MATHS

PROGRESSION DOCUMENT

Highfield Community Primary School

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The following Progression Document is an outline of the progression of knowledge and skills that we would expect children to follow. As we use the White Rose Maths sequence of learning, the term in which these skills are covered is outlined.

Where children might need a more tailored approach and smaller-step learning we are informed by PIVATs targets and we can use the NCETM 'progression maps' which can be found using the QR code below:

Maths Subject Coverage in the EYFS Curriculum (from Development Matters 2021)

Mathematical Vocabulary			
Three and Four-Year-Olds	Communication and Language		• Use a wider range of vocabulary. • Understand 'why' questions, like: "why do you think the caterpillar is so fat?"
Reception	Communication and Language		• Learn new vocabulary. • Use new vocabulary throughout the day.
ELG	Communication and Language	Speaking	• Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.

Number and Place Value			
Counting			
Three and Four-Year-Olds	Mathematics		• Recite numbers past 5. • Say one number name for each item in order: 1, 2, 3, 4, 5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
Reception	Mathematics		• Count objects, actions and sounds. • Count beyond ten.
ELG	Mathematics	Numerical Patterns	• Verbally count beyond 20, recognising the pattern of the counting system.
Identifying, Representing and Estimating Numbers			
Three and Four-Year-Olds	Mathematics		• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals.
Reception	Mathematics		• Subitise. • Link the number symbol (numeral) with its cardinal number value.
ELG	Mathematics	Number	• Subitise (recognising quantities without counting) up to 5.

Reading and Writing Numbers			
Three and Four-Year-Olds	Mathematics		• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals.
Reception	Mathematics		• Link the number symbol (numeral) with its cardinal number value.
Compare and Order Numbers			
Three and Four-Year-Olds	Mathematics		• Compare quantities using language: 'more than', 'fewer than'.
Reception	Mathematics		• Compare numbers.
ELG	Mathematics	Numerical Patterns	• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.

Understanding Place Value			
Reception	Mathematics		• Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10.
ELG	Mathematics	Number	• Have a deep understanding of numbers to 10, including the composition of each number.
Solve Problems			
Three and Four-Year-Olds	Mathematics		• Solve real world mathematical problems with numbers up to 5.

Addition and Subtraction			
Mental Calculations			
Reception	Mathematics		• Automatically recall number bonds for numbers 0-5 and some to 10.
ELG	Mathematics	Number	• Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
Solve Problems			
ELG	Mathematics	Numerical Patterns	• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.
Measurement			
Describe, Measure, Compare and Solve (All Strands)			
Three and Four-Year-Olds	Mathematics		• Make comparisons between objects relating to size, length, weight and capacity.
Reception	Mathematics		• Compare length, weight and capacity.
Telling the Time			
Three and Four-Year-Olds	Mathematics		• Begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then…'
Properties of Shapes			
Recognise 2D and 3D Shapes and their Properties			
Three and Four-Year-Olds	Mathematics		• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'. • Select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc.
Reception	Mathematics		• Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
Compare and Classify Shapes			
Reception	Mathematics		• Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.

Position and Direction		
Position, Direction and Movement		
Three and Four-Year-Olds	Mathematics	• Understand position through words alone – for example, "The bag is under the table," – with no pointing. • Describe a familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'.
Reception	Understanding the World	• Draw information from a simple map.
Patterns		
Three and Four-Year-Olds	Mathematics	• Talk about and identify the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern.
Reception	Mathematics	• Continue, copy and create repeating patterns.

Statistics		
Record, Present and Interpret Data		
Three and Four-Year-Olds	Mathematics	• Experiment with their own symbols and marks, as well as numerals.

Maths skills and knowledge progression Map: Y1-Y6 (White Rose Long term overviews)

Place Value

Number and place value	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count numbers to 100 in numerals; count in multiples of 2s, 5s and 10s **Autumn** **Spring** **Summer**	To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. **Autumn**	To count from 0 in multiples of 4, 8, 50 and 100. Find 10 or 100 more or less than a given number **Autumn** **Autumn** **Spring**	To count in multiples of 6, 7, 9, 25 and 1000. To count backwards through zero to include negative numbers. **Autumn**	To count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. Count forwards and backwards with positive and negative whole numbers, including through zero. **Autumn**	

Number and place value	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Problems and rounding		Use place value and numbers to solve problems **Autumn**	Solve number problems and practical problems involving these ideas **Autumn**	Round any number to the nearest 10, 100 or 1000 Solve number and practical problems that involve all of the above and with increasingly large numbers **Autumn**	Interpret negative numbers in context Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 Solve number problems and practical problems that involve all of the above **Autumn**	Round any whole number to a required degree of accuracy Use negative numbers in context, and calculate intervals across zero Solve number and practical problems that involve all of the above **Autumn**

Number and place value	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place value: Represent	Identify and represent numbers using objects and pictorial representations Read and write numbers to 100 in numerals Read and write numbers from 1 to 20 in numeral and words **Autumn** **Spring** **Summer**	Read and write numbers to at least 100 in numerals and words Identify, represent and estimate numbers using different representations, including the number line **Autumn**	To read and write numbers up to 1000 in numerals and in words. Identify, represent and estimate numbers using different representations **Autumn**	Identify, represent and estimate numbers using different representations **Autumn**	Read, write, (order and compare) numbers to at least 1000000 and determine the value of each digit Read Roman numerals to 1000 (M) and recognise years written in Roman numerals **Autumn**	Read, write, (order and compare) numbers to at least 10000000 and determine the value of each digit **Autumn**

Number and place value	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use place value and compare	Given a number find one more or less **Autumn** **Spring** **Summer**	Recognise the place value of each digit in a two-digit number (tens, ones) Compare and order numbers from 0 up to 100; use <, > and = signs **Autumn**	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Compare and order numbers to 1000 **Autumn**	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) Order and compare numbers beyond 1000 **Autumn**	Read, write, order and compare numbers to at least 1000000 and determine the value of each digit **Autumn**	Read, write, order and compare numbers to at least 10000000 and determine the value of each digit **Autumn**

Addition and subtraction

Addition and subtraction	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall, Represent, Use	Read write and interpret mathematical statements involving additions, subtraction and equals signs Represent and use number bonds and related subtraction facts within 20 **Autumn** **Spring**	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts to 100 Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems To recall all numbers bonds to and within 10 and use these to reason with and calculate bonds within 20, recognising other associated additive relationships **Autumn**	Estimate the answer to a calculation and use inverse operations to check answers **Autumn**	Estimate and use inverse operations to check answers to a calculation **Autumn**	Use rounding to check answers to calculations and determine, in the context of a problem, level of accuracy **Autumn**	

Addition and subtraction	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Calculations	Add and subtract onedigit and two-digit numbers to 20 including zero **Autumn** **Spring**	Add and subtract numbers using an efficient strategy explaining their method verbally, in pictures or using apparatus mentally, including - A two-digit numbers - A two-digit number and tens - Two two-digit numbers - Adding three one-digit numbers **Autumn**	Add and subtract numbers mentally including: - A three digit numbers and ones - A three-digit number and tens - A three-digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction **Autumn**	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate **Autumn**	Add and subtract whole numbers with more than 4-digits including formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers **Autumn**	Perform mental calculations, including with mixed operations and large numbers Use their knowledge of the order of operation to carry out calculations involving the four operations **Autumn**

Addition and subtraction	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Solve problems	Solve problems that involve addition and subtraction, using concrete objects and pictorial representation, and missing number problems such as 7 = __ - 9 **Autumn** **Spring**	Solve problems with addition and subtraction: - Using concrete objects and pictorial representations involving numbers, quantities and measures - Applying their increasing knowledge of mental and written methods **Autumn**	Solve problems including missing number problems using number facts, place value, and more complex addition and subtraction **Autumn**	Solve addition and subtraction two-step problems in different contexts deciding which operations and methods to use and why **Autumn**	Solve addition and subtraction multi-step problems in different contexts, deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division and a combination of these including understanding the meaning of the equals sign **Autumn**	Solve addition and subtraction multi-step problems in different contexts, deciding which operations and methods to use and why **Autumn**

Multiplication and division

Multiplication and division	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall, represent, use		Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers and use them to solve simple problems, demonstrating an understanding of commutativity as necessary Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot **Autumn** **Spring**	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables **Autumn** **Spring**	Recall and use multiplication and division facts for multiplication tables up to 12 x 12 Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculations **Autumn** **Spring**	Identify multiples and factors, including factor pairs of a number and common factors of tow numbers Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19 Recognise and use square numbers and cube numbers, and the notion of squared and cubed **Autumn**	Identify common factors, common multiples and prime factors Use estimation and check answers to calculation and determine, in the context of a problem, an appropriate degree of accuracy **Autumn**

Multiplication and division	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Calculations		Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division and equals sings **Autumn** **Spring**	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods **Autumn** **Spring**	Multiply two-digit and three-digit numbers by a onedigit number using formal written layout **Spring**	To multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for twodigit numbers fluently. Multiply and divide mentally drawing upon known facts To divide numbers up to four digits by a onedigit number using the formal written method of short division and interpret remainders appropriately for the context fluently. To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. **Autumn** **Spring** **Summer**	To multiply multi-digit numbers up to four digits by a two-digit whole number using the formal written method of long multiplication. To divide numbers up to four digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. To divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Perform mental calculations, including with mixed operation and large numbers **Autumn**

Multiplication and division	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Solve problems	To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. **Summer**	To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **Autumn** **Spring**	To solve simple problems in different contexts, deciding which of the four operations to use and why. These include missing number problems, involving multiplication and division, including measuring and positive integer scaling problems and correspondence problems in which n objects are connected to m objects. **Autumn** **Spring**	To solve two-step problems in different contexts involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems, such as n objects are connected to m objects **Spring**	To solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. **Autumn** **Spring**	To solve problems involving addition, subtraction, multiplication and division. **Autumn**

Combined operations						To solve problems, including in missing number problems, involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign (to indicate equivalence). **Autumn** **Spring**	To use their knowledge of the order of operation to carry out calculations involving the four operations **Autumn**

Fractions, decimals and percentages

Fractions	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Recognise and write	To recognise, find and name a half as one of two equal parts of an object, shape or quantity To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **Summer**	To recognise, find, name, identify and write fractions $\frac{1}{3}, \frac{1}{4}, \frac{2}{4}, \frac{1}{2}$ and three-quarters of a length, number, shape, set of objects or quantity and know that all parts must be equal parts of the whole **Spring**	To count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by ten. To recognise, *understand* and use fractions as numbers: unit fractions and non-unit fractions with small denominators To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. **Spring** **Summer**	To count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. **Spring**	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number. For example 2/5 + 4/5 = 6/5 = 1 1/5 **Spring**	

Fractions: Compare			To recognise the equivalence of 2/4 and ½ **Spring**	To recognise and show, using diagrams, equivalent fractions with small denominators. To compare and order unit fractions, and fractions with the same denominators. **Spring** **Summer**	To recognise and show, using diagrams, families of common equivalent fractions. **Spring**	To compare and order fractions whose denominators are all multiples of the same number. **Spring**	To compare and order fractions, including fractions > 1. To use common factors to simplify fractions; use common multiples to express fractions in the same denomination. **Autumn**
		KS1		**KS2**			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Calculations			To write simple fractions for example, ½ of 6 = 3 **Spring**	To add and subtract fractions with the same denominator within one whole **Spring** **Summer**	To add and subtract fractions with the same denominator **Spring**	To add and subtract fractions with the same denominator and denominators that are multiples of the same number To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. . **Spring**	To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions To multiply simple pairs of proper fractions, writing the answer in its simplest form To divide proper fractions by whole numbers. **Autumn**

Fractions: solve problems				To solve problems that involve all of the above. **Spring** **Summer**	To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. **Spring**		

Decimals		**KS1**		**KS2**			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Recognise and write					To recognise and write $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ and decimal equivalents to . **Spring**	To read and write decimal numbers as fractions. To recognise and use thousandths and relate them to tenths, hundredths, decimal equivalents **Spring** **Summer**	To identify the value of each digit in numbers given to three decimal places **Spring**
Decimals: Compare					To round decimals with one decimal place to the nearest whole number. To compare numbers, amounts and quantities with the same number of decimal places up to two decimal places.	To round decimals with two decimal places to the nearest whole number and to one decimal place To read, *say,* write, order and compare numbers with up to three decimal places.	

					Summer	**Spring** **Summer**	

Decimals: Calculations and problems					To find the effect of dividing a one or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. **Spring**	To solve problems involving numbers up to three decimal places. **Summer**	To multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. To use written division methods in cases where the answer has up to two decimal places To multiply one-digit numbers with up to two decimal places by whole numbers . To solve problems which require answers to be rounded to specified degrees of accuracy **Spring**

Fractions, decimals and percentages		KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions, decimals and percentages					To solve simple measure and money problems involving fractions and decimals to two decimal places **Spring** **Spring** **Summer**	To recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. To solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ $\frac{1}{4}$, , $\frac{1}{5}$ $\frac{2}{5}$ $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25. **Spring** **Summer**	To associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Autumn** **Spring**

Ratio and proportion							To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. To solve problems involving the calculation of percentages and the use of percentages. To solve problems involving similar shapes where the scale factor is known or can be found. To solve problems involving unequal *quantities*, sharing and grouping using knowledge of fractions and multiples. **Spring**

Algebra		KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Algebra		To Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ___ - 9 **Autumn**	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **Spring**	Solve problems including missing number problems **Autumn**			To use simple formulae. To generate and describe linear number sequences. To express missing number problems algebraically. To find pairs of numbers that satisfy an equation with two unknowns. To enumerate possibilities of combinations of two variables. **Spring**

Algebraic thinking starts in Y1/2/3 in the form of missing numbers problems but the language associated with algebra is not introduced until Y6

Measurement

Measurement	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using Measures	To compare, describe and solve practical problems for: - lengths and heights, - mass/weight, - capacity and volume, - time. To measure and begin to record the following: - lengths and heights - mass/weight, - capacity and volume - time. **Spring** **Summer**	To choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. To compare and order lengths, mass, volume/capacity and record the results using >, < and =. Read scales in divisions of ones, twos, fives and tens **Spring** **Summer**	To measure, compare, add and subtract *using mixed units*: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). **Spring** **Summer**	To estimate, compare and calculate different measures To convert between different units of measure (for instance metres to kilometres and minutes to hours) **Autumn** **Summer**	To convert between different units of metric measure. To understand and use approximate equivalences between metric units and common imperial units. To use all four operations to solve problems involving measure using decimal notation, including scaling *and conversions*. **Summer**	To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. To convert between miles and kilometres. **Spring**

Measurement	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Money	To recognise and know the value of different denominations of coins and notes. **Summer**	To recognise and use symbols for pounds (£) and pence (p) accurately, recording pounds and pence separately; combine amounts to make a particular value. To find and use different combinations of coins that equal the same amounts of money. To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. **Autumn**	To add and subtract amounts of money, *including mixed units,* to give change, using both £ and p in practical contexts. **Spring**	To estimate, compare and calculate different measures, including money in pounds and pence **Autumn** **Summer**	To use all four operations to solve problems involving measure (for examples, money) **Summer**	

Measurement	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Time	To sequence events in chronological order using language. To recognise and use language relating to dates, including days of the week, weeks, months and years. To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **Summer**	To read, tell and write the time to five minutes, including quarter past/to the hour/half hour and draw the hands on a clock face to show these times. To know the number of minutes in an hour and the number of hours in a day. To compare and sequence intervals of time. **Summer**	To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours. To know the number of seconds in a minute and the number of days in each month, year and leap year. To compare durations of events. **Summer**	To read, write and convert time between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. **Summer**	To solve problems involving converting between units of time. **Summer**	To use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa **Spring**

Measurement	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Perimeter, Area, Volume			To measure the perimeter of simple 2D shapes. **Spring**	To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. To find the area of rectilinear shapes by counting squares. **Autumn** **Spring**	To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres To calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.. To estimate volume. **Autumn** **Summer**	To recognise that shapes with the same areas can have different perimeters and vice versa. To recognise when it is possible to use formulae for area and volume of shapes. To calculate the area of parallelograms and triangles. To calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm^3 and km^3). **Spring**

Geometry

Geometry		KS1		KS2			
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: 2-D Shapes		To recognise, *handle* and name common 2D shapes (for example rectangles (including squares), circles and triangles) **Autumn**	To identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line To identify 2D shapes on the surface of 3D shapes. To compare and sort common 2D and 3D shapes and everyday objects **Spring**	To draw 2D shapes **Summer**	To compare and classify geometric shapes, including *different* quadrilaterals and triangles, based on their properties and sizes. To identify lines of symmetry in 2-D shapes presented in different orientations **Summer**	To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. To use the properties of rectangles to deduce related facts and find missing lengths and angles **Summer**	To illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons To draw 2D shapes using given dimensions and angles **Summer**

Geometry: 3-D Shapes		To recognise, *handle* and name common 3D (for example, cuboids (including cubes), pyramids and spheres **Autumn**	To compare and sort common 2D and 3D shapes and everyday objects To, identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. **Spring**	To draw 2D shapes and make 3D shapes using modelling materials. **Summer**		To identify 3D shapes, including cubes and other cuboids, from 2D representations. **Summer**	To recognise, describe and build simple 3D shapes, including making nets. **Summer**

Geometry	**KS1**		**KS2**			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: Angles and Lines			To recognise angles as a property of shape or a description of a turn. To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn To identify whether angles are greater than or less than a right angle. **Summer**	To identify acute and obtuse angles and compare and order angles up to two right angles by size *in preparation for using a protractor*. To complete a simple symmetric figure with respect to a specific line of symmetry. To identify lines of symmetry in 2D shapes presented in different orientations. **Summer**	To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. To draw given angles, and measure them in degrees. To identify: - angles at a point and one whole turn (total 360˚) - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180˚) - Other multiples of 90˚. **Summer**	To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. **Summer**

Geometry	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: Position and direction	To describe position, direction and movement, including whole, half, quarter and three-quarter turns **Summer**	To use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). To order and arrange combinations of mathematical objects and *shapes, including those in different orientations,* in patterns and sequences. **Spring** **Summer**		To describe positions on a 2D grid as coordinates in the first quadrant. To plot specified points and draw sides to complete a given polygon. To describe movements between positions as translations of a given unit to the left/right and up/down. **Summer**	To identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. **Summer**	To draw and translate simple shapes on the coordinate plane, and reflect them in the axes. To describe positions on the full coordinate grid (all four quadrants) **Autumn**

Statistics

Statistics	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Record, present and interpret data		To interpret and construct simple pictograms, tally charts, block diagrams and simple tables *(e.g. many-to-one correspondence in pictograms with simple ratios 2, 5, 10 scales).* **Spring**	To interpret and present data using bar charts, pictograms and tables *and use simple scales with increasing accuracy*. **Autumn**	To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. **Summer**	To complete, read and interpret information in tables, including timetables. **Autumn**	To interpret and construct pie charts and line graphs (*relating to two variables)* and use these to solve problems. **Summer**
Solve problems		To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To ask and answer questions about totalling and comparing categorical data. **Spring**	To solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables. **Autumn**	To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. **Summer**	To solve comparison, sum and difference problems using information presented in a line graph. **Autumn**	To calculate and interpret the mean as an average. **Spring**