Y7 Fraction, Decimal, and Percentage equivalence

What do I need to be able to do?

By the end of this unit you should be able to:
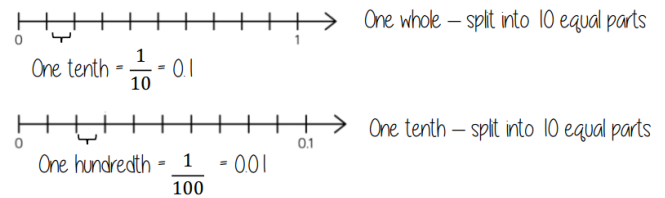- Convert fluently between fractions, decimals & percentages

Keywords

Fraction: how many parts of a whole we have

Decimal: a number with a decimal point used to separate ones, tenths, hundredths etc.

Percentage: a proportion of a whole represented as a number between 0 and 100

Place value: the numerical value that a digit has decided by its position in the number

Placeholder: a number that occupies a position to give value

Interval: a range between two numbers

Tenth: one whole split into 10 equal parts

Hundredth: one whole split into 100 equal parts

Sector: a part of a circle between two radius (often referred to as looking like a piece of pie)

Recurring: a decimal that repeats in a given pattern
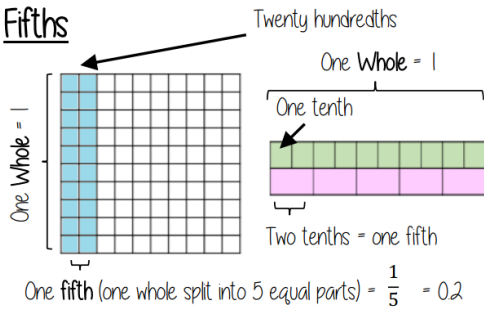
Tenths and hundredths

One hundredth (one whole split into 100 equal parts) $= \frac{1}{100} = 0.01$

One Whole = 1

One tenth (one whole split into 10 equal parts) $= \frac{1}{10} = 0.1$

ones	tenths	hundredths
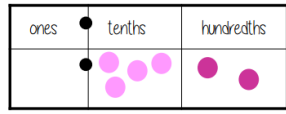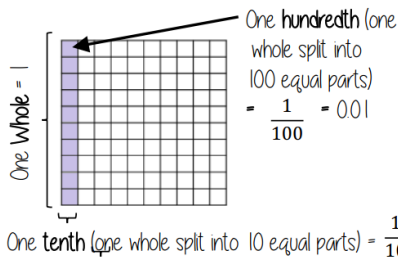
0 ones, 5 tenth and 2 hundredths

$0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01$
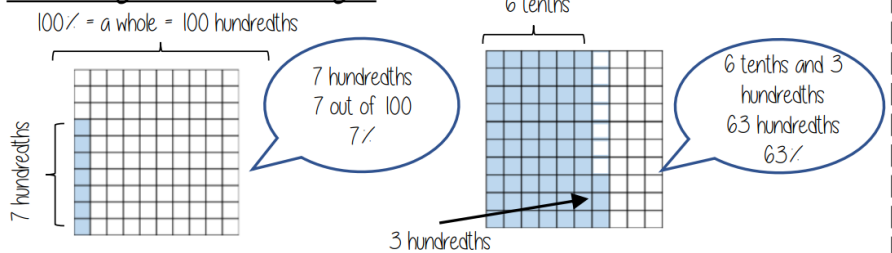
$= 0 + 0.5 + 0.02$

$= 0.52$

On a number line

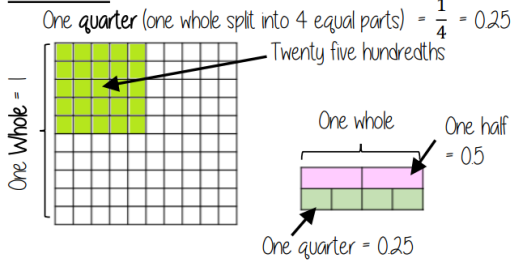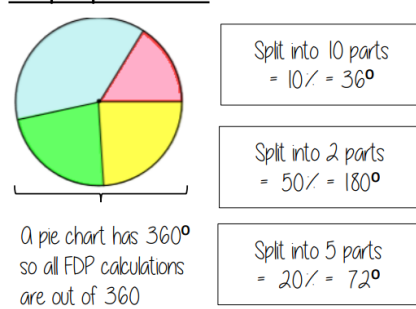One tenth $= \frac{1}{10} = 0.1$ One whole – split into 10 equal parts

One hundredth $= \frac{1}{100} = 0.01$ One tenth – split into 10 equal parts

Fifths

Twenty hundredths

One Whole = 1

One tenth

Two tenths = one fifth

One fifth (one whole split into 5 equal parts) $= \frac{1}{5} = 0.2$

Percentages on a hundred grid

100% = a whole = 100 hundredths

7 hundredths

7 hundredths / 7 out of 100 / 7%

6 tenths

3 hundredths

6 tenths and 3 hundredths / 63 hundredths / 63%

Quarters

One quarter (one whole split into 4 equal parts) $= \frac{1}{4} = 0.25$

Twenty five hundredths

One Whole = 1

One whole

One half = 0.5

One quarter = 0.25

Simple pie charts

Split into 10 parts = 10% = 36°

Split into 2 parts = 50% = 180°

Split into 5 parts = 20% = 72°

A pie chart has 360° so all FDP calculations are out of 360

Equivalent fractions

Represent equivalence with fraction walls

Whole	$\frac{1}{1}$

$\frac{1}{2}$ $\frac{1}{2}$

$\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$

$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$

$\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$

$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$

$\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$

$\frac{1}{10}$ ... $\frac{1}{10}$

$\frac{1}{12}$ ... $\frac{1}{12}$

Fractions – on a diagram

The denominator is represented by EQUALLY sized parts – this is split into quarters

Fractions – on a number line

This point is at the 6th part 6 is the numerator

One whole split into 18 equal parts 18 is the denominator

$\frac{6}{18} \leftarrow \frac{3}{9} \leftarrow \frac{1}{3}$

Convert FDP

$\frac{70}{100}$ → This also means 70 ÷ 100 → 70 out of 100 squares 70 "hundredths" = 7 "tenths" 0.7 → 70 hundredths = 70%

Using a calculator

$\frac{\blacksquare}{\square}$ → S↔D → Convert to a decimal

This will give you the answer in the simplest form

× 100 converts to a percentage
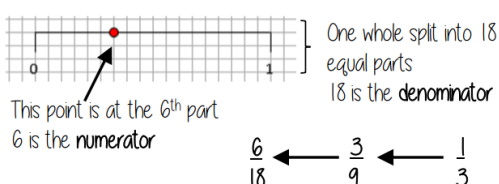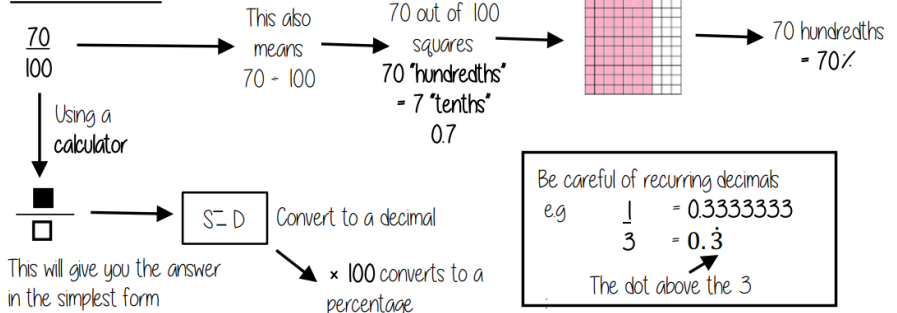
Be careful of recurring decimals

e.g $\frac{1}{3} = 0.3333333$

$\frac{1}{3} = 0.\dot{3}$

The dot above the 3