Algebra at Fen Rivers

Progression pathway

In Year 6 we will...

- Use simple formulae
- Generate and describe linear number sequences
- Express missing number problems algebraically
- Find pairs of numbers that satisfy an equation with 2 unknowns
- Enumerate possibilities of combinations of 2 variables

In KS3 we will...

- Use and interpret algebraic notation, including: ab in place of $a \times b$; $3y$ in place of $y + y + y$ and $3 \times y$; a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$; a^2b in place of $a \times a \times b$; a/b in place of $a \div b$; coefficients written as fractions rather than as decimals; brackets
- Substitute numerical values into formulae and expressions, including scientific formulae
- Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors
- Simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms; multiplying a single term over a bracket; taking out common factors; expanding products of two or more binomials
- Understand and use standard mathematical formulae; rearrange formulae to change the subject
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs
- Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)
- Work with coordinates in all four quadrants
- Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane
- Interpret mathematical relationships both algebraically and graphically
- Reduce a given linear equation in two variables to the standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically
- Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations
- Find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs
- Generate terms of a sequence from either a term-to-term or a position-to-term rule
- Recognise arithmetic sequences and find the nth term

- Recognise geometric sequences and appreciate other sequences that arise.