

### Learning Intentions

#### Year 10

Unit: Algebra

Stage: Algebra 1

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At the end of this unit **all** pupils should be able to:

- Write an algebraic expression using the rules of algebra
- Simplify an algebraic expression by collecting like terms
- Calculate the value of an expression by substituting values into it
- Multiply out single brackets using any coefficient
- Multiply out and simplify two single linear brackets
- Solve simple linear equations where the unknown appears on only one side
- Solve linear equations where the unknown appears on both sides, to include brackets

At the end of this unit **most** pupils should be able to:

- Factorise a simple expression easily by taking all common factors outside the bracket
- Change the subject of a formula where the subject appears once
- Solve algebraic equations involving squares and cubes using trial & improvement

At the end of this unit **some** pupils should be able to:

- Solve equations involving fractions
- Factorise a simple quadratic in the form  $x^2 + bx + c$
- Change the subject of a formula where the subject appears more than once

### Learning Intentions

#### Year 10

Unit: Algebra

Stage: Straight Line Graphs

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At the end of this unit **all** pupils should be able to:

- Draw and label the x and y axis with positive and negative values
- Plot and label co-ordinates in all four quadrants
- Draw and label horizontal and vertical lines on a co-ordinate axis
- Draw and label the lines  $y = x$  and  $y = -x$
- Read and interpret conversion graphs

At the end of this unit **most** pupils should be able to:

- Draw  $y = mx + c$  lines using the method of substituting into a table to derive co-ordinates
- Solve linear simultaneous equations graphically
- Write down the gradient and y-intercept from the equation of a straight where y is the subject
- Find the equation of a straight line, when given the gradient and the y intercept
- Recognise that lines are parallel from the equation of a straight line

At the end of this unit **some** pupils should be able to:

- Write down the gradient and y-intercept from the equation of a straight where y is not the subject
- Calculate the gradient when given two co-ordinates