

St Sebastian's Primary School – Maths Knowledge Progression

	EYFS Know how to...	Year 1 Know how to...	Year 2 Know how to...	Year 3 Know how to...	Year 4 Know how to...	Year 5 Know how to...	Year 6 Know how to...
Number	Counting Children know how to count securely at least 5 objects and correspond correctly when they count. Children know how to give the total group once they have counted. Children know how to count securely at least 10 objects and correspond correctly when they count. Children know how to give the sum of the group once they have counted. Subitising Children start to subitise groups and pictures of groups of 5 objects (including a 5 frame) Children know how to recognise the coins 1p, 2p and 5p Children know how to recognise a group of 5 without counting it (subitise) Composition Children know how to put groups of objects together and count the total (up to 5) Children know how to make amounts up to 5p using 1p, 2p and 5p coins. Children know how to understand and	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.

St Sebastian's Primary School – Maths Knowledge Progression

	accurately use zero Children are beginning to discuss and find bonds to 10 (what's the hidden number?) Children know how to combine two groups to find out how many altogether. Children start to use part part whole models using dots/objects Children know how to build and identify numbers to 20 using a range of resources. Children know that a teen number is made up of tens and ones Number Formation Children know how to write numerals 0-10 with correct formation. Children know that a teens number is made up of 10s and 1s Counting Children know how to count backwards and forwards fluently to 10 Ordering/Comparing Children know how to order 3 or more quantities Children know how to find 1 more/1 less than a number to 10 Children know how to sort, order and compare representations of numbers Composition					
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St Sebastian's Primary School – Maths Knowledge Progression

	Children know how to recognise when the total of 2 groups are the same and call them 'even' Children know how to recognise representations of numbers to 10 using their knowledge of 5 or pairs (tens frames) Ordering/Comparing Children know how to compare items by building patterns using 10s frames, exploring odd and even and grouping into pairs.					
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St Sebastian's Primary School – Maths Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Addition and Subtraction (Whole number)	Children know how to recall number bonds to 5 and 10	Add by counting.	Add numbers without	Add numbers without	Add numbers without	Add whole numbers with more than 4 digits.	Perform mental calculations.
		Add by counting on.	renaming.	renaming.	renaming.	more than 4 digits.	Use estimation to check
	Children know how to find a matching partner number cards and pictures of groups of objects (number bonds to 10)	Make addition stories.	Add numbers with	Add numbers with	Add numbers with	Add numbers mentally.	answers to calculations.
		Write addition equations.	renaming.	renaming.	renaming.	Subtract whole numbers	Use the order of operations.
	Children know how to understand that quantities of groups know how to be changed by adding more	Subtract by crossing out.	Subtract numbers without	Subtract numbers without	Add numbers mentally.	with more than 4 digits.	Solve problems involving
		Subtract using number	renaming.	renaming.	Subtract numbers without	Subtract numbers mentally.	addition and subtraction.
	Children know how to use mathematical stories to show addition and subtraction.	bonds.	Subtract numbers with	Subtract numbers with	renaming.	Use rounding to check	multiplication and division.
		Subtract by counting back.	renaming.	renaming.	Subtract numbers with	answers.	
		Make subtraction stories.	Add three numbers.	Solve word problems	renaming.	Solve word problems	
		Write subtraction equations.	Draw models for different situations.	involving addition and	Subtract numbers mentally.	involving addition,	
		Make a family of addition and subtraction facts.		subtraction.	Solve word problems	subtraction,	
		Add by making 10.			involving addition and	multiplication and division,	
		Add by adding ones.			subtraction.	and a combination of these.	
		Subtract by subtracting ones.					
		Subtract by subtracting from 10.					
		Solve word problems involving addition or subtraction.					

St Sebastian's Primary School – Maths Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Multiplication and Division (Whole number)	Children know that double means twice as many Children know how to find doubles using objects and 10s frames	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,	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.

St Sebastian's Primary School – Maths Knowledge Progression

					and a combination of these.	
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	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Fractions	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				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	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	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.

St Sebastian's Primary School – Maths Knowledge Progression

				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.	nearest whole number and to one decimal place. Solve problems involving decimals up to three decimal places.	
Percentage					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.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to ...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Length	Children know how to use the language: larger, smaller, long, short, tall, heavy, light, fully, empty Children know how to make direct comparisons when describing length and height. Children know how to use language: taller, shorter, longer, narrower	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.	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).	Measure and estimate length. Convert units of length.	Convert measurements of length. Solve problems involving measurements.	

St Sebastian's Primary School – Maths Knowledge Progression

	and wider. Children solve problems involving length, height, capacity, weight		How to measure and draw lines. How to solve word problems on length.	Convert length from km and m to m. Convert length from m to km and m. Compare different lengths. Solve word problems on length.			
Area and Perimeter				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		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 (mm^3 , cm^3 , m^3 and km^3). Solve problems involving volume.

St Sebastian's Primary School – Maths Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Geometry	Children know how to name and recognise circles, triangles, squares and rectangles	Name solids and shapes.	Name triangles, quadrilaterals	Recognise an angle.	Identify acute and obtuse	Identify acute angles, right	Recognise angles that meet
	Children know how to talk about straight and curved sides when discussing shapes.	Look for shapes in solids.	and polygons.	Find angles in shapes.	angles.	angles, obtuse angles and	at a point, angles on a
	Children know how to make pictures and build using shapes.	Group shapes.	Identify the number of sides	Find a right angle, an acute angle and an obtuse angle.	Compare and order angles.	reflex angles.	straight line, and vertically
	Children know how to print with 3D shapes and recognise that some 3D shapes make circles, squares and triangles.	Make and complete patterns with shapes.	and vertices of a shape.	Compare the sizes of angles.	Compare and classify triangles and quadrilaterals.	Draw and measure given angles.	opposite angles.
	Children know how to continue, copy and create a three step repeating pattern.		Identify the lines of symmetry of a shape or figure.	Make a half turn, a three-quarters turn and a full turn.	Identify lines of symmetry in 2-D shapes.	Identify angles on a straight line and angles that meet at a point.	Find unknown angles in triangles, quadrilaterals and regular polygons.
	Children know how to make, describe and sort 3D shapes talking about similarities and differences. They use 3D shapes to make models.		Form different figures with shapes.		Complete a simple symmetrical figure with respect to a specific line of symmetry.	Identify regular polygons.	Identify the radius, diameter, circumference and centre of a circle.
	Children know how to solve shape problems (find the shape that's missing, rotate the shape to fit)		Name the shapes that make up a figure.			Find unknown angles in squares and rectangles.	Draw 2-D shapes using given dimensions and angles.
	Children know how to recognise different		Sort shapes.			Identify 3-D shapes from 2-D drawings.	Identify and draw nets of 3-D 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,				

St Sebastian's Primary School – Maths Knowledge Progression

	representations and rotations of shape. Children know how to use shapes to make new shapes, e.g. triangles to make a square.	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.				
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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Mass	Children know how to talk about weight and balance weighing scales Children know how to make direct comparisons about weight using balance scales to check. Children know how to use language: heavy, heavier than, heaviest, light, lighter than, lightest Children know how to	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.	

St Sebastian's Primary School – Maths Knowledge Progression

	explore capacity and use the language: tall, thin, narrow, wide, shallow, empty, nearly empty, full, half full, nearly full. Children solve problems involving length, height, capacity, weight						
Temperature			Read a thermometer. Measure and write down the temperature.			Tell the temperature. Solve problems involving measurements.	
Money		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.		

St Sebastian's Primary School – Maths Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Time	Children know how to use language: day, night, morning, afternoon, before, after, today, tomorrow, now, next, later. Children know how to sequence days of the week. Children know how to order key events in their daily routines. Children begin to explore the passing of time with sand timers. Children know how to order and sequence important times in their day using: now, before, later, soon, after, then, next Children know how to describe events for different days of the week: yesterday, today, tomorrow	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.	

St Sebastian's Primary School – Maths Knowledge Progression

Graphs			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.
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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...	Know how to...
Position and Movement	Children know how to use simple positional and directional language: next to, on top of, under, over, in, behind, between, beside, through. Children know how to give positional instructions (Beebots) and use their shapes to recreate models, real places and story places Children know how to make maps and plans	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.

St Sebastian's Primary School – Maths Knowledge Progression

	to represent places using different directional language (first, next, then)						
Ratio							Compare quantities and numbers using ratios. Solve problems involving ratios.
Negative Numbers							Add and subtract negative numbers. Use negative numbers in context. Solve problems involving negative numbers.
Algebra							Describe and complete a pattern. Write and evaluate algebraic expressions. Write and use formulae. Solve equations.
Roman Numerals					Read and write Roman numerals for 1 to 20. Read and write Roman numerals to 100.	Write Roman numerals up to 1000. Write years in Roman numerals.	