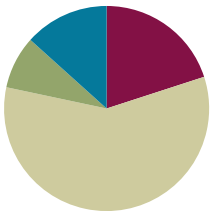
Lesson 2

Objective: Specify and partition a whole into equal parts, identifying and counting unit fractions by folding fraction strips.

Related Topics: More Lesson Plans for the Common Core Math

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(8 minutes)
Total Time	**(60 minutes)**



Fluency Practice (12 minutes)

- Skip Counting by Three and Six **3.OA.4** (6 minutes)
- Multiplication by Three and Six **3.OA.4** (6 minutes)

Skip Counting by Three and Six (6 minutes)

Materials: (S) Use personal white boards (if students struggle to answer verbally)

By Threes:

Skip count forward and backward by threes two times with a pause between each effort so that students see themselves improve on the second try. After doing the threes twice, have students underline the multiples of 6. (e.g., 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 27, 24, 21, 18, 15, 12, 9, 6, 3, 0)

By Sixes:

Skip count forward and backward by sixes two times with a pause between each effort to analyze weak points.

Multiplication by Three and Six (6 minutes)

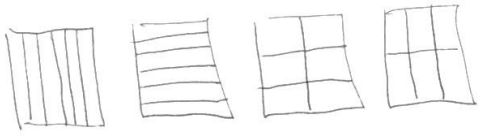
Materials: (T) Choose your mode of delivery (e.g., oral work, personal white boards)

Students pair facts of 3 and 6 and uncover the doubling.

2 x 3 = 6	2 x 6 = 12
3 x 3 = 9	3 x 6 = 18
4 x 3 = 12	4 x 6 = 24

Application Problem (5 minutes)

Anu needs to cut a piece of paper into 6 equal parts. Draw at least three pictures to show how Anu can cut her paper so that all the parts are equal. (Early finishers can do the same thing with halves, fourths or eighths.)



Concept Development (35 minutes)

Materials: (S) About 8 paper strips sized 4¼" x 1" per student (vertically cut an 8 ½" x 11" paper down the middle), pencil, and crayon

Have students take one strip and fold it to make halves. (They might fold it one of two ways. This is correct but for the purpose of this lesson it is best to fold as pictured below.)

T: How many equal parts do you have in the whole?
S: Two.
T: What fraction of the whole is 1 part?
S: 1 half.
T: Draw a line to show where you folded your paper. Write the name of the unit onto each equal part.

Use the following sentence frames with the students chorally.

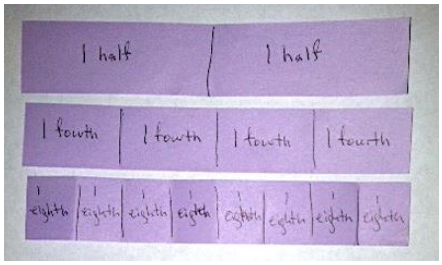
1. There are _____ equal parts in all.
2. One equal part is called _____.

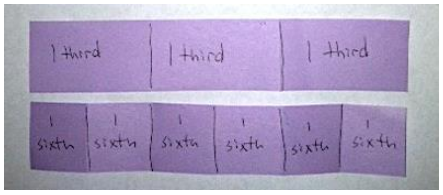
Students should fold and label strips showing fourths and eighths to start, followed by thirds and sixths, and fifths and tenths. Some students may create more strips than others.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

For *English Language Learners* and others sentence frames support English language acquisition. Students are able to form complete sentences while providing details about the fraction they are analyzing.

For students above grade level, ask students to predict a method for partitioning the whole into ninths (after partitioning thirds for example).





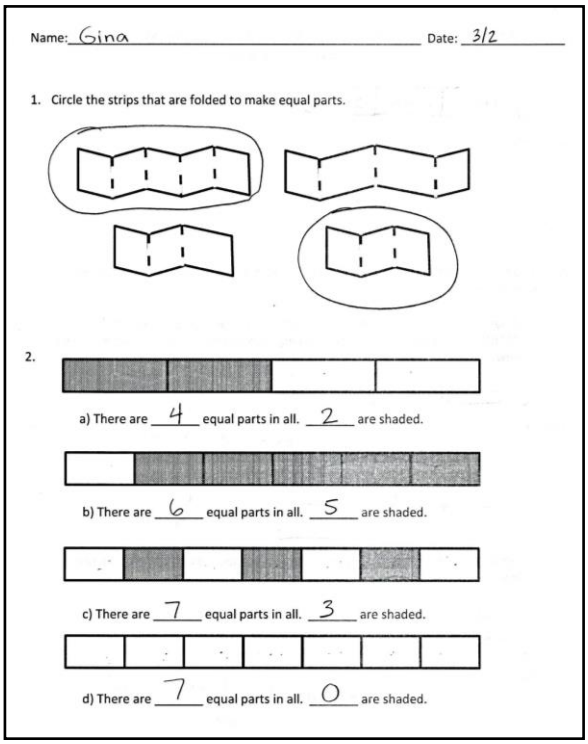
Circulate as you watch for students who are not folding in equal parts. Encourage students to try specific strategies for folding equal parts. A word wall would be helpful to support correct spelling of the units, especially eighths.

Before beginning the activity sheet when the students have all created their fraction strips, ask a series of questions such as the following:

- Look at your set of fraction strips. Suppose they are pieces of delicious pasta. Raise the strip in the air that best shows how to cut one piece of pasta in two equal parts with your fork.
- Look at your fraction strips. Suppose they are lengths of ribbon. Raise the strip in the air that best shows how to divide the ribbon into 3 equal parts.
- Look at your fraction strips. Suppose they are candy bars. Which best shows how to share your candy bar fairly with one person? Which shows how to share your half fairly with three people?

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students solve these problems using the RDW approach used for Application Problems.


Name: Gina Date: 3/2

1. Circle the strips that are folded to make equal parts.

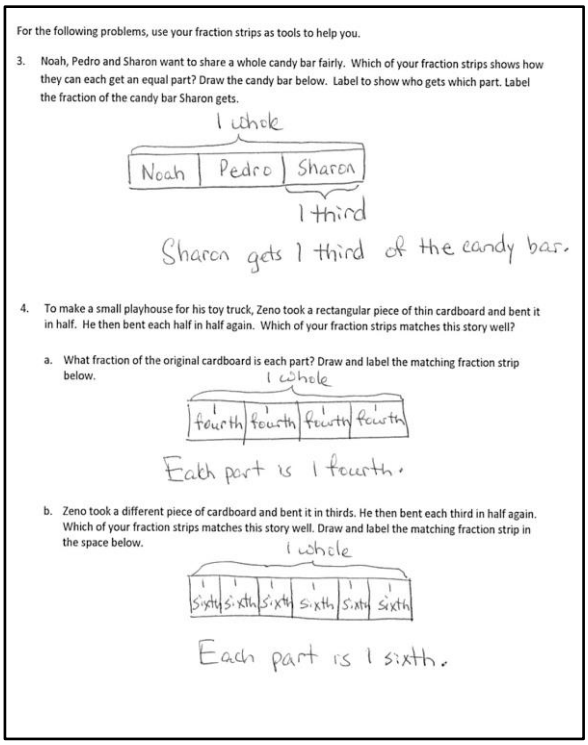
2.

a) There are 4 equal parts in all. 2 are shaded.

b) There are 6 equal parts in all. 5 are shaded.

c) There are 7 equal parts in all. 3 are shaded.

d) There are 7 equal parts in all. 0 are shaded.


For the following problems, use your fraction strips as tools to help you.

3. Noah, Pedro and Sharon want to share a whole candy bar fairly. Which of your fraction strips shows how they can each get an equal part? Draw the candy bar below. Label to show who gets which part. Label the fraction of the candy bar Sharon gets.

1 whole
Noah | Pedro | Sharon
1 third
Sharon gets 1 third of the candy bar.

4. To make a small playhouse for his toy truck, Zeno took a rectangular piece of thin cardboard and bent it in half. He then bent each half in half again. Which of your fraction strips matches this story well?

a. What fraction of the original cardboard is each part? Draw and label the matching fraction strip below.

1 whole
fourth | fourth | fourth | fourth
Each part is 1 fourth.

b. Zeno took a different piece of cardboard and bent it in thirds. He then bent each third in half again. Which of your fraction strips matches this story well. Draw and label the matching fraction strip in the space below.

1 whole
sixth | sixth | sixth | sixth | sixth | sixth
Each part is 1 sixth.

Student Debrief (8 minutes)

Lesson Objective: Specify and partition a whole into equal parts, identifying and counting unit fractions by folding fraction strips.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

You may choose to use any combination of the questions below to lead the discussion.

- The size of the whole never varies. What happens to the size of the parts?
- The relationship of the number of equal parts to the name of the fraction.
- Methods for folding different fractional parts.
- The relationship of the halves to the fourths then to the eighths.
- The relationship of the thirds to the sixths.
- The relationship of the halves, fourths, and eighths to the thirds and sixths.
- The relationship of the multiplication and "count by" activity beginning the lesson in fluency to the relationship of the thirds and sixths.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

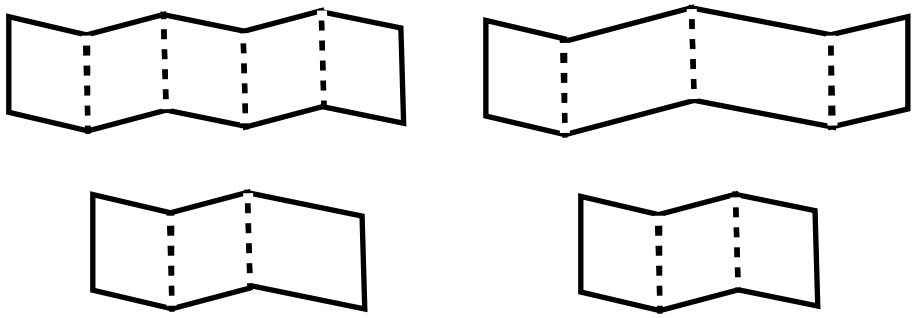
Act out both word problems on the Problem Set using concrete materials which will aid students in better understanding.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help you assess the students' understanding of the concepts that were presented in the lesson today and plan more effectively for future lessons. You may read the questions aloud to the students.

Name _____ Date _____

1. Circle the strips that are folded to make equal parts.



2.

a. There are _____ equal parts in all. _____ are shaded.

b. There are _____ equal parts in all. _____ are shaded.

c. There are _____ equal parts in all. _____ are shaded.

d. There are _____ equal parts in all. _____ are shaded.

For the following problems, use your fraction strips as tools to help you.

3. Noah, Pedro, and Sharon want to share a whole candy bar fairly. Which of your fraction strips shows how they can each get an equal part? Draw the candy bar below. Label to show who gets which part. Label the fraction of the candy bar Sharon gets.

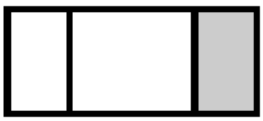
4. To make a small playhouse for his toy truck, Zeno took a rectangular piece of thin cardboard and bent it in half. He then bent each half in half again. Which of your fraction strips matches this story well?

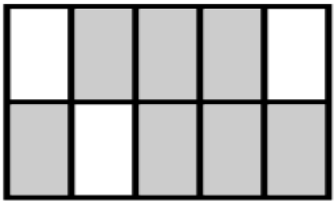
   a. What fraction of the original cardboard is each part? Draw and label the matching fraction strip below.

   b. Zeno took a different piece of cardboard and bent it in thirds. He then bent each third in half again. Which of your fraction strips matches this story well? Draw and label the matching fraction strip in the space below.

Name _____ Date _____

1. Circle the model that shows one third.





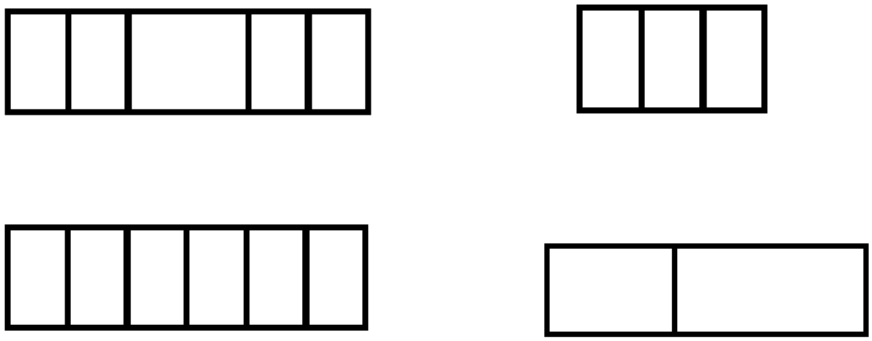
3. 2.

There are _____ equal parts in all. _____ are shaded.

2. Michael bakes a piece of garlic bread for dinner. He shares it equally with his three sisters. Show how Michael and his three sisters can each get an equal share of the garlic bread.

Name _____ Date _____

1. Circle the strips that are cut into equal parts.



2. 

a. There are _____ equal parts in all. _____ are shaded.

b. There are _____ equal parts in all. _____ are shaded.

c. There are _____ equal parts in all. _____ are shaded.

d. There are _____ equal parts in all. _____ are shaded.

3. Dylan plans to eat $\frac{1}{5}$ of his candy bar. His 4 friends want him to share the rest equally. Show how Dylan and his friends can each get an equal share of the candy bar.

4. Nasir baked a pie and cut it in fourths. He then took each of the pieces and cut them in half.

   a. What fraction of the original pie does each piece represent?

   b. Nasir ate one piece of pie on Wednesday and two pieces on Tuesday. What fraction of the original pie was not eaten?