St Stephen's CofE First School
Maths Progression document

The assessment framework is structured to set out progression in the 7 areas of disciplinary knowledge of the mathematics curriculum: Number and place value, addition and subtraction, multiplication and division, fractions, measurement, geometry and statistics. All of these are interwoven with the substantive knowledge and concepts of fluency, reasoning and problem solving. This framework is designed to inform how we plan for children to improve year by year and assess how well they are improving. Progression is a cumulative experience of using and applying disciplinary knowledge gained and made secure by repeated practice in different contexts. Learning is embedded by the application of what has previously been learned and remembered into new concepts.

CRST Progression in Mathematics in EYFS

Nursery Progression Map		
Mathematical language	**Number**	**Pattern in Number**
• Compare amounts – lots more, same • Compare sizes, weights, etc using gesture and language – bigger, smaller, little, high low, tall, heavy • Take part in finger rhymes with numbers	• Compare amounts • Begin to recognise 0-10 • Develop counting like behaviour – saying some numbers in sequence	• Count in every-day contexts – not always accurate
• Take part in number and shape rhymes and songs • Say numbers	• Recite numbers up to and beyond 5 • Recognise numerals e.g. special number • Recognise symbols	• Solve real life problems with numbers up to 5
• Respond to mathematical language	• Say one number for each item • Count things and repeat the last number e.g. 1, 2, 3, 3 cars	• Identify patterns around them • Use patterns in collage etc.
• Talk about 2D and 3D shapes • Use informal language	• Recognise an increasing number of numerals	• Count in rhymes
• Explore different weight, capacities etc.	• Match numerals to amounts	• Recognise the sequence of numbers to 5
• Use correct vocabulary to describe – big, small		
• Talk about patterns around them using informal language		
• Compare quantities – less, fewer than, more than • Understanding position – up, down, in front of, behind, in, under, beside, between • Talk about shape using formal language – sides, corners, straight, flat, round • Make comparisons using mathematical language between size, shape, weight, capacity	• Show finger numbers up to 5 • Subitise to 3 • Know the last number they reach is the total (Cardinal Principle) • Link numerals and amounts up to 5 • Recognise numerals 0 - 10	• Say one number for each item in order • Extend and create patterns • Correct an error in a simple repeating pattern ABAB

	• Describe a familiar route • Discuss routes and locations e.g in front of, behind • Begin to describe a sequence of events using words such as first, then • Create patterns and notice and talk about an error in a simple repeating pattern • Subitise to 3		

	Reception Progression Map		
	Mathematical language	**Number**	**Pattern in Number**
	• Use comparative language – more than, less than, fewer, the same as, equal to • Say names of numbers up to 10	• Identify smaller numbers within a number • Explore using subitising • Place objects into 5 frames and 10 frames • 1-1 correspondence with larger numbers • Link the numeral to the value	• Verbally count beyond 10 - 20 • Recognise the pattern of the counting system • Identify groups of the same number of things
	• Say the names of numbers up to 20	• Which pairs make a given number • Explore numbers to 10 • Count objects, actions and sounds • Subitise regular pattern e.g. dice	• Compare numbers – which group of numbers has more/less
	•	• Begin to recall number bonds	• Link to composition of numbers and begin to spot doubles • Begin to share equally - halving
	• Discuss patterns	• Practice subitising regular and irregular patterns • Explore composition of number to 10 e.g. doubles • Partition numbers within 10 – part whole and put them back again	• Understand the one more than/one less than relationship between consecutive numbers

	• Subitise up to 5 • Compare length, weight, capacity e.g. “this box is heavier than this box” • Use formal and informal language to describe 2D and 3D shapes e.g. straight, curved • Make a deliberate mistake in pattern and discuss how to fix it.	• Deep understanding of numbers to 10 including the composition of each number • Automatically recall number bonds up to 5 including subtraction and some in 10 • Subitise up to 5 – regular and irregular patterns	• Verbally count beyond 20 • Recognise the pattern of the counting system • Compare quantities up to 10 in different contexts, recognizing when one quantity is greater than/less than/ or the same • Explore and represent patterns within numbers up to 10 including odds and evens, double facts, sharing up to 10

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	**Number** Opportunities for settling in, introducing the areas of provision, getting to know the children. Match and Sort Compare amounts Counting to 5 Say one number for each item in order **Measure, Shape and Spatial thinking** Key times of day, class routines. Exploring the continuous provision inside and out. Where do things belong? Positional Language Compare size, length & capacity Exploring time. How long does it take to…Can I go faster? Circles and Triangles Positional language Measuring heights	**Number** Representing 1,2 & 3 Comparing 1,2 & 3 Composition of 1,2 & 3 Match and sort Representing numbers to 5 One more and one less **Measure, Shape and Spatial thinking** Exploring Pattern Positional language Circles and triangles Comparing objects: size, length, weight, capacity Describe sequences of events Shapes with 4 sides Time	**Number** Representing numbers to 5 One more and one less Introducing 0 Ordinal Numbers Comparing Numbers to 5 Composition of 4 and 5 **Measure, Shape and Spatial thinking** Comparing objects: size, length, weight, capacity Describe sequences of events Time Compare Mass (2) Compare Capacity (2)	**Number** 6, 7 & 8 Making pairs Combining 2 groups 9 & 10 Comparing numbers to 10 Bonds to 10 **Measure, Shape and Spatial thinking** Length & Height Time 3D-shape Pattern (2)	**Number** Building Numbers Beyond 10 Counting Patterns Beyond 10 Adding More Taking Away **Measure, Shape and Spatial thinking** Spatial Reasoning (1) Match, Rotate, Manipulate Spatial Reasoning (2) Compose and Decompose	**Number** Doubling Sharing & Grouping Even and Odd Deepening Understanding Patterns and Relationships **Measure, Shape and Spatial thinking** Spatial Reasoning (3) Visualise and Build Spatial Reasoning (4) Mapping

Year 1	**Numbers to 10** We will consolidate our understanding of the value of numbers to 10, including 0. We will be learning how to order, compare and understand all numbers to 10 and work with them fluently and accurately. We will begin to understand the concept of number bonds and we will begin to learn to record work to solve problems. **Number bonds** We will consolidate our understanding of how two numbers can be added to make a bigger number. We will explore different ways to make numbers up to 10 and create stories from what we have learnt. **Addition to 10** We will find different ways of adding to 10. We will learn how to use the part-part-whole diagram and begin to lay the foundations of the inverse of addition. We learn to make our own addition equations in order to support the deeper understanding of the processes of addition. **Subtraction within 10** We will learn that subtraction equations can be done in three ways; by crossing out, by using number bonds and by counting back. We will continue to use our concrete apparatus and pictorial	**Positions** We will deepen our understanding of positional language (first, second, third) as well as directional language for right and left. **Numbers to 20** We will now look at numbers up to 20 and in particular focus on numbers between 10 and 20. We will be able to confidently count and write numbers to 20, compare and order numbers and see patterns within 20. **Addition and subtraction within 20** We will learn different ways to add and subtract numbers within 20. **Shapes and Patterns** We will find out about different types of 2d shapes and some basic 3d shapes. We will be able to talk about the properties of basic 2d shapes and some solid shapes. We will learn to group shapes according to different criteria. This will also lead to recognising, creating and continuing a pattern, as well as generalising patterns.	**Length and Height** We will begin to understand the concept of length. We will compare different lengths and describe whether something is taller, longer, shorter or higher. We will learn how to measure two items fairly for comparison using items and body parts before moving on to measuring using a ruler. **Numbers to 40** We will be exploring numbers to 40 in a variety of ways. To start with we will focus on counting to 40 in different ways and writing numbers to 40. Then we will compare numbers and look at number patterns. **Addition and Subtraction word problems** We will be counting, adding and subtracting in a real life context. We will use pictures and other representations to help us visualise problems. We will be applying our knowledge of number bonds and simple bar models to represent word problems. We will be comparing – specifically looking at how many more or how many fewer/less.	**Multiplication** We will learn the foundations of equal grouping, repeated addition, arrays and doubling. We will learn to apply this knowledge to solve word problems. We will be using images from our previous learning such as tens frames and number tracks. **Division** We will be learning how to share small numbers into a specific number of groups. Then we will be given a number of items, but will need to work out how many will go into each group by sharing equally. **Fractions** We will be learning about making halves and quarters before moving on to making the connection between fractions and division.	**Numbers to 100** We will begin by reinforcing our previous learning by counting in 10s and 1s. We will use our number bonds to partition numbers. Then will learn to compare numbers to 100 and find number patterns looking at one hundred charts. **Time** We will learn to tell the time to the hour and half hour, using terms such as 'next', 'before' and 'after', estimating durations of time and finally comparing time. We will be exploring analogue clocks and telling the time to the hour and half hour. We will look at a timetable for an average day and then determine the order of events using specialised terminology. We will estimate lengths of time and then compare measures of time.	**Money** We will be learning to recognise different coins and notes and using our number bonds to work out how much items cost. **Volume and Capacity** We will be learning to compare volume and capacity, using terms such as 'more than' and 'less than'. We will measure volume and capacity using non-standard units. We will be describing volume using terms such as 'half' and 'quarter'. **Mass** We will be comparing mass using terms such as 'heavy/heavier' and 'light/lighter'. We will then measure mass using non-standard units. **Space** We will be exploring the elements of position, movement and turns. We will be learning to describe the position of one object relative to another, using terms such as 'top', 'middle' and 'bottom'; 'around', 'close', 'near' and 'far'; and 'on top of', 'in front of' and 'above'. When looking at movement we will explore the concepts of 'up and down', 'forwards and backwards', and 'inside and outside'. We will learn about turns, navigating whole turns, half turns, quarter

	representations to support our understanding and we will learn to use maths vocabulary appropriately.					turns and the notion of clockwise and anticlockwise.
Year 2  	**Numbers to 100** We will learn to count to 100, including counting up in 10s. We will compare numbers using what we know about place value. We will embed our number bonds and apply them. We will explore numbers to see patterns within 100. **Addition and Subtraction** We will learn to add and subtract mentally by applying our number bonds diagrams as well as using the standard column method. **Multiplication of 2, 5 and 10** We will be using concrete apparatus and images to investigate multiplication by 2, 5 and 10. We will learn to look for patterns in multiplication and we will understand the commutative law.	**Multiplication and Division of 2, 5 and 10** We will learn about both the multiplication and division of 2, 5 and 10. We will look at different ways of sharing including sharing and grouping before learning about division by 2, 5 and 10. We will also investigate links between multiplication and division and odd and even numbers. **Length** We will deepen our understanding of how to measure length. We will begin by understanding what a metre is and what centimetres are and then progress to using them in real life contexts. **Mass** We will be learning about mass in the context of kilograms and grams. We will learn how to read scales, to compare the weight of different objects and to solve word problems in the context of mass.	**Temperature** We will learn to measure temperature. We will learn about Celsius, how to read thermometers and we will look at what kinds of temperatures we can measure. **Picture Graphs** We will learn how to read, interpret, analyse and construct our own picture graph with confidence. **More Word Problems** We will be learning to use addition and subtraction to help solve problems. We will learn to make the decision to use addition and subtraction. We will use the bar models to think about what is the same and what is the difference. **Money** We will learn to write and count money. We will learn to represent money using £ and p. We will be reinforcing previous counting methods using 5s and 10s to count quickly and efficiently. We will learn to show equal amounts of money and to exchange money. We will solve problems involving money and using bar modelling.	**Two Dimensional Shapes** We will be learning about 2d shapes and their different properties. We will explore how to draw shapes, make patterns with shapes and turn shapes using familiar language. We will be identifying sides of shapes and their vertices before moving onto lines of symmetry. We will recreate shapes using blocks and sorting the basic shapes before we learn to draw shapes using square grids and dot grids. **Three Dimensional Shapes** Following on from our learning about 2d shapes, we will be learning to recognise, describe and group 3d shapes, forming structures with them and making patterns using 3d shapes.	**SATs** We will take two standardised assessment tasks (SATs) – one arithmetic paper and one reasoning paper. **Fractions** We will embed our understanding that fractions are equal parts and will focus on halves, quarters and thirds. We will learn to name fractions of the same denominations. We will understand how many quarters, halves and thirds make a whole. We will explore how to order and compare fractions. We will count in fractions and begin to learn how to find fractions of a set of objects or part of a quantity.	**Time** We will learn to tell the time to the nearest 5 minutes on analogue clocks. We will learn how to find the duration of time, the end of a length of time, the beginning of a length of time and finally compare lengths of time. **Volume** We will learn to compare volumes of containers, measuring in litres and millilitres and solving word problems associated with volume. **NB:** In order to ensure your child in adequately prepared for the SATs undertaken in May, the class teacher may teach parts of some of the chapters at an earlier date.
Year 3	**Numbers to 1000**	**Multiplication and Division**	**Length**	**Money**	**Picture Graphs and Bar Graphs**	**Lines and Shapes**

 	We will learn numbers to 1000 and focus on the value of each digit: place value. We will learn how to compose and decompose numbers, compare, order and look for patterns. **Addition and Subtraction** We will learn to use formal methods of addition and subtraction where grouping is required. We will learn to solve problems using addition and subtraction, using the bar model as a visual aid.	We will learn to multiply and divide by 3, 4 and 8. We will then use this experience of multiplication and division to solve word problems. **Further Multiplication and Division** We will learn to multiply and divide using both informal and formal methods. We will solve problems such as missing number problems and scaling problems.	We will embed our understanding of measuring length in metres and centimetres before moving on to kilometres. We will learn to convert different units of measurement as well as compare different lengths. We will solve problems in which we will use our mental and procedural skills to solve problems with the aid of the bar model. **Mass** We will be using scales to measure mass in grams and kilograms, reading scales that have different values for each marking. We will then solve some challenging word problems using the bar model. **Volume** We will learn to measure volume using millilitres and litres. We will solve a range of problems involving volume and capacity.	We will embed our previous learning on recognising different denominations (both notes and coins) and the simple addition and subtraction of money. We will then develop the concepts related to addition and subtraction of money using number bonds as a key method. We will then apply our new knowledge to solve word problems using bar modelling as a key strategy. **Time** We will tell the time using 'am' and 'pm', telling the time to the minute, using analogue and digital time by using both the minute and hour hands. We will then learn to use the 24 hour clock and clocks using Roman numerals. We will understand how to measure and compare time in seconds, minutes and hours. We will convert units of time and then find a number of days in lengths of time.	We will be learning about how to create and interpret picture graphs and bar graphs. We will create picture graphs where the pictures can represent more than 1 item. Then we will start to create bar graphs. We will then read and interpret information from bar graphs. **Fractions** We will begin by counting using fractions and then making number pairs (the fraction equivalent to number bonds) before moving on to adding and subtracting fractions. We will explore equivalent fractions and look at simplifying fractions before comparing fractions with different denominators. We will be finding fractions of whole numbers as part of a set and looking at sharing 1 and more than 1. We will apply our learning to solve increasingly sophisticated word problems.	We will be exploring different types of lines in addition to properties of shapes, both 2d and 3d. We will learn to identify perpendicular and parallel lines, followed by horizontal and vertical lines. We will learn the vocabulary to describe 2-dimensional shapes and learn to draw them before making 3-dimensional shapes using nets and clay. **Perimeter of Figures** We will learn to measure the total length around a shape to find its perimeter before moving onto grid paper to measure the combined lengths of each side. We will learn to calculate perimeter by adding all of the lengths together. We will learn to solve problems using perimeter.
Year 4 	**Numbers to 10000** We will embed our understanding of number by counting to 10000 in multiples of 25, 100 and 1000. We will develop our understanding of place value by using concrete apparatus to represent numbers. We will compare and order 4-digit numbers and learn to create and interpret number patterns by using our knowledge of place value.	**Multiplication and Division** We will learn how to multiply and divide by 6, 7, 9, 11 and 12. We will begin to understand mathematical vocabulary such as 'quotient' in relation to division. We will learn how to calculate multiplication equations using the multiplication facts that we know. We will understand the difference between sharing and grouping and we will	**Completion of Further Multiplication and Division** We will learn more about division and will divide 2-digit numbers using chunking and short division: this includes numbers with remainders. We will learn to solve multiplication and division problems using the methods we have learned and will use the bar model to help visualise what the problem is asking us to do.	**Time** We will embed our learning about the 24-hour clock. We will learn how to convert between the 12-hour clock and the 24-hour clock. We will learn to convert between units of time, such as minutes and seconds, and hours and minutes. We will learn how to solve time problems involving conversions and calculating durations of time.	**Money** We will be learning how to count and record in pounds and pence. We will make links between tenths and hundredths and decimal notation for money. We will learn how to compare amounts of money by looking at significant digits and by converting amounts from pounds to pence and vice versa. We will learn how to round money to the	**Geometry** We will be learning to name and compare angles and use this information to help us when classifying triangles and quadrilaterals. We will explore symmetry and symmetrical figures before applying this knowledge to the completion of symmetrical figures. We will draw lines of symmetry on shapes and figures and will combine this knowledge and

	We will learn to round numbers to the nearest 10, 100 and 1000 and use this knowledge to estimate numbers. We will begin to understand that numbers less than one exist. **Addition and Subtraction within 10000** We will learn to add and subtract with numbers up to 10000. We will learn mental methods and column methods for addition and subtraction. We will be encouraged to think about when is the most appropriate time to use each method. We will use the methods taught to solve word problems, visualising the problems using the bar model.	understand the commutative law in multiplication. We will also solve problems involving multiplication and division. **Further Multiplication and Division** We will further develop our understanding of multiplication and division. We will learn how to divide and multiply by 1 and 0 and understand the law of commutativity. We will learn how to multiply three numbers together using our knowledge of multiplication tables. We will use our tables and knowledge of place value to multiply multiple of 10 leading to the multiplication of 2-digit numbers using short multiplication. We will use our knowledge of multiplying multiples of 10 when multiplying multiples of 100 leading to multiplying 3-digit numbers using short multiplication.	**Graphs** We will learn how to interpret picture graphs and bar graphs. We will be introduced to line graphs and how they are used to measure change over time. We will interpret line graphs and use information collated in a table to draw a line graph. We will learn to make predictions based on trends identified in data. **Fractions** We will be using concrete apparatus to learn about mixed number fractions and improper fractions. We will learn about hundredths using concrete apparatus. We will learn how to convert between mixed numbers and improper fractions. We will learn how to add and subtract fractions and we will solve addition and subtraction word problems.	**Decimals** We will be learning how to count, order and record the decimals in different ways. We will begin to understand the equivalence between tenths and hundredths and will be able to compare and order numbers. We will learn to create number sequences using decimals as well as rounding decimals to the nearest whole number. We will explore the link between tenths and hundredths and dividing by 10 and 100.	nearest pound and we will understand contexts in which this would be a useful skill to know, like estimating. We will apply our learning to problem solving – finding totals and calculating change. We will using the bar model to visualise money problems. We will begin to explore unequal sharing in the context of money. **Mass, Volume and Length** We will be learning how to estimate and measure mass, volume and length. We will be learning how to convert units of measure from larger to small and vice versa. We will embed our understanding of measuring perimeter using cm and mm. We will solve problems involving mass, volume and length. **Areas of Figures** We will understand the concept of area by measuring surface coverage, i.e. counting squares before measuring area by using multiplication. We will find areas of figures that have squares and rectangles by counting and visualising. We will learn how to apply our knowledge of finding the area of figures in different orientations.	understanding to sort a variety of 2d shapes. **Position and Movement** We will be learning how to describe the positions of objects and figures. We will understand how we can describe positions on grids using co-ordinates. We will be introduced to the x and y axes and how co-ordinates are written. We will learn how to translate shapes using the language of 'left', 'right', 'upwards' and 'downwards' and will use co-ordinates to describe a figure following a translation. **Roman Numerals** We will learn to write the Roman numerals to 100, exploring patterns involved and exploring other concepts of number whilst learning about this number system.