

## NUMBERS AND THE NUMBER SYSTEM

### Pupils should be taught to:

Understand percentage as the number of parts per 100; recognise the equivalence of fractions, decimals and percentages; calculate percentages and use them to solve problems

### As outcomes, Year 7 pupils should, for example:

**Understand percentage as the number of parts in every 100, and express a percentage as an equivalent fraction or decimal.** For example:

**Convert percentages to fractions** by writing them as the number of parts per 100, then cancelling. For example:

- 60% is equivalent to  $\frac{60}{100} = \frac{3}{5}$ ;
- 150% is equivalent to  $\frac{150}{100} = \frac{3}{2} = 1\frac{1}{2}$ .

**Convert percentages to decimals** by writing them as the number of parts per 100, then using knowledge of place value to write the fraction as a decimal. For example:

- 135% is equivalent to  $135 \div 100 = 1.35$ .

### Recognise the equivalence of fractions, decimals and percentages.

Know decimal and percentage equivalents of simple fractions.

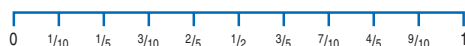
For example, know that  $1 \equiv 100\%$ . Use this to show that:

- $\frac{1}{10} = 0.1$  which is equivalent to 10%;
- $\frac{1}{100} = 0.01$  which is equivalent to 1%;
- $\frac{1}{8} = 0.125$  which is equivalent to 12½%;
- $1\frac{3}{4} = 1.75$  which is equivalent to 175%;
- $\frac{1}{3} = 0.333\dots$  which is equivalent to 33⅓%.

**Express simple fractions and decimals as equivalent percentages** by using equivalent fractions. For example:

- $\frac{3}{5} = \frac{60}{100}$  which is equivalent to 60%;
- $\frac{7}{20} = \frac{35}{100}$  which is equivalent to 35%;
- $2\frac{3}{4} = \frac{275}{100}$  which is equivalent to 275%;
- $0.48 = \frac{48}{100}$  which is equivalent to 48%;
- $0.3 = \frac{30}{100}$  which is equivalent to 30%.

Use number lines to demonstrate equivalence.



See Y456 examples (pages 32–3).

**Link the equivalence of fractions, decimals and percentages to the probability scale (pages 278–9), and to the interpretation of data in pie charts and bar charts (pages 268–71).**