Curriculum Map: **Math** **Year 4**

Below outlines the learning focus for each term

Year 4 Programme of Study – by the end of the academic year:

Number – number and place value

- count in multiples of 6, 7, 9, 25 and 1000
- find 1000 more or less than a given number
- count backwards through zero to include negative numbers
- recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
- order and compare numbers beyond 1000
- identify, represent and estimate numbers using different representations
- 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 positive numbers
- read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

Number – 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 and use inverse operations to check answers to a calculation
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Number – multiplication and division

- recall multiplication and division facts for multiplication tables up to 12 × 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
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- 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 such as n objects are connected to m objects

Number – fractions

- recognise and show, using diagrams, families of common equivalent fractions
- count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- 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
- add and subtract fractions with the same denominator
- recognise and write decimal equivalents of any number of tenths or hundredths
- recognise and write decimal equivalents to ¼, ½, ¾
- 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
- round decimals with one decimal place to the nearest whole number
- compare numbers with the same number of decimal places up to two decimal places
- solve simple measure and money problems involving fractions and decimals to two decimal places.

Measurement

- Convert between different units of measure [for example, kilometre to metre; hour to minute]
- measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- find the area of rectilinear shapes by counting squares

- estimate, compare and calculate different measures, including money in pounds and pence
- read, write and convert time between analogue and digital 12- and 24-hour clocks
- solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Geometry – properties of shapes

- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- identify acute and obtuse angles and compare and order angles up to two right angles by size
- 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

Geometry – position and direction

- 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.

Statistics

- 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 bar charts, pictograms, tables and other graphs.

Term	Learning Focus	
	Knowledge	**Skills**
	Number : Place Value • Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • Round any number to the nearest 10, 100 or 1,000 • Count in multiples of 6, 7, 9, 25 and 1,000 • Identify, represent and estimate numbers using different representations • Order and compare numbers beyond 1,000 • Read roman numerals to 100 (i to c) and know that over time, the numeral system changed to include the concept of zero and place value • Find 1,000 more or less than a given number • Order and compare • numbers beyond 1,000 • Comparing 4-digit numbers • Ordering numbers to 10,000 • Round any number to the nearest 10, 100 or 1,000 • Solve number and practical problems that involve all of the above and with increasingly large positive numbers • Solving problems using rounding • Count backwards through zero to include negative numbers **Number : Addition and Subtraction** • Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate ➢ Adding and subtracting 1s, 10s, 100s, 1,000s ➢ Adding two 4-digit numbers • Estimate and use inverse operations to check answers to a calculation ➢ Equivalent difference ➢ Estimating answers to additions and subtractions ➢ Checking strategies	
Autumn Term		

	• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why **Multiplication and division** • Recall multiplication and division facts for multiplication tables up to 12 × 12 ➢ Multiplying and dividing by 6 ➢ Multiplying and dividing by 9 ➢ Multiplying and dividing by 7 ➢ Multiplying and dividing by 11 and 12 • Multiplying by multiples of 10 and 100 • 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 **Measurement – perimeter** • Convert between different units of measure [for example, kilometre to metre; hour to minute] ➢ Perimeter of a rectangle ➢ Perimeter of rectilinear shapes
Spring Term	**Multiplication and division** • 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 such as n objects are connected to m objects • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout ➢ Using written methods to multiply ➢ Multiplying a 2-digit number by a 1-digit number ➢ Multiplying a 3-digit number by a 1-digit number • Problem solving – multiplication; more than two numbers • Recognise and use factor pairs and commutativity in mental calculations • Dividing a 2-digit number by a 1-digit number • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout • 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 ➢ Dividing a 2-digit number by a 1-digit number ➢ Dividing a 3-digit number by a 1-digit number ➢ Problem solving – division **Measurement** • Find the area of rectilinear shapes by counting squares • Estimate, compare and calculate different measures, including money in pounds and pence **Number – number fractions** • Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten • Recognise and show, using diagrams families of common equivalent fractions ➢ Equivalent fractions ➢ Simplifying fractions • 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 ➢ Problem solving – adding and subtracting fractions ➢ Calculating fractions of a quantity ➢ Problem solving,– fraction of a quantity • Add and subtract fractions with the same denominator • Recognise and write decimal equivalents or any number of tenths or hundredths • 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
Summer Term	**Number – fractions / decimals** • Recognise and write decimal equivalents of any number of tenths or hundredths • 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 two decimal places ➢ Comparing decimals ➢ Ordering decimals • Round decimals with one decimal place to the nearest whole number • Recognise and write decimal equivalents to ¼, 1/2., ¾ • Solve simple measure and money problems involving fractions and decimals to two decimal places **Measurement – money** • Solve simple measure and money problems involving fractions and decimals to two decimal places • Estimate, compare and calculate different measures, including money in pounds and pence ➢ Pounds and pence ➢ Pounds, tenths and hundredths ➢ Ordering amounts of money ➢ Rounding money ➢ Using rounding to estimate money ➢ Problem solving – pounds and pence ➢ Problem solving – multiplication and division ➢ Solving two-step problems ➢ Problem solving – money **Measurement – time** • Convert between different units of measure [for example, kilometre to metre; hour to minute] • Problem solving – units of time **Geometry – properties of shapes** • Identify acute and, obtuse angles and compare and order angles up to two right angles by size ➢ Identifying angles ➢ Comparing and ordering angles • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ➢ Identifying regular and irregular shapes ➢ Classifying triangles ➢ Classifying and comparing quadrilaterals ➢ Deducing facts about shapes • Identify lines of symmetry in 2D shapes presented in different orientations – inside and outside of shapes

	• Complete a simple symmetric figure with respect to a specific line of symmetry • Describe positions on a 2D grid as coordinates in the first quadrant • Plot specified points and draw sides to complete a given polygon • Describe movements between positions as translations of a given unit to the left/right and up/down **Statistics** • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs ➢ Charts ➢ Tables ➢ Line graphs • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

Intent

The intent of our mathematics curriculum is to provide children with a foundation for understanding number, reasoning, thinking logically and problem solving with resilience so that they are fully prepared for the future.

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, develop their curiosity about the subject, and to experience success in the subject.

Implementation

The majority of pupils will move through the programmes of study at broadly the same pace.... Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on

- Teachers reinforce an expectation that all pupils are capable of achieving high standards in mathematics.
- Pupils are taught through whole-class teaching, where the focus is on all pupils working together on the same lesson content at the same time.
- Differentiation is achieved by emphasising deep knowledge and/or through individual support and intervention.
- If a pupil fails to grasp a concept or procedure, this is identified within the lesson structure and timely intervention ensures the pupil is best placed to move forward.
- Key facts such as multiplication tables and addition facts within 10 are retained through retrieval practice to develop automaticity; this avoids cognitive overload in the working memory and enables pupils to focus on new concepts.

Impact

Children demonstrate quick recall of facts and procedures. This includes:

- The recollection of the times tables.
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics.
- Children show confidence in Believing that they will achieve.
- Children show a high level of pride in the presentation and understanding of the work

Ongoing formative assessment enabling teachers to be responsive to our children's needs. Furthermore, our lesson design structure is shaped in a way that ensures misconceptions are identified during the lesson and immediately addressed at the point of learning.

Termly teacher assessment, alongside standardised tests, are used to help identify any gaps there may be in a pupils understanding