YEAR 7 SCHEME OF WORK - DEVELOPING

Autumn Term 1	Calculating	Spring Term 1	Factors and Multiples	Summer Term 1	Measuring and Shapes
	Analysing and displaying data		Decimals and Measure		Fractions, Decimals and Percentages
Half Term: Assessment		Half Term: Assessment		Half Term: Assessment	
Autumn Term 2	Expressions, functions and Formulae	Spring Term 2	Angles and Lines	Summer Term 2	Transformations
	Graphs				End of Term Assessment
End of Term: Assessment		End of Term: Assessment		End of Year: Assessment	

Year 7 Support Term: Autumn 1	Unit Title: Calculating	Duration: 12 hrs.
Objectives: • understand and use place value for integers • order positive and negative integers • use the symbols =, ≠, <, >, ≤, ≥ • use the four operations, including formal written methods, with positive and negative integers	**Notes:** • Understand and apply the order in simple calculations (no brackets) • Apply the principles of the commutative, distributive and associative laws with numbers • Add and subtract several numbers, looking for strategies • Solve simple problems using ideas of ratio and proportion ('one for every … and one in every ...') • Develop calculator skills involving negative number input, sign change, squares and square root keys • Consolidate the rapid recall of addition and subtraction facts and positive integer complements to 100 • Use standard column procedures to add and subtract whole numbers • Recognise and extend number sequences formed by counting on or counting back • Approximate before carrying out an addition or subtraction. • Round positive whole numbers to the nearest 10 • Consolidate the rapid recall of multiplication facts to 10 × 10 • Know square numbers, 1 × 1 up to 10 × 10 • Check a result by considering if it is of the right order of magnitude • Multiply and divide integers by 10 and 100 and 1000 and explain the effect • Divide a quantity into two parts in a given ratio where ratio is given in worded form • Order positive and negative integers in context; show positions on number lines	

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Year 7 Support Term: Autumn 1	Unit Title: Analysing and Displaying data	Duration: 11 hrs.
Objectives: • describe, interpret and compare observed distributions of a single variable through: appropriate measures of central tendency (mean, mode, median) • construct and interpret frequency tables • construct and interpret bar charts • construct and interpret vertical line (or bar) charts for ungrouped data	**Notes:** • Use a calculator effectively • Represent and interpret data in tables, charts and diagrams • Extract data and interpret discrete bar charts • Construct on paper, and using ICT simple bar graphs and bar-line graphs • Find 'most common' from a set of discrete data or grouped bar chart • Extract data and interpret frequency tables • Construct on paper, and using ICT, frequency diagrams for grouped discrete data • Collect data from a simple experiment and record in a simple frequency table • Extract data, interpret and draw conclusions from line graphs • Find the mode from any bar chart • Find the modal class for a small set of grouped discrete data • Find the mode and range of a set of data. • Calculate the median of a set of data • Compare two simple distributions using the range, mode and median • Calculate the mean for a small set of discrete data • Draw conclusions from simple statistics for a single distribution	

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Year 7 Support Term: Autumn 2	Unit Title: Expressions, functions and formulae	Duration: 11 hrs.
Objectives: • use and interpret algebraic notation: 3y in place of y + y + y and 3 × y • substitute numerical values into formulae and expressions, including scientific formulae • understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors	**Notes:** • Find outputs of simple functions expressed in words • Find outputs of simple functions in words and symbols • Describe simple functions in words • Find outputs of more complex functions expressed in words • Simplify simple linear algebraic expressions by collecting like terms • Construct expressions from worded description, using addition and subtraction • Construct expressions from worded description, using addition, subtraction and multiplication • Substitute positive integers into simple formulae expressed in words • Substitute integers into simple formulae expressed in letter symbols • Identify variables and use letter symbols • Identify the unknowns in a formula and a function • Understand the difference between an expression and a formula and the meaning of the key vocabulary 'term' • Derive simple formulae expressed in letter symbols	

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Year 7 Support Term: Autumn 2	Unit Title: Graphs	Duration: 8 hrs.
Objectives: work with coordinates in all four quadrants	**Notes:** • Interpret information from a simple real life graph, eg temperature (including negatives), rainfall; conversion graphs - metric units and currencies 4a • Read *x* and *y* coordinate in the first quadrant Read *x* and *y* coordinate in the first quadrant Read *x* and *y* coordinate in the first quadrant Read *x* and *y* coordinate in the first quadrant Read *x* and *y* coordinate in the first quadrant Read *x* and *y* coordinate in the first quadrant • Plot a co-ordinate in the first quadrant • Know and understand conventions and notation used for 2-D co-ordinates in the first quadrant • Read *x* and *y* co-ordinate in all four quadrantsRead *x* and *y* co-ordinate in all four quadrantsRead *x* and *y* co-ordinate in all four quadrantsRead *x* and *y* co-ordinate in all four quadrantsRead *x* and *y* co-ordinate in all four quadrants Read *x* and *y* co-ordinate in all four quadrantsRead *x* and *y* co-ordinate in all four quadrants • Generate first quadrant co-ordinates that satisfy a simple linear rule; plot these	

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Year 7 Support Term: Spring 1	Unit Title: Factors and Multiples	Duration: 11 hrs.
Objectives: • order decimals and fractions • use the symbols =, ≠, <, >, ≤, ≥ • use the four operations, including formal written methods, with positive and negative fractions • define percentage as 'number of parts per hundred' • interpret a percentage as a fraction or a decimal • interpret fractions and percentages as operators	**Notes:** • Know and use the order of operations (four rules, not powers or brackets) • Develop calculator skills involving the use of clear keys and all operation keys • Recognise multiples of 2, 5, and 10 and 25 • Extend written methods to HTU × U • Understand multiplication as it applies to whole numbers and know how to use associative, commutativite and distributive laws. • Apply simple tests of divisibility (2, 9, 10, 5) • Extend written methods to HTU ÷ U • Identify at least 2 factors of 2 digit numbers with 3 or 4 factors • Round up or down after division, depending on context • Recognise and use multiples and factors • Apply simple tests of divisibility (3, 6, 4) Apply simple tests of divisibility (3, 6, 4) • Find common factors and primes • Identify numbers with exactly 2 factors (primes) • Recognise and use common factor, highest common factor and lowest common multiple	

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Year 7 Support Term: Spring 1	Unit Title: Decimals and Measure	Duration: 12 hrs.
Objectives: • understand and use place value for decimals • understand and use place value for measures • order decimals and fractions • use the four operations, including formal written methods, with positive and negative decimals • round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] • use approximation through rounding to estimate answers	**Notes:** • Choose suitable units to estimate or measure length, mass and capacity • Record readings and estimates from scales to a suitable degree of accuracy • Read and interpret scales on a range of measuring instruments • Draw and measure lines to the nearest millimetre (in mm) • Use decimal notation for tenths and hundredths • Recognise the relationship between hundredths and tenths • Know what each digit represents in numbers with up to two decimal places • Read and write whole numbers in figures and words • Order decimals (including in context of measures) • Understand and use decimal notation and place value • Read and interpret scales involving decimals • Compare decimals in different contexts • Order metric units of measurement (e.g. 1 mm, 1 cm, 1 m, 1 km or equivalent) • Convert between large and small whole number metric units • Recognise and extend number sequences by counting in decimals. • Use standard column procedures to add and subtract decimals with up to two places • Consolidate and extend mental methods of calculation to include decimals • Round positive whole numbers to the nearest 10, 100 or 1000 • Round decimals to one decimal place or to the nearest whole number • Enter and interpret numbers on a calculator in different contexts (decimals and money) • Enter money amounts on calculator • Round decimals to two decimal places in context of money only	

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Year 7 Support Term: Spring 2	Unit Title: Angles and Lines	Duration: 10 hrs.
Objectives: • describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric • use the standard conventions for labelling the sides and angles of triangle ABC • apply the properties of angles at a point • apply the properties angles at a point on a straight line	**Notes:** • Identify right angles and parallel lines • Know and use left and right, anticlockwise and clockwise • Describe angles as fractions of full turns – 1/4, 1/2, 3/4 • Know and use compass points and 90°, 180°, 270° • Identify perpendicular lines • Distinguish between acute and obtuse angles • Use a protractor to measure acute angles to the nearest degree • Use correct notation for labelling lines and angles • Distinguish between acute, obtuse and reflex angles • Use a protractor to measure obtuse angles to the nearest degree • Begin to estimate the size of angles • Use a protractor to draw acute angles to the nearest degree • Know the sum of angles on a straight line • Know the sum of angles a round a point	

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Year 7 Support Term: Summer 1	Unit Title: Measuring and Shapes	Duration: 11 hrs.
Objectives: • calculate and solve problems involving composite shapes • draw and measure line segments and angles in geometric figures • derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies	**Notes:** • Choose suitable metric units to estimate area • Use units of measurement to estimate and solve problems in everyday contexts involving length, area • Know names of regular polygons • Classify triangles (isosceles, equilateral, scalene) using equal sides. • Classify triangles (isosceles, equilateral, scalene) using equal angles • Classify triangles (isosceles, equilateral, scalene) using lines of symmetry • Recognise properties of squares and rectangles • Understand and measure perimeters of rectangles and regular polygons • Calculate perimeters of rectangles and regular polygons • Find the perimeter of a square/rectangle by counting • Calculate the perimeter and area of shapes made from rectangles • Use the formulae to calculate the area of a square/rectangle • Identify simple angle, side and symmetry properties of triangles • Recognise and visualise the symmetry of a 2D shape – line symmetry and rotation symmetry • Describe reflection symmetry of any triangle or quadrilateral • Describe line symmetry properties of regular polygons • Solve simple geometrical problems using properties of triangles • Find the measurement of a side given the perimeter of squares and rectangles	

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Year 7 Support Term: Summer 1	Unit Title: Fractions, decimals and percentages	Duration: 11 hrs.
Objectives: • order decimals and fractions • define percentage as 'number of parts per hundred'	**Notes:** • Order fractions with common denominators or unit fractions using diagrams • Use fraction notation to describe parts of shapes. • Recognise when two fractions are equivalent with a diagram • Cancel a fraction down to its simplest form • Change an improper fraction to a mixed number • Find simple fractions of whole number quantities • Relate fractions to division • Consolidate and extend mental methods of calculation to include fractions • Consolidate and extend mental methods of calculation to include fractions. (Adding and subtracting fractions with common denominators) • Understand a percentage as the number of parts per 100 • Convert a percentage to a number of hundredths or tenths • Recognise the equivalence of fractions, decimals and percentages • Find simple percentages of whole number quantities	

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Year 7 Support Term: Summer 2	Unit Title: Transformations	Duration: 8 hrs.
Objectives: • know and use the criteria for congruence of triangles • identify properties of, and describe the results of: translations • identify properties of, and describe the results of: rotations • identify properties of, and describe the results of: reflections	**Notes:** • Recognise where a shape will be after a reflection • Recognise and visualise reflection in a mirror line • Understand and use language associated with reflection • Recognise where a shape will be after a translation • Understand and use language associated with translations • Recognise and visualise the transformation of a 2D shape; translation • Visualise where a shape will be after a rotation • Understand rotations using fraction of turn, and clockwise anticlockwise. • Know and understand the term congruent • Begin to understand that in congruent shapes, corresponding sides and angles are equal	

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