Topics

Converting decimals to percentages.
Converting percentages to decimals.
Converting decimals to fractions.
Converting fractions to decimals.
Converting percentages to fractions.
Converting fractions to percentages.

Handy Resources

Place Value Grid

hundred million	ten million	million	million	hundred thousand	ten thousand	thousand	thousand	hundreds	tens	units	sshhh!

FDP Grid

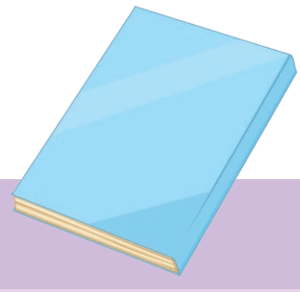
	What we know			
What we want to find out		Fraction	Decimal	Percentage
	Fraction			
	Decimal			
	Percentage			

Key Skills

- [ ] Multiply integers and decimals by 100.
- [ ] Divide integers and decimals by 100.
- [ ] Write a fraction in its simplest form.
- [ ] Use the bus stop method for division.
- [ ] Convert decimals to percentages.
- [ ] Convert percentages to decimals.
- [ ] Convert decimals to fractions.
- [ ] Convert fractions to decimals.
- [ ] Convert percentages to fractions.
- [ ] Convert fractions to percentages.

Key Vocabulary

- bus stop
- conversion/convert
- decimal
- denominator
- divide
- equivalence/equivalent
- fraction
- highest common factor
- integer
- multiply
- numerator
- percent/percentage
- simplify/simplest form



All those things you need to remember...

- When multiplying by 100, move all the digits of a number two places to the left. Don't forget to add a zero (if necessary) to act as a place holder in the units column.
- When dividing by 100, move all the digits of a number two places to the right. Don't forget to add a zero (if necessary) to act as a place holder in the units column.
- To simplify a fraction, find the highest common factor of both the numerator and denominator. To find a highest common factor means to find the **highest** factor which is **common** to **both** numbers. To find the highest common factor, you could use your times table knowledge to list all the factors of each number, then select the highest number which appears in both lists. Finally, divide the numerator and denominator by the highest common factor.
- To set up a bus stop, the number you're dividing by will go on the outside of the bus stop. Remember to add a decimal point and zeros to the number inside the bus stop if you run out of numbers to place your remainder on.
- To convert a decimal to a percentage, multiply the number by 100. **For example, to write 0.21 as a percentage, multiply 0.21 by 100. The answer is 21%.**
- To convert a percentage to a decimal, divide the number by 100. **For example, to write 12.5% as a decimal, divide 12.5 by 100. The answer is 0.125.**
- To convert a percentage to a fraction, write the percentage as a fraction of 100 (for an integer) then simplify. **For example, to write 24% as a fraction, write the percentage as a fraction out of 100: $\frac{24}{100}$ and then simplify: $\frac{6}{25}$.**
- To convert a decimal to a fraction, start by writing down the decimal as a fraction of 1, **for example, $\frac{0.15}{1}$. Then, multiply both the numerator and the denominator by 100 (because there are 2 digits after the decimal point; if there were 3 digits, we would multiply by 1000) so you have $\frac{15}{100}$. The final step is to simplify the fraction: $\frac{3}{20}$.**
- To convert a fraction to a decimal, divide the numerator by the denominator. **For example, to convert $\frac{3}{5}$ into a decimal, divide 3 by 5 (3 ÷ 5). The answer is 0.6.**
- To convert a fraction to a percentage, start by converting the fraction to a decimal and then multiply the decimal by 100. **For example, $\frac{56}{100}$ as a decimal is 0.56. Multiplying by 100 gives the answer 56%.**

GCSE Corner

Bronze

Write 0.45 as a fraction in its simplest form.

Worked solution:

Start by writing the decimal as a fraction of 1: $\frac{0.45}{1}$

Multiply the numerator and denominator by 100: $\frac{45}{100}$

Simplify: $\frac{9}{20}$

Silver

Which is smaller, $\frac{13}{20}$ or 60%? Show your working.

Worked solution:

Convert the fraction to a percentage: $\frac{13}{20}$ = 65%

Therefore, 60% is smaller.

Gold

There are red, yellow and blue beads in a bag.

0.4 of the beads are blue.

$\frac{1}{8}$ of the beads are red.

What percentage of the beads are yellow?

Worked solution:

Convert the decimal and fraction to percentages:

0.4 = 40%

$\frac{1}{8}$ = 12.5%

Now subtract these percentages away from 100% to find out what percentage is yellow:

100 – 40 – 12.5 = 47.5

47.5% of the beads are yellow.