

## Fractions, Decimals and Percentage

### Level 1

Use the vocabulary of halves.

Find one half by folding paper shapes, lengths of string, putting water in a clear container so that it is about half-full.

Find half of an even, small number of objects.

### Level 2

Use the vocabulary of halves and quarters.

Find one half and one quarter of shapes and sets of objects.

Find one half, one quarter and three quarters of shapes and sets of objects.

### Level 3

Understand and use unit fractions such as  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$ ,  $\frac{1}{5}$ ,  $\frac{1}{10}$ . Find those fractions of shapes and sets of objects. Recognise what fraction of a shape is shaded and say and write that fraction.

Interpret the denominator as the parts of a whole and the numerator as the number of parts.

Read and write proper fractions that are several parts of the whole (e.g.  $\frac{3}{7}$ ,  $\frac{9}{10}$ ).

Use diagrams to compare fractions and establish equivalents. E.g show on a diagram of a rectangle made from eight squares that one half is the same as two quarters or four eighths.

Know fractions that are equivalent to  $\frac{1}{2}$  . E.g  $\frac{2}{4}$ ,  $\frac{4}{8}$ ,  $\frac{5}{10}$ ,  $\frac{50}{100}$

Find fractions that are equivalent to a quarter.

Interpret mixed numbers (E.g.  $1\frac{1}{2}$  ) and position them on a number line.

### Facts

Use diagrams to find pairs of fractions that make 1 whole.

### Calculating

Find unit fractions of numbers and quantities (e.g.  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$  and  $\frac{1}{6}$  of 12 litres)

## Level 4

### Fractions

Use diagrams to identify equivalent fractions (e.g.  $\frac{6}{8}$  and  $\frac{3}{4}$ , or  $\frac{70}{100}$  and  $\frac{7}{10}$ )

Express a smaller whole number as a fraction of a larger one (e.g. recognise that 5 out of 8 is  $\frac{5}{8}$ )

Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of a 5-slice pizza represents  $\frac{8}{5}$  or  $1\frac{3}{5}$  pizzas)

Convert mixed numbers to improper fractions and vice versa.

Find equivalent fractions (e.g.  $\frac{7}{10} = \frac{14}{20}$ , or  $\frac{19}{10} = \frac{19}{10}$ )

### Facts

Identify pairs of fractions that total 1

### Calculating with Fractions

Find fractions of numbers and quantities (e.g.  $\frac{2}{3}$ ,  $\frac{3}{4}$ ,  $\frac{4}{6}$  of 12 litres.)

Use a calculator to solve problems, including those involving decimals or fractions (e.g. find  $\frac{3}{4}$  of 150 g); interpret the display correctly in the context of measurement.

### Percentages

Understand percentage as the number of parts in every 100 and express tenths and hundredths as percentages. E.g.  $1\% = \frac{1}{100}$

### Calculating with Percentages

Find a simple percentage (50% 25% 75% 10%) of a quantity.

Find percentages of numbers and quantities (e.g. 10%, 5% and 15% of £80)

### Fractions, Decimals and Percentages

Recognise the equivalence between decimal and fraction forms of one half, quarters, tenths and hundredths.

Use a calculator to find the decimal equivalent of a fraction.

Find equivalent percentages, decimals and fractions for fractions such as  $\frac{1}{2}$   $\frac{1}{4}$   $\frac{3}{4}$   $\frac{1}{10}$  and vice versa.

### Level 5

Simplify fractions by cancelling common factors.

Order a set of fractions by converting them to fractions with a common denominator.

Order a set of fractions by converting them to decimals.

### Percentages

Express one quantity as a percentage of another (e.g. express £400 as a percentage of £1000).

### Fractions, decimals, percentages

Find equivalent percentages, decimals and fractions. E.g. convert fractions such as  $\frac{2}{5}$  into decimals and percentages.

### Calculating

Relate fractions to multiplication and division

(e.g.  $6 \div 2 = \frac{1}{2}$  of 6 =  $6 \times \frac{1}{2}$ )

Express a quotient as a fraction or decimal (e.g.  $67 \div 5 = 13.4$  or  $\frac{132}{5}$ )

Calculate mentally with decimals, fractions and percentages e.g. 15% of 460 or 5% of £3600

Find fractions and percentages of whole-number quantities (e.g.  $\frac{5}{8}$  of 96, 65% of £260)

Calculate percentage increases or decreases and fractions of quantities and measurements (integer answers)