TOPIC 10

Understand Fractions as Numbers

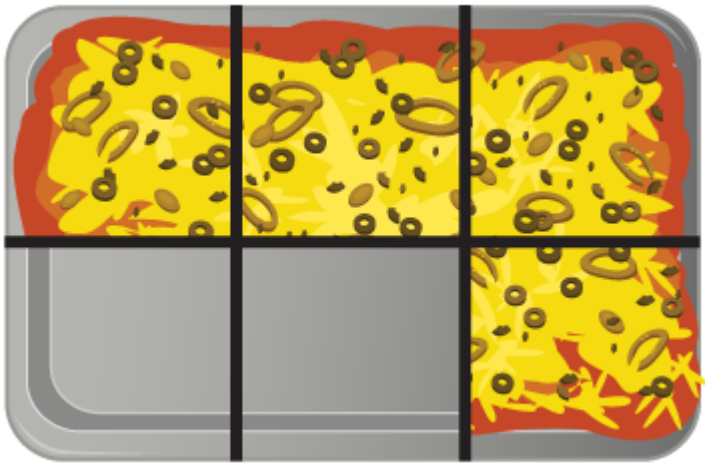
OVERVIEW

Topic 10 focuses on understanding that fractions are numbers that can represent a portion of a whole or a point on the number line. The work in this topic also includes measuring lengths to the nearest half inch and fourth inch or measuring liquid volume to the nearest half cup and quarter cup.

FRACTION MEANINGS AND REPRESENTATIONS

Partitioning Regions Your child will use fractions to describe equal parts of a region. A unit fraction, such as $\frac{1}{6}$ describes one equal part. Other fractions, such as $\frac{5}{6}$, describe multiple equal parts. A fraction such as $\frac{6}{6}$ describes the whole.

To describe the part of the casserole that has been eaten, count the original number of equal pieces. Use this number as the bottom number of the fraction (the denominator). Then determine the number of pieces that were eaten and use that number for the top number of the fraction (the numerator).



$\frac{2}{6}$ of the casserole has been eaten.
$\frac{4}{6}$ of the casserole is left.

Fractions and Sets Your child will identify and write fractions that name a part of a group or set. The group is considered the whole.

Here is how your child would answer the question, "What fraction of the group of kittens is orange?"

The unit fraction $\frac{1}{8}$ represents one kitten in the set of 8 kittens.
To find the fraction of the set that are orange, count all the kittens.

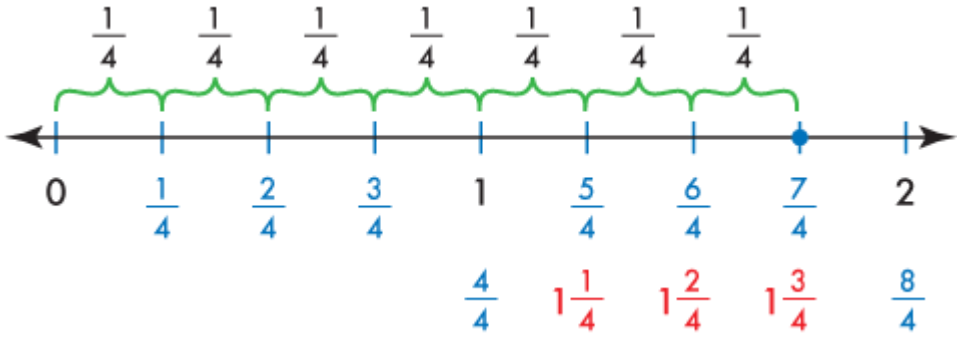
Then count the orange kittens.

$\frac{6}{8}$ ← Number of orange kittens
← Total number of kittens

Say: *Six eighths* of the kittens are orange.

Fractions on a Number Line Your child will learn that a fraction is represented by a point on the number line. Students learn that every number on a number line represents a distance from 0. When the distance from 0 to 1 is divided into equal lengths, a unit fraction, such as $\frac{1}{4}$, describes the distance from 0 to one of those equal lengths. Other fractions, such as $\frac{2}{4}$, $\frac{4}{4}$, and $\frac{7}{4}$, describe multiple equal lengths from 0.

The point showing 7 lengths of $\frac{1}{4}$ can be labeled $\frac{7}{4}$.



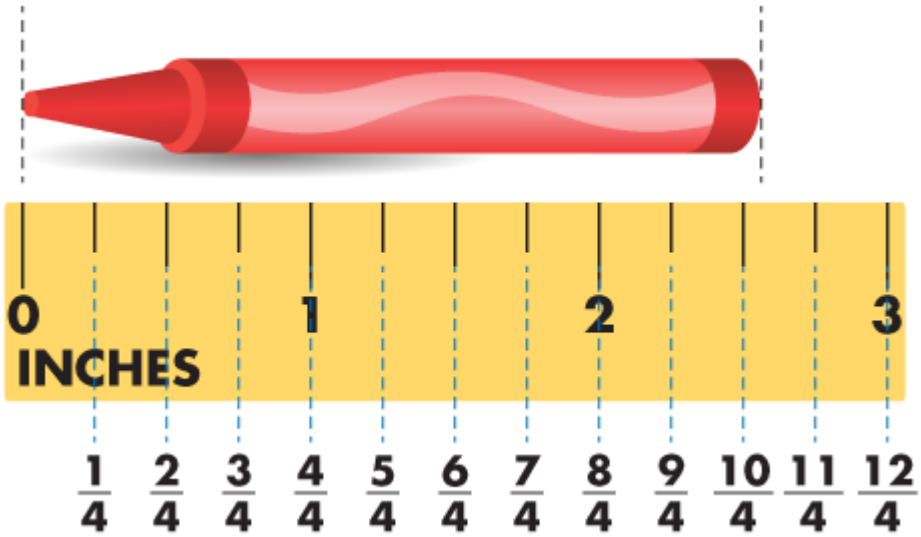
Seven fourths can also be written as $1\frac{3}{4}$, which is a mixed number. A mixed number is made up of a whole number and a fraction.

MEASURE LENGTH AND CAPACITY USING FRACTIONAL PARTS

Number Line and Measuring Length Your child will learn how to use a ruler to measure the length of objects to the nearest half and fourth inch. Measuring to these fractions of an inch connects your child's knowledge of equal intervals on a number line to the

sections on a ruler.

This crayon measures two whole inches and two fourth inches.



The length of the crayon can be written as $2\frac{2}{4}$ inches.

Number Line and Measuring Liquids Your child will use measuring cups to measure liquid to the nearest half cup and quarter cup.

Your child will see that a measuring cup has a vertical number line that is used to measure liquid capacity.

There is $\frac{1}{4}$ cup of liquid in this measuring cup.

There is $1\frac{1}{2}$ cups of liquid in this measuring cup.

CONNECT THE MATH

You can connect the math in this topic to everyday experiences. When you cut rectangular, square, or circular pans of food into equal pieces, have your child name the fractional parts—for example, *eighths*. Then serve some of the parts and ask your child to use a fraction to describe the part of the pan that has been served, as well as the part that remains. You can also have your child name parts of a set. You might say, "There are 6 seats at the kitchen table, and 4 of the seats have people seated in them tonight. What fraction of the chairs have people in them? What fraction are empty?"

TOPIC 10 LESSONS

MATH THINKING AND REASONING

Participate in Effortful Learning