

Maths Year 7	Using and Applying Mathematics	Calculating Numbers and Number Systems	Algebra	Geometry and Measures	Statistics and Probability	Ratio, Proportion and Rates of Change
Developing	<ul style="list-style-type: none"> I can use number bonds to make sense of addition and subtraction of integers. I am developing an understanding of maths in finance. I am developing skills using halving and doubling. I am developing the use of mathematical language when talking about operations using numbers. I am developing the skills to use mathematical equipment to measure lines and angles. I am developing the skills to use maths equipment to accurately draw line segments and angles. 	<ul style="list-style-type: none"> I am developing an understanding of what a fraction is and how it is used. I am developing an understanding of equal parts and how this relates to fractions. I can put simple fractions on a number line. I understand the meaning of percentage. I can recognise and use tenths, hundredths and thousandths. I can recognise and use halves. I can recognise and use quarters and I am developing an understanding of the relationship between halves and quarters. I can recognise and use fifths and I am developing an understanding of equivalent decimals. I am developing the skill for addition and subtraction of integers. I can solve problems with addition and subtraction. I am developing an understanding of sharing and grouping. I am developing the skills needed to multiply and divide by units of 10. I am developing the skills to multiply numbers up to multiplying a four digit number by a single digit number. I am developing the skills to calculate using unit fractions. I am developing the skills to find 10%, 25% and 50% of a number. I am developing the skill to use any unit fraction to find an integer. 	<ul style="list-style-type: none"> I am developing recognition of patterns. I am developing sequences of diagrams. I am developing recognition and generation of number sequences. I am beginning to use the Term to Term rule in my oracy. I am developing my use of linear and non-linear sequences. I am developing the use of one step function machines using numbers. I am developing the use of two step function machines with numbers. I am developing substituting values into an equation or a formula. I am developing the use of one step function machines with algebra. I am developing the use of two step function machines with algebra. I am developing substituting two values into equations and formulae. I am developing understanding of the use of the equals sign and the meaning of equivalence. I am developing the use of directed numbers within equations and formulae. 	<ul style="list-style-type: none"> I am developing the skills to be able to accurately draw a line segment to size. I am developing skills to estimate lengths in mm and cm. I can convert between mm, cm and metres. I am developing the knowledge to recognise and name angles. I am developing the knowledge and skills to be able to estimate the size of an angle. I can identify the angles in a full turn. I am developing the knowledge relating to angles in a quadrilateral. I am developing the knowledge to recognise and calculate the angles in a half turn. I am developing an understanding of the angles in a triangle. I am developing an understanding of different types of triangle. I am developing the skills to solve problems with angles in a triangle. I am developing an understanding of perimeter and can find perimeter on a grid. I am developing skills needed to measure a perimeter. I am developing the skills to calculate side lengths when I am given a perimeter. I am developing the skills to calculate unknown sides and angles. 	<ul style="list-style-type: none"> I am developing an understanding of words and the probability scale. I am developing an understanding of probability scales on a number line. I am developing the skills to list outcomes. I am developing the language to describe equally likely outcomes. I am developing confidence with probability experiments. 	<ul style="list-style-type: none"> I am developing an understanding of multiplication and division. I am developing my understanding of simplifying ratios I am developing my ability to share objects between two different sized groups



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Securing	<ul style="list-style-type: none"> I am securing an understanding of notations and diagrams commonly used in maths. I am securing an understanding of key words and vocabulary and endeavouring to use them when explaining my reasons. I am securing competency in the use of mathematical apparatus to help me to understand problems and contexts. I can use simple methods and different approaches for solving mathematical problems. I am securing skills in reflecting on and improving my work by estimating what an answer should be. I am securing skills for overcoming difficulties with mathematical problems by drawing a diagram or choosing apparatus. I am securing the skills to organise my work according to mathematical protocols. I am securing the skills necessary to understand and describe statements using supporting examples. I am securing skills needed to give reasons for my workings and my answers, using proofs. I am securing the skills to apply my understanding to wider world situations. I am securing these skills to allow me to grow in fluency across the mathematical strands. 	<ul style="list-style-type: none"> I am securing my understanding of place values and can demonstrate ability to read and write numbers up to 100. I am securing my understanding of comparing numbers up to 100, using this understanding to enable me to correctly use simple column methods for calculations. I am securing my understanding concepts and vocabulary of types of numbers, and I am recognising multiples, factors, primes and square numbers. I am securing my understanding in the use of the four operations to any number, I can add and subtract whole numbers with increasing ease. I am securing my understanding of the order of operations, excluding brackets and indices, within a calculation. I am securing my recognition of the relationships between operations, and beginning to recognise inverse operations and their importance. I am securing my understanding of integer powers and real roots, including squares and cubes (powers of 2 and 3). I am securing my understanding in recognising the reason for the use of standard form. I am securing my understanding of equivalent decimals and fractions. I am securing my definition of percentage and its use in comparing amounts. I am securing my recognition of fractions and percentages as operators. I am securing my recognition of standard units of measurement in a real life context. I am securing my recognition of degrees in accuracy. I am securing my use of rounding to approximate. I am securing my knowledge of buttons on the calculator. I am securing my recognition of the infinite nature of sets of integers. 	<ul style="list-style-type: none"> I am securing my use of algebraic notation, recognising basic terminology and relating it to problems. I am securing the skills for substituting numerical values into expressions. I am securing understanding of algebraic vocabulary, and beginning to understand the role of the equals sign. I can use simple algebraic formulae for example to find areas of simple shapes. I am developing skills in substituting values into these formulae. I can recognise symbols allowing me to begin to use algebraic methods to solve simple linear equations. I am securing an understanding of co-ordinates and the first quadrant of the coordinate plane. I am securing the ability to draw simple graphs. I am securing the skills to interpret linear graphs. I am securing understanding of vocabulary specific to sequences (term to term rule, common difference). I am securing skills to identify arithmetic sequences. I am securing skills to conjecture about patterns and relationships. 	<ul style="list-style-type: none"> I am securing my ability to substitute into given formula. I am securing my understanding of shape by finding area and perimeter. I am securing my ability to measure lines in several metric units and identify different types of angles. I am securing my ability to construct circles and triangles (using ASA and SSS) using a compass. I am securing my ability to recognise and use mathematical terms in relation to angles and lines. I am securing my ability to understand when two triangles are congruent or similar. I am securing my understanding of shapes by identifying regular and irregular shapes based on number of sides. I am securing my ability to recognise the type of movement described by a transformation. I am securing my knowledge of angle facts regarding straight lines and around a point. I am securing my ability to recognise alternate, corresponding and co-interior pairs of angles. I am securing my investigative skills by identifying polygons and determining formulae for interior polygon angle sums. I am securing my ability to identify the hypotenuse and successfully label the sides of a right triangle, as well as using Pythagoras' Theorem to find a missing hypotenuse. I am securing my ability to successfully label sides with hypotenuse, adjacent and opposite, along with selecting the correct ratio for a question. I am securing my ability to identify 3D shapes and describe them using their properties. I am securing my ability to substitute into given formulae. 	<ul style="list-style-type: none"> I am securing the ability to describe, interpret and compare observed distributions of a single variable (mean, mode, median and range). I am securing the ability to construct and interpret appropriate tables, charts and diagrams. This includes pictograms, bar charts, frequency tables and pie charts. I am securing the ability to use the mode, mean, median and range to describe sets of data. I am securing the ability to describe information presented in simple tables, charts and graphs, using technical vocabulary. I am securing my ability to collect and record discrete data. I am securing my ability to group data, where appropriate in equal class intervals. I am securing my ability to record, describe and analyse the frequency of outcomes of simple probability experiments. I am securing my ability to understand probabilities of all possible outcomes add up to 1. I am securing my ability to enumerate sets and unions/intersections of sets systematically. I am securing my ability to generate theoretical sample spaces for single and combined events. I am securing my ability to explain how to use the probability scale from 0 to 1. I am securing the skills to express a probability as a decimal or a fraction. 	<ul style="list-style-type: none"> I am securing my ability to convert between related standard units, allowing me to solve simple direct proportion problems by scaling up or down. I am securing my ability to use scale factors, for example to order size or for simple enlargements. I am securing my understanding of scale diagrams and maps, and can use this skill in Geography. I am securing my ability to express one quantity as a fraction of another. I am securing my understanding of unit ratio notation and simplifying given ratios. I am securing my ability to divide a quantity into a given ratio with two parts. I am securing my understanding of equivalent fractions. I am securing my understanding of equivalent ratios. I am securing my ability to interpret worded ratio problems. I am securing my ability to increase and decrease quantities by a percentage. I am securing solving problems involving direct proportion. I am securing my understanding of compound units.



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Developing	<ul style="list-style-type: none"> I am developing an understanding of notations and diagrams commonly used in maths. I am developing an understanding of key words and vocabulary and endeavouring to use them when explaining my reasons. I am developing competency in the use of mathematical apparatus to help me to understand problems and contexts. I can use simple methods and different approaches for solving mathematical problems. I am developing skills in reflecting on and improving my work by estimating what an answer should be. I am developing skills for overcoming difficulties with mathematical problems by drawing a diagram or choosing apparatus. I am developing the skills to organise my work according to mathematical protocols. I am developing the skills necessary to understand and describe statements using supporting examples. I am developing skills needed to give reasons for my workings and my answers, using proofs. I am developing the skills to apply my understanding to wider world situations. I am developing these skills to allow me to grow in fluency across the mathematical strands. 	<ul style="list-style-type: none"> I am developing my understanding of place values and can demonstrate ability to read and write numbers up to 100. I am developing my understanding of comparing numbers up to 100, using this understanding to enable me to correctly use simple column methods for calculations. I am developing my understanding of concepts and vocabulary of types of numbers, and I am recognising multiples, factors, primes and square numbers. I am developing my understanding in the use of the four operations to any number and I can add and subtract whole numbers with increasing ease. I am developing my understanding of the order of operations, excluding brackets and indices, within a calculation. I am developing my recognition of the relationships between operations, and beginning to recognise inverse operations and their importance. I am developing my understanding of integer powers and real roots, including squares and cubes (powers of 2 and 3). I am developing my understanding in recognising the reason for the use of standard form. I am developing my understanding of equivalent decimals and fractions. I am developing my definition of percentage and its use in comparing amounts. I am developing my recognition of fractions and percentages as operators. I am developing my recognition of standard units of measurement in a real life context. I am developing my recognition of degrees in accuracy. I am developing my use of rounding to approximate. I am developing my knowledge of buttons on the calculator. I am developing my recognition of the infinite nature of sets of integers. 	<ul style="list-style-type: none"> I am developing my use of algebraic notation, recognising basic terminology and relating it to problems. I am developing the skills for substituting numerical values into expressions. I am developing understanding of algebraic vocabulary, and beginning to understand the role of the equals sign. I can use simple algebraic formulae for example to find areas of simple shapes. I am developing skills in substituting values into these formulae. I can recognise symbols allowing me to begin to use algebraic methods to solve simple linear equations. I am developing an understanding of co-ordinates and the first quadrant of the coordinate plane. I am developing the ability to draw simple graphs. I am developing the skills to interpret linear graphs. I am developing understanding of vocabulary specific to sequences (term to term rule, common difference). I am developing skills to identify arithmetic sequences. I am develop skills to conjecture about patterns and relationships. 	<ul style="list-style-type: none"> I am developing my ability to substitute into given formula. I am developing my understanding of shape by finding area and perimeter. I am developing my ability to measure lines in several metric units and identify different types of angles. I am developing my ability to construct circles and triangles (using ASA and SSS) using a compass. I am developing my ability to recognise and use mathematical terms in relation to angles and lines. I am developing my ability to understand when two triangles are congruent or similar. I am developing my understanding of shapes by identifying regular and irregular shapes based on number of sides. I am developing my ability to recognise the type of movement described by a transformation. I am developing my knowledge of angle facts regarding straight lines and around a point. I am developing my ability to recognise alternate, corresponding and co-interior pairs of angles. I am developing my investigative skills by identifying polygons and determining formulae for interior polygon angle sums. I am developing my ability to identify the hypotenuse and successfully label the sides of a right triangle, as well as using Pythagoras' Theorem to find a missing hypotenuse. I am developing my ability to successfully label sides with hypotenuse, adjacent and opposite, along with selecting the correct ratio for a question. I am developing by ability to identify 3D shapes and describe them using their properties. I am developing my ability to substitute into given formulae. 	<ul style="list-style-type: none"> I am developing the ability to describe, interpret and compare observed distributions of a single variable (mean, mode, median and range). I am developing the ability to construct and interpret appropriate tables, charts and diagrams. This includes pictograms, bar charts, frequency tables and pie charts. I am developing the ability to use the mode, mean, median and range to describe sets of data. I am developing the ability to describe information presented in simple tables, charts and graphs using technical vocabulary. I am developing my ability to collect and record discrete data. I am developing my ability to group data where appropriate in equal class intervals. I am developing my ability to record, describe and analyse the frequency of outcomes of simple probability experiments. I am developing my ability to understand probabilities of all possible outcomes add up to 1. I am developing my ability to enumerate sets and unions/intersections of sets systematically. I am developing my ability to generate theoretical sample spaces for single and combined events. I am developing my ability to explain how to use the probability scale from 0 to 1. I am developing the skills to express a probability as a decimal or a fraction. 	<ul style="list-style-type: none"> I am developing my ability to convert between related standard units, allowing me to solve simple direct proportion problems by scaling up or down. I am developing my ability to use scale factors, for example to order size or for simple enlargements. I am developing my understanding of scale diagrams and maps, and can use this skill in Geography. I am developing my ability to express one quantity as a fraction of another. I am developing my understanding of unit ratio notation and simplifying given ratios. I am developing my ability to divide a quantity into a given ratio with two parts. I am developing my understanding of equivalent fractions. I am developing my understanding of equivalent ratios. I am developing my ability to interpret worded ratio problems. I am developing my ability to increase and decrease quantities by a percentage. I am developing solving problems involving direct proportion. I am developing my understanding of compound units.



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Extending	<ul style="list-style-type: none"> I am extending my understanding of notations and diagrams commonly used in maths, and I am able to use them to solve problems. I am extending my use, understanding and application of technical vocabulary. I am extending the use of mathematical apparatus to include specialist calculators. I am extending my understanding of the application of different methodologies in maths and by breaking problems into more manageable sections. I am extending my presentation of work to include formal methods of calculation and their inverses to check my work for accuracy. I am extending my understanding of examples and am increasingly able to add in my own examples. I am extending the use of proofs to substantiate my work. I am extending understanding of mathematical methods and reasoning in wider world situations. I am extending fluency across the mathematical strands. 	<ul style="list-style-type: none"> I know and can use place value to complete calculations using decimal numbers and mixed numbers. I am extending my use of inequalities to include generalisations and can confidently apply number rules. I am extending my use of concepts and vocabulary including HCF/LCM/Prime factorisation. I am extending my use of the four operations in multi-step processes. I am extending my confidence in the application of the order of operations including power/roots/reciprocals. I am extending my confidence in the application of relationships between operations including inverses. I am extending my use of indices and associated real roots including decimal approximations. I am extending my ability to interpret and compare standard form. I am extending my application of any terminating decimal and its corresponding fraction. I am extending my knowledge of percentages and ability to solve percentage problems. I am extending my confidence in applying any fraction and percentage as an operator. I am extending my use of standard units of measurements including decimals and imperial. I am extending my use of rounding to include significant figures. I am extending my confidence in appropriate rounding for estimations including their resulting errors. I am extending my ability to interpret and apply the correct buttons on a calculator. I am extending my appreciation of the infinite nature of sets. 	<ul style="list-style-type: none"> I am extending interpretation of algebraic notation. I am extending substitution skills in expressions and more complex formulae. I am extending understanding and use of algebraic vocabulary. I am extending the use of algebraic formulae, to include formulae used in Science. I am extending the use of algebraic methods to solve more complex linear equations and quadratic equations. I am extending the use of co-ordinates in all four quadrants of the coordinate plane. I am extending the ability to sketch, produce and recognise graphs. I am extending the skills to interpret linear and quadratic graphs. I am extending understanding of vocabulary specific to sequences (term to term rule, common difference, position to term rule, nth term, Fibonacci sequences and quadratic sequences). I am extending skills used to identify arithmetic, geometric and quadratic sequences. I am extending in making and testing conjectures about patterns and relationships, and looking for proofs and counterexamples. 	<ul style="list-style-type: none"> I am extending my ability to derive and apply formula to solve problems. I am extending my understanding of area and perimeter by incorporating algebra to solve problems in a wide range of shapes including circles and compound shapes. I am extending my ability to measure, draw and label angles up to 360°. I am extending my ability to construct by confidently using a compass to solve real world problems involving Loci. I am extending my understanding of regular shapes and their useful properties to solve problems. I am extending my ability to successfully apply congruency rules to multi-step problems. I am extending my ability to describe shapes using their properties, e.g. pairs of parallel lines, lines of symmetry, order of rotation symmetry etc. I am extending my ability to determine the transformation having been giving the object and image and also carry out negative enlargements. I am extending my knowledge of angle facts by using algebra to execute proofs and solve problems. I am extending my ability to apply parallel line ideas to find missing angles and solve multi-step algebraic problems. I am extending my ability to successfully apply formulae for interior and exterior angles to solve multi-step algebraic problems and carry out proofs. I am extending my ability to apply Pythagoras' Theorem to real life problems. I am extending my ability to find missing angles, applying knowledge to real life problems. I am extending my ability to apply properties and formulae for 3D shapes to solve real life and algebraic problems. I am extending my ability to apply formulae to solve problems. 	<ul style="list-style-type: none"> I am extending my ability to use the mean, mode, median and range to describe, interpret and compare observed distributions. I am extending my ability to construct and interpret appropriate tables, charts and diagrams. This includes pictograms, bar charts, frequency tables and pie charts. I am extending my ability to estimate the mean of grouped data sets. I am extending my ability to interpret information presented in simple tables, charts and graphs I am extending my ability to group data, where appropriate in equal and unequal class intervals. I am extending my ability to record, describe and analyse the frequency of outcomes of simple probability experiments. I am extending my ability to understand probabilities of all possible outcomes sum to 1. I am extending my ability to enumerate sets and unions/intersections of sets systematically, using Venn diagrams. I am extending my ability to generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities. 	<ul style="list-style-type: none"> I am extending my ability to convert between related standard units including squared and cubic units. I am extending my ability to use scale factors including area and volume scale factors. I am extending my ability to use and manipulate scale diagrams and maps. I am extending my ability to express one quantity as a fraction of another including simplest form and percentage form. I am extending my use of ratio notation including ratio in worded problems and wider world contexts. I am extending my ability to divide a given ratio into a given number of parts. I am extending my ability to manipulate and compare equivalent fractions. I am extending my ability to manipulate and compare equivalent ratios including combining multiple ratios. I am extending my ability to interpret and solve worded ratio problems using fractions and linear functions. I am extending my ability to solve problems involving percentage change and interest rates. I am extending my ability to solve problems involving direct and indirect proportion including algebraic notation. I am extending my ability to manipulate and convert between compound units.

