

Strand: Numbers and Operations **Name:** KEY

Skill Addressed: Understanding Operations with Fractions **Blk:**

Activity: *Understanding Dividing Fraction*

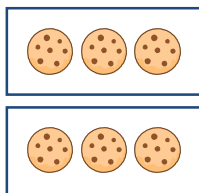
This task is a non-calculator activity; it will help you make sense of dividing fractions.

Back to Basic Concepts – Dividing Fractions

Think of a context, and use a diagram to represent each of the following division statements:

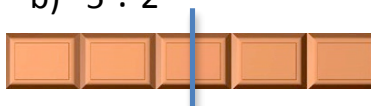
***Note: There are two ways to think about division: $6 \div 2$ can be thought of as 6 cookies shared between 2 people (partitive – you know how many portions you want, and you are looking for how many are in each portion – the size of each portion). It can also be thought of as “how many people are there if each person receives 2 cookies?” (quotitive – you know the portion size (quota) and you are looking for how many portions there will be).*

a) $6 \div 2$



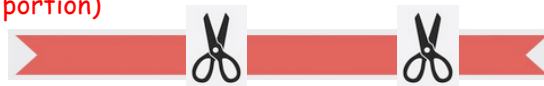
There are 6 cookies and two friends. How many cookies will each friend receive? (partitive)

b) $5 \div 2$



There is a chocolate bar that is 5 pieces wide. How much do each of 2 friend receive? (partitive)

There is a piece of ribbon 5 m long, and I need 2 m for each gift that I want to wrap. How many pieces will I be able to make to wrap my gifts? (quotitive - I know the size of the portion)



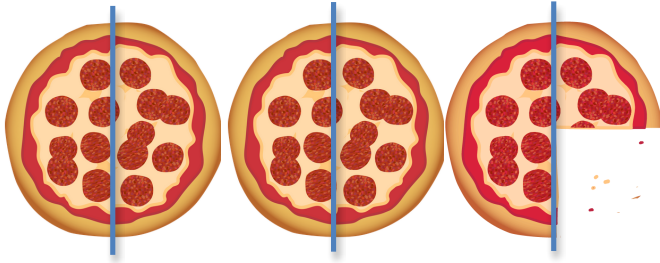
c) $\frac{1}{5} \div \frac{2}{5}$



I have four fifths of a cup of milk left, and I need two fifths for each smoothie. How many smoothies can I make? (quotitive)

d) $2\frac{3}{4} \div \frac{1}{2}$ see next page for answer

d) $2\frac{3}{4} \div \frac{1}{2}$



I bought three pizzas, but someone ate a quarter. I am supposed to have a $\frac{1}{2}$ -pizza sized serving for each person today. How many servings of $\frac{1}{2}$ -size will I have? (quotitive – we know the serving size is $\frac{1}{2}$ -pizza)

There will be 5 and a half portions because each portion should have been one half of a pizza.

Report back to the class and explain your diagrams and which type of division your problem demonstrates (partitive or quotitive).

Use these examples and others to develop a procedure for division of fractions that makes sense.

Work as a class and use the examples to look for patterns as you try to devise a procedure that would work for dividing all fractions. It is a good idea to write fractions in simple form.

If you want to do even more work to make sense of dividing fractions, this is an excellent article. I highly recommend it! 😊

Gregg, J., & Underwood Gregg, D. (2007). Measurement and fair-sharing models for dividing fractions. *Mathematics Teaching in the Middle School*, 12(9), 490-496.