



Year 6 – Maths – Fractions

Key vocabulary

numerator
denominator
proper fraction
improper fraction
factor
highest common multiple
lowest common multiple
equivalents
common numerator
common denominator
decimal equivalent
simplify
simplest form
mixed number
whole number
mixed number

Key questions

Can you show me how to simplify a fraction?

List the common denominators for the following fractions: $\frac{3}{5}$ and $\frac{2}{3}$

I need to divide a fraction by a whole number. Can you write me a step by step guide on how to do this?

Links to other learning

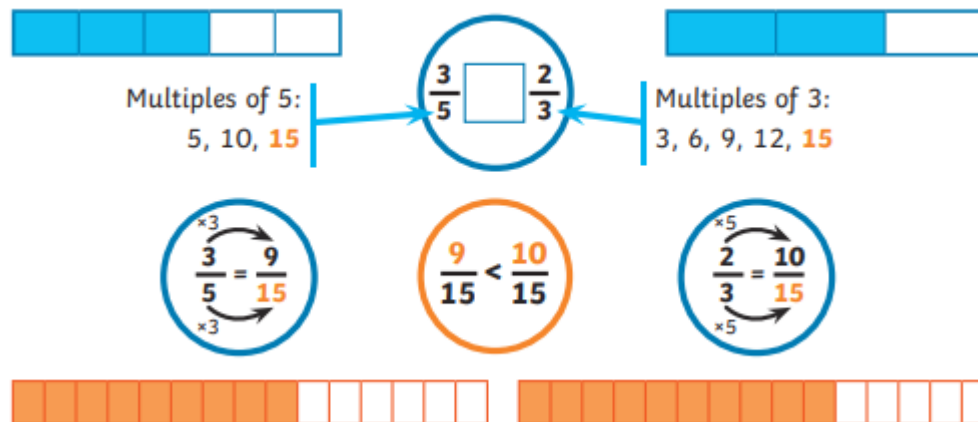
Year 5 - Compare and order fractions whose denominators are all multiples of the same number; Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths; Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number; Add and subtract fractions with the same denominator and denominators that are multiples of the same number; Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams; Read and write decimal numbers as fractions; Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents; Round decimals with two decimal places to the nearest whole number and to one decimal place; Read, write, order and compare numbers with up to three decimal places; Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.

Year 7 - Simplifying fractions; Adding and subtracting fractions; Calculating percentages.

Use the common denominator

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Use the Common Denominator



Simplify fractions

$$\frac{9}{12}$$

Factors of 9:

1, 3, 9

Factors of 12:

1, 2, 3, 4, 6, 12

$$\frac{9}{12} = \frac{3}{4}$$



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Adding and subtracting proper fractions

Same Denominators



$$\frac{4}{7} + \frac{2}{7} = \frac{6}{7}$$



$$\frac{8}{11} - \frac{3}{11} = \frac{5}{11}$$

Different Denominators

$$\frac{2}{7} + \frac{3}{5}$$

Multiples of 7: 7, 14, 21, 28, **35**
 Multiples of 5: 5, 10, 15, 20, 25, 30, **35**

$$\frac{2}{7} = \frac{10}{35}, \frac{3}{5} = \frac{21}{35}$$

$$\frac{10}{35} + \frac{21}{35} = \frac{31}{35}$$

$$\frac{9}{10} - \frac{1}{4}$$

Multiples of 10: 10, **20**
 Multiples of 4: 4, 8, 12, 16, **20**

$$\frac{9}{10} = \frac{18}{20}, \frac{1}{4} = \frac{5}{20}$$

$$\frac{18}{20} - \frac{5}{20} = \frac{13}{20}$$

Adding and subtracting mixed numbers

Add or subtract the whole numbers and fractions separately.

$$2\frac{2}{5} + 1\frac{3}{10}$$

$$2 + 1 = 3$$

$$\frac{2}{5} + \frac{3}{10} = \frac{4}{10} + \frac{3}{10} = \frac{7}{10}$$

$$3 + \frac{7}{10} = 3\frac{7}{10}$$

$$2\frac{1}{2} - 1\frac{1}{4}$$

$$2 - 1 = 1$$

$$\frac{1}{2} - \frac{1}{4} = \frac{2}{4} - \frac{1}{4} = \frac{1}{4}$$

$$1 + \frac{1}{4} = 1\frac{1}{4}$$

Convert the mixed numbers to improper fractions.

$$2\frac{2}{5} + 1\frac{3}{10}$$

$$2\frac{1}{2} - 1\frac{1}{4}$$

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

$$1\frac{3}{10} = \frac{13}{10}$$

$$2\frac{1}{2} = \frac{5}{2}$$

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

$$\frac{12}{5} + \frac{13}{10} = \frac{24}{10} + \frac{13}{10} = \frac{37}{10}$$

$$\frac{37}{10} = 3\frac{7}{10}$$

$$\frac{5}{2} - \frac{5}{4} = \frac{10}{4} - \frac{5}{4} = \frac{5}{4}$$

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

Multiplying proper fractions

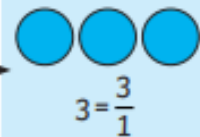
Multiplying Fractions by Fractions

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

Multiplying Fractions by Whole Numbers



$$\frac{2}{5} \times 3$$



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

$$\frac{2}{5} \times \frac{3}{1} = \frac{6}{5} = 1\frac{1}{5}$$

Dividing fractions by whole numbers

$$\frac{2}{5} \div 2 = \frac{1}{5}$$

Multiplication and division are the inverse of one another so:

$\div 2$ is the same as $\times \frac{1}{2}$

$$\frac{2}{5} \times \frac{1}{2} = \frac{2}{10}$$