\_\_

f.



Number of equal parts \_\_\_\_\_

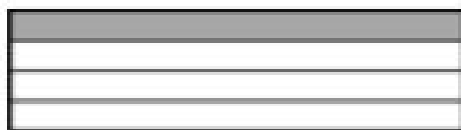
Number of equal parts shaded \_\_\_\_\_

The fraction shaded is \_\_\_\_\_

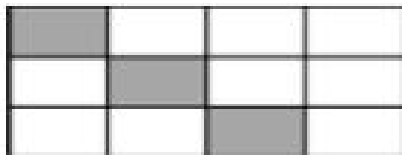
Write words like 2-fourths, 3-fifths, and so on for the fraction shaded by each diagram.



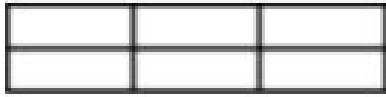
Write \_\_\_\_\_



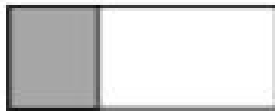
Write \_\_\_\_\_



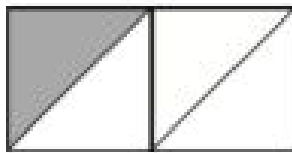
Write \_\_\_\_\_



Write \_\_\_\_\_



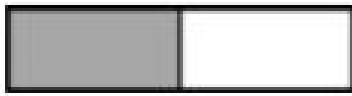
Write \_\_\_\_\_



Write \_\_\_\_\_

Write the fraction that is shown in words:

a.



\_\_\_\_\_

d.



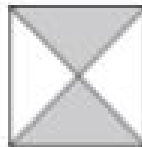
\_\_\_\_\_

b.



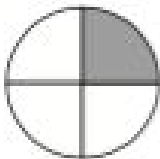
\_\_\_\_\_

e.



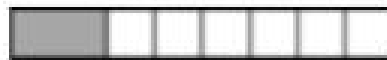
\_\_\_\_\_

c.



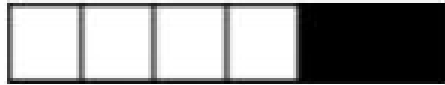
\_\_\_\_\_

f.



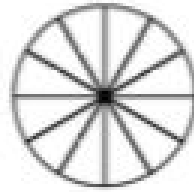
\_\_\_\_\_





g.

\_\_\_\_\_

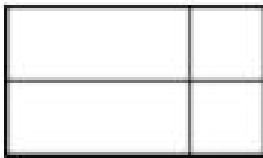


h.

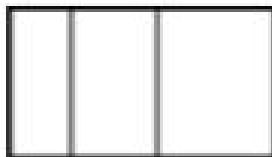
\_\_\_\_\_

Circle the figures that have equal-sized parts.

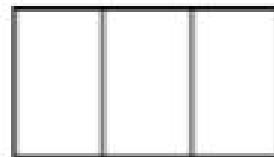
1.



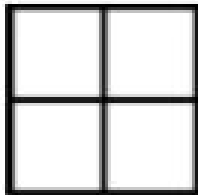
2.



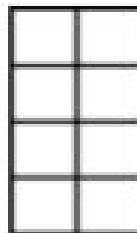
3.



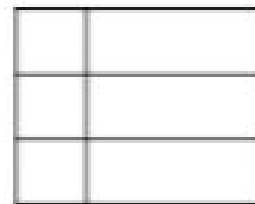
4.



5.



6.



7.



8.



9.



## Lesson 7

### Connecting Models with Symbols

Standards:

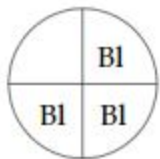
3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

Learning Targets: I can read fractions with words and symbols.

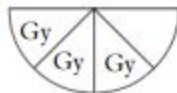
I can write fractions with words and symbols.

Materials: Fraction circles for students and teacher, student pages A-E

Launch: Use paper fraction strips to show one-third and one-fourth. Which is the largest fraction? Ask students to use fraction circles to show three-fourths. They are to show two models. For example:

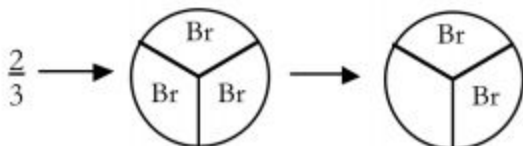


3 blues are 3-fourths  
of 1 black.

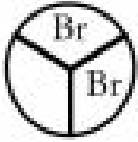


3 grays are 3-fourths  
of 1 yellow.

Ask how the two models are alike. Record in words fraction name: three-fourths. Explain that there is also a symbol name for three-fourths and it is  $\frac{3}{4}$ . Discuss the meaning of  $\frac{3}{4}$ . Ask how many equal parts each unit is divided into. Point to the bottom of the fraction symbol and explain that this 4 tells us how many equal parts. The 3 tells us that we are interested in 3 of these 4 equal parts. The fraction means  $\frac{1}{4}$  and  $\frac{1}{4}$  and  $\frac{1}{4}$ . Write  $\frac{2}{3}$  on the board and ask students to show that fraction with the fraction circles. Have them verbalize why their model does indeed represent  $\frac{2}{3}$ . First divide the whole circle into 3 equal parts ... then explain



"I divided the circle into 3 equal parts to find what color is thirds. Then I only want two of them so



shows 2 of 3 equal parts. It is  $\frac{1}{3}$  and  $\frac{1}{3}$  more.”

Explore: Repeat for  $\frac{2}{5}$ ,  $\frac{4}{8}$ , and  $\frac{3}{3}$ . Embed examples in context: A spinner for a game was divided into 5 equal parts.  $\frac{3}{5}$  of the spinner was blue. Show that amount with the fraction circles. A pizza was cut into 6 equal parts. You ate  $\frac{2}{6}$  of the pizza. Show that amount with the fraction circles. Have them talk through what they are doing with the fraction circles. The action on the manipulative reinforces the meaning of the symbol.

Share: Student pages that follow reinforce the meaning of the symbol. Select the most appropriate (and amount of) practice that your students need. Students are not expected to do all the pages.

Ask students to describe 2-3 instances that fractions are used in everyday life or in science class. Record situations from these examples that lead to recording a fraction with symbols.

Summarize: For example, to make chocolate chip cookies, you need to use  $\frac{3}{4}$  of a cup of brown sugar. Draw a picture of a measuring cup, partition it into 4 equal parts and show  $\frac{3}{4}$ .

1. Write each fraction in words.

a.  $\frac{2}{4}$  2-fourths

e.  $\frac{7}{10}$  \_\_\_\_\_

b.  $\frac{3}{7}$  \_\_\_\_\_

f.  $\frac{7}{15}$  \_\_\_\_\_

c.  $\frac{6}{8}$  \_\_\_\_\_

g.  $\frac{3}{12}$  \_\_\_\_\_

d.  $\frac{3}{11}$  \_\_\_\_\_

h.  $\frac{7}{9}$  \_\_\_\_\_

2. Write the word name and the symbol name for each fraction described.

a. 3 of 5 equal-size parts are shaded. 3-fifths  $\frac{3}{5}$

b. 5 of 7 equal-size parts are shaded. \_\_\_\_\_

c. 3 of 13 equal-size parts are shaded. \_\_\_\_\_

d. 12 of 17 equal-size parts are shaded. \_\_\_\_\_

e. 0 of 3 equal-size parts are shaded. \_\_\_\_\_

3. Write the fraction symbol for each fraction word.

a. 9-tenths  $\frac{9}{10}$

e. 13-twenty-firsts \_\_\_\_\_

b. 7-eighths \_\_\_\_\_

f. 17-eighteenhs \_\_\_\_\_

c. 6-sixths \_\_\_\_\_

g. 0-fourths \_\_\_\_\_

d. 15-nineteenths \_\_\_\_\_

4. Imagine a circle divided into 4 equal parts.

Three  $\frac{1}{4}$  parts are shaded!

What fraction tells how much is shaded in all? \_\_\_\_\_

Draw a picture.

5. Imagine a rectangle divided into 5 equal parts.

Four  $\frac{1}{5}$  parts are shaded!

What fraction tells how much is shaded in all? \_\_\_\_\_

Draw a picture.






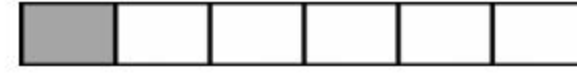






6. Write the word name and the symbol name each fraction describes.

a. A rectangle is folded into 7 equal-size parts.  
5 parts are shaded.

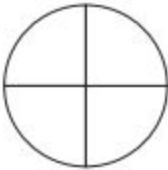
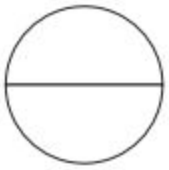


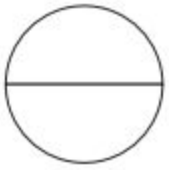













b. A circle is folded into 8 equal-size parts.  
4 parts are shaded.

Directions:












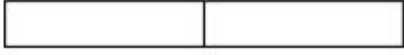




Match each picture with its symbol or word name by writing the letter of the picture next to its symbol. The first one is done for you.

A.		$\frac{1}{6}$	<u>F</u>
B.		2-halves	_____
C.		$\frac{3}{4}$	_____
D.		2-thirds	_____
E.		$\frac{3}{3}$	_____
F.		1-fourth	_____
G.		$\frac{6}{6}$	_____
H.		$\frac{1}{3}$	_____
I.		3-sixths	_____
J.		$\frac{4}{6}$	_____
K.		2-fourths	_____
L.		$\frac{1}{2}$	_____

Shade each circle to show the fractional amount.

$\frac{1}{4}$		$\frac{2}{2}$		$\frac{1}{6}$	
$\frac{5}{12}$		$\frac{0}{2}$		$\frac{5}{6}$	
$\frac{1}{3}$		$\frac{11}{12}$		$\frac{4}{4}$	
$\frac{2}{12}$		$\frac{1}{2}$		$\frac{6}{8}$	
$\frac{1}{6}$		$\frac{0}{3}$		$\frac{6}{12}$	
$\frac{6}{6}$		$\frac{8}{8}$		<i>You Decide</i>	

Write the name for the shaded part of each rectangle in words and then in symbols.

<p>1. 1 - half <math>\frac{1}{2}</math></p> 	<p>9.</p> 
<p>2.</p> 	<p>10.</p> 
<p>3.</p> 	<p>11.</p> 
<p>4.</p> 	<p>12.</p> 
<p>5.</p> 	<p>13.</p> 
<p>6.</p> 	<p>14.</p> 
<p>7.</p> 	<p>15.</p> 
<p>8.</p> 	<p>16.</p> 



## Lesson 8

### Comparing Unit Fractions

Standard:

3.1.3.3: Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.

Learning Target: I can compare unit fractions.

Materials: Fraction circles for students and teachers, Student pages A and B

Launch: Show this fraction with your fraction circles using two different units or wholes.

Then draw pictures for your display:  $\frac{3}{4}$

Explore: Start the lesson by reviewing ordering of whole numbers. For example, ask a student to select the greater of these 2 numbers, 720 or 702, and to explain his/her strategy for doing so. Give another example using a context. José earns \$42,175 a year. Mara earns \$51,275 a year. Who earns more? Introduce the idea of ordering fractions with this example. Draw two whole circles. On one circle draw in fourths. In the other draw in eighths. Which circle has the larger parts? Why is this so? So which is bigger one of the four equal parts or one of the eight equal parts? Explain: Let's develop this idea between number of parts and size of parts using Student Page A. Ask students to use their fraction circles as you work together; name the black circle as the unit. Ask: How many brown pieces cover the whole circle? How many orange? Which color takes more pieces to cover the whole unit? Which color has the smaller pieces? Record that information in a chart:

Color	How many cover 1 circle	Which color takes more...	Which color has smaller...
1. Brown	3		
Orange	5	√	√
2.			

Share: When completed, ask students if they see any patterns between the number of pieces to fill the whole unit and the size of the pieces. As a group, write a rule similar to either of these: • As the number of pieces needed to fill the whole decreases, the size of each piece gets larger. • As the number of pieces needed to fill the whole increases, the size of each piece gets smaller. Once the rule is generated use it in examples without the circular pieces. Examples: 20 purples = 1 whole 80 greens = 1 whole Which is

larger, 1 purple or 1 green? Assign Practice Pages B to reinforce the day's lesson. Ask students to picture the whole circle in their mind. What color pieces would divide the circle into twelfths? (red). Now picture the color pieces that would cover the whole circle into 3 equal parts (brown). Which piece is bigger red or brown? Why does that make sense? Repeat for blue vs yellow; orange vs red. Then ask: which is bigger and why:  $\frac{1}{2}$  or  $\frac{1}{4}$ ? Conclude by asking: Does more always mean less with fractions? Give this example: Imagine that it takes 10 maroon pieces to cover the whole circle. Which is smaller, 2 maroon pieces or 3 maroon pieces? How do you know? Ask: How is this example different from all the rest we've talked about today? Ask which is bigger:  $\frac{3}{4}$  or  $\frac{1}{4}$ ? What do you picture in your mind to answer this question?

Summarize: Students should understand that the denominator means the unit or whole and the smaller it is the bigger the piece. They should also start to realize that  $\frac{3}{4}$  means 3 fourth pieces and it is bigger than 1 fourth piece.

Show this fraction with your fraction circles using two different units. Then draw pictures for your display:

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

**Directions:** Use fraction circles to fill in the table.

Color	How many cover 1 whole circle?	Which color takes MORE pieces to cover 1 whole?	Which color has SMALLER pieces?
1. Brown	3		
Orange	5	√	√
2. Orange			
White			
3. Purple			
White			
4. Gray			
Green			
5. White			
Green			

6. Orange			
Purple			
7. Gray			
Brown			
8. Brown			
Green			

## Comparing Fractions

1. Use the whole circle as your unit. Show  $\frac{1}{3}$  and  $\frac{1}{2}$ . Which fraction is the smaller of the two?

2. Use the whole circle as your unit. Show  $\frac{1}{5}$  and  $\frac{1}{10}$ . Which fraction is the larger of the two?

3. Use the whole circle as your unit. Show  $\frac{1}{6}$  and  $\frac{1}{3}$ . Which fraction is the smaller of the two?

4. Use the whole circle as your unit. Show  $\frac{1}{12}$  and  $\frac{1}{9}$ . Which fraction is the larger of the two?

5. Imagine the whole circle is a pizza. You cut the pizza into 4 equal parts. How much of the pizza is one slice? Would you get more or less pizza if you divided it into 8 equal parts? Draw pictures to show how you answered the questions.

## **Lesson 9**

### **Ordering Fractions**

Standard: 3.1.3.3: Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.

Learning Targets: I can identify equivalent fractions. I can describe fractions using vocab words. I can compare fractions with like denominators.

Materials: Fraction Circles, Student Page A, Warm Up

Launch: Have students start by working on the warm up with a partner. Present students with this problem “Kara entered the Pizza Factory. She saw 2 friends in 1 booth and 3 friends in another booth. Both groups have just been served a large pizza. Which group should she sit with so that she gets the most to eat?”

Explore: Post this problem so students can see it while they work to solve it. Students should draw a picture to support their answer. As students work, draw two circles to represent the pizzas on the board. Give students time to solve this problem and discuss it with their peers around them. When most students have finished bring the class together and talk about the problem.

Share: Have one student divide the first pizza and ask if everyone did it the same way. Have the class come to a point of agreement on how to divide the first pizza. Then have another student show how they divided the second pizza and work to come to an agreement. Ask the class, “which table should she sit at?” Students should see that the pizza divided into thirds will give her the most pizza. Have the students help name the fractions and label them  $\frac{1}{3}$  and  $\frac{1}{4}$ . Then ask if anyone can show which one is bigger using greater than or less than symbols. In order to check for and deepen understanding, present students with another similar problem. Say, “You have two small square pans of brownies. Both pans are divided into 8 equal parts. Allie ate 2 brownies from the first pan with nuts on top. Hamdi ate 3 brownies from the second pan that didn’t have nuts. How much of each pan did each girl eat? Who ate more? How do you know?” Give students time to solve this problem with their small group. Students should draw pictures to help them solve it. Then have some students share their work and come to an understanding with the class. If time, have students work on student page A and B.

Summarize: Students should be able to describe what happens to fractions as numerators and denominators change.

Which is larger: 1-fourth or 3-fourths? Draw a picture to support your answer.

Draw pictures or use fraction circles to solve each problem.

1. Four children share one large pizza at the blue table in the lunchroom. Three children share one large pizza at the green table. At which table does each child get more pizza? Why?
2. Who gets more candy: a child at a table where 6 children are sharing a candy bar or a child at a table where 3 children are sharing a candy bar?
3. Jessica and Kim shared a large pizza. Jessica ate  $\frac{2}{6}$  of a pizza. Kim ate  $\frac{3}{6}$  of the pizza. Who ate more? How do you know?
4. Josie eats 2 brownies from a small pan of brownies that was divided into 6 equal parts. You ate 2 brownies from a small pan of brownies (the same size pan as Josie's) divided into 8 equal parts. How much of each pan did Josie and you eat? Who ate more? How do you know?



**Directions:**Use fraction circles to compare the two fractions. Circle the larger fraction.

$\frac{1}{3}$

$\frac{2}{3}$

$\frac{1}{4}$

$\frac{3}{4}$

$\frac{4}{5}$

$\frac{3}{5}$

$\frac{2}{7}$

$\frac{2}{6}$

$\frac{6}{7}$

$\frac{2}{7}$

$\frac{4}{12}$

$\frac{4}{15}$

$\frac{8}{12}$

$\frac{11}{12}$

$\frac{6}{7}$

$\frac{3}{7}$

$\frac{2}{7}$

$\frac{2}{9}$

$\frac{9}{10}$

$\frac{3}{10}$

$\frac{4}{8}$

$\frac{4}{6}$

Try these without  
manipulatives.

$\frac{2}{3}$

$\frac{2}{8}$

$\frac{13}{100}$

$\frac{27}{100}$

$\frac{7}{10}$

$\frac{7}{9}$

$\frac{9}{10}$

$\frac{9}{10}$

## Lesson 10

### **Fabulously Fruity Candy Company Presents Fruit-O-Bars**

Standards: 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

Learning Targets: I can recognize fractions as part of a whole.

Materials: A tape recording of different staff members' orders as well as a note sheet with the orders for each student to refer to, order form #1, and order form #2.

Launch: Introduce the lesson by discussing different ways people can buy gifts - going to a store or ordering through the mail, the Internet, or the phone. Tell students that they will be processing phone orders for The Fabulously Fruity Candy Company. Say, "We have tapes from some phone orders and we will be practicing how to record these on paper. The first candy we will be taking orders for is the Fruit-O-Bar. The Fruit-O-Bar is about the size of a large Hershey's bar, but it is square and is fruit flavored. Customers can choose the fruit flavor or flavors they want their bar to be." Pass out the order forms and tell class that there are certain things we need to record in order to get the orders correct. Tell them, "How many bars are ordered, and what flavor, or flavors, the bar will be are the most important part of the order."

Do the first order together, as read below in the copy of order #1.

Explore: Students will work individually to complete the final 3 orders, using the same guiding questions as order #1. Play the tape for each order with appropriate wait time in between recordings to allow students to explore their answers with a person next to them. Be sure to do a comprehensive check as the students are working on the problem.

Share: After students have recorded their answers on their order forms, have students share their answers, starting with order #2. Ask questions like, "How many bars were ordered, what flavor, how can we show that?" Have multiple students share for each order by asking if anyone did it differently. Prompt students on the fact that some of these show that fractions are less than one, in this case less than one whole Fruit-O-Bar, and that fractions involve equal parts, so be sure the parts are as equal as possible. Review the responses and ask students to list other wholes that can be split into fractions (other than just candy bars). Tell the students that this completes their "training session" for the Fabulously Fruity Candy Company order takers. Students could bring home the attached worksheets and/or work on them in class.

Summarize: Students should see that as there are more parts, the parts get smaller.

**Order #1** – “I would like to order one orange Fruit-O Bar.” (*orange = 1*)

Ask students, “How many bars were ordered?” (*1*) “Record it on your order sheet. What flavor?” (*Orange*) “Record that as well. In the last column, there is an order diagram. This helps the candy makers know what they should be making. Color in the Fruit-O Bar diagram with the color for the flavor ordered.” (*The entire square should be orange.*) “For quantity, write ‘1.’ Now, let’s try a second one.”

**Order #2** – “Please send me one Fruit-O Bar. Please make it equal parts cherry and orange.” (*cherry = 1/2, orange = 1/2*)

Ask, “How many bars were ordered?” (*1*) “Record it on your order sheet. What flavor?” (*Cherry and orange*) “How can we show that?” As students suggest writing  $1/2$  cherry and  $1/2$  orange, discuss the fraction and talk about its parts. Tell students, “Remember how we had to talk about amounts that were less than 1 with the apple. Fractions tell about something that is less than 1. In this case, less than 1 whole Fruit-O Bar. Fractions always involve equal parts, so make sure to divide your Fruit-O Bar into 2 equal parts—1 part orange and 1 part cherry.”

**Order #3** – “I would like to order one Fruit-O Bar. Please make it lime, cherry, lemon, and orange.” (*lime = 1/4, cherry = 1/4, lemon = 1/4, orange = 1/4*)

Have students enter the order information and color in the diagram. Call on volunteers to share their answers. Discuss how  $1/4$  is 1 of 4 equal parts and that the 4 fourths added together make 1 whole. This should be clear on the diagram and order form. Also have students show the different ways the Fruit-O Bar can be divided up into quarters (e.g., horizontal stripes, vertical stripes, four squares, slant lines, and so on).

**Order #4** – “I am ordering one Fruit-O Bar for my three sons to share. Bert likes cherry, Bart likes lemon, and Elmo likes grape. Please be sure the bar gives them each a fair share of their favorite flavors.” (*cherry = 1/3, lemon = 1/3, grape = 1/3*)

17



Date: \_\_\_\_\_

## Candy Company

<p><b>Order Diagram</b></p> <div style="border: 1px solid black; width: 100%; height: 100%;"></div>	<p><b>Order Diagram</b></p> <div style="border: 1px solid black; width: 100%; height: 100%;"></div>
<p><b>Form</b></p> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div>	<p><b>Form</b></p> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div>

Name: \_\_\_\_\_

## Fabulously Fruity

<p><b>Order #1</b></p> <p>I would like to order one orange Fruit-O Bar.</p>	<p><b>Order</b></p> <p>How many bars? _____</p> <p>Flavors:</p> <p>Lemon _____</p> <p>Orange _____</p> <p>Cherry _____</p> <p>Grape _____</p> <p>Lime _____</p> <p>Blueberry _____</p>
<p><b>Order #2</b></p> <p>Please send me one Fruit-O Bar. Please make it equal parts cherry and orange.</p>	<p><b>Order</b></p> <p>How many bars? _____</p> <p>Flavors:</p> <p>Lemon _____</p> <p>Orange _____</p> <p>Cherry _____</p> <p>Grape _____</p> <p>Lime _____</p> <p>Blueberry _____</p>

Name: \_\_\_\_\_

Date: \_\_\_\_\_



## Fabulously Fruity Candy Company

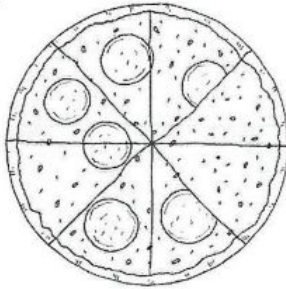
<p><b>Order #3</b></p> <p>I would like to order one Fruit-O Bar. Please make it lime, cherry, lemon, and orange.</p>	<p><b>Order Form</b></p> <p>How many bars? _____</p> <p>Flavors:</p> <p>Lemon _____</p> <p>Orange _____</p> <p>Cherry _____</p> <p>Grape _____</p> <p>Lime _____</p> <p>Blueberry _____</p>	<p><b>Order Diagram</b></p> <div style="border: 1px solid black; width: 100%; height: 100%;"></div>
<p><b>Order #4</b></p> <p>I am ordering one Fruit-O Bar for my three sons to share. Bert likes cherry, Bart likes lemon, and Elmo likes grape. Please be sure the bar gives them each a fair share of their favorite flavors.</p>	<p><b>Order Form</b></p> <p>How many bars? _____</p> <p>Flavors:</p> <p>Lemon _____</p> <p>Orange _____</p> <p>Cherry _____</p> <p>Grape _____</p> <p>Lime _____</p> <p>Blueberry _____</p>	<p><b>Order Diagram</b></p> <div style="border: 1px solid black; width: 100%; height: 100%;"></div>

Name: \_\_\_\_\_

Date: \_\_\_\_\_

WORD PROBLEM

John saw this pizza in the cafeteria. He wanted plain pizza. How much of the pizza could John have?



BASICS BOX

Fractions tell about parts of wholes. It is a way to talk about amounts less than 1. Some common fractions are:

$\frac{1}{2}$  (one half)

$\frac{1}{3}$  (one third)

$\frac{1}{4}$  (one fourth or one quarter)

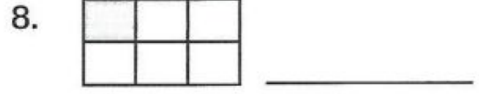
$\frac{1}{8}$  (one eighth)

The bottom number of a fraction is the *denominator*. It tells us how many equal pieces the whole has been divided into. The top number is the *numerator*. It tells us how many of the equal pieces we are focusing on.

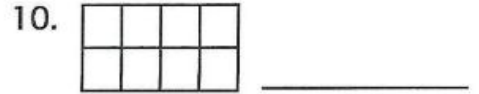
We see that John's pizza has 8 equal pieces—6 pieces have toppings and 2 are plain. So John could have  $\frac{2}{8}$  of the pizza.

PRACTICE

Write the fraction to match the shaded part of the picture.



Draw a fraction. Write the number.



**JOURNAL**

Charlene's birthday cake was  $\frac{1}{8}$  blue,  $\frac{3}{8}$  red,  $\frac{1}{8}$  orange, and  $\frac{3}{8}$  yellow icing.  
 Draw a picture of Charlene's cake and color it in.

**REVIEW PAGE #2**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Fractions of a Whole**

Draw a picture to match each fraction.

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

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

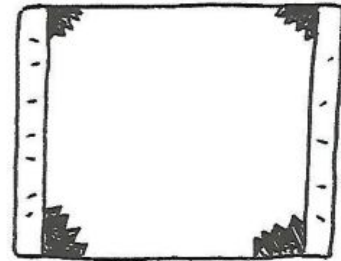
7. Color in this Fruit-O Bar so  $\frac{1}{4}$  is lemon,  $\frac{1}{4}$  is grape,  $\frac{1}{4}$  is cherry and  $\frac{1}{4}$  is blueberry.

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

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

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

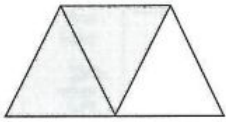
6.  $\frac{1}{8}$  





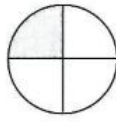
Write the fraction for each picture.

8.



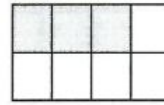
\_\_\_\_\_

9.



\_\_\_\_\_

10.



\_\_\_\_\_

Review:

11. What is the numerator in  $\frac{7}{8}$ ? \_\_\_\_\_

12. What is the denominator in  $\frac{1}{10}$ ? \_\_\_\_\_

13. If  $\frac{1}{3}$  of a Fruit-O Bar is cherry and the rest is orange, how much is orange? \_\_\_\_\_

# Lesson 11

## **New Candy - Fruit Drops!**

### Standards:

3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

3.1.3.2: Understand that the size of a fractional part is relative to the size of the whole. *For example:* One-half of a small pizza is smaller than one-half of a large pizza, but both represent one-half.

Learning Targets: I can recognize fractions as part of a set.

I can recognize that as the whole (or unit) changes, the size of the part changes as well.

Materials: Fruit Drop Order Forms #1 and #2, pencil, colored pencils, crayons, practice page #4, review page #4.

Launch: Begin the lesson with a problem to get students thinking in an investigative way. Draw 15 same-size-and-color-dots on the board. Write this problem above the picture, "Joe has a bag of candy. He wants to share it fairly with his friends, Tom and Tina. He empties the bag and sees there are 15 candies. How many candies should each person get?" (5 candies) Call on students to volunteer answers and discuss. Draw circles around each set of 5 dots to show how the candies would be divided up evenly. Ask students, "What fraction of the bag did each person get?" ( $\frac{5}{15}$ ) Explain to students that we can use fractions to talk about not only parts of a whole, like a whole apple, but also parts of a set or group of things, like a set of candies or a group of people. Ask them to think of examples that show a fraction of a set or group of something and discuss.

Tell students, "Today we are going to be helping the Fabulously Fruity Candy Company with some new orders for another one of their famous candies: Fruit Drops. Fruit Drops are small fruity candies that are similar in size and shape to M&M's or Skittles. They come in three different box sizes - small, medium, and large. Small boxes have 4 drops, medium boxes have 8 drops, and large boxes have 16 drops." Pass out the Order Forms and review together. Listen to the tape or read the orders below, and work on the first order together as an example. Split students into groups of 3 to work on reading, recording, and modeling the fractions of Fruit Drops.

Explore: Students will work together to complete the final 3 orders. Play the tape and give each group a copy of the notes for each order with appropriate wait time in between recordings to allow students to explore their answers with their group. Be sure to do a comprehensive check as the students are working on the problem

Share: After students have recorded their answers on their order forms, have students share their answers, starting with order #2. Have multiple students share for each order by asking if anyone did it differently. While students are explaining their methods, be sure to ask them why they did what they did. It is important to make sure that the students know why they do what they do so as to avoid misconceptions. To have students “truly” experience how fractions of sets work, use the students themselves as the objects in sets. Invite a group of students to the front of the room. Then ask the class to use fractions to describe the group: How many girls? How many have brown eyes? How many are wearing sneakers? Then have students write down a fraction they notice and challenge their classmates to figure out what feature or characteristic they are focusing on. For example, a student might say, “ $\frac{1}{3}$  of the group is this,” and based on the fraction and the people in the group, someone might answer that  $\frac{1}{3}$  of the group is wearing denim jeans.

Summarize: Students should be able to relate the set model to the other fraction models by the end of the lesson with parts and wholes.

**Order #1** – “I want a small box of Fruit Drops, please. One half should be blueberry and one half should be orange.” (*blueberry =  $\frac{1}{2}$  or 2 Fruit Drops, orange =  $\frac{1}{2}$  or 2 Fruit Drops*)

Students should write the fractions and then color in the diagram. Call on a volunteer to share his or her answer. Discuss how  $\frac{1}{2}$  of 4 is 2.

This problem also gives you another opportunity to look at equivalent fractions. Some students may describe the blueberry as  $\frac{2}{4}$  and the orange as  $\frac{2}{4}$ . After all, 2 of the 4 pieces are blueberry and 2 of the 4 pieces are orange. From their colored-in diagrams, it should be clear that  $\frac{2}{4}$  is equal to  $\frac{1}{2}$ .

**Order #2** – “Could I please have a medium box of Fruit Drops with grape, orange, lime, and cherry?” (*grape =  $\frac{1}{4}$  or 2 Fruit Drops, orange =  $\frac{1}{4}$  or 2 Fruit Drops, lime =  $\frac{1}{4}$  or 2 Fruit Drops, cherry =  $\frac{1}{4}$  or 2 Fruit Drops*)

If we compare this to the last problem, we see that we are talking about 2 Fruit Drops for each flavor again. But this time the 2 is  $\frac{1}{4}$  of 8. How much would  $\frac{1}{4}$  be of a small box be? (*1 Fruit Drop*) Doing this problem and discussing its results will help emphasize the idea that *the size of a fractional amount depends on the size of the whole*—a very important concept in fractions.

**Order #3** – “One large box of Fruit Drops, please. The flavors I want are lemon, cherry, blueberry, and grape.” (*lemon = 1/4 or 4 Fruit Drops, cherry = 1/4 or 4 Fruit Drops, blueberry = 1/4 or 4 Fruit Drops, grape = 1/4 or 4 Fruit Drops*)

This is an interesting problem for discussion because the previous caller asked for 4 flavors as well but in a medium box. Now this caller wants 4 flavors, but in a large box. Contrast the two answers. Students will see how 1/4 of 8 (2) is larger than 1/4 of 16 (4). Again, we see how the size of a fraction actually depends on what it is a fraction of.

**Order #4** – “Hi! I would like to order a large box of Fruit Drops. Three-fourths should be cherry, my favorite, and the rest should be lime for my parakeet, Herbert.” (*cherry = 3/4 or 12 Fruit Drops, lime = 1/4 or 4 Fruit Drops*)

When students hear this caller supply the fraction, they often figure this problem will be easy. But they soon see that they will have to figure out how much 3/4 of 16 is. Explain to students that drawing a picture or diagram is often helpful when finding fractions of a set or



Date: \_\_\_\_\_

**Candy Company**

<p><b>Order Diagram</b></p>	<p><b>Order Diagram</b></p>
<p><b>Form</b></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Form</b></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Name: \_\_\_\_\_

## Fabulously Fruity

<p><b>Order #1</b></p> <p>I want a small box of Fruit Drops, please. One half should be blueberry and one half should be orange.</p>	<p><b>Order</b></p> <p>Box Size? _____</p> <p>Flavors:</p> <p>Lemon _____</p> <p>Orange _____</p> <p>Cherry _____</p> <p>Grape _____</p> <p>Lime _____</p> <p>Blueberry _____</p>
<p><b>Order #2</b></p> <p>Could I please have a medium box of Fruit Drops with grape, orange, lime, and cherry?</p>	<p><b>Order</b></p> <p>Box Size? _____</p> <p>Flavors:</p> <p>Lemon _____</p> <p>Orange _____</p> <p>Cherry _____</p> <p>Grape _____</p> <p>Lime _____</p> <p>Blueberry _____</p>

Date: \_\_\_\_\_

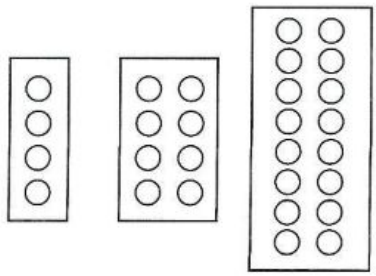


# Candy Company

**Form**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

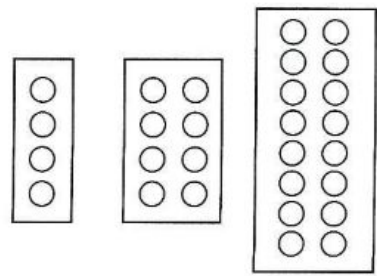
**Order Diagram**



**Form**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Order Diagram**



Name: \_\_\_\_\_

# Fabulously Fruity

## Order #3

One large box of Fruit Drops, please.  
The flavors I want are lemon, cherry, blueberry, and grape.

## Order

Box Size? \_\_\_\_\_

Flavors:

Lemon \_\_\_\_\_

Orange \_\_\_\_\_

Cherry \_\_\_\_\_

Grape \_\_\_\_\_

Lime \_\_\_\_\_

Blueberry \_\_\_\_\_

## Order #4

Hi! I would like to order a large box of Fruit Drops. Three fourths should be cherry, my favorite, and the rest should be lime for my parakeet, Herbert.

## Order

Box Size? \_\_\_\_\_

Flavors:

Lemon \_\_\_\_\_

Orange \_\_\_\_\_

Cherry \_\_\_\_\_

Grape \_\_\_\_\_

Lime \_\_\_\_\_

Blueberry \_\_\_\_\_

### PRACTICE PAGE #4

Name: \_\_\_\_\_

Date: \_\_\_\_\_

#### WORD PROBLEM

There were 21 students in Mr. Smart's math class.  $\frac{1}{3}$  voted for dogs as their favorite animal. The rest of the class voted for cats. How many votes did dogs get?

#### BASICS BOX

Pictures or diagrams, along with multiplication and division, can help you find fractions of a set or group.



To find  $\frac{1}{3}$  of 21:

number of groups

number of items

What if  $\frac{2}{3}$  voted for dogs? How many students would that be? We already know  $21 \div 3 = 7$  students in a group. To know about 2 of the 3 groups, we multiply:

$$2 \times 7 = 14 \text{ number of students in 2 groups}$$

number of groups


number in a group

#### EXAMPLE



Divide the total number of items (21)  
by the number of groups (3).

$$21 \div 3 = 7 \text{ students voted for dogs}$$

 number in a group

There were 24 cats in the yard.  
 $\frac{1}{4}$  were striped. How many striped cats?

$\frac{1}{4}$  of 24

$$24 \div 4 = \underline{\hspace{2cm}}$$

#### PRACTICE

1.  $\frac{3}{8}$  of 16 =           

4.  $\frac{5}{6}$  of 18 =            .

2.  $\frac{1}{5}$  of 25 =           

5.  $\frac{2}{9}$  of 18 =           

3.  $\frac{1}{2}$  of 24 =           

6.  $\frac{1}{10}$  of 100 =           

#### JOURNAL

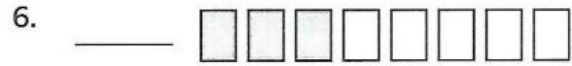
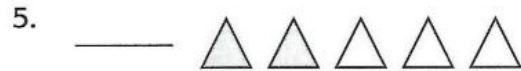
Explain with words, numbers, and pictures how you would find  $\frac{5}{6}$  of 30.

Name: \_\_\_\_\_

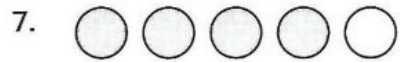
Date: \_\_\_\_\_

## Fractions of a Set

Write the fraction for each shaded part of the set.



Match the fraction with the picture.



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



$$\frac{4}{5}$$



$$\frac{3}{9}$$



$$\frac{1}{5}$$

11. How much is  $\frac{1}{2}$  of 16? \_\_\_\_\_

12. How much is  $\frac{1}{3}$  of 12? \_\_\_\_\_

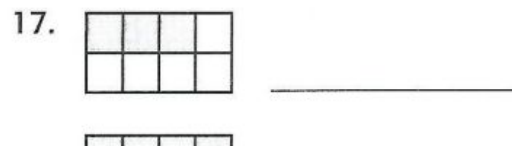
13. 4 is what fraction of 16? \_\_\_\_\_

Review: Make these fractions equivalent.

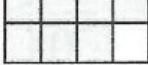
14.  $\frac{1}{4} = \frac{\quad}{8}$

15.  $\frac{2}{3} = \frac{2}{6}$

Review: What fraction of the shape is shaded?



16.  $\frac{5}{8} = \frac{10}{\quad}$

18.  \_\_\_\_\_

53

## Lesson 12 **Chip Model**

### Standards:

**3.1.3.1:** Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

**3.1.3.2:** Understand that the size of a fractional part is relative to the size of the whole. *For example:* One-half of a small pizza is smaller than one-half of a large pizza, but both represent one-half.

**3.1.3.3:** Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.

Learning Target: I can create different sets for a fraction.

I can represent fractions as parts using different unit sizes.

I can compare fractions as parts of different set sizes.

Materials: Chips for students and teacher, Student pages A-C.

Launch: Put the following problem up on the board:

Order these fractions from smallest to largest. Be ready to explain your thinking.

$$\frac{1}{3} \quad \frac{1}{5} \quad \frac{1}{6} \quad \frac{1}{10}$$

Present this picture:



Say, “I want to model this fraction using chips as my unit or whole instead of paper.

What fraction is shown? If I use 12 chips as my unit, tell me the steps to show  $\frac{3}{4}$ .”

Vary the unit by asking students what they’d do if you used 4 chips as a unit and then 20 chips as the unit. Ask how these chip models are alike and how they are different.

Summarize by showing that to show  $\frac{3}{4}$  you used 4, 12, and 20 chips. Ask if you could

have used other sets of chips as your unit. Show  $\frac{2}{3}$  with the fraction circles. Ask

students to model this fraction with chips. Allow them to choose the unit. Ask students to tell you the number of tiles they use as the whole or unit.

Explore: Present this chart to students.

Fraction	Units you could use
$\frac{1}{5}$	
$\frac{1}{2}$	
$\frac{3}{4}$	

Ask if they showed each fraction with paper folding strips, how many equal parts would they need. Then ask them to imagine using chips to show each fraction. Ask: What are some possible sets of chips you can use as the whole (unit) to model each fraction? List 3 possible units that they could use as the unit for each fraction. Ask: How did you figure this out? Conclude explore time by asking students to show the fraction  $\frac{1}{4}$  with 14 chips. Share: Discuss why this cannot be done. Ask for units that cannot be used to show the fractions in the above chart. [Make another column in the table]. Assign Student Pages A - C as a way to practice showing fractions with chips. End this lesson with some problem solving using chips. Present these two problems and ask students to solve them using chips.

Joe ate 4 jellybeans. This was  $\frac{1}{5}$  of all the jellybeans in the bag. How many jellybeans were in the bag?

Marta ate 10 jellybeans. This was  $\frac{1}{4}$  of all the jellybeans in the bag. How many jellybeans in the bag?

Then have a few students share how they solved the problems.

Summarize: Again, students should realize that they are dealing with parts and wholes and be able to relate this model to others.

## Showing Fractions Using Chips



What fraction is shaded? \_\_\_\_\_

Show that fraction using 6 chips as your unit. Draw a picture in the column to the right.



What fraction is shaded? \_\_\_\_\_



Show that fraction using 12 chips as your unit. Draw a picture in the column to the right.

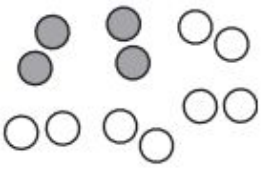

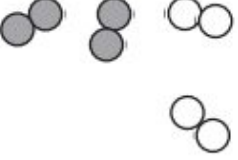


What fraction is shaded? \_\_\_\_\_

Show that fraction using 12 chips as your unit. Draw a picture in the column to the right.

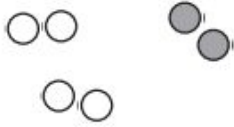
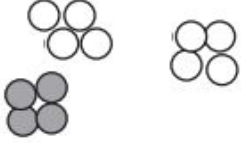
Identify the fractional amount of chips shaded.

Picture of chips	Fraction shaded
	<p>How many groups? _____</p> <p>How many groups are tan? _____</p> <p>What fraction of the chips are tan? _____</p>
	<p>How many groups? _____</p> <p>How many groups are tan? _____</p> <p>What fraction of the chips are tan? _____</p>

	<p>How many groups? _____</p> <p>How many groups are tan? _____</p> <p>What fraction of the chips are tan? _____</p>
	<p>How many groups? _____</p> <p>How many groups are tan? _____</p> <p>What fraction of the chips are tan ? _____</p>
	<p>How many groups? _____</p> <p>How many groups are tan? _____</p> <p>What fraction of the chips are tan ? _____</p>



Show each fraction with chips in two ways. You decide on the unit. Draw a picture or your models.

	Model 1	Model 2
$\frac{1}{3}$		
$\frac{1}{4}$		
$\frac{1}{6}$		
$\frac{3}{4}$		
$\frac{1}{2}$		
$\frac{2}{3}$		

## **Lesson 13**

### **The Fraction Cookie Game**

From Investigations Curriculum, Grade 3, Unit 7, Lesson 2.2

**Standards:** 3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

**Learning Targets:** I can identify fractions that equal 1. I can name fractions using words and symbols.

**Materials:** M16 Hexagon Cookies Master, Pattern Blocks, Fraction Number Cubes ( $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{6}$ ,  $\frac{2}{3}$ ,  $\frac{5}{6}$ ), M14 Fraction Cookie Game Instructions

**Launch:** Introduce the Fraction Cookie Game to the class. In the game, the students collect pieces of pattern block cookies. The game is played with one fraction number cube. On each turn, students roll the number cube and then add the exact amount of their roll to their cookies (hexagon cookie worksheet). They should place pattern blocks to show how the cookies are covered as they go. The goal is to cover all of the fraction cookies on the sheet. After each turn they should make sure they have the least number of blocks by trading for larger pieces as needed (i.e. I have  $\frac{1}{3}$  and  $\frac{2}{6}$  on my board which is a blue rhombus and two triangles. Can I have less than 3 pieces on my board?) Model this game with a student playing a few rounds so that students can see how to play.

**Explore:** Students will play The Fraction Cookie Game in pairs. Walk around and make sure that students are understanding how to trade pieces for larger ones.

**Share:** Ask the questions, “Who can give us an example of when you had to make a trade so that you would end up with as few pattern block pieces as possible? How much of a hexagon did you start with? What did you roll? How did you make the trade?” Have some students share answers to these questions to emphasize the trading.

**Summarize:** Make sure that students understand that many different fractions can mean the same thing. It is also important that they understand that there are many ways to get one as a whole.

Name \_\_\_\_\_


Date \_\_\_\_\_

**Finding Fair Shares**



# Fraction Cookie (page 1 of 2)

## You need

- pattern blocks 
- fraction number cubes (2 in one color and 1 in a different color)
- *Hexagon Cookies*



## Play with a partner or in a group.

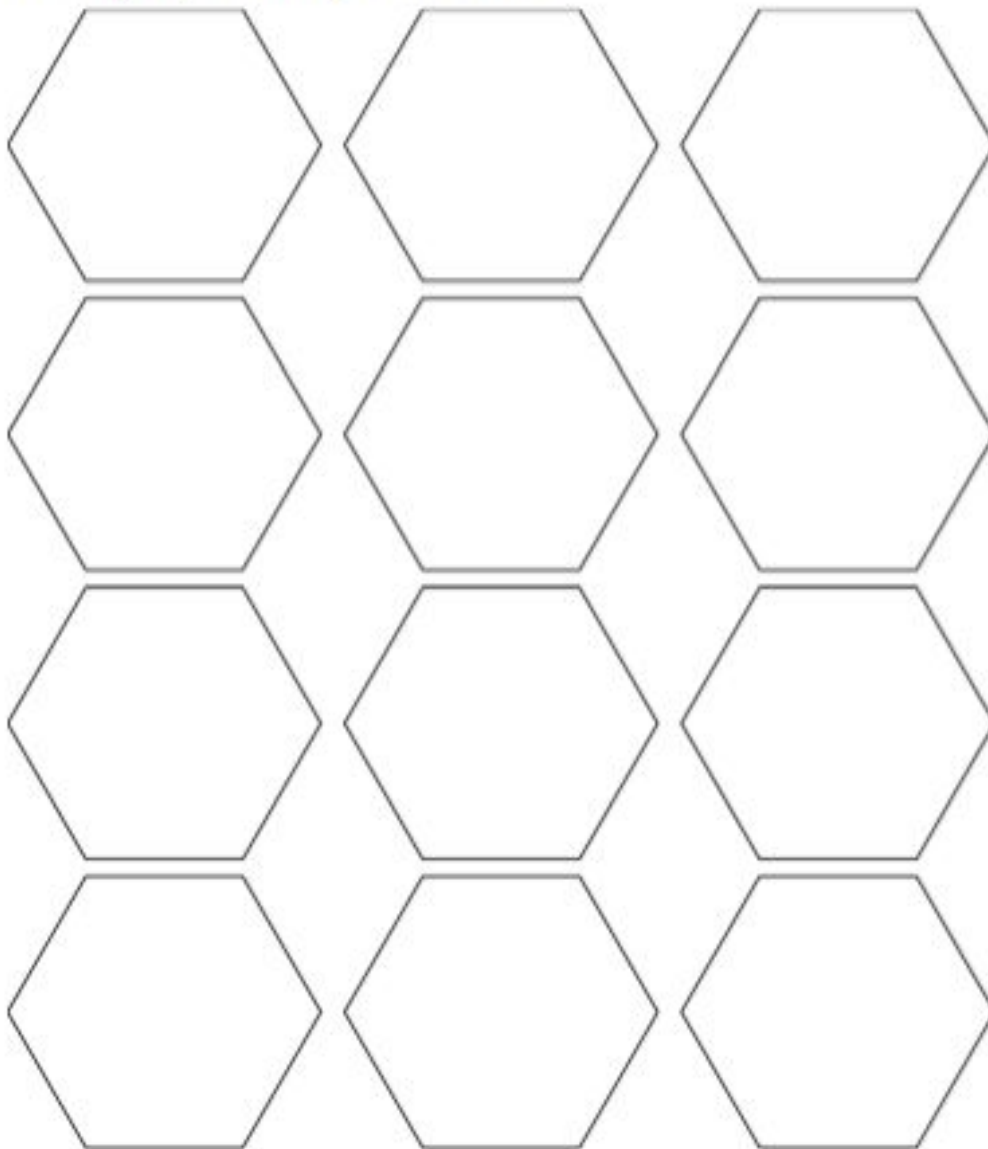
- 1 Each player rolls one fraction number cube and takes that amount in pattern blocks, or "cookies." Record the cookies you collect on *Hexagon Cookies*.
- 2 At the end of a turn, each player must have the fewest number of pieces possible. For example, if you have  $2\frac{1}{2}$  cookies altogether, you should have 2 yellows and 1 red in front of you. Trade in smaller fraction pieces for larger ones, and check each other's cookie shares as you play.
- 3 Take turns and collect cookies until you have filled in the sheet. The player who finishes first wins.

© Pearson Education 3

## Hexagon Cookies

Use pattern blocks. Show all the ways to make 1 whole cookie.

Are any of your designs the same?



**Lesson 14**  
**Fractions on a Number Line**  
**Teacher's Gumbo -**

<https://www.teacherspayteachers.com/Product/FREE-Fractions-on-a-Number-Line-1114780>

Standards:

3.1.3.1: Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line. *For example:* Parts of a shape ( $\frac{3}{4}$  of a pie), parts of a set (3 out of 4 people), and measurements ( $\frac{3}{4}$  of an inch).

Learning Target: I can read and write fractions on a number line.

Materials: Fractions on a Number Line Task Cards and Recording Sheet, marker board and markers, fraction circles, fraction strips, paper, pencils.

Launch: Have students post multiple models of  $\frac{1}{2}$  on the board using fraction circles, fraction strips, paper folding, and a set. Ask students if they think there are any other ways to represent fractions. Ask, what if I had a number line that was labeled from zero to one? Draw this on the board, without putting in another line, and have students work with a partner for 1-2 minutes to try to come up with a way to show  $\frac{1}{2}$  on that number line. Prompt students to explain what it means to have 2 as the denominator (two equal parts). This should help them see that they need to split the number line into two equal parts. Allow the class to come up with the correct way. Once students understand this, discuss that  $\frac{1}{2}$  is halfway between zero and one.

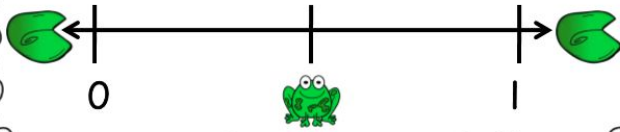
Explore: Now, have students try the same thing for showing thirds, fourths, fifths, and sixths as well. Allow students to work in groups of 3 on this.

Share: Have students come up to the board and share the different fractions on a number line. Ask students to explain their thinking. Pair students up in groups of 2 and sit next to each other. Pass out the task cards and recording sheets to the students. Have students work to find where the frog has hopped on the number line. Students will need to know the distance hopped and the total distance shown on the number line (not 1!).

Summarize: Students should recognize fractions can be represented on a number line.

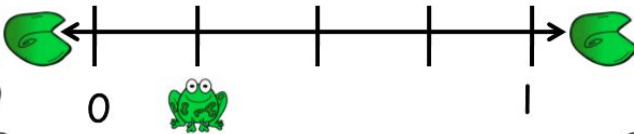
Card 1

What fraction on the number line does the frog represent?



Card 2

What fraction on the number line does the frog represent?



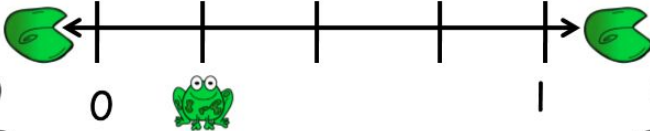
Card 3

What fraction on the number line does the frog represent?



Card 4

How much farther  
must the frog hop to  
be at the end of the  
number line?



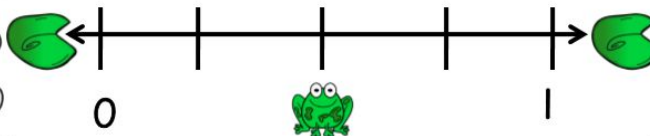
Card 5

What fraction on the  
number line does the  
frog represent?



Card 6

How much farther  
must the frog hop to  
be at the end of the  
number line?



Name: \_\_\_\_\_

## Fractions on a Number Line Recording Sheet

Card 1	Card 2	Card 3
Card 4	Card 5	Card 6



**Lesson 15**  
**Fraction Golf!**  
**Michelle Thom -**

<https://www.teacherspayteachers.com/Product/Fraction-Golf-a-game-to-practice-making-and-comparing-fractions-1163075>

Standards:

Learning Target:

Materials: Dice, recording sheet, pencils, and fraction manipulatives.

Launch: Watch this short film on golf:

<https://www.youtube.com/watch?v=BHugEN5OMIs>

Have a discussion about what golf is with the class. Be sure that the topic of scoring comes up through prompting. Discuss that it is very important to get the lowest score possible when golfing.

Explore: Explain the game of Fraction Golf to the students. They will be playing in groups of 4, so group them as such. Each will have their own recording sheet, but they will share the dice and take turns rolling. Explain to them that each student will roll both die on their turn. The score they get is determined by this. Say, "On your turn, roll two dice and create a fraction by placing the smaller number on top as the numerator and the larger number on the bottom as the denominator. Roll the dice until you reach the golfing goal. Keep track of your strokes using tally marks. Remember, the winner has the fewest points at the end!" Do one example for the students using the golfing goal as less than one half. Let students play out an 18-hole game (or a 9-hole game if time doesn't allow for 18 holes) in their groups.

Share: Once done with this, have groups share their scores and who they think won (and why!), and have the class determine a winner out of the entire class. Ask students, "What are some of the techniques you used to get the lowest score? What about to find the winner? How did you know when you were at the lowest score for each golfing goal?" Be sure students explain well and prompt them to realize that they used many different kinds of fractions to reach their goals. Have students share in a way that you get an example of every representation that has been discussed during this unit.

Summarize: This lesson helps student put together their knowledge of fractions and comparing them.



# Fraction Golf



Directions: On your turn, roll two dice and create a fraction by placing the smaller number on top as the numerator and the larger number on the bottom as the denominator. Roll the dice until you reach the golfing goal. Keep track of your strokes using tally marks. The winner has the fewest points at the end!

HOLE	PAR	PLAYER 1 SCORE	PLAYER 2 SCORE	GOLFING FRACTION GOAL
1	4			Greater than one half
2	3			Less than one half
3	4			Equal to one half
4	3			Equal to one
5	5			Greater than one fourth
6	4			Less than three fourths
7	5			Greater than one half
8	4			Less than one half
9	5			Greater than one sixth
TOTAL	37			

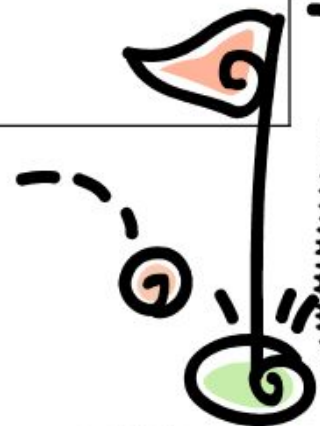


Smaller Number

1

Larger Number

2





# Fraction Golf



Directions: On your turn, roll two dice until you reach the golfing goal. Keep track of your strokes using tally marks. The winner has the fewest points at the end!

HOLE	PAR	PLAYER 1 SCORE	PLAYER 2 SCORE	GOLFING FRACTION GOAL
1	4			Less than one half
2	3			More than one whole
3	4			Less than three fourths
4	3			An improper fraction
5	5			Equivalent to one third
6	4			Equivalent to one half
7	5			Equal to one
8	4			Greater than one
9	5			Between one half and three fourths
10	4			Less than one fourth
11	4			Equivalent to one half

12	3			Less than five sixths
13	5			Equivalent to one fourth
14	5			Equal to two
15	4			Between one and two
16	5			Between one half and five sixths
17	3			Numerator of three
18	4			Not simplified
TOTAL	74			



Name: \_\_\_\_\_ Date: \_\_\_\_\_

End-of-Unit Assessment

1. What fraction is shown?



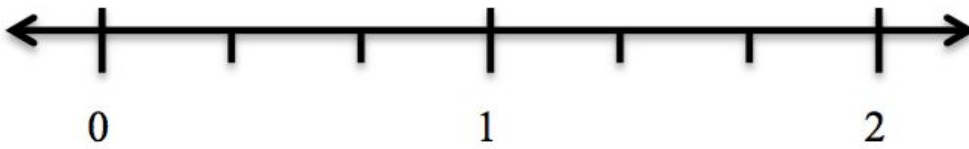
2. What are 2 ways to show  $\frac{2}{3}$ ?

3. Julie has a collection of teddy bears.  $\frac{2}{8}$  are brown.  $\frac{1}{3}$  are white.  $\frac{1}{6}$  are black.  $\frac{1}{4}$  are tan. Which is the greatest fraction?

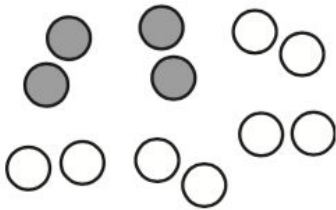
4. Show  $\frac{3}{4}$  on the number line below:



5. Show  $\frac{2}{3}$  on the number line below:



6. What fraction is shown with this set?



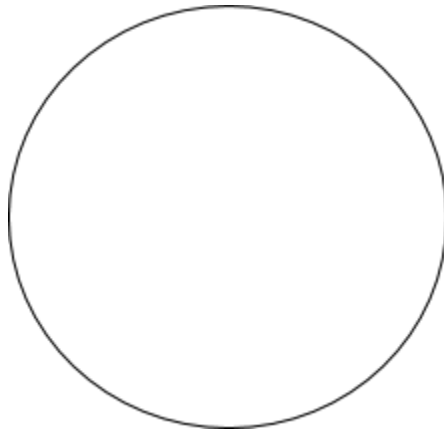
7. Circle the larger fraction:

$$\frac{3}{6} \quad \frac{5}{6}$$

8. Anna has 4 chocolates and 1 sucker. What fraction of Anna's candy is suckers?

9. Carla has 3 books and 4 notebooks in her backpack. Sarah has 4 books and 4 notebooks in her backpack. Who has the greater fraction of books?

10. Kristine made a pizza to share with her 5 friends. How can she cut it evenly?



## **References**

### Works Cited

- Cramer, Kathleen, Meryln Behr, Thomas Post, and Richard Lesh. "Rational Number Project: Initial Fraction Ideas." *Rational Number Project: Initial Fraction Ideas*. N.p., 2013. Web. 29 June 2016.
- "Grade 3: Finding Fair Shares: Many Ways to Make a Share." *Investigations in Number, Data, and Space*. Glenview, IL: Pearson Scott Foresman, 2012. 69-73. Print.
- Gumbo, Teacher's. "Fractions on a Number Line." *Teachers Pay Teachers*. N.p., n.d. Web. 29 June 2016.  
<<https://www.teacherspayteachers.com/Product/Fractions-on-a-Number-Line-Task-Cards-Center-Activities-and-Worksheets-1114783>>.
- Krech, Bob. *Reteaching Math: Fractions & Decimals: Mini-Lessons, Games & Activities to Review & Reinforce Essential Math Concepts & Skills*. New York: Scholastic, 2008. 10-18. Print.
- Thom, Michelle. "Fraction Golf {a Game to Practice Making and Comparing Fractions}." *Teachers Pay Teachers*. N.p., n.d. Web. 29 June 2016.  
<<https://www.teacherspayteachers.com/Product/Fraction-Golf-a-game-to-practice-making-and-comparing-fractions-1163075>>.