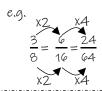
47 Maths Knowledge Organiser Topic 8: Fractions 1

What must I be able to do?		Key vocabulary	
	Represent fractions using area diagrams, bar models and number lines Recognise and name equivalent fractions Use equivalent fractions Sparx M410, M671	Fraction	A fraction is a <u>part of a whole</u> . It is also a ratio between two numbers separated by a vinculum (). It is represented by the <u>division</u> of one number by another.
Ц	Compare and order numbers involving fractions Sparx M335	Numerator	The <u>'top' part</u> of a <u>fraction</u> – it tells us
	Express one quantity as a fraction of another		how many parts we are dealing with.
	Find a fraction of a set of objects or quantity Sparx M158, M695, M684	Denominator	The <u>'bottom' part</u> of a <u>fraction</u> – it
	Find the whole given a fraction		tells us how many parts the whole is divided into.
	Multiply a whole number or fraction by a whole number		OILAIDO INTO.
	or fraction Sparx W157 Divide a whole number or proper fraction by a whole	Equivalent	Equivalent fractions represent the same value.
	number or proper fraction > Sparx W110	Reciprocal	The reciprocal of a number is <u>1 divided</u> <u>by the number</u> .
	Add and subtract fractions with like and unlike denominators Sparx M835	Unit fraction	A fraction where the <u>numerator is 1</u> and denominator is a positive integer.

Equivalent fractions

Found by multiplying or dividing the numerator and denominator by the same value



Compare/Order fractions

You need to first of all rewrite all fractions with equivalent fractions that all have the same denominator. Then you can compare/order the numerators.

e.g.
$$\frac{5}{8}$$
 vs $\frac{7}{11} \rightarrow \frac{5}{8} = \frac{55}{88}$ and $\frac{7}{11} = \frac{56}{88}$
55 < 56 so $\frac{5}{8} < \frac{7}{11}$ The lowest multiple of 8 and 11 is 88

Reciprocals

Reciprocal of an integer is $\frac{1}{\text{integer}}$ e.g $5 \longleftrightarrow \frac{1}{5}$

Reciprocal of a fraction "flips" it e.g. $\frac{3}{5} \leftarrow \frac{5}{2}$

- Dividing by any number is the same as multiplying by its reciprocal.
- Multiplying by any number is the same as dividing by its reciprocal.

Fraction of a quantity

To find a fraction of a number (an integer multiplied by a fraction), divide the number by the denominator and multiply by the numerator

e.g.
$$45 \times \frac{3}{5} = 45 \div 5 \times 3 = 9 \times 3 = 27$$

Multiplying two fractions

Just multiply numerators and multiply denominators

e.g.
$$\frac{3}{7} \times \frac{2}{5} = \frac{3 \times 2}{7 \times 5} = \frac{6}{35}$$

Dividing by a fraction

Instead of dividing by a fraction, multiply by its reciprocal

$$e.g. \frac{4}{9} \div \frac{4}{5} = \frac{4}{9} \times \frac{5}{4} = \frac{4 \times 5}{9 \times 4} = \frac{20}{36} = \frac{5}{9}$$

Simplify your final answer if possible

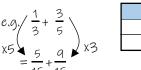
Adding and subtracting fractions

When the denominators are the same you just add or subtract the numerators

e.g.
$$\frac{3}{7} + \frac{2}{7} = \frac{5}{7}$$

and
$$\frac{7}{9} - \frac{3}{9} = \frac{4}{9}$$

Smallest multiple of 3 and 5 is 15





If the denominators are different we use equivalent fractions to write

