

Maths	Year 7	Year 8	Year 9	Year 10	Year 11
<b>Autumn</b>	<p><b>Unit 1 – Analysing and displaying data</b></p> <ul style="list-style-type: none"> <li>Find information from tables and pictograms.</li> <li>Find information from bar and bar-line charts.</li> <li>Display data using bar and bar-line charts.</li> <li>Organise data using a tally chart.</li> <li>Understand and use frequency tables.</li> <li>Understand and draw a grouped bar chart.</li> <li>Find the mode and modal class.</li> <li>Find the mean, median and range.</li> <li>Compare data using their range, mode and median.</li> </ul> <p><b>Unit 2 – Calculating</b></p>	<p><b>Unit 1 – Number properties and calculations</b></p> <ul style="list-style-type: none"> <li>Add and subtract larger numbers and negative numbers.</li> <li>Multiply and divide larger numbers and negative numbers.</li> <li>Use brackets.</li> <li>Find equivalent ratios.</li> <li>Solve word problems involving ratio.</li> <li>Understand the relationship between ratio and proportion.</li> <li>Use proportion to solve simple problems.</li> </ul> <p><b>Unit 2 – Shapes and measures in 3D</b></p> <ul style="list-style-type: none"> <li>Recognise and name 3D shapes.</li> <li>Count faces edges and vertices.</li> <li>Deduce properties of 3D</li> </ul>	<p><b>Unit 1 – Number</b></p> <ul style="list-style-type: none"> <li>Order positive and negative numbers and decimals; use the symbols <math>&lt;</math>, <math>&gt;</math> and <math>\neq</math></li> <li>Use four operations</li> <li>Recall multiplication facts and use with division</li> <li>Multiply or divide numbers by powers of 10</li> <li>Use brackets and BIDMAS with powers</li> <li>Round numbers to a given power of 10</li> <li>Check answers by rounding and inverse operations</li> <li>Use decimal notation and place value</li> <li>Identify the value of digits in decimals or whole numbers</li> <li>Write decimal numbers of millions</li> <li>Round to the nearest integer</li> <li>Round to certain decimal places and significant figures</li> <li>Estimate answers to calculations by rounding</li> <li>Use one calculation to find the answer to another</li> <li>Find squares and cubes</li> <li>Use index notation for squares and cubes</li> <li>Evaluate expressions involving squares, cubes and roots</li> <li>Use index notation for powers of 10, including negative powers</li> <li>Use the laws of indices to multiply and divide numbers</li> <li>Use calculators for all calculations</li> <li>List all three-digit numbers that can be made from three numbers</li> <li>Recognise odd, even and prime numbers</li> <li>Identify factors and multiples</li> </ul>	<p><b>Unit 9 – Graphs</b></p> <ul style="list-style-type: none"> <li>Use input/output diagrams</li> <li>Draw, label and scale axes</li> <li>Use axes and coordinates to specify points in four quadrants in 2D</li> <li>Identify points with given coordinates and coordinates of a given point in all four quadrants</li> <li>Find the coordinates of points identified by geometrical information in 2D</li> <li>Find the coordinates of the midpoint of a line segment</li> <li>Read values from straight-line graphs</li> <li>Draw straight line graphs</li> <li>Draw distance-time graphs and velocity-time graphs</li> <li>Work out time intervals for graph scales</li> <li>Interpret distance-time graphs, and calculate: the speed of individual</li> </ul>	<p><b>Unit 18 – Fractions, indices and standard form</b></p> <ul style="list-style-type: none"> <li>Add and subtract mixed number fractions</li> <li>Multiply mixed number fractions</li> <li>Divide mixed numbers by whole numbers</li> <li>Find the reciprocal of an integer, decimal or fraction</li> <li>Understand ‘reciprocal’ as multiplicative inverse</li> <li>Use index laws to simplify and calculate the value of numerical expressions</li> <li>Use numbers raised to the power zero, including the zero power of 10</li> </ul>

	<ul style="list-style-type: none"> <li>• Add and subtract numbers together.</li> <li>• Round to the nearest 10.</li> <li>• Approximate before adding and subtracting.</li> <li>• Multiply and divide numbers.</li> <li>• Recognise multiples, square numbers and square roots.</li> <li>• Use approximation.</li> <li>• Solve ratio and proportion problems.</li> <li>• Use negative numbers.</li> <li>• Continue a sequence.</li> </ul> <p><b>Unit 3 – Expressions, functions and formulae</b></p> <ul style="list-style-type: none"> <li>• Find outputs of simple functions.</li> <li>• Simplify expressions.</li> <li>• Write expressions in words.</li> </ul>	<p>shapes from 2D representations.</p> <ul style="list-style-type: none"> <li>• Identify and draw nets of 3D solids.</li> <li>• Calculate the surface area of cubes and cuboids.</li> <li>• Find the volume of a cube or cuboid by counting cubes.</li> <li>• Know the formula for calculating the volume of a cube or cuboid.</li> <li>• Solve problems involving units of length, area and capacity.</li> <li>• Convert between cm<sup>3</sup> and litres.</li> </ul> <p><b>Unit 3 – Statistics</b></p> <ul style="list-style-type: none"> <li>• Design a data collection sheet.</li> <li>• Group data into equal class intervals.</li> <li>• Interpret complex bar charts.</li> <li>• Draw bar charts for more than one set of data.</li> </ul>	<ul style="list-style-type: none"> <li>• Find the prime factor decomposition of numbers and write as a product using index notation</li> <li>• Find common factors and common multiples of two numbers</li> <li>• Find the LCM and HCF of two numbers</li> <li>• Understand that the prime factor decomposition of a positive integer is unique</li> <li>• Solve problems using HCF, LCM and prime numbers</li> </ul> <p><b>Unit 2 – Algebra</b></p> <ul style="list-style-type: none"> <li>• Use notation and symbols</li> <li>• Write an expression</li> <li>• Identify expression/equation/formula/identity</li> <li>• Collect 'like' terms;</li> <li>• Multiply together two algebraic expressions</li> <li>• Simplify expressions by cancelling</li> <li>• Use index notation and the index laws</li> <li>• Understand <math>\neq</math> and introduce <math>\equiv</math></li> <li>• Multiply a single number term over a bracket</li> <li>• Simplify expressions using squares and cubes</li> <li>• Simplify expressions involving brackets</li> <li>• Show algebraic expressions are equivalent</li> <li>• Recognise factors of algebraic terms</li> <li>• Factorise algebraic expressions</li> <li>• Write expressions to solve problems</li> </ul>	<p>sections, total distance and total time</p> <ul style="list-style-type: none"> <li>• Interpret information presented in a range of linear and non-linear graphs</li> <li>• Interpret graphs with negative values on axes</li> <li>• Find the gradient of a straight line</li> <li>• Interpret gradient as the rate of change</li> <li>• Use function machines to find coordinates</li> <li>• Plot and draw graphs of <math>y = a</math>, <math>x = a</math>, <math>y = x</math> and <math>y = -x</math>;</li> <li>• Recognise straight-line graphs parallel to the axes</li> <li>• Recognise that equations of the form <math>y = mx + c</math> correspond to straight-line graphs in the coordinate plane</li> <li>• Plot and draw graphs of straight lines of the form <math>y = mx + c</math> using a table of values</li> <li>• Sketch a graph of a linear function, using the gradient and <math>y</math>-intercept</li> <li>• Identify and interpret gradient from an equation <math>y = mx + c</math></li> </ul>	<ul style="list-style-type: none"> <li>• Convert large and small numbers into standard form</li> <li>• Add, subtract, multiply and divide numbers in standard form</li> <li>• Interpret a calculator display using standard form</li> </ul> <p><b>Unit 19 – Congruence, similarity and vectors</b></p> <ul style="list-style-type: none"> <li>• Use the basic congruence criteria for triangles (SSS, SAS, ASA and RHS)</li> <li>• Solve angle problems involving congruence</li> </ul>
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	<ul style="list-style-type: none"> <li>• Substitute numbers into formulae.</li> <li>• Write formulae using words and letter symbols.</li> </ul> <p><b>Unit 4 – Graphs</b></p> <ul style="list-style-type: none"> <li>• Read information from graphs.</li> <li>• Draw graphs to show change.</li> <li>• Write the coordinates of points and plot points from their coordinates.</li> <li>• Plot graphs of simple functions.</li> <li>• Read values from graphs.</li> <li>• Draw line graphs to show relationships.</li> <li>• Read values from science graphs</li> </ul>	<ul style="list-style-type: none"> <li>• Interpret pie charts.</li> </ul> <p><b>Unit 4 – Expressions and equations</b></p> <ul style="list-style-type: none"> <li>• Simplify expressions by collecting like terms.</li> <li>• Find outputs and inputs of function machines.</li> <li>• Construct functions.</li> <li>• Solve simple equations and check the solution is correct.</li> <li>• Understand the difference between an expression and an equation, and identify the unknown in an equation.</li> <li>• Use brackets with numbers and letters.</li> </ul>	<ul style="list-style-type: none"> <li>• Substitute numbers in algebraic expressions involving brackets and powers</li> <li>• Derive a formula</li> <li>• Substitute numbers into formula and word formula</li> </ul>	<ul style="list-style-type: none"> <li>• Identify parallel lines from their equations</li> <li>• Plot and draw graphs of straight lines in the form <math>ax + by = c</math></li> <li>• Find the equation of a straight line from a graph</li> </ul> <p><b>Unit 10 – Transformations</b></p> <ul style="list-style-type: none"> <li>• Identify congruent shapes by eye</li> <li>• Understand clockwise and anticlockwise</li> <li>• Understand that rotations are specified by a centre, an angle and a direction of rotation</li> <li>• Find the centre of rotation, angle and direction of rotation and describe rotations fully</li> <li>• Rotate a shape about a point</li> <li>• Draw the position of a shape after rotation about a centre</li> <li>• Identify correct rotations</li> <li>• Understand that translations are specified by a distance and direction using a vector</li> <li>• Translate a given shape by a vector</li> <li>• Describe and transform 2D shapes using single translations</li> </ul>	<ul style="list-style-type: none"> <li>• Identify shapes which are similar</li> <li>• Understand similarity of triangles and of other plane shapes</li> <li>• Identify the scale factor of an enlargement of a shape</li> <li>• Understand the effect of enlargement on perimeter</li> <li>• Solve problems to find missing lengths in similar shapes</li> <li>• Know that scale diagrams, including bearings and maps are 'similar' to the real-life examples</li> <li>• Understand and use column notation in</li> </ul>
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				<ul style="list-style-type: none"> <li>• Identify the scale factor of an enlargement</li> <li>• Understand that distances and angles are preserved under reflections</li> <li>• Understand that similar shapes are enlargements of each other and angles are preserved</li> </ul> <p><b>Unit 11 – Ratio and proportion</b></p> <ul style="list-style-type: none"> <li>• Understand and express the division of a quantity into a of number parts as a ratio</li> <li>• Write ratios in their simplest form</li> <li>• Write/interpret a ratio to describe a situation</li> <li>• Share a quantity in a given ratio</li> <li>• Solve a ratio problem in context</li> <li>• Use a ratio to find one quantity when the other is known</li> <li>• Use a ratio to compare a scale model to an object</li> <li>• Use a ratio to convert between measures and currencies and problems involving mixing</li> <li>• Compare ratios</li> </ul>	<p>understand the <math>\neq</math> symbol</p> <ul style="list-style-type: none"> <li>• Change the subject of a formula involving the use of square roots and squares</li> <li>• Answer ‘show that’ questions using consecutive integers, squares, even numbers and odd numbers</li> <li>• Solve problems involving inverse proportion using graphs, and read values</li> <li>• Find the equation of the line through two given points;</li> <li>• Recognise, sketch and interpret graphs of simple cubic functions</li> <li>• Recognise, sketch and interpret graphs of the</li> </ul>
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<p><b>Spring</b></p>	<p><b>Unit 5 – Factors and multiples</b></p> <ul style="list-style-type: none"> <li>• Understand BIDMAS.</li> <li>• Understand the rules of multiplication.</li> <li>• Use the operation keys on a calculator.</li> <li>• Recognise and work out multiples.</li> <li>• Multiply and divide 3-digit numbers by a single digit.</li> <li>• Round numbers to the nearest 100 and 1000.</li> <li>• Use a calculator to solve multiplication and division problems.</li> <li>• Recognise and use multiples, factors and primes.</li> <li>• Find common factors and common multiples.</li> </ul> <p><b>Unit 6 – Decimals and measure</b></p>	<p><b>Unit 5 – Decimal calculations</b></p> <ul style="list-style-type: none"> <li>• Add and subtract decimal numbers.</li> <li>• Multiply decimals.</li> <li>• Round decimals.</li> <li>• Order decimals.</li> <li>• Solve problems involving decimals.</li> </ul> <p><b>Unit 6 – Angles</b></p> <ul style="list-style-type: none"> <li>• Use a protractor to measure and draw obtuse and reflex angles.</li> <li>• Estimate the size of reflex angles.</li> <li>• Use vertically opposite angles.</li> <li>• Work out the size of unknown angles in a triangle.</li> <li>• Accurately draw triangles using a ruler and protractor.</li> <li>• Accurately draw a net of a 3D shape.</li> </ul>	<p><b>Unit 3 - Graphs, tables and charts</b></p> <ul style="list-style-type: none"> <li>• Use suitable data collection techniques</li> <li>• Design and use data-collection sheets for data</li> <li>• Use inequalities for grouped data, and introduce <math>\leq</math> and <math>\geq</math> signs</li> <li>• Sort, classify and tabulate data</li> <li>• Extract data from lists and tables</li> <li>• Use correct notation for time</li> <li>• Work out time taken for a journey from a timetable</li> <li>• Construct tables for time-series data</li> <li>• Design, complete and use two-way tables</li> <li>• Calculate frequency from a frequency table</li> <li>• Read off frequency values from a frequency table</li> <li>• Find greatest and least values</li> <li>• Identify the mode and modal class from data</li> <li>• Plotting coordinates in first quadrant and read graph scales in multiples;</li> <li>• Produce and interpret: <ul style="list-style-type: none"> <li>– pictograms;</li> <li>– composite bar charts</li> <li>– dual/comparative bar charts for categorical and ungrouped discrete data</li> <li>– bar-line charts</li> <li>– vertical line charts</li> <li>– line graphs</li> <li>– line graphs for time-series data</li> <li>– histograms with equal class intervals</li> <li>– stem and leaf</li> </ul> </li> </ul>	<p><b>Unit 12 – Right-angled triangles</b></p> <ul style="list-style-type: none"> <li>• Understand, recall and use Pythagoras' Theorem in 2D</li> <li>• Justify if a triangle is right-angled</li> <li>• Calculate the length of the hypotenuse and of a shorter side in a right-angled triangle</li> <li>• Apply Pythagoras' Theorem with a triangle drawn on a coordinate grid</li> <li>• Calculate the length of a line segment AB given pairs of points</li> <li>• Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures;</li> <li>• Use the trigonometric ratios to solve 2D problems including angles of elevation and depression</li> <li>• Round answers to appropriate degree of accuracy</li> <li>• Know the exact values of <math>\sin \theta</math> and <math>\cos \theta</math> for <math>\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ</math> and <math>90^\circ</math>; know the exact value of</li> </ul>	<p><b>Revision</b></p>
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	<ul style="list-style-type: none"> <li>• Estimate, and choose suitable units, to measure length, mass and capacity.</li> <li>• Draw and measure lines to the nearest mm and cm.</li> <li>• Read and interpret scales and record measurements.</li> <li>• Record estimates.</li> <li>• Read and write numbers.</li> <li>• Understand, compare, order and use decimals.</li> <li>• Read and interpret scales using decimals.</li> <li>• Order metric measurements.</li> <li>• Convert between different units of measure.</li> <li>• Recognise and extend number sequences by counting in decimals.</li> <li>• Add and subtract</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate the sides of a right-angled triangle.</li> </ul> <p><b>Unit 7 – Number properties</b></p> <ul style="list-style-type: none"> <li>• Calculate squares and square roots, mentally and using a calculator.</li> <li>• Calculate cubes and cube roots, mentally and using a calculator.</li> <li>• Do calculations involving brackets and square numbers.</li> <li>• Use the brackets keys on a calculator.</li> <li>• Use index notation.</li> <li>• Find the factor pairs of any whole number.</li> <li>• Use the lowest common multiple (LCM) and highest common factor (HCF) to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise simple patterns, characteristic and relationships in bar charts and line graphs</li> <li>• Interpret and discuss data</li> <li>• Interpret tables; represent data in tables and charts</li> <li>• Know which charts to use for different types of data sets</li> <li>• Draw circles and arcs to a given radius</li> <li>• Know there are 360 degrees in a full turn, 180 degrees in a half turn, and 90 degrees in a quarter turn</li> <li>• Measure and draw angles, to the nearest degree</li> <li>• Construct pie charts for categorical data and discrete/continuous numerical data</li> <li>• Interpret pie charts using simple fractions and percentages; and multiples of 10% sections</li> <li>• Understand that the frequency represented by corresponding sectors in two pie charts is dependent upon the total populations represented by each of the pie charts</li> <li>• Draw scatter graphs</li> <li>• Interpret points on a scatter graph</li> <li>• Identify outliers and ignore them on scatter graphs</li> <li>• Draw the line of best fit on a scatter diagram by eye, and understand what it represents</li> <li>• Use the line of best fit make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing</li> </ul>	<p><math>\tan \theta</math> for <math>\theta = 0^\circ, 30^\circ, 45^\circ</math> and <math>60^\circ</math>.</p> <p><b>Unit 13 – Probability</b></p> <ul style="list-style-type: none"> <li>• Distinguish between events which are impossible, unlikely, even chance, likely, and certain to occur</li> <li>• Mark events and/or probabilities on a probability scale of 0 to 1</li> <li>• Write probabilities in words or fractions, decimals and percentages</li> <li>• Find the probability of an event happening using theoretical probability</li> <li>• Use theoretical models to include outcomes using dice, spinners, coins</li> <li>• List all outcomes for single events systematically</li> <li>• Work out probabilities from frequency and two way tables</li> <li>• Record outcomes of probability experiments in tables</li> <li>• Add simple probabilities</li> <li>• Identify different mutually exclusive outcomes</li> <li>• Know that the sum of the probabilities of all outcomes is 1</li> </ul>	
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	<p>decimal numbers.</p> <ul style="list-style-type: none"> <li>• Use mental methods with decimals.</li> <li>• Round decimals.</li> <li>• Use a calculator with decimals.</li> <li>• Multiply and divide decimal numbers.</li> </ul> <p><b>Unit 7 – Angles and lines</b></p> <ul style="list-style-type: none"> <li>• Recognise acute, right and obtuse angles.</li> <li>• Recognise quarter, half and three-quarter turns.</li> <li>• Recognise parallel and perpendicular lines.</li> <li>• Use compass points.</li> <li>• Estimate, measure and draw angles.</li> <li>• Find missing angles on a straight line and round a point.</li> </ul>		<ul style="list-style-type: none"> <li>• Distinguish between positive, negative and no correlation using lines of best fit</li> <li>• Use a line of best fit to predict values of a variable given values of the other variable</li> <li>• Interpret scatter graphs in terms of the relationship between two variables</li> <li>• Interpret correlation in terms of the problem</li> <li>• Understand that correlation does not imply causality</li> <li>• State how reliable their predictions are</li> </ul> <p><b>Unit 4 – Fractions and percentages</b></p> <ul style="list-style-type: none"> <li>• Use diagrams to find equivalent fractions or compare fractions</li> <li>• Write fractions to describe shaded parts of diagrams</li> <li>• Express a given number as a fraction of another</li> <li>• Write a fraction in its simplest form and find equivalent fractions</li> <li>• Order fractions, by using a common denominator</li> <li>• Compare fractions, use inequality signs, compare unit fractions</li> <li>• Convert between mixed numbers and improper fractions</li> <li>• Add and subtract fractions, write the answer as a mixed number</li> <li>• Multiply and divide an integer by a fraction, including finding fractions of quantities or measurements</li> <li>• Understand and use unit fractions as multiplicative inverses</li> </ul>	<ul style="list-style-type: none"> <li>• Using <math>1 - p</math> as the probability of an event not occurring</li> <li>• Find a missing probability from a list or table including algebraic terms <ul style="list-style-type: none"> <li>• Find the probability of an event happening using relative frequency</li> <li>• Estimate the number of times an event will occur, given the probability and the number of trials</li> </ul> </li> <li>• List all outcomes for combined events systematically</li> <li>• Use and draw sample space diagrams</li> <li>• Work out probabilities from Venn diagrams</li> <li>• Use union and intersection notation</li> <li>• Compare experimental data and theoretical probabilities</li> <li>• Compare relative frequencies from samples of different sizes</li> <li>• Find the probability of successive events</li> <li>• Use tree diagrams to calculate the probability of two independent and dependent events</li> </ul>	
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- Multiply fractions: simplify calculations by cancelling first
- Divide a fraction by a whole number and by fractions
- Recall the fraction-to-decimal conversion and convert fractions to decimals
- Convert a fraction to a decimal to make a calculation easier
- Recognise recurring decimals and convert fractions into recurring decimals
- Compare and order fractions, decimals and integers, using inequality signs
- Understand that a percentage is a fraction in hundredths
- Express a given number as a percentage of another number
- Convert between fractions, decimals and percentages
- Order fractions, decimals and percentages
- Express a given number as a percentage of another number
- Find a percentage of a quantity without a calculator
- Find a percentage of a quantity or measurement
- Calculate amount of increase/decrease
- Use percentages in real-life situations, including percentages greater than 100%
- Use decimals to find quantities
- Find a percentage of a quantity, including using a multiplier
- Use a multiplier to increase or decrease by a percentage
- Understand the multiplicative nature of percentages as operators

**Unit 14 – Multiplicative reasoning**

- Understand and use compound measures: density; pressure; speed
- Convert between metric speed measures
- Read values in km/h and mph
- Calculate average speed, distance, time
- Use kinematics formulae to calculate speed, acceleration
- Change  $d/t$  in m/s to a formula in km/h, with support
- Express a number as a percentage of another number
- Calculate percentage profit or loss
- Make calculations involving repeated percentage change,
- Find the original amount given the final amount after a percentage change
- Use compound interest
- Use measures in ratio and proportion problems
- Set up, solve and interpret the answers

**Unit 5 – Equations, inequalities and sequences**

- Select an expression/equation/formula/identity from a list
- Write expressions and set up simple equations including forming an equation from a word problem
- Use function machines
- Solve simple equations
- Rearrange simple equations
- Substitute into a formula, and solve the resulting equation
- Find an approximate solution to a linear equation using a graph
- Solve angle or perimeter problems using algebra
- Write an equation to solve a word problem
- Show inequalities on number lines
- Write down whole number values that satisfy an inequality
- Solve an inequality and show the solution set on a number line
- Solve two inequalities in  $x$ , find the solution sets and compare them to see which value of  $x$  satisfies both
- Use the correct notation to show inclusive and exclusive inequalities
- Construct inequalities to represent a set shown on a number line
- Solve simple linear inequalities in one variable, and represent the solution set on a number line

in growth and decay problems

- Understand that  $X$  is inversely proportional to  $Y$  is equivalent to  $X$  is proportional to  $\frac{1}{Y}$
- Interpret equations that describe direct and inverse proportion.

			<ul style="list-style-type: none"> <li>• Round answers to a given degree of accuracy</li> <li>• Use inequality notation to specify simple error intervals due to truncation or rounding</li> <li>• Recognise sequences of odd and even numbers, and other sequences</li> <li>• Use function machines to find terms of a sequence</li> <li>• Write the term-to-term definition of a sequence in words;</li> <li>• Find a specific term in the sequence using position-to-term or term-to-term rules</li> <li>• Generate arithmetic sequences of numbers, triangular number, square and cube integers and sequences derived from diagrams</li> <li>• Recognise such sequences from diagrams and draw the next term in a pattern sequence</li> <li>• Find the next term in a sequence, including negative values</li> <li>• Find the <math>n</math>th term</li> <li>• Use the <math>n</math>th term of an arithmetic sequence</li> <li>• Continue a geometric progression and find the term-to-term rule</li> <li>• Continue a quadratic sequence and use the <math>n</math>th term to generate terms</li> <li>• Distinguish between arithmetic and geometric sequences.</li> </ul>		
<b>Summer</b>	<b>Unit 8 – Measuring and shapes</b>	<b>Unit 8 – Sequences</b> <ul style="list-style-type: none"> <li>• Recognise, describe and</li> </ul>	<b>Unit 6 – Angles</b> <ul style="list-style-type: none"> <li>• Estimate sizes of angles</li> <li>• Measure angles using a protractor</li> </ul>	<b>Unit 15 – Constructions, loci and bearings</b>	<b>Revision</b>

	<ul style="list-style-type: none"> <li>Identify triangles, squares and rectangles.</li> <li>Recognise the properties of triangles, squares and rectangles.</li> <li>Estimate, measure and draw acute, obtuse and reflex angles.</li> <li>Label lines and angles.</li> <li>Find missing angles on a straight line and round a point.</li> </ul> <p><b>Unit 9 – Fractions, decimals and percentages</b></p> <ul style="list-style-type: none"> <li>Order fractions.</li> <li>Use fractions to describe parts of shapes.</li> <li>Identify equivalent fractions.</li> <li>Simplify fractions by cancelling.</li> <li>Change an improper</li> </ul>	<p>continue number sequences.</p> <ul style="list-style-type: none"> <li>Find and use pattern and term-to-term rules.</li> <li>Use the term-to-term rule to work out terms in a sequence.</li> <li>Recognise an arithmetic sequence.</li> <li>Describe and continue sequences.</li> <li>Recognise a geometric sequence.</li> <li>Generate terms of a sequence using the position-to-term rule.</li> <li>Find the <math>n</math>th term of a simple sequence.</li> </ul> <p><b>Unit 9 – Fractions and percentages</b></p> <ul style="list-style-type: none"> <li>Compare fractions.</li> <li>Simplify fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Use geometric language</li> <li>Use letters to identify points, lines and angles</li> <li>Use two-letter notation for a line and three-letter notation for an angle</li> <li>Describe angles as turns and in degrees and understand clockwise and anticlockwise</li> <li>Know that there are <math>360^\circ</math> in a full turn, <math>180^\circ</math> in a half turn and <math>90^\circ</math> in a quarter turn</li> <li>Identify a line perpendicular to a given line on a diagram and use their properties</li> <li>Identify parallel lines on a diagram and use their properties</li> <li>Find missing angles using properties of corresponding and alternate angles</li> <li>Understand and use the angle properties of parallel lines</li> <li>Recall the properties and definitions of special types of quadrilaterals</li> <li>List the properties of each special type of quadrilateral, or identify a shape</li> <li>Draw sketches of shapes</li> <li>Classify quadrilaterals by their geometric properties and name all quadrilaterals that have a specific property</li> <li>Identify quadrilaterals from everyday usage</li> <li>Given some information about a shape on coordinate axes, complete the shape</li> <li>Understand and use the angle properties of quadrilaterals</li> <li>Use the fact that angle sum of a quadrilateral is <math>360^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li>Understand clockwise and anticlockwise</li> <li>Draw circles and arcs to a given radius or given the diameter</li> <li>Measure and draw lines, to the nearest mm</li> <li>Measure and draw angles, to the nearest degree</li> <li>Know and use compass directions</li> <li>Draw sketches of 3D solids</li> <li>Know the terms face, edge and vertex</li> <li>Identify and sketch planes of symmetry of 3D solids</li> <li>Make accurate drawings of triangles and 2D shapes using a ruler and a protractor</li> <li>Construct diagrams of everyday 2D situations involving rectangles, triangles, perpendicular and parallel lines</li> <li>Understand and draw front and side elevations and plans of shapes</li> <li>Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid</li> <li>Understand and identify congruent shapes</li> </ul>	
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	<p>fraction to a mixed number.</p> <ul style="list-style-type: none"> <li>• Calculate fractions of quantities.</li> <li>• Add and subtract fractions.</li> <li>• Understand percentage as 'the number of parts per 100'.</li> <li>• Write a percentage as a fraction or decimal.</li> <li>• Calculate percentages.</li> </ul> <p><b>Unit 10 – Transformations</b></p> <ul style="list-style-type: none"> <li>• Reflect a shape in a mirror line.</li> <li>• Translate a shape.</li> <li>• Draw and describe rotations.</li> <li>• Identify congruent shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify equivalent fractions.</li> <li>• Calculate with fractions.</li> <li>• Calculate fractions of quantities.</li> <li>• Multiply a fraction by a whole number.</li> <li>• Add and subtract fractions.</li> <li>• Write a number as a fraction of another number.</li> <li>• Change between fractions and percentages.</li> <li>• Calculate percentages.</li> <li>• Compare proportions using percentages.</li> <li>• Write one number as a percentage of another number.</li> </ul> <p><b>Unit 10 – Probability</b></p> <ul style="list-style-type: none"> <li>• Use the language of probability.</li> </ul>	<ul style="list-style-type: none"> <li>• Recall and use properties of angles at a point, angles at a point on a straight line, right angles, and vertically opposite angles</li> <li>• Distinguish between triangles</li> <li>• Derive and use the sum of angles in a triangle and find a missing angle in a triangle</li> <li>• Understand and use the angle properties of triangles</li> <li>• Use the symmetry property of isosceles triangle to show that base angles are equal</li> <li>• Use the side/angle properties of isosceles and equilateral triangles</li> <li>• Understand and use the angle properties of intersecting lines</li> <li>• Understand a proof that the exterior angle of a triangle is equal to the sum of the interior angles at the other two vertices;</li> <li>• Use geometrical language, give reasons for angle calculations</li> <li>• Recognise and name pentagons, hexagons, heptagons, octagons and decagons</li> <li>• Understand 'regular' and 'irregular' as applied to polygons</li> <li>• Use the sum of angles of irregular polygons</li> <li>• Calculate and use the sums of the interior angles of polygons</li> <li>• Calculate and use the angles of regular polygons</li> <li>• Use the sum of the interior angles of an <math>n</math>-sided polygon</li> </ul>	<ul style="list-style-type: none"> <li>• Use straight edge and a pair of compasses to do standard constructions: <ul style="list-style-type: none"> <li>– understand, from the experience of constructing them, that triangles satisfying SSS, SAS, ASA and RHS are unique, but SSA triangles are not</li> <li>– construct the perpendicular bisector of a given line</li> <li>– construct the perpendicular from a point to a line</li> <li>– construct the bisector of a given angle</li> <li>– construct angles of <math>90^\circ</math>, <math>45^\circ</math></li> </ul> </li> <li>• Draw and construct diagrams, including: <ul style="list-style-type: none"> <li>– a region bounded by a circle and an intersecting line</li> <li>– a distance from a point and a distance from a line</li> <li>– equal distances from two points</li> </ul> </li> </ul>	
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		<p>based on results.</p>	<ul style="list-style-type: none"> <li>• Convert between units of measure within one system</li> <li>• Make sensible estimates of a range of measures in everyday settings</li> <li>• Measure shapes to find perimeters and areas using a range of scales</li> <li>• Find the perimeter and area of <ul style="list-style-type: none"> <li>– rectangles and triangles</li> <li>– parallelograms and trapezia</li> <li>– compound shapes</li> </ul> </li> <li>• Estimate surface areas by rounding measurements</li> <li>• Find the surface area of a prism</li> <li>• Find surface area using rectangles and triangles</li> <li>• Convert between metric area measures</li> <li>• Identify and name common solids</li> <li>• Sketch nets of cuboids and prisms</li> <li>• Recall and use the formula for the volume of a cuboid</li> <li>• Find the volume of a prism</li> <li>• Calculate volumes of right prisms and shapes made from cubes and cuboids</li> <li>• Estimate volumes</li> <li>• Convert between metric volume measures</li> <li>• Convert between metric measures of volume and capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Define a 'quadratic' expression</li> <li>• Multiply together algebraic expressions with brackets</li> <li>• Square a linear expression</li> <li>• Factorise quadratic expressions</li> <li>• Factorise a quadratic expression using the difference of two squares;</li> <li>• Solve quadratic equations by factorising</li> <li>• Find the roots of a quadratic function algebraically</li> <li>• Generate points and plot graphs of simple quadratic functions, then more general quadratic functions</li> <li>• Identify the line of symmetry of a quadratic graph</li> <li>• Find approximate solutions to quadratic equations using a graph</li> <li>• Interpret graphs of quadratic functions from real-life problems</li> <li>• Identify and interpret roots, intercepts and turning points of quadratic graphs</li> </ul>	
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