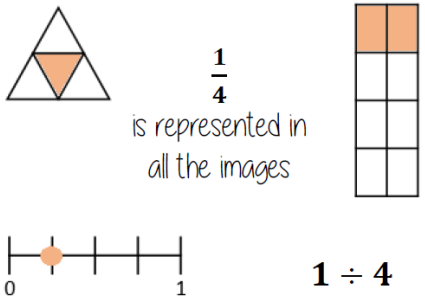
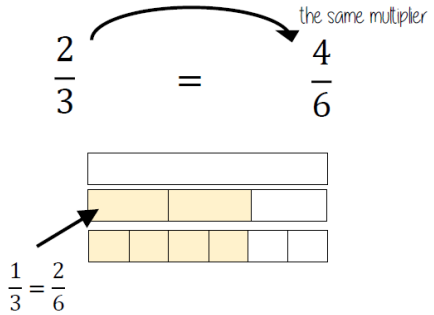
Representing Fractions



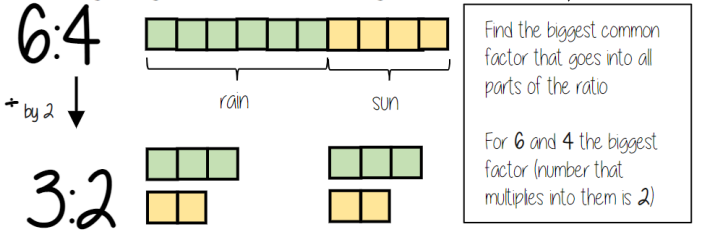
Equivalent fractions



Simplifying a ratio

Cancel down the ratio to its lowest form

"For every 6 days of rain there are 4 days of sun"

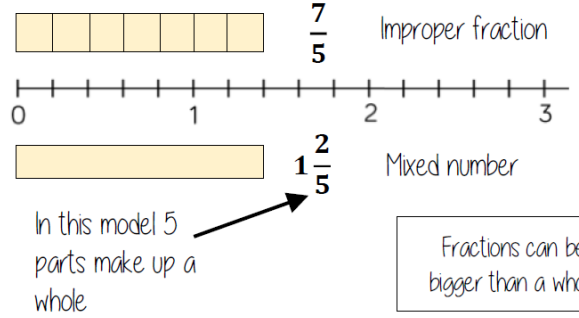


Find the biggest common factor that goes into all parts of the ratio

For 6 and 4 the biggest factor (number that multiples into them is 2)

"For every 3 days of rain there are 2 days of sun" – when this happens twice the ratio becomes 6:4

Mixed numbers and fractions



Fractions can be bigger than a whole

Ordering fractions

1. Find the lowest common multiple of the denominators
2. Make all of the denominators the same using equivalent fractions
3. Compare the numerators of the fractions and order them

Example

Put the following fractions in ascending order::

$$\frac{3}{4}, \frac{5}{8}, \frac{11}{12}$$

LCM = 24

$$\frac{3}{4} = \frac{18}{24} \qquad \frac{5}{8} = \frac{15}{24} \qquad \frac{11}{12} = \frac{22}{24}$$

$$\frac{5}{8}, \frac{3}{4}, \frac{11}{12}$$

One quantity as a fraction of another

Write £5 as a fraction of £20.

As a fraction this is written as $\frac{5}{20}$. This cancels to ¼.

Write 1 hour as a fraction of 25 minutes

We must change both of the amounts into minutes first. 1 Hour = 60 minutes this will be the denominator

$$\frac{60}{25} = \frac{12}{5} = 2\frac{2}{5}$$

One quantity as a percentage of another

There are 25 children in a class. 14 are girls. What is the percentage of girls in the class.

Write as a fraction first.

$\frac{14}{25}$ Percent means out of 100. Make the fraction have a denominator of 100 using equivalent fractions.

$$\frac{14}{25} \xrightarrow{\times 4} \frac{56}{100} = 56\%$$

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Convert percentages to fractions

Percent means out of one. Write the percentage as a fraction with a denominator of 100.

What is 48% as a fraction?

$$\frac{48}{100} \overset{\div 2}{=} \frac{24}{50} \overset{\div 2}{=} \frac{12}{25}$$

Convert fractions to decimals by scaling

You can change fractions into decimals by finding an equivalent fraction with a denominator of 10, 100, 1000 etc

What is $\frac{4}{25}$ as a decimal?

$$\frac{4}{25} = \frac{16}{100} = 0.16$$

Convert fractions to decimals by division

If you can't scale, do the division!

What is $\frac{4}{5}$ as a decimal?

$$5\overline{)4.^{4}0} = 0.8$$

$$\frac{4}{5} = \mathbf{0.8}$$

What is $\frac{3}{11}$ as a decimal?

$$11\overline{)3.^{3}0^{8}0^{3}0^{8}0} = 0.2727\ldots$$

$$\frac{3}{11} = \dot{2}\dot{7}$$

Convert decimals to fractions

Remember place value and use this to change the decimal to a fraction. Be sure to simplify the fraction.

What is 0.85 as a fraction?

Ones	Tenths 1/10	Hundredths 1/100	Thousandths 1/1000
0 •	8	5	

$$\frac{85}{100} \overset{\div 5}{=} \frac{17}{20}$$