Partitioning Shapes
Problem of the Day

Solve using model drawing.

Karla went to the store to buy some eggs. She bought three cartons of eggs, and each carton contained 12 eggs. She used 1/6 of the eggs to make a cake. How many eggs did she have left?
<table>
<thead>
<tr>
<th>Key Vocabulary</th>
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<tbody>
<tr>
<td>Fraction</td>
<td>Partition</td>
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<tr>
<td>Numerator</td>
<td>Triangle</td>
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</tr>
<tr>
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<td>Trapezoid</td>
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Essential Question

How are fractions connected to equal shares?
Activity 1: Review of Shapes

Name the following shapes:
Activity 1: Review of Shapes

How many sides does each shape have?
Activity 2: Partitioning Shapes

What does the word “partition” mean?

Can you use triangles to create a rhombus?

Try using your pattern blocks.
Activity 2: Partitioning Shapes

Building a rhombus with triangles partitions the rhombus into two equal parts.

We can say that a triangle is $\frac{1}{2}$ of a rhombus because we need two triangles to make 1 whole rhombus.
Activity 2: Partitioning Shapes - We Do

2. How many green triangles are in one red trapezoid?
Activity 2: Partitioning Shapes - We Do

3. How many green triangles are in one yellow hexagon?
Activity 2: Partitioning Shapes- You Do

4. How many blue rhombuses are in one yellow hexagon?
Activity 2: Partitioning Shapes - You Do

5. How many red trapezoids are in one yellow hexagon?
Activity 3: Partitioning Shapes with a Different Whole

How would things change if our whole was 2 hexagons?

If the whole is 2 hexagons, what fraction does 1 hexagon represent?
Activity 3: We Do

2. The red trapezoid is what part of the whole?
Activity 3: We Do

3. The blue rhombus is what part of the whole?
Activity 3: You Do

4. The green triangle ▲ is what part of the whole?
Exit Ticket

If our whole is 5 hexagons, what fraction does 1 rhombus represent?
Partitioning Shapes
Problem of the Day

Solve using model drawing.

Juan has 7 times as many erasers as Terry. Amy has twice as many erasers as Terry. Altogether they have 80 erasers. How many erasers does Juan have?
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Essential Question

How are fractions connected to equal shares?
Partitioning Review

When partitioning an object, it must be divided into equivalent sections.

**Ex. 1** Each of these circles are partitioned into 4 equal pieces or fourths (1/4).

![Diagram of two circles partitioned into four equal parts](image1)

**Ex. 2** Each of these number lines are partitioned into thirds (1/3).

![Diagram of number lines partitioned into thirds](image2)
How to partition?

When you are partitioning an object, you must first determine if you are dividing into an odd number (numbers ending in 1, 3, 5, 7, or 9) or an even number (numbers ending in 0, 2, 4, 6, or 8).

If dividing into an even number, you can always divide the object in $\frac{1}{2}$ first and make additional partitions as needed.

Ex. To divide these objects into 4 equal pieces or fourths, it would look like this...

![Number line and square](image)
How to partition?

If dividing into an odd number, you can always draw one partitioned piece, then divide the rest in half, and make additional partitions as needed.

Ex. To divide this object into 7 equal pieces or sevenths, it would look like this...

Rectangle

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- Draw the rectangle and create 1 partition
- Next split the unpartitioned rectangle in half
- Finally, draw the remaining partitions
Partitioning Example--I Do

Kathryn invites five friends so she needs to split her cake evenly between 6 people. Show Kathryn ways she could cut her cake for her and her friends and label each piece as 1/6.

How would this look on a number line (remember to determine your whole)?
Partitioning Example--We Do

Nicole is going to share a pan of brownies with her family of 4 people. She was trying to figure out all the ways she could share the pan of brownies with her family by cutting, or partitioning the pan into 4 equal parts. Using the models below, figure out 3 different ways to partition the pan into four parts, and label each part as $\frac{1}{4}$ of the pan.
Partitioning Example--You do

Read the word problem and draw different ways to partition the birthday cake based on the amount of guests. Try to find several different ways to divide the cake into the amount of parts asked for, and label each piece with a fraction.

Kathryn invites two friends so she needs to split her cake evenly between 3 people. Show Kathryn ways she could cut her cake for her and her friends and label each piece as \( \frac{1}{3} \).
Exit Ticket

Rewrite the sentence in your math journal and fill in the blank.

When partitioning an object, each partitioned piece must be ________?
Independent Practice/Centers

Complete the **Independent Practice** activity sheet **Partitioning Shapes—Fraction Based**

Complete Division Fluency Print-outs—**One’s Division Facts**

Technology 1— [www.khanacademy.org](http://www.khanacademy.org)

- Click on... Subjects
- Click on... 3rd grade
- Click on... fractions
- Click on... Fractions | 3rd grade | Math | Khan Academy
- Click on... Test yourself (20 question quiz)


- Click on... multiplication/division
- Click on... **Compare Quantities: Two-Step Model**
Partitioning Shapes
Word Problems
Day 3
Malik had four times as many sticks of gum as Cameron. Cameron has 8 sticks of gum. How many sticks of gum does Malik have left if he chewed 7 sticks of gum?
Key Vocabulary

Fraction
Numerator
Denominator
Whole
Equivalent
Partition
Triangle
Hexagon
Rhombus
Trapezoid
Learning Activity 1 (I Do)

- Brianna has a circle and she partitions it into 3 equal sections.
  - Draw the circle with the 3 equal parts
  - Explain why lines all the way across (vertically, horizontally, and diagonal wouldn’t work with a circle)
Learning Activity 2 (We Do)

- Derrick has a rectangle. He wants it partitioned into 6 equal parts.
  - What are some possible ways that we can partition the rectangle into 4 equal parts?
    - Draw each of the examples on the board.
  - What fraction is each section of the rectangle?
  - What if three rectangles made up the whole...then what fraction would each section of the rectangles be?
Learning Activity 3 (You Do...In Groups)

• Part A. Fold one of the square pieces of paper into four equal parts. Color one of the parts. Repeat with the other two papers, folding them in different ways. Discuss in your group how you are going to fold each sheet of paper before you start.

• Part B. What fraction of each square did you color?

• Part C. Are the areas of the colored parts the same or different? Discuss in your group.
Math Talk

- Share Out using Academic Language (key vocab. partition, equal parts, fraction)
Exit Ticket

Would the following picture be a way to divide the shape into 5 equal parts with equal areas? Explain why or why not.
Independent Practice/Centers

Complete the Independent Practice activity sheet: Partitioning Shapes—Fraction Based

Complete Division Fluency Print-outs—One’s Division Facts

Technology 1—www.khanacademy.org

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Fractions Strategy Review

Day 4
Problem of the Day

Draw a visual model or number line to help you solve the problem.

Caroline has candy left from going to a party. 2/8 of her candy is suckers and 2/4 of her candy is chocolate and the rest is a mixture of other kinds.

· What kind of candy does she have more of?

Caroline has more of ____ candy.

I know that Caroline has more ____ candy because ______.

· What fraction of her candy is a mixture of other kinds?

The fraction of Caroline’s candy that is a mixture of other kinds is ____.
Essential Question

How are fractions connected to equal shares?

Today we will learn how **fractions** are connected to **equal shares**.

**Fractions**: The number that contains a part and a whole. \(\frac{3}{4}\) ← Numerator

**Equal shares**: Partitioned pieces
Sarah was playing in her backyard when she noticed that \( \frac{2}{6} \) of the trees are Pine trees and \( \frac{2}{4} \) of the trees are Oak trees.

- Which type of tree does she have more of in her backyard?

The person we are talking about is____.

I have will compare _____ to ______.

Sarah has more ___ trees in her backyard.
Marco has two dogs, Sammy and Spot. Sammy eats $\frac{3}{4}$ of a can of dog food each day and Spot eats $\frac{5}{4}$ of a can of dog food.

- Which dog eats more food, and how much more?

The dog that ____ more food is ____.

I know that the dog ____ eats more food because ______________.
You Try!

Draw a visual model or a number line to help you solve the problem.

Ava makes some turkey and cheese sandwiches. Ava used \( \frac{6}{12} \) of the loaf of bread and only \( \frac{1}{2} \) of the loaf of bread is left.

Did Ava use more loaf of bread, or is there more loaf of bread left than what Ava used?

How do you know?

Ava used more ____ than ____.

I know that Ava used more ____ beause ________________________.
Create your own fraction word problem (make sure you know what the answer is to your problem) and then switch with a partner so they can solve your problem using at least one strategy.

When your partner has completed your problem, fact check them to see if they got your problem correct.

This answer to your problem is ____.

I know ____ is the answer because _________________. 
Exit Ticket

What is an example of a set of equivalent fractions?

An example of a set of equivalent fractions are _____ and ____. I know that _____ and _____ are equivalent fractions because _____.
Independent Practice/Centers

Complete the Independent Practice activity sheet

Complete Division Fluency Print-outs–One’s

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