

TOPIC 11

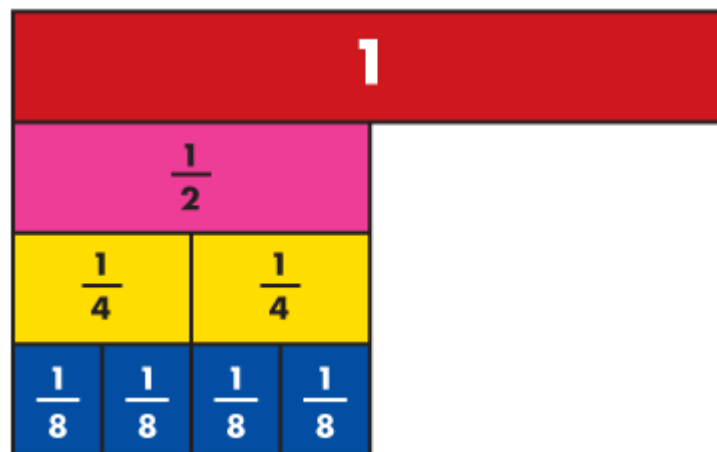
Fraction Equivalence and Comparison

OVERVIEW

Topic 11 focuses on using models and number sense to understand fraction equivalence and comparison.

FRACTION EQUIVALENCE

Fraction Models and Equivalence Your child will learn that fractions that name the same part of a whole are equivalent fractions. Fraction strips and area models are used to find equivalent fractions.



These are fractions equivalent to $\frac{1}{2}$.

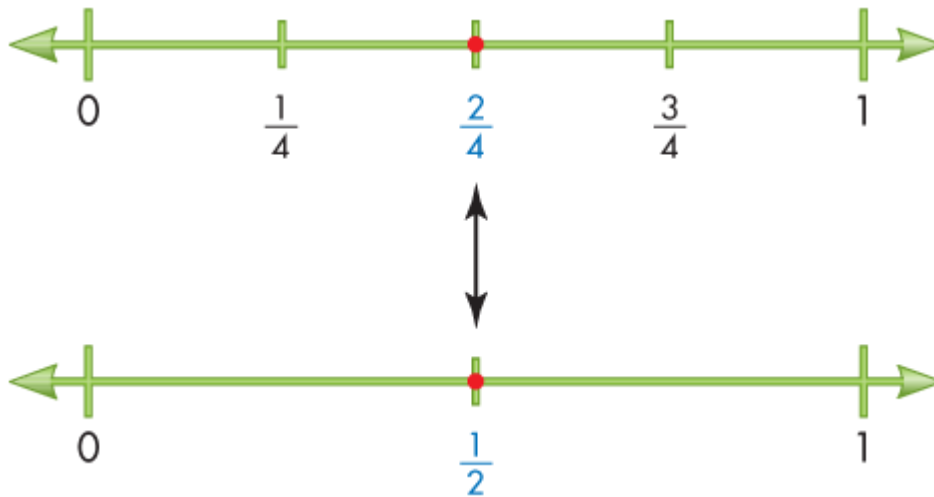
Two $\frac{1}{4}$ strips are equal to $\frac{1}{2}$, so $\frac{1}{2} = \frac{2}{4}$.

Four $\frac{1}{8}$ strips are equal to $\frac{1}{2}$, so $\frac{1}{2} = \frac{4}{8}$.

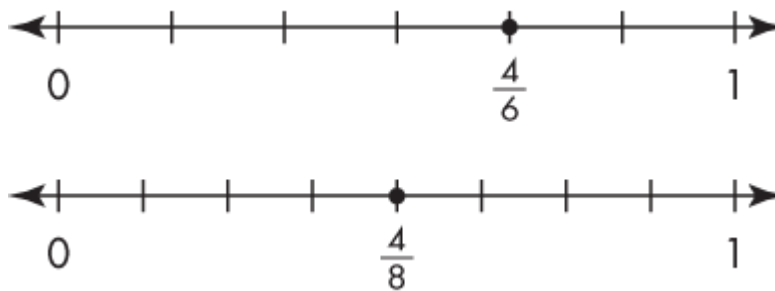
$\frac{1}{2}$, $\frac{2}{4}$, and $\frac{4}{8}$ all name the same part of the whole, so they are equivalent.

Number Lines and Equivalence Your child will learn that equivalent fractions are different names for the same point on a number line. Your child will use one or two number lines to find equivalent fractions.

$\frac{2}{4}$ and $\frac{1}{2}$ are the same distance from 0 on these number lines, so they are equivalent.



$\frac{4}{6}$ and $\frac{4}{8}$ are NOT the same distance from 0 on these number lines, so they are NOT equivalent.



Circle Graphs and Equivalence Your child will use circle graphs to represent and interpret fractions. A circle graph shows the parts of a set. Each section of the graph is equal, representing a unit fraction. Some of the equal sections are combined, so each category in a circle graph can be represented with the same denominator. The number of sections for each category can be compared to show whether one category is greater or less than another.

A group of friends chose where they wanted to go on a trip. The circle graph shows

their votes. The circle was divided into 4 equal sections, so each section represents $\frac{1}{4}$. The red section that is $\frac{1}{2}$ of the whole represents two fourths that were combined.

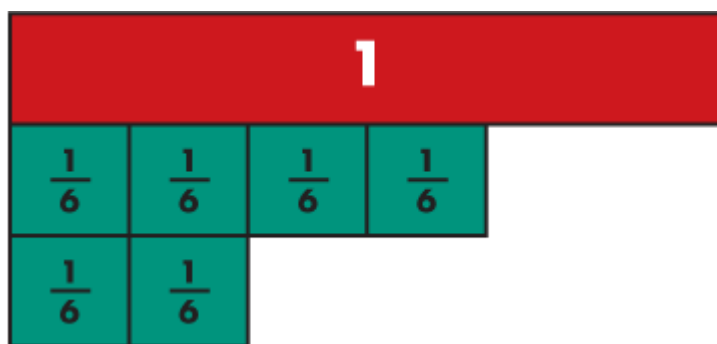


The red section is equivalent to the blue and green sections combined. So, $\frac{1}{2} = \frac{2}{4}$.

FRACTION COMPARISON

Use Models to Compare Fractions Your child will compare fractions with the same denominator (number below fraction bar) and fractions with different denominators.

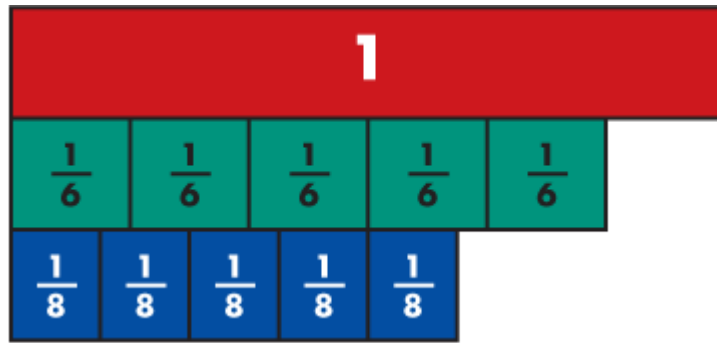
When the denominators are the same, the number of parts (numerators) can be directly compared. The fraction with more parts is greater.



$$\frac{4}{6} > \frac{2}{6}$$

Four sixths is greater than *two sixths*.

When fractions have the same numerator and different denominators, the fraction with the larger-sized parts is greater.

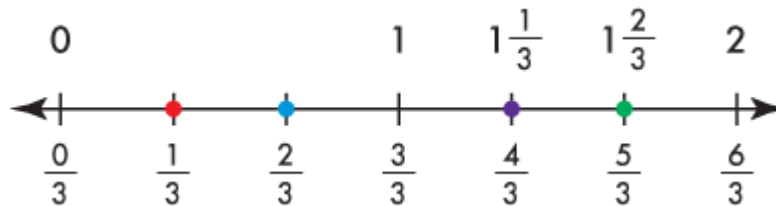


$$\frac{5}{6} > \frac{5}{8}$$

Five sixths is greater than *five eighths*.

Use Number Lines to Compare Fractions Your child will compare two fractions by locating them on one or two number lines.

The farther the distance a fraction is from zero, the greater the fraction.



$\frac{2}{3}$ is farther to the right than $\frac{1}{3}$, so $\frac{2}{3} > \frac{1}{3}$.

$\frac{5}{3}$ is farther to the right than $1\frac{1}{3}$, so $\frac{5}{3} > 1\frac{1}{3}$.

Use Benchmarks to Compare Fractions Your child will learn that another strategy for comparing fractions is to use common benchmark numbers such as 0, $\frac{1}{2}$, 1, and $1\frac{1}{2}$. This method requires your child to use number sense.

To determine which is the greater amount of peanuts, $1\frac{2}{6}$ pounds or $1\frac{2}{3}$ pounds, your child can compare each fraction to the benchmark number $1\frac{1}{2}$.



$1\frac{2}{6}$ pounds is less than $1\frac{1}{2}$ pounds.

$1\frac{2}{3}$ pounds is greater than $1\frac{1}{2}$ pounds.

So, $1\frac{2}{3}$ pounds is greater than $1\frac{2}{6}$ pounds.

CONNECT THE MATH

You can connect the math in this topic to everyday experiences. Invite your child to express equivalent fractions, for example, when cooking. If a recipe calls for $\frac{3}{4}$ cup of flour, you might say, "We don't have a quarter-cup measure, but we do have an eighth-cup measure. How many eighths are equivalent to $\frac{3}{4}$?" Your child can also help compare fractions. You might have your child compare the length of a walking path that is $1\frac{3}{4}$ miles long and a walking path that is $1\frac{3}{8}$ miles long. Ask, "Which path is the greater distance?"

TOPIC 11 LESSONS

Lesson 11-1 [Equivalent Fractions: Use Models](#)

Lesson 11-2 [Equivalent Fractions: Use the Number Line](#)

Lesson 11-3 [Fractions and Circle Graphs](#)

Lesson 11-4 [Use Models to Compare Fractions: Same Denominator](#)

Lesson 11-5 [Use Models to Compare Fractions: Same Numerator](#)

Lesson 11-6

Compare Fractions: Use the Number Line

Lesson 11-7

MATH THINKING AND REASONING

Assess the Reasonableness of Solutions