Deepdale Community Primary School - Maths Knowledge Organiser

Topic: Fractions | Year 6

Key Vocabulary:

- Numerator
- Denominator
- Common factor
- Common multiple
- Lowest common multiple
- Multiple
- Equivalent
- Simplify
- Simplest form
- Express
- Mixed Number
- Improper fraction

A key skill you will need:
Simplifying fractions

Simplest form:

"An equivalent fraction where the numbers are reduced as much as possible"

$\frac{6}{48} \xrightarrow{\div 2} \frac{3}{24} \xrightarrow{\div 3} \frac{1}{8}$

$\frac{6}{48} \xrightarrow{\div 2} \frac{3}{24} \xrightarrow{\div 3} \frac{1}{8}$

A key skill you will need:
Expressing fractions in the same denominator

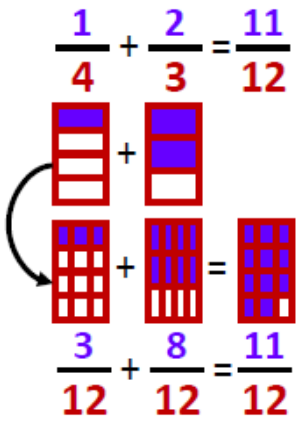
1) Find a number that is a common multiple of both denominators

$\frac{2}{3}$ $\frac{3}{4}$ The common multiple of 3 and 4 is 12

2) Multiply both fractions by the relevant multiple to reach the new denominator

$\frac{2}{3} \times 4$ $\frac{3}{4} \times 3$ → $\frac{8}{12}$ $\frac{9}{12}$

Key learning:
Add and subtract fractions with different denominators and mixed numbers



$\frac{5}{6} - \frac{1}{4} =$

$\frac{10}{12} - \frac{3}{12} = \frac{7}{12}$

Find the lowest common multiple of both denominators

Add the integers, then add the two fractions by first expressing them in the same denominator

X both by 5 to get to 20

X both by 4 to get to 20

$2\frac{3}{4} + 1\frac{4}{5} = 2\frac{15}{20} + 1\frac{16}{20}$

$= 3\frac{31}{20} = 4\frac{11}{20}$

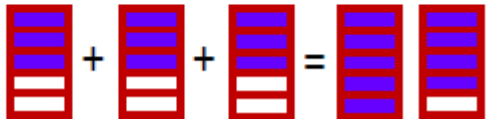
Multiplying Fractions

If multiplying fractions together, you multiply the numerators together and multiply the denominators together

$$\frac{2}{3} \times \frac{3}{4} = \frac{2 \times 3}{3 \times 4} = \frac{6}{12} = \frac{1}{2}$$

If multiplying by an integer, think of it as repeated addition.

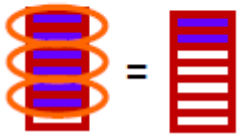
$$\frac{3}{5} \times 3 = \frac{3}{5} + \frac{3}{5} + \frac{3}{5} = \frac{9}{5} = 1\frac{4}{5}$$



Dividing Fractions

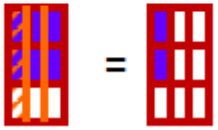
If the numerator is divisible by the integer, dividing can be thought of as grouping

$$\frac{6}{7} \xrightarrow{\div 3} \frac{2}{7} \qquad 6 \div 3 = 2$$



If the numerator is not divisible by the integer, dividing can be thought of as splitting

$$\frac{2}{3} \xrightarrow{\times 3} \frac{2}{9} \qquad 3 \times 3 = 9$$



Equivalent Fractions

ALWAYS REMEMBER

As long as we multiply or divide the numerator and denominator by the same number, our fraction will be equivalent.

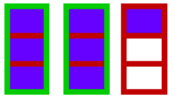
$$\frac{1}{3} = \frac{2}{6}$$

Both the numerator and denominator have been X by 2. The fractions are still equal in value.

Improper Fractions to Mixed Numbers

Remember, when the numerator is greater than the denominator this is an improper fraction

Fractions which are bigger than 1.

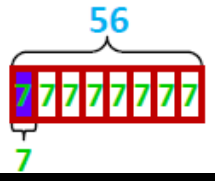
Seven thirds $\frac{7}{3}$  $2\frac{1}{3}$ Two and one third

Fractions of Amounts

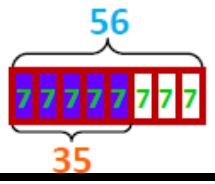
Find fractions of amounts

When finding fractions of amounts, remember the denominator is how many equal parts something has been split into and the numerator is how many parts you have

$\frac{1}{8}$ of 56 = 56 ÷ 8 = 7



$\frac{5}{8}$ of 56 = (56 ÷ 8) x 5 = 7 x 5 = 35



Extra note: multiplication will result in the exact same thing!!

$$\frac{5}{8} \times 56 = \frac{5 \times 56}{8} = \frac{280}{8} = 35$$