Maths

Characteristics

- An understanding of the important concepts and an ability to make connections within mathematics.

- A broad range of skills in using and applying mathematics.

- Fluent knowledge and recall of number facts and the number system.

- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.

- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.

- The ability to embrace the value of learning from mistakes and false starts.

- The ability to reason, generalise and make sense of solutions.

- Fluency in performing written and mental calculations and mathematical techniques.

- A wide range of mathematical vocabulary.

- A commitment to and passion for the subject.

Opportunities

Key Stage 1	Key Stage 2
• Count and calculate in a range of practical contexts.• Use and apply mathematics in everyday activities and across the curriculum. • Repeat key concepts in many different practical ways to secure retention. • Explore numbers and place value up to at least 100. • Add and subtract using mental and formal written methods in practical contexts. • Multiply and divide using mental and formal written methods in practical contexts. • Explore the properties of shapes. • Use language to describe position, direction and movement. • Use and apply in practical contexts a range of measures, including time. • Handle data in practical contexts.	• Count and calculate in increasingly complex contexts, including those that cannot be experienced first hand. • Rigorously apply mathematical knowledge across the curriculum, in particular in science, technology and computing. • Deepen conceptual understanding of mathematics by frequent repetition and extension of key concepts in a range of engaging and purposeful contexts. • Explore numbers and place value so as to read and understand the value of all numbers. • Add and subtract using efficient mental and formal written methods. • Multiply and divide using efficient mental and formal written methods. • Use the properties of shapes and angles in increasingly complex and practical contexts, including in construction and engineering contexts. • Describe position, direction and movement in increasingly precise ways. • Use and apply measures to increasingly complex contexts. • Gather, organise and interrogate data. • Understand the practical value of using algebra.

Broad Learning Objectives

- To know and use numbers

- To add and subtract

- To multiply and divide

- To use fractions

- To understand the properties of shapes

- To describe position, direction and movement

- To use measures

- To use statistics

- To use algebra

MATHS YR 5							
Number – number and place value	**Number- addition and subtraction**	**Number – multiplication and division**	**Number – fractions (including decimals and percentages)**	**Measurement**	**Geometry – properties of shapes**	**Geometry – position and direction**	**Statistics**
Pupils should be taught to: ▪read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit ▪count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 ▪interpret negative numbers in	Pupils should be taught to: ▪add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ▪add and subtract numbers mentally with increasingly large numbers ▪use rounding to check answers to calculations	Pupils should be taught to: -identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers ▪know and use the vocabulary of prime numbers, prime factors and composite (non- prime) numbers ▪establish whether a number up to 100 is prime	Pupils should be taught to: ▪ compare and order fractions whose denominators are all multiples of the same number ▪identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths ▪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 ▪add and subtract fractions with the same denominator and denominators that are multiples of the same	Pupils should be taught to: ▪convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ▪understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints ▪measure and calculate the	Pupils should be taught to: ▪identify 3-D shapes, including cubes and other cuboids, from 2-D representations ▪know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles ▪draw given angles, and measure them in degrees (o) ▪identify: angles at a point and one whole turn	Pupils should be taught 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.	Pupils should be taught to: ▪solve comparison, sum and difference problems using information presented in a line graph ▪complete, read and interpret information in tables, including timetables.

context, count forwards and backwards with positive and negative whole numbers, including through zero ▪round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 ▪solve number problems and practical problems that involve all of the above ▪read Roman numerals to 1000 (M) and recognise years written in Roman	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.	and recall prime numbers up to 19 ▪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 numbers mentally drawing upon known facts ▪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 ▪multiply and divide whole numbers and those	number ▪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 use thousandths and relate them to tenths, hundredths and decimal equivalents ▪round decimals with two decimal places to the nearest whole number and to one decimal place ▪read, write, order and compare numbers with up to three decimal places ▪solve problems involving number up to three decimal places ▪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	perimeter of composite rectilinear shapes in centimetres and metres ▪calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. ▪estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] ▪solve problems involving converting between units of time	(total 360) ▪angles at a point on a straight line and ½ a turn (total 180 ') ▪other multiples of 90' ▪use the properties of rectangles to deduce related facts and find missing lengths and angles ▪distinguish between regular and irregular polygons based on reasoning about equal sides and angles.		

numerals.		involving decimals by 10, 100 and 1000	100, and as a decimal ▪solve problems which require knowing percentage and decimal equivalents of ½,1/4, 1/5,2/5,4/5, and those fractions with a denominator of a multiple of 10 or 25.	▪use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.			