

Edexcel GCSE (9-1) Mathematics

UNIT / LESSON	HOURS	PRIOR KNOWLEDGE
1 Number	13	
		Identify the value of digits in a whole number or decimal.
		Round to the nearest integer, and to a given power.
		Apply the four operations.
		Recall all multiplication facts to 10×10 , and use them to derive quickly the corresponding division facts.
		Know strategies for multiplying and dividing whole numbers by 2, 4, 5 and 10.
		Recognise odd and even numbers.
		Use brackets and the hierarchy of operations (not including powers).
		Understand and use positive and negative numbers.
		Interpret scales on thermometers using $^{\circ}\text{F}$ and $^{\circ}\text{C}$ (positive and negative).
1.1 Calculations		Order positive and negative integers and decimals.
1.1 Calculations		Use the symbols =, <, >
1.1 Calculations		Find a fraction of a number.
1.1 Calculations		Recall square numbers.
1.1 Calculations		Understand the commutative property of multiplication.
1.2 Decimal numbers		Identify place value.
1.2 Decimal numbers		Convert between metric measures.
1.3 Place value		Round to the nearest 100, 10 and whole number.
1.3 Place value		Multiply and divide by powers of 10.
1.3 Place value		
1.3 Place value		
1.4 Factors and multiples		Understand the meaning of the words prime, factor, multiple and product.
1.4 Factors and multiples		List the multiples of a given number.
1.4 Factors and multiples		
1.4 Factors and multiples		

1.5 Squares, cubes and roots		Understand the meaning of the words prime, factor, multiple and product.
1.5 Squares, cubes and roots		Round numbers to a specified degree of accuracy.
1.5 Squares, cubes and roots		
1.6 Index notation		Use simple powers of 10.
1.6 Index notation		Convert between metric units.
1.6 Index notation		Evaluate numeric expressions with powers.
1.7 Prime factors		List the factors of numbers; identify which factors are prime.
1.7 Prime factors		Evaluate numeric expressions with powers.
2 Algebra	12	
2 Algebra		Use the four operations with positive and negative integers.
2 Algebra		Recall and use the hierarchy of operations.
2 Algebra		Evaluate numerical expressions involving powers and roots.
2 Algebra		Multiply and divide numbers with indices.
2 Algebra		Find the HCF of two numbers.
2 Algebra		Simplify simple algebraic expressions.
2.1 Algebraic expressions		Simplify simple algebraic expressions.
2.1 Algebraic expressions		
2.2 Simplifying expressions		Multiply and divide simple terms.
2.2 Simplifying expressions		Calculate with positive and negative integers.
2.2 Simplifying expressions		Use index notation.
2.3 Substitution		Recognise equivalent expressions.
2.3 Substitution		Calculate with positive and negative integers.
2.3 Substitution		Apply the four operations.
2.4 Formulae		Calculate with negative numbers and terms.
2.4 Formulae		Recall square numbers.
2.4 Formulae		Substitute into and evaluate expressions.
2.4 Formulae		Write simple expressions.
2.5 Expanding brackets		Multiply negative and positive terms.

2.5 Expanding brackets		Simplify algebraic expressions.
2.5 Expanding brackets		Write simple formulae.
2.6 Factorising		Find HCFs of number pairs.
2.6 Factorising		Multiply a single term over brackets.
2.6 Factorising		
2.7 Using expressions and formulae		Write simple expressions.
2.7 Using expressions and formulae		Substitute into and evaluate expressions.
3 Graphs, tables and charts	14	
3 Graphs, tables and charts		Read scales on graphs and plot coordinates in the first quadrant.
3 Graphs, tables and charts		Draw circles.
3 Graphs, tables and charts		Measure and draw angles.
3 Graphs, tables and charts		Know that there are 360 degrees in a full turn and 180 degrees at a point on a straight line.
3 Graphs, tables and charts		Have experience of tally charts.
3 Graphs, tables and charts		Have used inequality notation.
3 Graphs, tables and charts		Use correct notation for time using 12 & 24-hour clocks.
3 Graphs, tables and charts		Find the midpoint of two numbers.
3.1 Frequency tables		Addition of numbers.
3.1 Frequency tables		Counting tally symbols and drawing tally charts.
3.1 Frequency tables		Interpret a frequency table, including calculating the total population.
3.2 Two-way tables		Convert between 12 and 24 hour clock times.
3.2 Two-way tables		Calculate with time.
3.2 Two-way tables		Understand use of fractions.
3.3 Representing data		Determine what features are missing from a graph.
3.3 Representing data		Interpret bar charts.
3.4 Time series		Write decimal numbers of millions.
3.4 Time series		Plot a line graph.
3.4 Time series		
3.5 Stem and leaf diagrams		Place numbers in order of size.

3.6 Pie charts		Express a part of a circle as a fraction or percentage of the whole.
3.6 Pie charts		Know the number of degrees in a circle.
3.6 Pie charts		Draw a circle.
3.6 Pie charts		Draw a given angle.
3.7 Scatter graphs		Understand depreciation of value as things age, as well as an understanding of exceptions (e.g. classic cars)
3.7 Scatter graphs		Plot coordinates in the first quadrant.
3.8 Line of best fit		Recall definitions of positive, negative and no correlation.
3.8 Line of best fit		Read values from a graph.
4 Fractions and percentages	14	
4 Fractions and percentages		Use the four operations of number.
4 Fractions and percentages		Find common factors.
4 Fractions and percentages		Have a basic understanding of fractions as being 'parts of a whole' and be able to write one value as a fraction of another.
4 Fractions and percentages		Define percentage as 'number of parts per hundred'.
4 Fractions and percentages		Know number complements to 10 and multiplication tables.
4 Fractions and percentages		Convert between common fractions, decimals and percentages.
4.1 Working with fractions		Identify equivalence in fractions.
4.1 Working with fractions		Identify the denominator of a fraction.
4.1 Working with fractions		Identify the numerator of a fraction.
4.1 Working with fractions		Find the LCM.
4.1 Working with fractions		Write fractions in their simplest form.
4.2 Operations with fractions		Convert between units of length.
4.2 Operations with fractions		Add and subtract fractions.
4.2 Operations with fractions		Convert between mixed numbers and improper fractions.
4.3 Multiplying fractions		Find a fraction of a quantity.
4.3 Multiplying fractions		Know that 1000 g = 1 kg.
4.3 Multiplying fractions		Know the commutative rule $a \times b = b \times a$.
4.3 Multiplying fractions		Write 1 million pounds as a figure.
4.4 Dividing fractions		Divide larger numbers by smaller numbers.

4.4 Dividing fractions		Convert between mixed numbers and improper fractions.
4.4 Dividing fractions		Multiply a whole number or a fraction by a fraction.
4.5 Fractions and decimals		Identify the (place) value of a digit in a decimal number.
4.5 Fractions and decimals		Convert between common fractions and decimals.
4.5 Fractions and decimals		Write one value as a fraction of another.
4.6 Fractions and percentages		Write common fractions and decimals as percentages.
4.6 Fractions and percentages		
4.7 Calculating percentages 1		Find percentages of quantities.
4.7 Calculating percentages 2		Convert a fraction to a decimal.
4.7 Calculating percentages 3		Convert a percentage to a fraction.
4.7 Calculating percentages 4		
4.8 Calculating percentages 2		Calculate with percentages.
4.8 Calculating percentages 3		Convert a percentage to a decimal.
4.8 Calculating percentages 4		Find a percentage of a quantity.
5 Equations, inequalities and	14	
5 Equations, inequalities and		Use inequality signs between numbers.
5 Equations, inequalities and		Use negative numbers with the four operations, recall and use the hierarchy of operations and understand inverse operations.
5 Equations, inequalities and		Deal with decimals and negatives on a calculator.
5 Equations, inequalities and		Use index laws numerically.
5 Equations, inequalities and		Draw a number line.
5 Equations, inequalities and		Write the next terms in a sequence, and find the term to term rule.
5 Equations, inequalities and		Use function machines.
5 Equations, inequalities and		Multiply a term over brackets.
5 Equations, inequalities and		Substitute into and evaluate an expression.
5.1 Solving equations 1		Understand the meaning of the term 'inverse operation'.
5.1 Solving equations 2		Find the output of a function machine when given the input.
5.1 Solving equations 3		
5.2 Solving equations 2		Use all four operations to solve simple, single one-step equations.

5.2 Solving equations 3		Work out the outputs of a function machine.
5.2 Solving equations 4		Simplify expressions.
5.3 Solving equations with brackets		Expand a single bracket, involving positive and negative numbers.
5.3 Solving equations with brackets		Solve two-step equations.
5.4 Introducing inequalities		Identify numbers that satisfy an inequality.
5.4 Introducing inequalities		Use the inequality signs between numbers.
5.4 Introducing inequalities		
5.4 Introducing inequalities		
5.5 More inequalities		List integer values that satisfy an inequality.
5.5 More inequalities		
5.6 More formulae		Identify the inverse of all four operations.
5.6 More formulae		Substitute into and evaluate expressions.
5.6 More formulae		
5.7 Generating sequences		Find the missing numbers in simple arithmetic sequences.
5.7 Generating sequences		Write down missing terms in sequences.
5.7 Generating sequences		Find the term-to-term rule.
5.8 Using the nth term of a sequence		Substitute into a simple expression.
5.8 Using the nth term of a sequence		Solve simple equations.
6 Angles	12	
6 Angles		Be able to use a ruler and protractor.
6 Angles		Have an understanding of angles as a measure of turning.
6 Angles		Name angles and distinguish between acute, obtuse, reflex and right angles.
6 Angles		Recognise reflection symmetry, be able to identify and draw lines of symmetry, and complete diagrams with given number of lines of symmetry.
6 Angles		Recognise rotation symmetry and be able to identify orders of rotational symmetry, and complete diagrams with given order of rotational symmetry.
6 Angles		Know the properties of special triangles and quadrilaterals.
6.1 Properties of shapes		Identify lines of symmetry and rotational symmetry in 2D shapes.
6.1 Properties of shapes		Draw angles.
6.1 Properties of shapes		Know that the angles in a quadrilateral sum to 360° .

6.2 Angles in parallel lines		Identify parallel and perpendicular lines.
6.2 Angles in parallel lines		Identify acute and obtuse angles.
6.3 Angles in triangles		Identify different types of triangles.
6.3 Angles in triangles		Know that the angles in a triangle sum to 180° .
6.3 Angles in triangles		
6.4 Exterior and interior angles		Recall the number of sides of different polygons.
6.4 Exterior and interior angles		Know the properties of special triangles and quadrilaterals.
6.5 More exterior and interior angles		Recall the number of interior angles in different polygons.
6.5 More exterior and interior angles		Identify exterior and interior angles.
6.6 Geometrical patterns		Using angle facts to find missing angles.
6.6 Geometrical patterns		Write an equation to solve a problem.
7 Averages and range	11	
7 Averages and range		Calculate the midpoint of two numbers.
7 Averages and range		Draw the statistical diagrams in unit 3.
7 Averages and range		Use inequality notation.
7 Averages and range		Calculate the mode, median and the range.
7.1 Mean and range		Understand that sharing equally involves dividing a total.
7.1 Mean and range		Identify the mode.
7.2 Mode, median and range		Identify the mode, median and range.
7.2 Mode, median and range		Identify an incorrect value.
7.2 Mode, median and range		Draw a stem and leaf diagram.
7.2 Mode, median and range		Understand inequality notation.
7.3 Types of average		Find the mode, median and mean.
7.3 Types of average		
7.3 Types of average		
7.4 Estimating the mean		Calculate the value halfway between pairs of numbers.
7.4 Estimating the mean		Calculate the mean.
7.4 Estimating the mean		Read data from a frequency table.

7.5 Sampling		Understand the use of random numbers in a real-life situation.
7.5 Sampling		
8 Perimeter, area and volume 1	12	
8 Perimeter, area and volume 1		Measure lines.
8 Perimeter, area and volume 1		Recall the names of 2D shapes.
8 Perimeter, area and volume 1		Identify and name common 3D solids: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres.
8 Perimeter, area and volume 1		Use strategies for multiplying and dividing by powers of 10.
8 Perimeter, area and volume 1		Find areas by counting squares and volumes by counting cubes.
8 Perimeter, area and volume 1		Interpret scales on a range of measuring instruments.
8 Perimeter, area and volume 1		Convert metric units to metric units.
8.1 Rectangles, parallelograms and		Understand the meaning of 'perpendicular'.
8.1 Rectangles, parallelograms and		Work out the perimeter and area of triangles and rectangles.
8.1 Rectangles, parallelograms and		
8.2 Trapezia and changing units		Multiplying and dividing by powers of 10, converting between millimetres, centimetres and metres.
8.2 Trapezia and changing units		
8.2 Trapezia and changing units		
8.3 Area of compound shapes		Know that 1 km = 1000 m
8.3 Area of compound shapes		Multiply and divide by powers of 10.
8.3 Area of compound shapes		Convert between metric measures of area.
8.4 Surface area of 3D solids		Describe shapes using correct vocabulary, including face, edge and vertex.
8.4 Surface area of 3D solids		Sketch the net of a cuboid.
8.4 Surface area of 3D solids		Work out the area of rectangles, triangles and trapezia.
8.5 Volume of prisms		Identify cross sections of prisms.
8.5 Volume of prisms		Decide whether a 3D solid is a prism.
8.6 More volume and surface area		Multiply and divide by large powers of 10.
8.6 More volume and surface area		Know that 1 litre = 1000 ml.
8.6 More volume and surface area		Work out the volume and surface area of a prism.
9 Graphs	13	

9 Graphs		Plot coordinates and read scales
9 Graphs		Substitute into a formula.
9.1 Coordinates		Halve a number.
9.1 Coordinates		Substitute into an equation, and solve for an unknown.
9.2 Linear graphs		Use a function machine.
9.2 Linear graphs		Read scales
9.2 Linear graphs		
9.3 Gradient		Understand that parallel lines will never meet.
9.3 Gradient		Identify which line is steepest.
9.3 Gradient		
9.4 $y = mx + c$		Understand that in a linear equation, the coefficient of x is the gradient.
9.4 $y = mx + c$		Understand that parallel lines have the same gradient.
9.4 $y = mx + c$		Draw a line with a given gradient.
9.5 Real-life graphs		Interpret scales.
9.5 Real-life graphs		Draw a graph of an equation in the form $y = mx + c$.
9.6 Distance-time graphs		Understand and use the relationship between distance, average speed and time.
9.6 Distance-time graphs		
9.6 Distance-time graphs		
9.7 More real-life graphs		Interpret a distance–time graph.
9.7 More real-life graphs		Recall the definitions of positive, negative and no correlation.
9.7 More real-life graphs		Find the equation of a line.
10 Transformations	12	
10 Transformations		Recall basic shapes.
10 Transformations		Be able to plot points in all four quadrants.
10 Transformations		Understand the concept of rotation.
10 Transformations		Reflect a shape in a mirror line.
10 Transformations		Translate a shape on a squared grid using instructions such as left/right and up/down.
10 Transformations		Draw and recognise lines parallel to axes and $y = x$, $y = -x$.

10 Transformations		Understand the terms 'clockwise' and 'anticlockwise'.
10.1 Translation		Use the words left and right
10.1 Translation		List the four types of transformations
10.1 Translation		Describe translations using left/right and up/down.
10.2 Reflection		Define the word perpendicular
10.2 Reflection		Reflect a shape in a mirror line.
10.2 Reflection		
10.3 Rotation		Know the number of degrees in fractions of a turn.
10.3 Rotation		Use the words clockwise and anticlockwise.
10.4 Enlargement		Find scale factor from object to image and from image to object.
10.4 Enlargement		
10.5 Describing enlargements		Recognise the properties of enlargements.
10.5 Describing enlargements		Simplify fractions.
10.5 Describing enlargements		
10.6 Combining transformations		State key information for describing transformations.
10.6 Combining transformations		Identify the type of transformation used.
11 Ratio and proportion	13	
11 Ratio and proportion		Know the four operations of number.
11 Ratio and proportion		Have a basic understanding of fractions as being 'parts of a whole'.
11 Ratio and proportion		Find the scale factor of an enlargement.
11 Ratio and proportion		Draw a line graph from a table of values.
11.1 Writing ratios		Multiply and divide whole numbers.
11.1 Writing ratios		Interpret bar charts.
11.1 Writing ratios		
11.2 Using ratios 1		Know and use metric conversions.
11.2 Using ratios 2		Find the HCF of a pair of numbers.
11.2 Using ratios 3		
11.3 Ratios and measures		Convert units of weight, length, capacity and time.

11.3 Ratios and measures		Use index notation.
11.3 Ratios and measures		Work out areas of rectangles and volumes of cubes.
11.4 Using ratios 2		Write ratios using correct notation.
11.4 Using ratios 3		Round to a specified degree of accuracy.
11.4 Using ratios 4		Write a ratio in its simplest form.
11.5 Comparing using ratios		Interpret ratios.
11.5 Comparing using ratios		Write a ratio in its simplest form.
11.5 Comparing using ratios		
11.6 Using proportion		Understand and use place value to order decimals.
11.6 Using proportion		Write a ratio in the form 1 : n.
11.6 Using proportion		
11.7 Proportion and graphs		Understand and use $y = mx + c$.
11.7 Proportion and graphs		Use conversion graphs.
11.7 Proportion and graphs		Plot a line graph from a table of values.
11.8 Proportion problems		Relate common sense to real life problems.
11.8 Proportion problems		
12 Right-angled triangles	13	
12 Right-angled triangles		Rearrange simple formulae and equations, as preparation for rearranging trigonometric formulae.
12 Right-angled triangles		Recall basic angle facts.
12 Right-angled triangles		Understand when to leave an answer in surd form.
12 Right-angled triangles		Plot coordinates in all four quadrants and draw axes.
12 Right-angled triangles		Round to a specified degree of accuracy.
12.1 Pythagoras' theorem 1		Calculate of simple squares and square roots.
12.1 Pythagoras' theorem 2		Substitute into and evaluate expressions.
12.1 Pythagoras' theorem 3		Round answers to a specified degree of accuracy.
12.2 Pythagoras' theorem 2		Understand the meaning of \neq .
12.2 Pythagoras' theorem 3		Interpret a surd expression shown on the calculator display.
12.2 Pythagoras' theorem 4		Identify the hypotenuse, and calculate its length.

12.3 Trigonometry: the sine ratio 1		Simplify fractions.
12.3 Trigonometry: the sine ratio 2		Convert fractions to decimals using a calculator.
12.3 Trigonometry: the sine ratio 3		
12.4 Trigonometry: the sine ratio 2		Calculate the sine of an angle in a right-angled triangle.
12.4 Trigonometry: the sine ratio 3		Use the sin key on a calculator.
12.4 Trigonometry: the sine ratio 4		
12.5 Trigonometry: the cosine ratio		Identify the hypotenuse and adjacent side in a right-angled triangle.
12.5 Trigonometry: the cosine ratio		
12.5 Trigonometry: the cosine ratio		
12.5 Trigonometry: the cosine ratio		
12.6 Trigonometry: the tangent ratio		Identify the opposite and adjacent sides in right-angled triangles.
12.6 Trigonometry: the tangent ratio		
12.6 Trigonometry: the tangent ratio		
12.6 Trigonometry: the tangent ratio		
12.7 Finding lengths and angles using		Identify the sine, cosine and tangent ratios.
12.7 Finding lengths and angles using		
12.7 Finding lengths and angles using		
13 Probability	11	
13 Probability		Add and multiply fractions and decimals.
13 Probability		Have experience of expressing one number as a fraction or percentage of another number.
13 Probability		Convert between fractions, decimals and percentages.
13 Probability		Understand the terms impossible, unlikely, even chance, likely, certain.
13 Probability		Calculate theoretical probabilities for simple situations, e.g. spinner landing on a given colour.
13.1 Calculating probability		Write probability as a fraction, a decimal and a percentage.
13.1 Calculating probability		Add and subtract fractions.
13.2 Two events		List outcomes.
13.2 Two events		Simplify fractions.
13.3 Experimental probability		Convert fractions, decimals and percentages.

13.3 Experimental probability		Compare fractions.
13.3 Experimental probability		Understand theoretical probability (single event).
13.3 Experimental probability		Use two-way tables.
13.4 Venn diagrams		Add and subtracting equivalent fractions.
13.4 Venn diagrams		List primes and multiples.
13.4 Venn diagrams		Calculate probabilities.
13.5 Tree diagrams		Calculate with fractions.
13.5 Tree diagrams		List the possible outcomes for two events.
13.5 Tree diagrams		Work out the probability of something not happening.
13.5 Tree diagrams		Calculate probabilities.
13.6 More tree diagrams		Calculate with and simplify fractions.
13.6 More tree diagrams		Work out probabilities using tree diagrams.
14 Multiplicative reasoning	11	
14 Multiplicative reasoning		Interpret scales on a range of measuring instruments.
14 Multiplicative reasoning		Convert between metric measures.
14 Multiplicative reasoning		Understand ratio notation, and be able to write a ratio in its simplest form.
14 Multiplicative reasoning		Find a percentage of an amount and relate percentages to decimals.
14 Multiplicative reasoning		Rearrange equations and use these to solve problems.
14 Multiplicative reasoning		Know speed = distance/time, density = mass/volume.
14 Multiplicative reasoning		Find the equation of a line from a graph.
14 Multiplicative reasoning		Identify a graph showing direct proportion.
14.1 Percentages		Convert percentages to decimals.
14.1 Percentages		Express one number as a percentage of another.
14.1 Percentages		Work out percentage increases and decreases.
14.2 Growth and decay		Write powers of numbers in index form.
14.2 Growth and decay		Relate percentages to decimals.
14.3 Compound measures		Understand 'rate' as a mathematical concept.
14.3 Compound measures		Substitute into and solve equations.

14.3 Compound measures		Rearrange equations.
14.3 Compound measures		Convert between metric units of volume.
14.3 Compound measures		Calculate the area of a trapezium.
14.3 Compound measures		Calculate the volume of a prism.
14.4 Distance, speed and time		Find speed in km/h, given distance travelled in minutes.
14.4 Distance, speed and time		Convert between metric units of length.
14.4 Distance, speed and time		
14.5 Direct and inverse proportion		Identify graphs showing direct proportion.
14.5 Direct and inverse proportion		Write a ratio as a unit ratio.
15 Constructions, loci and bearings	13	
15 Constructions, loci and bearings		Measure and draw lines.
15 Constructions, loci and bearings		Write a ratio in the form 1 : m and in its simplest form.
15 Constructions, loci and bearings		Know the 8 points of the compass.
15 Constructions, loci and bearings		Draw a net of a 3D shape.
15 Constructions, loci and bearings		Know clockwise, anticlockwise.
15 Constructions, loci and bearings		Identify congruent shapes.
15.1 3D solids		Recall names of common 2D shapes.
15.1 3D solids		
15.1 3D solids		
15.2 Plans and elevations		Identify names of 2D shapes from faces of 3D solids.
15.2 Plans and elevations		Recall names of common 3D shapes.
15.2 Plans and elevations		Know the properties of special triangles and quadrilaterals.
15.3 Accurate drawings 1		Understand of the meaning of 'congruence'.
15.3 Accurate drawings 2		Draw lines, angles and circles accurately
15.3 Accurate drawings 3		
15.4 Scale drawings and maps		Work out scale factor of an enlargement.
15.4 Scale drawings and maps		Write a ratio in the form 1 : m, and write equivalent ratios.
15.4 Scale drawings and maps		Convert between metric measurements of length.

15.4 Scale drawings and maps		
15.4 Scale drawings and maps		
15.5 Accurate drawings 2		Knowledge of scale factors of enlargement.
15.5 Accurate drawings 3		Identify a solid from its net.
15.5 Accurate drawings 4		
15.6 Constructions		Identify parallel and perpendicular lines.
15.6 Constructions		Draw lines accurately.
15.7 Loci and regions		Convert distances from map scale to real life distance and vice versa.
15.7 Loci and regions		Construct the perpendicular bisector.
15.8 Bearings		Working out the complement to 180 or 360 (addition and subtraction).
15.8 Bearings		Recall the properties of angles at a point, angles on a straight line, alternate and corresponding angles.
15.8 Bearings		
16 Quadratic equations and	11	
16 Quadratic equations and		Square negative numbers.
16 Quadratic equations and		Substitute into formulae.
16 Quadratic equations and		Plot points on a coordinate grid.
16 Quadratic equations and		Expand single brackets and collect 'like' terms.
16.1 Expanding double brackets		Be able to work out area of a shape using algebraic terms.
16.1 Expanding double brackets		Simplify algebraic expressions.
16.1 Expanding double brackets		Multiply a single term over brackets.
16.2 Plotting quadratic graphs		Be able to square terms.
16.2 Plotting quadratic graphs		Identify the equation of the mirror line.
16.2 Plotting quadratic graphs		Copy and complete a table of values and plot a straight line graph.
16.3 Using quadratic graphs		Define the origin and x-axis on a graph.
16.3 Using quadratic graphs		Copy and complete a table of values and plot a quadratic graph.
16.3 Using quadratic graphs		
16.4 Factorising quadratic expressions		Work out factor pairs of negative numbers
16.4 Factorising quadratic expressions		Multiply double brackets.

16.4 Factorising quadratic expressions		
16.5 Solving quadratic equations		Know that taking the square root of a number will result in both a positive and a negative answer.
16.5 Solving quadratic equations		Factorise quadratic expressions.
16.5 Solving quadratic equations		
17 Perimeter, area and volume 2	12	
17 Perimeter, area and volume 2		Know the formula for calculating the area of a rectangle.
17 Perimeter, area and volume 2		Know how to use the four operations on a calculator.
17 Perimeter, area and volume 2		Name common 3D shapes.
17 Perimeter, area and volume 2		Define centre, radius and diameter for a circle.
17 Perimeter, area and volume 2		Substitute into formulae and solve for the unknown.
17 Perimeter, area and volume 2		Work out the volume of cuboids and prisms.
17.1 Circumference of a circle 1		Round accurately to a given number of significant figures or decimal place.
17.1 Circumference of a circle 2		Rearrange equations.
17.2 Circumference of a circle 2		Round to nearest metre.
17.2 Circumference of a circle 3		Solve equations.
17.2 Circumference of a circle 4		Understand inequality notation.
17.2 Circumference of a circle 5		Rearrange equations.
17.3 Area of a circle		Evaluate squares and square roots.
17.3 Area of a circle		Substitute into formulae and solve for the unknown.
17.3 Area of a circle		
17.3 Area of a circle		
17.4 Semicircles and sectors		Know number of degrees in a full turn, half turn or quarter turn.
17.4 Semicircles and sectors		Simplify fractions.
17.4 Semicircles and sectors		Find the area and circumference of a circle.
17.5 Composite 2D shapes and cylinders		Know and use the formula for the volume of a prism.
17.5 Composite 2D shapes and cylinders		Sketch the net of a cylinder.
17.5 Composite 2D shapes and cylinders		Work out the area and perimeter of rectangles, semicircles and quarter circles.
17.5 Composite 2D shapes and cylinders		Give answers in terms of π .

17.6 Pyramids and cones		Understand and use maths language for 3-D shapes.
17.6 Pyramids and cones		Work out the area of 2D shapes.
17.6 Pyramids and cones		Give answers in terms of π .
17.6 Pyramids and cones		
17.7 Spheres and composite solids		Know volume and surface area formulae.
17.7 Spheres and composite solids		Work out the length of the hypotenuse using Pythagoras' theorem.
17.7 Spheres and composite solids		
18 Fractions, indices and standard form	10	
18 Fractions, indices and standard form		Know how to do the four operations with fractions.
18 Fractions, indices and standard form		Convert between improper fractions and mixed numbers.
18 Fractions, indices and standard form		Write powers of 10 in index form and recognise and recall powers of 10, i.e. $10^2 = 100$.
18 Fractions, indices and standard form		Recall the index laws for multiplying and dividing positive integer powers.
18.1 Multiplying and dividing fractions		Convert between fractions, mixed numbers and improper fractions.
18.1 Multiplying and dividing fractions		Work out reciprocals of whole numbers, fractions, and decimals.
18.1 Multiplying and dividing fractions		Four operations with fractions.
18.2 The laws of indices		Evaluate simple powers.
18.2 The laws of indices		Recall the index laws for multiplying and dividing positive integer powers.
18.3 Writing large numbers in standard		Evaluate powers of 10.
18.3 Writing large numbers in standard		Write 1 million and 1 billion in figures.
18.4 Writing small numbers in standard		Divide integers and decimals by powers of ten.
18.4 Writing small numbers in standard		
18.5 Calculating with standard form		Use correct priority of operations.
18.5 Calculating with standard form		Write numbers in standard form.
19 Congruence, similarity and	12	
19 Congruence, similarity and		Begin to use column vectors when dealing with translations.
19 Congruence, similarity and		Recall and apply Pythagoras' Theorem on a coordinate grid.
19 Congruence, similarity and		Recognise and enlarge shapes and calculate scale factors.
19 Congruence, similarity and		Know how to calculate area and volume in various metric measures.

19 Congruence, similarity and		Measure lines and angles and using compasses, ruler and protractor, and construct standard constructions.
19 Congruence, similarity and		Know the properties of alternate, corresponding and vertically opposite angles.
19 Congruence, similarity and		Identify congruent and similar shapes.
19.1 Similarity and enlargement		Understand the scale factor of an enlargement.
19.1 Similarity and enlargement		Equivalent fractions.
19.2 More similarity		Calculating fractions of whole numbers.
19.2 More similarity		Using similarity of triangles to identify equal angles and lengths of corresponding sides.
19.2 More similarity		Identify similar shapes.
19.3 Using similarity		Understand squares and cubes of whole numbers and decimals.
19.3 Using similarity		Use similarity to find unknown lengths.
19.4 Congruence 1		Know that the sum of the angles in a triangle must be 180° .
19.4 Congruence 1		Identify congruent shapes.
19.5 Congruence 2		Recognise corresponding and alternate angles.
19.5 Congruence 2		Find angles using corresponding and alternate angles.
19.5 Congruence 2		Draw triangles accurately.
19.6 Vectors 1		Add and subtract with negative numbers.
19.6 Vectors 1		Use column vectors.
19.7 Vectors 2		Calculate with negative numbers.
19.7 Vectors 2		Find the resultant of two vectors.
20 More algebra	12	
20 More algebra		Draw linear graphs.
20 More algebra		Plot coordinates and sketch simple functions with a table of values.
20 More algebra		Substitute into and solve equations.
20 More algebra		Have experience of using formulae.
20 More algebra		Recall and use the priority of operations and use of inequality symbols.
20.1 Graphs of cubic and reciprocal		Recognise the shape of linear and quadratic graphs.
20.1 Graphs of cubic and reciprocal		Find reciprocals of fractions and integers.
20.2 Non-linear graphs		Recognise statements and equations describing direct and indirect proportion.

20.2 Non-linear graphs		Recognise the graphs of $y = x$ and $y = 1/x$.
20.3 Solving simultaneous		Write algebraic expressions.
20.3 Solving simultaneous		
20.4 Solving simultaneous		Add and subtract positive and negative terms, substitute integer and decimal values into a simple expression.
20.5 Rearranging formulae		Identify inverse operations for algebraic terms.
20.5 Rearranging formulae		Identify parallel lines from the equations of the lines.
20.6 Proof		Identify expressions, formulae and equations from a list.
20.6 Proof		