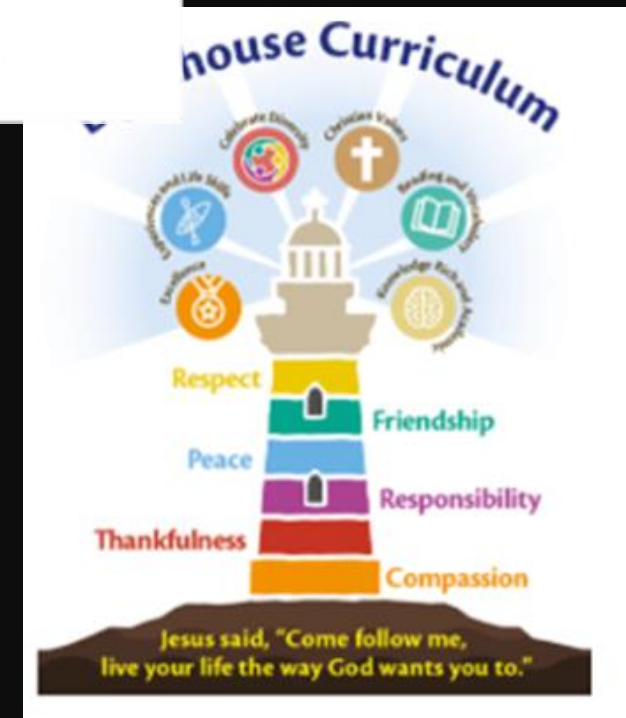


St Thomas' Maths Spiral Curriculum

May 2023

Linked with Maths No Problem New Edition



Our Curriculum Intent

The National Curriculum for mathematics aims to ensure that all pupils become fluent, reason mathematically and can solve problems. We believe that a high-quality Mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics and a sense of enjoyment and curiosity about the subject.



Our Programme of Learning

Across the school we follow the Maths No Problem approach, we are committed to ensuring that every child develops an understanding and love of Maths. We prioritise the mastery of conceptual understanding through the use of real life/ everyday problems in every lesson. We aim for fluency in the fundamentals of Maths so that our pupils can recall and apply knowledge confidently and accurately to solve problems. We use open ended, challenging questions that enable our pupils to make connections, identify patterns and draw conclusions about Mathematics.

Structure of Our Maths Lessons:

Explore

Includes real life questions related to various lesson objectives as an introductory activity for pupils. Pupils work collaboratively to discuss and explore methods to solve the problem. They use concrete materials to support them and to help them represent their thinking. They discuss, reason and explain. In journals they record their ideas and are encouraged to describe methods and explain their thinking. As they progress through the school they evaluate more. These journals provide pupils with opportunities to show their understanding of the mathematical concepts learnt.

Master

This introduces new concepts through a Concrete, Pictorial, Abstract approach with the use of engaging pictures and manipulatives. Guided examples are provided for reinforcement. Teachers reinforce non-negotiable learning objectives through direct teaching

Guided Practice

This comprises of questions for further consolidation and for the immediate evaluation of pupils' learning. Children complete tasks either independently, with a peer or collectively as a class. Discussion follows to encourage reasoning and mathematical fluency to be shown.

Independent Practice-Workbooks

Pupils independently answer a range of questions directly related to the National Curriculum learning objective. These are arranged in a non-uniform way to allow for children to evidence their mastery of the mathematical concept being taught.

Number & Counting

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Nursery</u> Say number words in sequence (ordinal numbers). To use cardinal numbers Tag each object with one number word. Know last number counted gives you a total (cardinal numbers). Begin to subitise, recognise quantities without counting. Begin to compare amounts. Identify equal groups. <u>Reception</u> Count reliably (with one-to-one correspondence and understanding of cardinality) up to five forwards and backwards. Compare numbers, order and write numbers to five. Represent the numbers 1–5 in different ways. Understand zero as an empty set. Count to 10 and 20 forwards and backwards. Represent numbers on a five and ten frame. To compare quantity. Count on and back to find 1 more and 1 fewer. Order numbers to 10. Find number bonds for numbers up to 6. Create number bonds to make 7–10. Use counting on as a strategy for addition. Count forwards and backwards within 10. To double numbers 1–5. To recognise doubles and non-doubles. To recognise and understand odd and even numbers.	Count to 100 (first 0 – 10, then to 20, then to 40 then to 100). Read and write numbers from 0 to 100 (first 0 – 10, then to 20, then to 40 then to 100). Compare and order numbers from 0 to 100 (first 0 – 10, then to 20, then to 40 then to 100). Make different number bonds for numbers up to 10. Make number stories Complete number patterns. Use a place-value chart to show numbers in tens and ones. Find how much more. Count in twos, fives and tens to 100. Say a number that is 1 more or 1 less than a 2-digit number	Count to 100. Read and write numbers to 100. Compare and arrange numbers within 100. Make and complete number patterns.	Count to 1000. Count in hundreds, tens and ones. Count in fifties. Count in fours and eights. Tell the value of a digit in a number. Compare and arrange numbers within 1000. Complete number patterns	Count to 10 000. Count in thousands, hundreds, tens and ones. Count in twenty-fives. Count in sixes, sevens and nines. Tell the number that a digit stands for. Compare and arrange numbers within 10 000. Describe and complete number patterns. Round numbers and estimate sum and difference.	Read and write numbers to 1 000 000. Tell the place value of a digit in a number. Compare and arrange numbers within 1 000 000. Count forwards or backwards in steps of 1000, 10 000 and 100 000. Round numbers to the nearest 10, 100, 1000, 10 000 and 100 000.	Read and write numbers to 10 million. Compare and arrange numbers within 10 million. Tell the place value of a digit in a number. Round numbers to the nearest 10, 100, 1000, 10 000, 100 000 and 1 000 000

Addition and Subtraction

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Reception</u> Know the 1 more than, 1 less than relationship between consecutive whole numbers. Use a counting all strategy to combine two sets up to 10.	Add by counting. Add by counting on. Make addition stories. Write addition equations. Subtract by crossing out. Subtract using number bonds. Subtract by counting back. Make subtraction stories. Write subtraction equations. Make a family of addition and subtraction facts. Add by making 10. Add by adding ones. Subtract by subtracting ones. Subtract by subtracting from 10. Solve word problems involving addition or subtraction	Add numbers without renaming. Add numbers with renaming. Subtract numbers without renaming. Subtract numbers with renaming. Add three numbers. Draw models for different situations.	Add numbers without renaming. Add numbers with renaming. Subtract numbers without renaming. Subtract numbers with renaming. Solve word problems involving addition and subtraction	Add numbers without renaming. Add numbers with renaming. Add numbers mentally. Subtract numbers without renaming. Subtract numbers with renaming. Subtract numbers mentally. Solve word problems involving addition and subtraction.	Add whole numbers with more than 4 digits. Add numbers mentally. Subtract whole numbers with more than 4 digits. Subtract numbers mentally. Use rounding to check answers. Solve word problems involving addition, subtraction, multiplication and division, and a combination of these.	Perform mental calculations. Use estimation to check answers to calculations. Use the order of operations. Solve problems involving addition and subtraction. multiplication and division.

Multiplication and Division

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Reception</u> Halve sets of items and even numbers by sharing into 2 equal groups.	Make equal groups. Add equal groups to find the total number of objects. Group things equally. Share things equally. Solve word problems about multiplication.	Do my 2, 5 and 10 times table. Write multiplication equations. Divide a number by 2, 5 and 10. Write multiplication and division equations. Write a family of multiplication and division facts. Recognise odd and even numbers. Solve word problems using the 2, 5 and 10 times tables. Solve word problems involving multiplication and division.	Do my 3, 4 and 8 times table. Divide a number by 3, 4 and 8. Solve word problems involving the 3, 4 and 8 times tables. Solve word problems involving the division of 3, 4 and 8.	Multiply by 6, 7, 9, 11 and 12. Divide by 6, 7, 9, 11 and 12. Divide to find quotient and remainder. Solve word problems involving multiplication and division. Multiply without regrouping. Multiply with regrouping. Divide without regrouping. Divide with regrouping. Find the quotient and remainder in division. Solve word problems involving multiplication and division.	Find multiples and common multiples. Find factors and common factors. Identify prime and composite numbers. Recognise square numbers and cube numbers, and use the notation for squares (e.g. 42) and cubes (e.g. 23). Multiply numbers up to 4 digits by a 1-digit number. Multiply numbers up to 3 digits by a 2-digit number. Multiply and divide mentally. Multiply and divide numbers by 10, 100 and 1000. Divide 3-digit and 4-digit numbers. Solve word problems involving addition, subtraction, multiplication and division, and a combination of these.	Multiply numbers up to 4 digits by a 2-digit whole number. Divide numbers up to 4 digits by a 2-digit whole number. Interpret remainders in division. Identify common factors, common multiples and prime numbers. Solve problems involving multiplication and division. Solve problems involving the calculation and conversion of units of measure.

Fractions

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Reception</u> Halve sets of items and even numbers by sharing into 2 equal groups.	Show a half. Show a quarter. Group/share things to get a half or a quarter. Find a half or a quarter of a group of things.	Make and show halves, quarters and thirds. Name and write a fraction. Name fractions that make one whole. Compare and order fractions. Count wholes with halves, quarters and thirds. Find part of a set and a quantity.	Count in tenths. Make number pairs that form one whole. Add and subtract two fractions. Find and list equivalent fractions. Write a fraction in its simplest form. Compare fractions. Find part of a set and fraction of a number. Share a number equally. Write fractions on the number line. Write fractions that are greater than 1. Solve word problems involving fractions.	Count in hundredths. Write and show mixed numbers on a number line. Find equivalent fractions. Simplify fractions and mixed numbers. Add and subtract fractions. Solve word problems involving fractions.	Find equivalent fractions of a given fraction. Recognise mixed numbers and improper fractions and convert from one form to the other. Compare and order fractions. Add and subtract fractions. Multiply proper fractions and mixed numbers by whole numbers.	Find equivalent fractions using common multiples. Simplify fractions using common factors. Compare and order fractions. Add and subtract fractions. Multiply proper fractions. Divide proper fractions by whole numbers. Relate division of whole numbers to fractions and decimals.

Decimals

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
				Recognise and write tenths. Recognise and write hundredths. Compare numbers with the same number of decimal places. Complete number patterns involving decimals. Round decimals with one decimal place to the nearest whole number. Recognise and write decimal equivalents of $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$. Divide a 1- or 2-digit number by 10 and by 100.. Solve simple measure and money problems involving decimals.	Read and write decimals up to three decimal places. Compare and order decimals up to three decimal places. Write fractions as decimals. Add and subtract decimals. Round decimals with two decimal places to the nearest whole number and to one decimal place. Solve problems involving decimals up to three decimal places.	Relate division of whole numbers to fractions and decimals. Write fractions as decimals. Tell the place value of digits in a decimal number. Multiply and divide decimals with 1-digit and 2-digit whole numbers.

Percentage

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
					Recognise the per cent symbol (%). Find percentages of a given number. Interpret a percentage as a fraction of an amount.	Calculate the percentage of a number and a quantity. Use percentage to describe changes. Use percentage to compare.

Length

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Nursery</u> To understand and use the words 'long' and 'short'. <u>Reception</u> To be able to compare and order by size, length and time. Measure end-to-end length, compare lengths and use non-standard units of measurement.	Compare the length of objects. Measure the length of objects.	How to measure length in metres (m). How to measure length in centimetres (cm). When to use cm or m to measure length. How to compare and order length. How to measure and draw lines. How to solve word problems on length.	Write length in metres (m) and centimetres (cm). Convert length from m and cm to cm. Convert length from cm to m and cm. Write length in kilometres (km) and metres (m). Convert length from km and m to m. Convert length from m to km and m. Compare different lengths. Solve word problems on length.	Measure and estimate length. Convert units of length.	Convert measurements of length. Solve problems involving measurements.	

Area and Perimeter

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
			Measure the total length around a shape. Find the perimeter of figures using a square grid . Find the perimeter of figures in centimetres (cm) and metres (m). Find the perimeter of squares and rectangles	Measure perimeter in different units.	Find the perimeter of a figure. Find the area of a figure. Use scale diagrams to find the perimeter and the area of a figure. Estimate the area of a figure.	Find the perimeter and the area of rectangles, triangles and parallelograms. Use formulae to find the area of rectangles, triangles and parallelograms. Use the area of rectangles to find the area of other types of polygons.

Volume

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Nursery</u> Start to use the language of 'full' and 'empty'. <u>Reception</u> Use the language 'empty', 'full' and 'half full' to describe how much is in a container. Measure the capacity of containers. To describe and compare different capacities.	Compare volume and capacity. Use half and a quarter to describe volume. Find volume and capacity.	Compare volume. Measure volume in litres (l) and millilitres (ml). Solve word problems on volume.	Measure volume in millilitres (ml) and litres (l). Measure capacity in ml and l. Write volume in ml and l. Write capacity in ml and l. Solve word problems on volume and capacity	Measure and estimate volume. Convert units of volume.	Find and compare the volumes of solids. Find and compare the capacity of rectangular boxes. Estimate volume and capacity. Convert units of volume. Solve word problems involving volume.	Find the volume of solids by counting unit cubes. Calculate the volume of cubes and cuboids in standard units (mm³, cm³, m³ and km³). Solve problems involving volume.

Geometry

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Nursery</u> Identify and name some 2d shapes, circles, triangles, rectangles and squares. Use flat and solid shapes to build with. <u>Reception</u> Identify similarities and differences across a range of criteria, for example by colour, shape, size, texture and function. Sort by colour, shape, size, texture, orientation and function. To compare and order by size, length and time. recognise language associated with 2D shapes, specifically triangles, squares, rectangles, circles. Understand and use positional language. Compose 2D shapes using tangrams and pattern blocks. Recognise 3D shapes and to build with 3D shapes.	Name solids and shapes. Look for shapes in solids. Group shapes. Make and complete patterns with shapes.	Name triangles, quadrilaterals and polygons. Identify the number of sides and vertices of a shape. Identify the lines of symmetry of a shape or figure. Form different figures with shapes. Name the shapes that make up a figure. Sort shapes. Draw figures on a square grid and a dot grid. Make and complete patterns. Tell how patterns are formed from shapes. Move shapes. Turn shapes. Recognise flat faces and curved surfaces. Name and describe spheres, cuboids, cubes, cylinders, cones, pyramids and prisms. Identify the number of faces, edges and vertices of a shape. Fold two-dimensional shapes into three-dimensional ones. Group shapes in different ways. Form structures with shapes. Make patterns with shapes.	Recognise an angle. Find angles in shapes. Find a right angle, an acute angle and an obtuse angle. Compare the sizes of angles. Make a half turn, a three-quarters turn and a full turn.	Identify acute and obtuse angles. Compare and order angles. Compare and classify triangles and quadrilaterals. Identify lines of symmetry in 2-D shapes. Complete a simple symmetrical figure with respect to a specific line of symmetry.	Identify acute angles, right angles, obtuse angles and reflex angles. Draw and measure given angles. Identify angles on a straight line and angles that meet at a point. Find unknown angles in squares and rectangles. Identify regular polygons. Identify 3-D shapes from 2-D drawings.	Recognise angles that meet at a point, angles on a straight line, and vertically opposite angles. Find unknown angles in triangles, quadrilaterals and regular polygons. Identify the radius, diameter, circumference and centre of a circle. Draw 2-D shapes using given dimensions and angles. Identify and draw nets of 3-D shapes.

Mass

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Nursery</u> To compare heavy and light objects. <u>Reception</u> To understand the mass of different objects.	Compare the mass of objects. Find the mass of objects.	Measure mass in kilograms (kg). Measure mass in grams (g). Compare and order mass. Solve word problems on mass.	Read the scales for mass in kilograms (kg) and grams (g). Solve word problems on mass.	Measure and estimate mass. Convert units of mass.	Convert measurements of mass. Solve problems involving measurements.	

Temperature

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
		Read a thermometer. Measure and write down the temperature			Tell the temperature. Solve problems involving measurements.	

Money

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Reception</u> To recognise 1p, 2p, 5p and 10p coins. To pay for items using a combination of these coins. To calculate change from 10p.	Recognise coins. Recognise notes.	Name coins and notes. Count an amount of money. Show amounts of money in different ways. Exchange coins and notes. Compare amounts of money. Calculate change. Solve word problems on money.	Name the amount of money in pounds and pence. Use different ways to show the same amount of money. Add money in pounds and pence. Subtract money in pounds and pence. Calculate change in pounds and pence. Solve word problems on money.	Count an amount of money and write it using decimals. Compare different amounts of money. Round money to the nearest £ and to the nearest £10. Estimate total amounts of money. Solve problems involving money.		

Time

Spiral Curriculum EYFS	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
<u>Nursery</u> To begin to sequence using 'First', 'Now' and 'Next' <u>Reception</u> Compare and order by size, length and time. To talk about time in terms of night and day, days of the week and months of the year. Use language related to time and to be able to sequence events.	Tell time to the hour. Tell time to the half hour. Compare different times. Recognise dates on a calendar.	Tell and write the time to 5 minutes. Draw hands on a clock face to show time. Find the duration of time. Find the ending or starting time. Compare and sequence intervals of time. Know the number of minutes in an hour. Know the number of hours in a day.	Tell and write time in a.m. and in p.m. Tell and write time using "past" and "to". Tell and write time shown on different types of clocks. Measure time in seconds, hours and minutes. Find starting time, ending time and duration. Change minutes to seconds, and seconds to minutes. Find the number of days using a calendar. Know the number of days in each month, year and leap year.	Tell time using the 24-hour clock. Change time in minutes to seconds. Change time in hours to minutes. Change time in years to months. Change time in months to years. Find the duration, starting time and finishing time. Solve word problems on time.	Convert measurements of time. Solve problems involving measurements.	

Graphs

Spiral Curriculum Reception	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
To be able to collect and represent data sets.		Read information from pictograms, block diagrams, tally charts and tables. Make pictograms, block diagrams, tally charts and tables. Solve problems using information from pictograms, block diagrams, tally charts and tables.	Draw picture graphs and bar graphs. Read and interpret bar graphs. Solve problems using information from bar graphs.	Use a table to show information. Draw, read and interpret tables, picture graphs, bar graphs and line graphs. Solve problems using information from tables and graphs.	Read and interpret information in a timetable. Read, interpret and complete information in a table. Read and interpret information from a line graph. Solve word problems using information from a line graph.	Calculate and interpret the mean as an average. Draw and read pie charts. Draw and read graphs. Solve problems using information provided by graphs.

Position and Movement

Spiral Curriculum Reception	Spiral Curriculum Year 1	Spiral Curriculum Year 2	Spiral Curriculum Year 3	Spiral Curriculum Year 4	Spiral Curriculum Year 5	Spiral Curriculum Year 6
	Name positions in a race and in a queue. Name positions from the left and from the right. Use words such as before, after, next to, last and between to name positions. Describe positions. Describe movements. Describe turns.			Describe positions using coordinates. Plot points and form figures on the grid. Describe movement including translation of figures.	Write the coordinates of points. Describe translations and reflections. Find the position of a shape after translation or after reflection.	Use coordinate grids with negative numbers. Describe positions of points with coordinates. Draw, translate and reflect simple shapes on the coordinate plane.