Whole School Maths Overview

Here at St Chad's we follow the **'Maths No Problem'** scheme of work from Year 1 to 6. This scheme has been adopted from the Singapore method of teaching and learning. This is taught through the use of concrete apparatus, pictorial images and finally abstract representations (numbers and mathematical symbols). This is called the CPA approach (concrete-pictorial-abstract). Teachers will use the scheme and continue to respond and adapt to the needs of their own class therefore some topics may be taught slightly earlier or later. Reception class are following a similar Mastery scheme called White Rose. We formally assess your children 3 times a year, towards the end of each term. These help alongside teacher assessments and assists teachers in checking whether your child has reached the standards expected for their year group. Teachers will use 'consolidation days' to support progress and address misconceptions. The **Maths No Problem programme** has been designed to include 'White Space' teaching. This means that there are spaces throughout all chapters for teachers to recap key objectives and skills over a longer period.

Please be aware that this is a guide and some topics may move to later in the academic year, depending on pupil needs and gaps in learning which may have occurred following Covid. This will be based on regular teacher assessment.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	**Numbers- using numbers 1-5** Count reliably from numbers 1 to 5. **Geometry- Shape, space and measures: Shape and money** Shape: Explore characteristics of everyday objects and shapes. Recognise, create and describe patters. Money: Use everyday language to talk about money **Numbers- securing numbers 1-5** Order numbers. Say numbers 1 more and 1 less. Addition and subtraction facts.		**Numbers –using numbers 1-10** Counting from 1 to 10. **Geometry- Shape, space and measures** Measures: Use everyday language to talk about size, weight and capacity to compare quantities and objects to solve problems. Shape: Explore characteristics of everyday objects and shapes. Recognise, create and describe patterns. Time: Use everyday language to talk about time to compare quantities to solve problems. **Numbers –securing numbers 1-10** Order numbers and say which is one more or one less. Use quantities and object. Add and subtract two single-digit numbers. Counting on or back to find an answer.		**Numbers- Using numbers 1-20** Count reliably with numbers from 1 to 20. **Numbers- Securing numbers 1-20** Place numbers in order and say which is one more or one less. Use quantities and objects to add and subtract two single digit numbers. Solving problems including doubling and halving. **Geometry -Shape, space and measures** Position- Use everyday language to talk about position and distance. Compare quantities and objects to solve problems. **Gap consolidation** Teacher will use assessment for learning to identify and plan to gap filling activities.	
Year 1	**Number and place value: Numbers 1 to 10** Count forwards and backwards to 10 accurately using objects, images and numerals. Understanding and exploring '0' Compare and order numbers- 1 more/1less than any number. **Addition and Subtraction within 10** Number bonds. Addition and subtraction within 10 – counting on, inverse operations, solving problems through pictures. **Geometry: Position and direction** Using and naming positional language- left and right. **Number and place value- numbers to 20** Counting and writing numbers to 20 in words and numerals. Comparing and ordering numbers. **Addition and subtraction within 20** Adding by counting on from the largest number. Add by making 10 (4+7 = 10+1) Using part whole models to partition tens and ones when		**Addition and Subtraction within 20** Consolidation from Autumn learning. Number facts **Geometry- Shapes and patterns** Recognise basic 3D and 2D shapes in the everyday environment. Grouping shapes. Making patterns using common 2D shapes. **Measurement- height and length** Comparing length and height using key vocabulary. Measure objects using items such as pencils or books. Introduce rulers. **Numbers and place value- numbers to 40** Counting to 40 using number lines and 100 squares. Counting in tens and ones using base 10 (concrete apparatus). Compare numbers using number bonds. Making number patterns. **Addition and subtraction** Solving word problems using visual representations. **Multiplication**		**Multiplication and Division** Grouping and sharing equally. Solving word problems. **Fractions** Making halves and quarters by splitting shapes into equal parts. **Number and place value- Numbers to 100** Counting to 100. Understand the value of the tens and ones in a 2digit number. Compare and order numbers. Making number patterns. **Measurement- Time, Money, Volume, Capacity and Mass** Telling the time to the hour and half hour. To sequence events using next, before, after. Estimate an amount of time using seconds, minutes and hours. Using a calendar to learn the days of the week and months of the year. Recognise coins. Compare volume and capacity using 'more than', 'less than' and 'empty' Describing volume using 'half' and 'quarter'. Comparing and finding the mass of objects using 'heavier than and	

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	adding. Subtracting by counting back from the largest number.	Making and adding equal groups. Organise objects into equal rows. Making doubles.	'lighter than'. **Geometry- Position and Direction** Describing patterns, movements and turns. **Gap consolidation** Teacher will use assessment for learning to identify and plan to gap filling activities.
Year 2	**Number and place value: Numbers 100** Counting up to 100 using concrete objects. Count in ones and tens. Recognising patterns. **Addition and Subtraction within 100** Adding 1 and 2 digit numbers without and with renaming. Subtracting 2 digit numbers. Adding three 1-digit numbers. **Multiplication and Division 2, 5 and 10** Use concrete materials to count in 2, 5 and 10s. Seek patterns and investigate links between these tables. Solve word problems. Dividing through grouping and sharing. **Measurement- Length** Measure length in meters, centimeters using 'greater than' and 'less than'. Solving addition, multiplication and division word problems involving measurement. **Measurement- Mass** Use weighing scales to explore and kilograms and grams. Compare the mass of different objects. **Measurement-Temperature** Estimate and read temperature in Celsius using a thermometer.	**Statistics- Picture Graphs** Read, interpret and create picture graphs. **Problem solving** Gap consolidation- word problems focusing on previous chapters covered. **Measurement- Money** Identify standard UK coins. Count coins in £ and p. Count notes in sequences of 5 and 10. Create values of money using different coins. Solve more complex word problems using bar modelling. **Geometry- 2D and 3D shapes** Identify and explore the properties of 2D and 3D shapes- looking at faces, vertices and edges. Construct shapes using patterns and symmetry. Recognise and seek patterns. Move objects on a square grid using quarter, half and three quarter turns both clockwise and anti-clockwise. **Fractions** Recognise halves and quarters and equivalent fractions. Compare and order similar fractions. Finding fractions of whole numbers (half, quarter and third)	**Measurement- Time** To tell and write time to 5-minute intervals. Sequencing events of the day using analogue clocks and pictures. Find the duration of time. Comparing durations of times. **Measurement- Volume** Compare volume in different sized containers using greater than and less than. Use litres and millilitres whilst looking at how many ml there are in a L. Solve word problems using ml and L **For rest of the Summer term, the Year 2 teacher will cover gap consolidation, revisit topics and use this time to assess the end of Key Stage One objectives.**
Year 3	**Number and place value: Numbers to 1000** Recognising the value of each digit in a 3-digit number. Counting up in hundreds and fifties. Recognising and describing number patterns. **Addition and Subtraction within 1000** Understand the commutative law (450+50=500 50+450=500) Add 3-digit numbers with 1-digit, 2-digit and 3-digit numbers Subtract 1,2 and 3-digit numbers from a 3-digit number Solve problems involving addition and subtraction. **Multiplication and Division** Multiply and dividing by 3, 4 and 8 Understand the commutative law (4x5=20 5x4=20) Find the inverse relationship with multiplication and division. Multiply multiples of 10 by a 1-digit number, multiplying 2-digit numbers by 2-digit numbers. Long division. Solve problems involving multiplication and division.	**Measurement- Length** Use metres and centimetres to measure objects. Convert metres to centimetres and kilometres to metres. Compare and order length. Solve problems involving length along with multiplication and division links. **Measurement- Mass** Measure mass using weighing scales using grams and kilograms. Read values on a scale which are 1kg or more. Solve problems relating to mass using multiplication and division. **Measurement- Volume** Measure volume and capacity in millilitres and litres. Convert millilitres into litres. Solve problems relating to volume and capacity. **Measurement- Money** Identify and count in denominations of notes and coins. Find multiple ways of showing an amount to money. Adding pounds and pence separately. Calculating the 'change' in a problem. Different ways of making £1. **Measurement- Time**	**Statistics- Picture and Bar Graphs** Read, construct and interpret both picture and bar graphs. **Fractions** Count in tenths. Adding and subtracting fractions with the same denominator. Find equivalent fractions using a variety of methods. Simplify fractions. Compare fractions with different denominators. Subtract fractions from a whole amount. Using bar models to solve word problems involving fractions. **Geometry- Angles** Identify angles on the inside and outside in objects and letters. Exploring the relationship between number of angles and number of sides. Compare angles using terms 'right angle' and 'acute angle'. **Geometry- Lines and Shapes** Identify, Create and define perpendicular lines in everyday objects Identify vertical and horizontal links. Draw 2-D shapes and create 3-D shapes. Describe the properties of 2-D and 3-D shapes.

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		Use a.m. and p.m. to identify morning or afternoon/evening. Compare analogue and digital time. Tell the time using 24-hour notations. Measure the passage of time in hours and minutes. Convert seconds into minutes and how many days are in a month (which months have 31, 30 and 28/29 days)	**Measurement- Perimeter of figures** Find the perimeter of basic shapes using grid/square paper. Create shapes with a specific perimeter. Calculate the perimeter of rectangles and squares using multiplication and addition **Gap consolidation** Teacher will use assessment for learning to identify and plan to gap filling activities.
Year 4	**Number and place value: Numbers to 10,000** Counting in thousands, hundreds and twenty-fives Understanding the place value of each digit in a 4-digit number. Comparing and ordering numbers. Finding 100, 10, 1 more and less than a number/. Counting in sixes, sevens and nines. Rounding numbers to the nearest 10,100 and 1000. **Addition and Subtraction within 10,000** Adding and subtracting 4-digit numbers with and without renaming. Exploring mental strategies to add and find the difference. Solving multi-step problems involving addition and subtraction. **Multiplication and Division** Multiplying by 6, 7, 9, 11 and 12. Dividing by 6, 7, 9, 11 and 12. Divide with remainders. Understanding the commutative law (4x5=20 5x4=20) Solve multi-step problems involving multiplication and division. Multiplying three numbers.	**Multiplication and Division** Multiplying 2-digit and 3-digit numbers with and without renaming. Dividing 2 and 3-digit numbers with and without remainders. Solving problems involving multiplication and division. **Statistics- Graphs** Reading and drawing picture, line and bar graphs. **Fractions** Counting in hundredths. Write mixed number fractions on a number line. Find equivalent fractions Simplify improper fractions. Add and subtract fractions. Solve word problems involving fractions. **Measurement- Time** Telling the time on a 24-hour clock Converting time between minutes and seconds, hours and minutes. Solving problems involving time. **Decimals** Record and write in tenths and hundredths. Convert fractions to decimals. Compare and order decimals. Divide whole numbers by 10 and 100. **Number and Place Value: Roman Numerals** To write Roman numerals to 20 and 100.	**Measurement- Money** Record amounts of money. Compare the total amounts of money. Rounding to the nearest £. Solve money problems involving addition, subtraction, multiplication and division. **Measurement- Mass, Volume and Length** Measure mass, volume and height. Convert units of mass and length. Measure perimeter in centimetres and millimetres. Solve problems in measurement. **Measurement- Area of Figures** Find the area by measuring surface coverages. Measure the area by counting squares and half squares. **Geometry- Shape** Identify and compare different types of angles. Classify quadrilaterals. Identify and draw lines of symmetry. **Geometry- Position and Movement** Describe position and movement. Plot co-ordinates. **Gap consolidation** Teacher will use assessment for learning to identify and plan to gap filling activities
Year 5	**Number and place value: Numbers to 1,000,000** Read and write numbers to 100,000 then to 1,000,000 Understanding place value up to 1,000,000. Comparing and ordering numbers. Rounding numbers to the nearest 10, 1000, 10,000 and 100,000. **Addition and Subtraction within 1,000,000** Adding and subtracting numbers to 1,000,000. Exploring a range of methods to add and subtract. Solving multi-step problems involving addition and subtraction. **Multiplication and Division** Multiply and divide 3 and 4-digit numbers by single and double-digit numbers. Finding and defining multiples, factors and common factors. Exploring prime, square and cube numbers. Solving complex problems using all four operations.	**Statistics- Graphs** Reading and interpreting information in tables and line graphs. Comparing line and bar graphs. **Fractions** Diving and multiplying fractions by whole numbers. Add and subtract fractions with different denominators and fractions represented with mixed numbers and improper fractions. Multiply fractions by whole numbers and multiply mixed numbers by whole numbers. Solve word problems involving fractions. **Decimals** Record and write decimals in thousandths. Compare and order decimals. Explore the link between hundredths and thousandths. Add and subtract decimals. **Percentage**	**Geometry- Shape** Measuring angles in degrees using a protractor. Exploring angles that make straight lines and full turns. Drawing lines and angles accurately when creating 2D shapes. Identify regular polygons. **Geometry- Position and Movement** Writing co-ordinates of points. Translate and reflect shapes on a grid. Solve problems involving translations and reflections of shapes. **Measurement** Convert between different units of length, mass and time. Use negative numbers when reading scales, such as thermometers. **Area and perimeter** Calculate the area and perimeter of shapes. Use scale diagrams to find the area and perimeter of figures. Estimating areas.

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		Link hundredths to other equivalent fractions. Convert decimals to percentages.	**Volume** Finding the volume of solid shapes. Explore and compare the capacity of cuboids. Convert between units of measurement for volume, estimate volume and solve problems involving volume. **Roman Numerals** Read and write Roman Numerals up to 1000. **Gap consolidation** Teacher will use assessment for learning to identify and plan to gap filling activities
Year 6	**Number and place value: Numbers to 10,000,000** Identifying numbers between 1,000,000 and 10,000,000. Rounding numbers to 10,000,000. Comparing and ordering numbers to 10,000,000 **Four Operations on whole numbers** Create and solve expressions involving brackets, exponents, multiplication, division, additions and subtraction. Exploring common multiples, common factors and prime numbers. Multiplying and dividing 3 and 4-digit numbers by 2-digit numbers using column multiplication and long division. Estimate the products of multiplication Solve more complex word problems. **Fractions** Simplifying fractions and ordering them from smallest to largest. Adding and subtracting fractions with different denominators and mixed numbers. Dividing fractions by whole numbers. **Decimals** Reading and writing decimals. Dividing and multiplying decimals by 1-digit numbers with no regrouping or renaming. Write fractions as decimals. Divide decimals by 1 and 2 digit numbers. **Measurement** Converting units of measure using fractions and decimals. **Word Problems** Solving complex word problems using the 4 operations and bar model diagrams.	**Percentage** Calculating percentages of numbers and quantities. Finding the percentage of a quantity measured in amounts involving litres and millitres. Learn how to use percentage to compare numbers and amounts. **Ratio** Comparing quantities and using fractions to represent this. Solve problems using ratio. **Algebra** Understanding patterns and learning how to tabulate to help identify patterns. Exploring how we can express the relationships between two numbers using a symbol or a letter. Writing algebraic expressions for each of the 4 operations. Writing and using formulae. **Area and perimeter** Exploring the area of rectangles, triangles and parallelograms. **Volume** Exploring volume of cubes and cuboids and creating formulas. Estimating and calculating total volumes using a formula. Solving problems relating to volume, using division and multiplication. **Geometry- Shape** Exploring angles and identifying rules for opposite angles and adjacent angles Angles in quadrilaterals and triangles. Naming parts of a circle and investigating angles within a circle. Practise precision drawing of quadrilaterals and triangles. Drawing nets for 3D shapes accurately. **Foundations** Foundational learning of position and movement, graphs, averages and negative numbers **Gap Consolidation**	**SATs** 3 Standardised Assessment Tasks: 1 x arithmetic and 2 x reasoning papers. **Position and Movement** Describing positions of shapes on a grid with all 4 quadrants Use algebraic expressions to describe positions and movements. **Graphs and Averages** Finding the mean. Reading pie charts and line graphs with more complex scales. Solving problems involving graphs and pie charts. **Negative Numbers** Consolidating understanding of negative numbers by adding and subtracting. **Some learning may be covered at an earlier date in order to adequately prepare children for their SATs.**

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Love, Joy, Peace, Patience, Kindness, Goodness, Faithfulness, Gentleness, Self-Control