Year	Topic Detail and Sequence	Pre-requisite Knowledge	Key Vocabulary	Demonstrable Skills
7	**Transformations** Rotation (Doing it) Reflection (Doing it) Translation (Doing it) Simple congruence **Sequences** Linear sequences Sequences in diagrams Describe sequences **Ratio and proportion** Ratio notation Simplify ratio Fraction ratio link **Units and compound measures** Scale – time/temperature/mass Which unit of measurement Measurement accuracy Simple estimation of real life measures Metric measurements Convert metric measures	Knowledge of shape in AC1-3 Multiples, pattern spotting FDP work from AC1-3 Reading from a number line. Understand scale of objects. Units of measurement	Transformation Rotation Centre of rotation Origin Angle of rotation Vector Reflection Mirror line Congruent Linear Sequence Term-to-term Ratio Simplest form Equivalent ratio Divided into (shared into) Measure Time Temperature Mass Scale Estimate Metric	**Transformations** • Transform 2D shapes using single rotations • Understand that rotations are specified by a centre and an angle • Find a centre of rotation • Rotate a shape about the origin or any other point • Measure the angle of rotation using right angles • Measure the angle of rotation using simple fractions of a turn or degrees • Translation of shapes using vectors • Transform 2D shapes using single reflections • Understand that reflections are specified by a mirror line • Distinguish properties that are preserved under particular transformations • Understand that lengths and angles are preserved under rotations, reflections and translations, so that any figure is congruent under any of these transformations **Sequences** • Generate linear sequences • Generate sequences with a given term-to-term rule • Generate simple sequences derived from diagrams and complete a table of results that describes the pattern shown by the diagrams • Describe how a sequence continues. **Ratio and proportion** • Understand the meaning of ratio notation • Simplify ratios to their simplest form a : b where a and b are integers write a ratio in the form 1 : n or n:1 • Use equality of ratios to solve problems • Understand the meaning of ratio as a fraction • Understand that a line divided in the ratio 1 : 3 means that the smaller part is one-quarter of the whole • Interpret a ratio as a fraction **Units and compound measures** • Interpret scales on a range of measuring instruments, including those for time, temperature and mass, reading from the scale or marking a point on a scale to show a stated value • Know that measurements using real numbers depend on the choice of unit • Choose appropriate units for estimating measurements, for example the height of a television mast would be measured in metres • Recognise that measurements given to the nearest whole unit may be inaccurate by up to one half in either direction • Make sensible estimates of a range of measures in real-life situations, for example estimate the height of a man • Know and use standard metric measures • Convert between metric measures

Curriculum: Mathematics

Year	Topic Detail and Sequence	Pre-requisite Knowledge	Key Vocabulary	Demonstrable Skills
8	**Transformations** Rotation (Doing it **and describing it)** Reflection (Doing it **and describing it)** Translation (Doing it **and describing it)** Simple congruence **Sequences** Linear sequences Sequences in diagrams Describe sequences **nth term** **Ratio and proportion** Ratio notation Simplify ratio Fraction ratio link **Simple problem solving** **Ratio in context** **Unitary method** **Comparison using ratio** **Best buy** **Units and compound measures** Scale – time/temperature/mass Which unit of measurement Measurement accuracy Simple estimation of real life measures Metric measurements Convert metric measures **Choosing units** **Compound measures length/area/volume/Speed**	Doing: rotation, reflection and translation. Shape properties for congruence. Linear sequences Sequences in diagrams Describe sequences Ratio notation Simplify ratio Fraction ratio link Scale – time/temperature/mass Which unit of measurement Measurement accuracy Simple estimation of real life measures Metric measurements Convert metric measures	Transform Enlargement Nth term 'n' Term Geometrical Similar shape Scale Best buy Unit cost Compound measures	**Transformations** • Describe and transform 2D shapes using single rotations • Describe and transform 2D shapes using translations • Describe and transform 2D shapes using single reflections • Recognise that enlargements preserve angle but not length • Understand that lengths and angles are preserved under rotations, reflections and translations, so that any figure is congruent under any of these transformations (Recap plus translations from y8) **Sequences** • Work out a formula for the nth term of a linear sequence • Work out the value of the nth term of a linear sequence for any given value of n • Generate a sequence where the nth term is given • Work out the value of the nth term of any sequence for any given value of n **Ratio and proportion** • Use ratios in the context of geometrical problems, for example similar shapes, scale drawings and problem solving involving scales and measures • Interpret a ratio in a way that enables the correct proportion of an amount to be calculated • Use ratio to solve, for example geometrical, algebraic, statistical, and numerical problems • Use ratio to solve word problems using informal strategies or using the unitary method of solution • Make comparisons between two quantities and represent them as a ratio • Compare the cost of items using the unit cost of one item as a fraction of the unit cost of another item • Solve best-buy problems using informal strategies or using the unitary method of solution **Units and compound measures** • Choose appropriate units for estimating measurements, for example a television mast would be measured in metres • Know and use compound measures such as area, volume and speed

Year	Topic Detail and Sequence	Pre-requisite Knowledge	Key Vocabulary	Demonstrable Skills
9	**Transformations** Rotation (Doing it and describing it) Reflection (Doing it and describing it) Translation (Doing it and describing it) Simple congruence **Enlargement (doing it AND describing it) - positive scale factors only, with and without a centre given, with and without coordinate axes.** **Scale factor and centre of enlargement** **Ratio of two sides** **Congruence** **Sequences** Linear sequences Sequences in diagrams Describe sequences nth term **Solve simple arithmetic progression problems** **Ratio and proportion** Ratio notation Simplify ratio Simple problem solving Fraction ratio link Ratio in context Unitary method Comparison using ratio Best buy **Proportion to solve (inc unitary method)** **Direct indirect problems** **Maps and scale** **Estimate from a scale drawing** **Represent a direct proportion as a graph** **Ratio/fraction to equations to solve problems** **Units and compound measures** Scale – time/temperature/mass Which unit of measurement Measurement accuracy Simple estimation of real life measures Metric measurements Convert metric measures Choosing units Compound measures (including, Speed, Distance, Time, **Pressure and Density**) Convert metric measures **Convert units in compound measures** **Speed/distance/time** **Convert between compound units** **Metric and imperial measures**	Rotation (Doing it and describing it) Reflection (Doing it and describing it) Translation (Doing it and describing it) Simple congruence Linear sequences Sequences in diagrams Describe sequences nth term Ratio notation Simplify ratio Simple problem solving Fraction ratio link Ratio in context Unitary method Comparison using ratio Best buy Scale – time/temperature/mass. Which unit of measurement. Measurement accuracy. Simple estimation of real life measures. Metric measurements. Convert metric measures. Choosing units. Compound measure.s (including, Speed, Distance, Time, Pressure and Density) Convert metric measures.	Scale Factor Enlargement Centre of enlargement Scale factor Arithmetic Progression Unitary Direct proportion Inverse proportion Scale Compound measurements Speed Distance Miles per hour Metres per second Imperial	**Transformations** • Describe and transform 2D shapes using enlargements by a positive scale factor • Draw an enlargement • Enlarge a shape on a grid (centre not specified) • Understand that an enlargement is specified by a centre and a scale factor • Find the centre of enlargement • Describe and transform 2D shapes using enlargements by a positive scale factor • Identify the scale factor of an enlargement of a shape as the ratio of the lengths of two corresponding sides • Identify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segments • Use congruence to show that translations, rotations and reflections preserve length and angle, so that any figure is congruent to its image under any of these transformations • Find the equation of a line of reflection **Sequences** • Work out an expression in terms of n for the nth term of a linear sequence by knowing that the common difference can be used to generate a formula for the nth term • Solve simple problems involving arithmetic progressions **Ratio and proportion** • Use proportion to solve problems using informal strategies or the unitary method of solution • Use direct proportion to solve geometrical problems • Calculate an unknown quantity from quantities that vary in direct proportion or inverse proportion • Use and interpret maps and scale drawings • Use a scale on a map to work out an actual length • Use a scale with an actual length to work out a length on a map • Construct scale drawings • Use scale to estimate a length, for example use the height of a man to estimate the height of a building where both are shown in a scale drawing • Work out a scale from a scale drawing given additional information • Represent the ratio of two quantities in direct proportion as a linear relationship and represent the relationship graphically • Relate ratios to fractions and use linear equations to solve problems **Units and compound measures** • Recall and use conversions for metric measures for length, area, volume and capacity • Understand and use compound measures and compound units including area, volume, speed, rates of pay, density and pressure • Understand speed and know the relationship between speed, distance and time • Understand units in common usage such as miles per hour or metres per second. The values used in the question will make the required unit clear • Convert between compound units • Now and use standard metric and imperial measures • Use conversions between imperial units and metric units using common approximations, for example 5 miles ≈ 8 kilometres, 1 gallon ≈ 4.5 litres, 2.2 pounds ≈ 1 kilogram, 1 inch ≈ 2.5 centimetres

Year	Topic Detail and Sequence	Pre-requisite Knowledge	Key Vocabulary	Demonstrable Skills
10	**Transformations** Rotation (Doing it and describing it) Reflection (Doing it and describing it) Translation (Doing it and describing it) Simple congruence Enlargement (doing it AND describing it) - positive scale factors only, with and without a centre given, with and without coordinate axes. Scale factor an centre of enlargement Ratio of two sides Congruence **Find and do SF of enlargement fractional SF** **Find and do SF of enlargement negative SF (H*)** **Column Vectors (notation and calculations)** **Vectors (non column) (H*)** **Combination of transformations** **Invariance – and point mapping (H*)** **Sequences** Linear sequences Sequences in diagrams Describe sequences nth term Solve simple arithmetic progression problems **Special sequences** **Nth term (quadratic) (H*)** **Geometric progressions** **Finding n, for more complicated sequences (H*)** **Ratio and proportion** Ratio notation Simplify ratio Simple problem solving Fraction ratio link Ratio in context Unitary method Comparison using ratio Best buy Proportion to solve (inc unitary method) Direct indirect problems Maps and scale Estimate from a scale drawing Represent a direct proportion as a graph Ratio/fraction to equations to solve problems **Ratio/fraction problems in geometry** **Direct and indirect proportion (construction of is H*)** **Units and compound measures** Scale – time/temperature/mass Which unit of measurement Measurement accuracy Simple estimation of real life measures Metric measurements Convert metric measures Choosing units Compound measures (including, Speed, Distance, Time, Pressure and Density) Convert metric measures Convert units in compound measures Speed/distance/time Convert between compound units Metric and imperial measures	Transformations Congruence Scale factors, ratio between sides, Linear sequences Sequences in diagrams Describe sequences nth term Solve simple arithmetic progression problems Ratio Ratio in context Unitary method Comparison using ratio Best buy Proportion to solve (inc unitary method) Direct indirect problems Maps and scale Estimate from a scale drawing Represent a direct proportion as a graph	Scale factor Fraction scale factor Negative scale factor Vector Resultant Colinear Invariance Fibonacci Quadratic sequence Sketch Constant of proportionality Geometric progression	**Transformations** • Identify the scale factor of an enlargement • Construct enlargements with fractional and negative scale factors • Understand that translations are specified by a distance and direction (using a vector) • Translate a given shape by a vector • Understand and use vector notation (not column) • Calculate and represent graphically the sum of two vectors, the difference of two vectors and a scalar multiple of a vector • Calculate the resultant of two vectors • Understand and use the commutative and associative properties of vector addition. • Solve simple geometrical problems in 2D using vector methods • Apply vector methods for simple geometric proofs • Recognise when lines are parallel using vectors • Recognise when three or more points are colinear using vectors • Use vectors to show three or more points are collinear • Use column vector notation for translations • Describe and transform 2D shapes using combined rotations, reflections, translations, or enlargements • Describe a combination of transformations as a single transformation • Understand and use the term 'invariance' for points, lines and shapes achieved by single or combined transformations • Map a point on a shape under a combination of transformations **Sequences** • Work with Fibonacci-type sequences (rule will be given) • Work out a formula for the nth term of a sequence, which may contain linear or quadratic parts • Know how to continue the terms of a quadratic sequence • Work out the value of a term in a geometric progression of the form r^n where n is an integer > 0 • Work out the value of the nth term of a sequence for any given value of n **Ratio and proportion** • Use fractions and ratios in the context of geometrical problems, for example similar shapes, scale drawings and problem solving involving scales and measures • Sketch an appropriately shaped graph (partly or entirely non-linear) to represent a real-life situation • Choose the graph that is sketched correctly from a selection of alternatives • Recognise the graphs that represent direct and inverse proportion • Set up and use equations to solve word and other problems involving direct proportion or inverse proportion • Relate algebraic solutions to graphical representation of the equations • Understand that an equation of the form $y = kx$ represents direct proportion and that k is the constant of proportionality and Construct • Understand that an equation of the form $y = k/x$ represents inverse proportion and that k is the constant of proportionality and Construct **Units and compound measures**