Hunton & Arrathorne Community Primary School

Curriculum Document: Mathematics

INTENT - The Mathematics Curriculum

The 2014 National Curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of Mathematics
- Are able to reason mathematically
- Can solve problems by applying their Mathematics

At Hunton and Arrathorne, these skills are embedded within Maths lessons and developed consistently over time. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children's curiosity about the subject and supporting them through innovative teaching styles, accompanied by rich resources and cross-curricular links.

IMPLEMENTATION - Progression Mathematics: Rationale

As a basis for our learning we have developed our own bespoke long-term plan to suit the needs of our children – this is influenced by White Rose and the NCETM, but enhanced by us as professionals. The National Curriculum objectives are then broken down into small steps which ensure that the children are taught mathematical concepts in a progressive way. Teachers use these planning tools to develop lessons which further children's understanding of mathematical fluency, varied fluency and problem solving. They also ensure plenty of time is dedicated to ensuring the children have the opportunity to 'deep practice' their mathematical skills. Alongside daily Maths lessons, pupils in Reception and Key Stage 1 also benefit from accessing the Mastering Number programme to learn and consolidate key number skills, representing our commitment to ensuring we do the basics brilliantly.

We have bespoke calculation policies for both written and mental calculations which demonstrate what progress looks like across school. These calculation policies have been designed with our children in mind and are in fully in line with the National Curriculum (White Rose Calculation Policy 2024).

Within a unit of work, or objective, children are given an opportunity to deepen their understanding including the 'concrete, pictorial and abstract' approaches to ensure that children have a solid understanding of the skills and concepts taught. We expect that over the course of a National Curriculum objective, children will develop their fluency, be exposed to varied fluency and have the opportunity to reason and problem solve. This may be during the course of one lesson, or over several lessons.

When pupils are in Reception and Key Stage 1 (or those who join us later from other schools / are on the SEND register) are regularly assessed on their foundational mathematical skills. This ensures all children have a secure understanding of basic number and shape concepts which they need to progress. This is tracked half-termly with rigour.

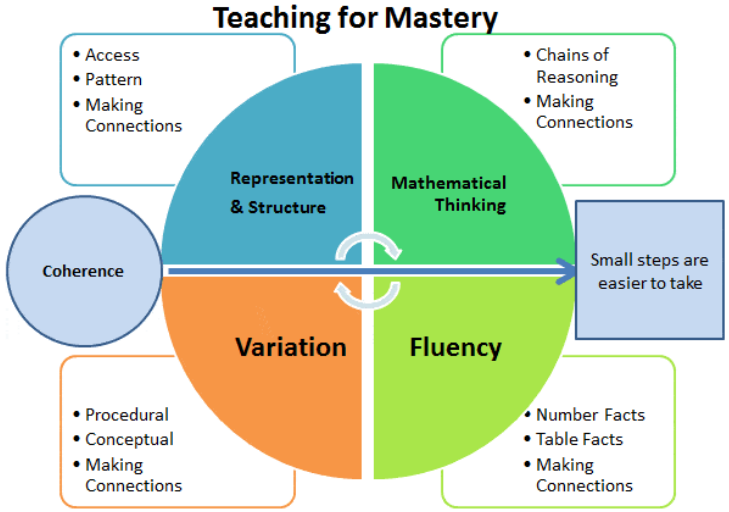
Mental and written calculations, as well as counting skills, are taught through the National Curriculum mathematics lessons. Counting is a key part of every maths lesson: each lesson begins with an active counting activity. Children are encouraged to retrieve and recall information through a retrieval activity in every lesson. Teachers may draw upon the 'Flashback 4' resources as a means of providing the children with varied fluency opportunities, but the focus should be on active learning opportunities based on assessment for learning.

‘The Diamond Dash’ is a key part of Mathematics within our school – it is a programme designed to accelerate children’s fluency in multiplication and division facts. Children take part in the ‘Diamond Dash’ from Reception where it starts with oral counting, through to the end of Key Stage 2, with a range of multiplication, division, square numbers, cube numbers, square roots and decimals. Ten minutes of each day are allocated to this.

Alongside planning and progression documents, to aid teacher’s in their delivery of mathematics lessons, the policy ensures consistency for our children in terms of work-books, learning environments and lesson structure.

Planning Structure

As a school, we have developed our own long-term plan using resources from the NCETM and White Rose Maths. Class teachers then create a unit plan, based on the National Curriculum objectives. They use schemes of learning such as the White Rose and NCETM to support, but are passionate about children receiving a wide and varied diet of Maths. Following the teaching of the ‘5 Big Ideas’ we recognise that varied representations, including the use of concrete and pictorial resources, is highly beneficial; teachers are encouraged to use these models throughout a unit of learning.



In addition to the long-term plan, we also have bespoke progression document for the teaching of calculations. When teaching these aspects, teachers follow these documents to ensure consistency throughout school.

Lesson Structure

Active Counting (5 minutes)

Each class has approximately 5 minutes rapid recall of counting per day – this could include key number bonds, multiplication tables or other curriculum related tasks. Such activities might include: use of the counting stick, times table songs, relay work, chanting etc. This is in addition to the ‘Diamond Dash’ which children complete at the start of each day.

Retrieval (5 minutes)

Each lesson begins with an open-ended retrieval activity; each day of the week has a specific focus such as a 'goal free problem', arithmetic or Flashback 4. Teachers use highly skilled questioning to adapt teaching; pupils are encouraged to talk purposefully and apply mathematical vocabulary whilst developing speaking and listening skills. Teachers draw upon previous formative and summative assessment to identify skills and knowledge which may need embedding further through the use of retrieval activities.

Lesson Objective

The lesson objective is shared with the children.

Key Vocabulary & Sentence Stems

Key vocabulary is identified at the start of each unit and is interwoven into each lesson. This may be done through the use of sentence stems to encourage children to 'talk like a mathematician'.

Lesson Content

The content of each lesson may vary based upon the objective, the children's prior understanding and the stage of their learning. Teachers can be guided by the small steps to ensure that knowledge is built upon sequentially. Lessons should incorporate the 'Teaching for Mastery' approach to ensure children are exposed to concrete, pictorial and abstract representations. Throughout each objective, children should be given the opportunity to develop their fluency, varied fluency and problem solving skills as well as opportunities for deep practice where appropriate. Children should be taught the skill of reasoning – either through a discrete lesson, group work, or as part of an activity.

Reflection

This may involve a recap of knowledge, children self-marking or additional extensions. Where possible, real life links should be clearly explained to the children.

Learning Environments

Learning environments should be maths rich. Resources should be readily accessible to the children. In addition, each classroom should include:

Age appropriate number lines (linked to curriculum objectives)

Permanent Features:

- A hundred square
- Concrete resources which are readily accessible
- 'Talk Like a Mathematician' poster
- Vocabulary in calculations posters
- Place value chart / Inequalities posters

Working Wall:

-Each class begins each unit with a blank space which the teacher uses to model and display key learning throughout the term. This should include concrete, pictorial and abstract representations.
-At the start of each unit, the topic title, key vocabulary and sentence stems should be added.

Presentation

Children work in squared maths books which are clearly labelled in the school style. Children use one square per digit and are encouraged to present their work to the best of their ability. When paper is used, it is trimmed and children are taught how to stick it in neatly. All work has a date and learning objective which starts with 'I can…' and an objective clearly linked to the national curriculum. Objectives may be provided for the children or written themselves depending on their age and ability. Children start a new page for each piece of work.

Marking & Feedback

Our emphasis will be on 'live marking' with either the children marking their own work (purple pen) or teacher marking (blue pen). Children are given the opportunity to correct any incorrect answers in purple pen.

IMPLEMENTATION – LONG TERM PLANNING

We have developed a long-term plan which is based upon a combination of using the best practice within the NCETM and White Rose. Reception follow the 'Mastering Number' programme which is further supported through the NCETM CPD materials to ensure broad coverage. Year 1 and 2 follow a single-age planning format, whilst Year 3 & 4 and Year 5 & 6 follow mixed-age planning which is carefully adapted to meet the needs of each cohort. In addition to this, Year 1 & 2 children have a 'Mastering Number' lesson daily to further embed their number knowledge.

IMPLEMENTATION – CUMULATIVE LEARNING IN MATHS

Number and Place Value				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
count reliably with numbers from one to 20 place numbers 0-20 in order say which number is one more or one less than a given number.	*count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number* *count in multiples of twos, fives and tens* given a number, identify one more and one less use the language of: equal to, more than, less than (fewer), most, least identify and represent numbers using objects and pictorial representations including the number line read and write numbers from 1 to 20 in numerals and words. count, read and write numbers to 100 in numerals; *use place value and number facts to solve problems*	*count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward* 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 identify, represent and estimate numbers using different representations, including the number line read and write numbers to at least 100 in numerals and in words	*count from 0 in multiples of 4, 8, 50 and 100;* ***count in multiples of 6, 7, 9, 25 and 1000*** recognise the place value of each digit in a three-digit number (hundreds, tens, ones) read and write numbers up to 1000 in numerals and in words compare and order numbers up to 1000 **order and compare numbers beyond 1000** find 10 or 100 more or less than a given number **find 1 000 more or less than a given number** **round any number to the nearest 10, 100 or 1000** identify, represent and estimate numbers using different representations **identify, represent and estimate numbers using different representations** solve number problems and practical problems involving these ideas. **count backwards through zero to include negative numbers** **read Roman numerals to 100 (I to C) and know that over time, the numeral system**	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit **read, write, order and compare numbers up to 10000 000 and determine the value of each digit** count forwards or backwards in steps of powers of 10 for any given number up to 1000000 round any number up to 1000 000 to the nearest 10, 100, 1000, 10000 and 100000 **round any whole number to a required degree of accuracy** interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero **use negative numbers in context, and calculate intervals across zero** read Roman numerals to 1000 (M) and recognise years written in Roman numerals *solve number problems and practical problems that involve all of the above* ***solve number and practical problems that involve all of the above***

			changed to include the concept of zero and place value. *solve number and practical problems that involve all of the above and with increasingly large positive numbers*	
Addition & Subtraction				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
using quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer. solve problems, including doubling, halving and sharing.	represent and use number bonds and related subtraction facts within 20 add and subtract one-digit and two-digit numbers to 20, including zero solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems *read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs*	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones a two-digit number and tens two two-digit numbers three one-digit numbers show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot solve problems with addition and subtraction: -using concrete objects and pictorial representations, including those involving numbers, quantities and measures	add and subtract numbers mentally, including: o a three-digit number and ones o a three-digit number and tens o a three-digit number and hundreds add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction **add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** estimate the answer to a calculation and use inverse operations to check answers **estimate and use inverse operations to check answers to a calculation** add and subtract amounts of money to give change, using both £ and p in practical contexts *solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction*	add and subtract numbers mentally with increasingly large numbers **perform mental calculations, including with mixed operations and large numbers** add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) **carry out calculations involving the four operations** use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.** **Solve problems involving addition, subtraction, multiplication and division**

		recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. *applying their increasing knowledge of mental and written methods*	**solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why**	
Multiplication & Division				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
solve problems, including doubling, halving and sharing.	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	*recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers* show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication	*recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables* ***recall multiplication and division facts for multiplication tables up to 12 × 12*** 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 **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** **multiply two-digit and three-digit numbers by a one-digit number using formal written layout** estimate the answer to a calculation and use inverse operations to check answers	multiply and divide numbers mentally drawing upon known facts **perform mental calculations, including with mixed operations and large numbers** identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. **identify common factors, common multiples and prime numbers** multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context **divide numbers up to 4-digits by a two-digit whole number using the formal written method of short**

		and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems recognise and use factor pairs and commutativity in mental calculations solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems	division where appropriate for the context divide numbers up to 4 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 know and use the vocabulary of prime numbers (know up to 19 and establish up to 100), prime factors and composite (non-prime) numbers recognise and use square numbers and cube numbers, and the notation for squared and cubed solve problems involving addition, subtraction, multiplication & division; factors and multiples, squares & cubes and scaling by simple fractions and problems involving simple rates associate a fraction with division and calculate decimal fraction equivalents use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy use their knowledge of the order of operations to carry out calculations involving the four operations
Fractions, Decimals & Percentages				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
solve problems involving doubling, halving and sharing.	recognise find and name a half as one of two equal parts of an object, shape or quantity.	recognise, find, name and write fractions 1/3 , 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity	*count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in*	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

	recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2	*dividing one-digit numbers or quantities by 10* ***count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10*** recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators **recognise and show, using diagrams, families of common equivalent fractions** compare and order unit fractions, and fractions with the same denominators add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] **add and subtract fractions with the same denominator** *solve problems that involve all of the above* **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**	**identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** compare and order fractions whose denominators are all multiples of the same number **compare and order fractions whose denominators are all multiples of the same number** 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] **recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number** [for eg. $\frac{2}{5}\frac{4}{5}\frac{6}{5}\frac{1}{5}$] add and subtract fractions with the same denominator, and denominators that are multiples of the same number **add and subtract fractions with the same denominator, and denominators that are multiples of the same number** multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams **multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams** read and write decimal numbers as fractions [for example, 0.71 = 71/100]

			recognise and write decimal equivalents to 1/4 , 1/2 , 3/4 recognise and write decimal equivalents of any number of tenths or hundreds 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 compare numbers with the same number of decimal places up to 2 decimal places round decimals with 1 decimal place to the nearest whole number *solve simple measure and money problems involving fractions and decimals to 2 decimal places*	read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents read, write, order and compare numbers with up to 3 decimal places round decimals with 2 decimal places to the nearest whole number and to 1 decimal place read, write, order and compare numbers with up to 3 decimal places round decimals with 2 decimal places to the nearest whole number and to 1 decimal place recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents solve problems involving number up to 3 decimal places solve problems involving number up to 3 decimal places recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 ,

				1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25 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
Algebra				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
				use simple formulae generate and describe linear number sequences express missing number problems algebraically find pairs of numbers that satisfy an equation with 2 unknowns enumerate possibilities of combinations of 2 variables
Measure				
EYFS	Year 1	Year 2	Year 3 and 4	Year 5 & 6
use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects to solve problems.	compare, describe and solve practical problems for: -lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] -mass/weight [for example, heavy/light, heavier than, lighter than] -capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] -time [for example, quicker, slower, earlier, later]	compare and order lengths, mass, volume/capacity and record the results using >, < and = 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	measure, compare, add and subtract: -lengths (m/cm/mm); -mass (kg/g); --volume/capacity (l/ml) convert between different units of measure [for example, kilometre to metre; hour to minute] estimate, compare and calculate different measures, including money in pounds and pence measure the perimeter of simple 2-D shapes measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares	convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre] solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate 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 3 decimal places

	measure and begin to record the following: lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) recognise and know the value of different denominations of coins and notes sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years	recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change know the number of minutes in an hour and the number of hours in a day tell the time to the hour and half past the hour and draw the hands on a clock face to show these times compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks **read, write and convert time between analogue and digital 12- and 24-hour clocks** estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; *use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight* know the number of seconds in a minute and the number of days in each month, year and leap year **solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days** compare durations of events [for example, to calculate the time taken by particular events or tasks]	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm^2) and square metres (m^2), and estimate the area of irregular shapes **recognise that shapes with the same areas can have different perimeters and vice versa** **calculate the area of parallelograms and triangles** estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] **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]** **recognise when it is possible to use formulae for area and volume of shapes** solve problems involving converting between units of time understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints *use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling*

Position, Direction & Movement				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
recognise, create and describe patterns.	describe position, direction and movement, including whole, half, quarter and three-quarter turns	order and arrange combinations of mathematical objects in patterns and sequences 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 anti-clockwise)	describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon	describe positions on the full coordinate grid (all 4 quadrants) 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 draw and translate simple shapes on the coordinate plane, and reflect them in the axes
Ratio & Proportion				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
				solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts convert between miles and kilometres solve problems involving similar shapes where the scale factor is known or can be found solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison

				solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Geometry: Properties of Shape				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
explore characteristics of everyday objects and shapes and use mathematical language to describe them	recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] recognise and name common 2-D and 3-D shapes, including: 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects	recognise 3-D shapes in different orientations and describe them compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes draw 2-D shapes and make 3-D shapes using modelling materials; recognise angles as a property of shape or a description of a turn identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn identify whether angles are greater than or less than a right angle identify acute and obtuse angles and compare and order angles up to 2 right angles by size identify horizontal and vertical lines and pairs of perpendicular and parallel lines identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry	identify 3-D shapes, including cubes and other cuboids, from 2-D representations recognise, describe and build simple 3-D shapes, including making nets draw 2-D shapes using given dimensions and angles compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees (°) identify: -angles at a point and 1 whole turn (total 360°) -angles at a point on a straight line and half a turn (total 180°) -other multiples of 90° -use the properties of rectangles to deduce related facts and find missing lengths and angles recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles

				illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Statistics				
EYFS	Year 1	Year 2	Year 3 & 4	Year 5 & 6
		interpret and construct simple pictograms, tally charts, block diagrams and tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask-and-answer questions about totalling and comparing categorical data	interpret and present data using bar charts, pictograms and tables solve one-step and two-step questions [for example 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average

IMPLEMENTATION – MATHEMATICS LONG TERM PLAN

	Autumn (12 weeks)				Spring (8 weeks)				Summer (12 weeks)			
Reception	Subitising, Counting & Cardinality Composition Comparison Spatial & Movement		Counting Ordinality & Cardinality Comparison & Composition Measure -Weight and Capacity		Subitising Counting & Cardinality Composition Shape – 2D & 3D		Patterns & Ordering Less than Doubles Odd & Even Pattern		Counting, ordinality & cardinality Subitising Comparison & Composition Measurement - Height		Review Length & Time	
Year 1	Place Value to 10 (2 weeks)	Addition & Subtraction to 10 (4 weeks)	Place Value to 20 (3 weeks)	Addition and Subtraction to 20 (3 weeks)	Shape (2 weeks)	Fractions (1 week)	Position and Direction (1 week)	Time (2 weeks)	Place Value Beyond 20 (3 weeks)	Multiplication and Division (3 weeks)	Money (1 week)	Length, Capacity and Weight (3 week)
Year 2	Number and Place Value (2 weeks)	Addition and Subtraction (4 weeks)	Money (2 weeks)	Multiplication & Division (4 weeks)	Fractions (2 weeks)	Shape (2 weeks)	Time (2 weeks)		Statistics (2 weeks)	Position and Direction (2 weeks)	Length, Mass and Capacity (3 weeks)	
Year 3/4	Place Value (4 weeks)	Addition & Subtraction (4 weeks)	Multiplication & Division (4 weeks)		Fractions, Deciamls and Money (7 weeks)				Geometry (2 weeks)	Statistics (2 weeks)	Time (3 weeks)	Measures (2 weeks)
Year 5/6	Place Value (3 weeks)	Addition & Subtraction (2 weeks)	Multiplication & Division (4 weeks)	Statistics (2 weeks)	Fractions, Decimals & Percentages (6 weeks)		Ratio & Proportion (2 weeks)		Algebra (1 weeks)	Geometry (2 weeks)	Measures (2 weeks)	Shape & Measure (3 weeks)

IMPACT IN MATHEMATICS

The school has a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Children can underperform in Mathematics because they think they can't do it or are not naturally good at it. Our curriculum addresses these preconceptions by ensuring that all children experience challenge and success in Mathematics by developing a growth mindset. Regular and ongoing assessment informs teaching, as well as intervention, to support and enable the success of each child. All children are assessed against our foundational skills tracker which ensures all children have the early mathematics knowledge they need to succeed. Rigorous assessment of this tracker ensures gaps are closed readily and children are secure in their mental knowledge at the end of each stage of learning. Children are encouraged to be 'risk takers' and to challenge themselves within Maths lessons in line with our curriculum aims.

In addition, the 'Diamond Dash' tracks pupil progress in learning their multiplication tables. Pupils are passionate about moving 'through' the Diamond Dash levels and the whole-school enjoys the end of year 'Diamond Dash Championship' celebration.

Our mathematics curriculum is high quality, well thought out and is planned to demonstrate progression. Within each objective, children should access varied fluency, the opportunity to reason and problem solve. Children use mathematics books to record their progression which are marked in accordance to our feedback policy.

The expectation is that the majority of the children will move through the domains of mathematics and where needed, will access 'keep up' interventions to ensure they do not fall behind. Staff monitor this through the use of the Insight Tracker assessment package which is formally monitored on a termly basis. In conjunction with this, teacher's make sound teacher assessment judgements through the use of summative assessments and past SAT's papers for Y6.