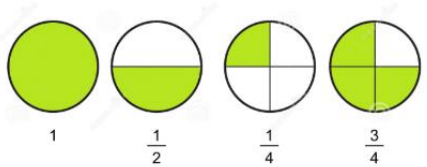
St John's C of E Infant School
Knowledge, Skills and Vocabulary Progression Map
Mathematics

	EYFS	Year 1	Year 2
Number and Place Value	**Knowledge-** ➢ Count accurately to 10, touching each object, saying the number and knowing the last number represents the total. ➢ Count accurately to 20 and beyond. ➢ Subitise up to 5. ➢ Automatic recall of number bonds to 5 **Skill-** ➢ Say how many there might be before you count to give a purpose to counting: ➢ Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; ➢ Understand the concept of odds and evens exploring in practical ways. ➢ Count objects; in a line, in a random order, from a larger group and objects which cannot be touched. ➢ Represent quantities. E.g. pictorial, or symbolic. ➢ Develop the conservation of number. ➢ Develop knowledge of the ordinal, cardinal and nominal aspects of number to 10. **Vocabulary-**	**Knowledge-** ➢ Count to 100, forwards and backwards, beginning with 0 or 1, or from any given number. ➢ Count, read and write numbers to 100 in numerals. ➢ Read and write numbers from 1 to 20 in numerals and words. **Skill-** ➢ Given a number, identify 1 more and 1 less. Identify and represent numbers using objects and pictorial representations including the number line, ➢ Reason about the location of numbers to 20 within the linear number system, including comparing using < > and = **Vocabulary** Use the language of: equal to, more than, less than (fewer), most, least, greater than, less than, tens, ones, digit	**Knowledge** ➢ Count to and across 100, forwards and backwards, beginning from any given number. ➢ Read and write numbers to at least 100 in numerals and in words. **Skill-** ➢ Compose and decompose two-digit numbers using standard and nonstandard partitioning. ➢ Recognise the place value of each digit in a two-digit number (10s, 1s). ➢ Reason about the location of any twodigit number in the linear number system, including identifying the previous and next multiple of 10. ➢ Identify, represent and estimate numbers using different representations, including the number line. ➢ Compare and order numbers from 0 up to 100; use <, > and = signs. ➢ Use place value and number facts to solve problems. **Vocabulary-** Use the language of: equal to, more than, less than (fewer), most, least, greater than, less than, fewer, tens ones, digit

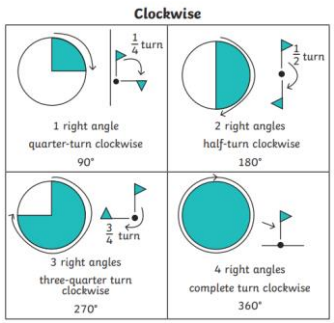
	Number names, greater than, more, less, same, equal, compare		
Addition and Subtraction	**Knowledge-** ➢ Know addition and subtraction facts for each number up to 10. **Skill-** ➢ Find one more and one less to 10. ➢ Understand the concepts of additional and subtraction and associative language.	**Knowledge-** ➢ Know number bonds to 10 with fluent recall. ➢ Compose numbers to 10 from 2 parts, ➢ Partition numbers to 10 into parts. ➢ Recognise odd and even numbers. **Skills-** ➢ Develop fluency in addition and subtraction facts within 10. ➢ Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs.	**Knowledge-** ➢ Recall and use addition and subtraction facts to 20 ➢ Derive and use related number facts up to 100. 1 + 9 = 10, 10+90=100 **Skills-** ➢ Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods fluently. ➢ Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

	Vocabulary- Add, plus, subtract minus, equals,	➢ Represent and use number bonds and related subtraction facts within 20. ➢ Add and subtract one-digit and two-digit numbers to 20, including 0. ➢ Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, ➢ Solve missing number problems such as 7 = ? – 9. **Vocabulary-** Add, plus, subtract minus, equals, number bond, odd, even	a two-digit number and 1s a two-digit number and 10s 2 two-digit numbers adding 3 one-digit numbers ➢ Show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot. ➢ Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. ➢ Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?". **Vocabulary** Add, plus, minus, subtract, equal, odd, even, number bond, difference, tens, ones,
Multiplication and Division	**Knowledge-** ➢ Automatic recall doubles within 10. **Skill-** ➢ Share quantities equally. ➢ Count and add repeated groups of the same amount, repeated addition. **Vocabulary-** Double, share fairly, equal	**Knowledge-** ➢ Count in multiples of 2s, 5s and 10s. **Skill-** ➢ Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. **Vocabulary-** Lots of, array, share equal	**Knowledge-** ➢ Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward. **Skill-** ➢ Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. ➢ Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. ➢ Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot.

			➢ Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **Vocabulary** Lots of, array, share, equal, times, divide
Fractions	**Knowledge-** ➢ Know how to share objects **Skill-** ➢ Share quantities equally.	**Knowledge-** ➢ Know half as 1 of 2 equal parts of an object, shape or quantity. ➢ Know a quarter as 1 of 4 equal parts of an object, shape or quantity. **Skill-** ➢ Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity.	**Knowledge-** ➢ Recognise, find, name and write fractions  of a length, shape, set of objects or quantity. **Skill-** ➢ Write simple fractions, for example $\frac{1}{2}$ of 6 = 3 ➢ recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

	Vocabulary- Half, equal	➢ Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity. **Vocabulary-** Half, quarter, equal	**Vocabulary-** Half, quarter, two quarters, three quarters, equal
Measurement	**Knowledge-** ➢ Begin to understand the language of time (days of the week, months of the year, morning, lunch, evening, tomorrow etc.) **Skill-** Make comparisons between objects [for example, long/short, longer/shorter, tall/short, double/half] mass/weight [for example, heavy/light, heavier than, lighter than] Capacity full/empty	**Knowledge-** ➢ Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **Skill-** ➢ Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] mass/weight [for example, heavy/light, heavier than, lighter than] capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] time [for example, quicker, slower, earlier, later] ➢ Measure and begin to record the following: lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) ➢ Recognise and know the value of different denominations of coins and notes sequence ➢ Place events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	**Knowledge-** ➢ Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. ➢ Know the number of minutes in an hour and the number of hours in a day. **Skill-** ➢ Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. ➢ Compare and order lengths, mass, volume/capacity and record the results using >, < and =. ➢ Find different combinations of coins that equal the same amounts of money. ➢ Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. ➢ Compare and sequence intervals of time.

	Vocabulary - Length- Long, short, longer, shorter, tall longest shortest tallest double, half Weight – heavy, light, heavier than, lighter than Capacity- full, empty half Time- days of the week, months of the year, morning, lunch, evening, tomorrow yesterday	**Vocabulary-** Measure- Heavy, light, heavier than, lighter than, long, short, longer, shorter, tall, taller short, longest, tallest, shortest double, half Time- use language relating to dates, including days of the week, weeks, months and years. O'clock, half past, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening Money- Coins, notes, pounds, pence, amount	➢ Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. **Vocabulary-** Measure- Heavy, light, heavier than, lighter than, long, short, longer, shorter, tall, short, longest, shortest, tallest double, half (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) Time- use language relating to dates, including days of the week, weeks, months and years. O'clock, half past, quarter to, quarter past before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening Money- Coins, notes, pounds, pence, amount, change
Geometry	**Knowledge-** ➢ Name some 2D shapes Circle, square, triangle, rectangle ➢ Name some 3D shapes Cube, Sphere, Cylinder cuboid **Skill-** ➢ Copy, continue and create a repeating pattern. Identify mistakes in patterns. ➢ See, explore and discuss models of common 2D and 3D shapes with varied	**Knowledge-** ➢ Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] **Skill-** ➢ Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	**Knowledge-** ➢ Identify and describe the properties of 2-D shapes, including the number of sides, ➢ Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. ➢ Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. **Skill-** ➢ Compare and sort common 2-D and 3-D shapes and everyday objects.

	dimensions and presented in different orientations (for example, triangles not always presented on their base). ➢ Compose and decompose shapes, recognise a shape can have other shapes within it, just as numbers can. ➢ Know positional language and direction. **Vocabulary-** Pattern, repeating, same, different, turn, side, face, on under, next to, beside, under, on top forward, backwards, sideways. 2D and 3D shape names.	 **Vocabulary-** Half, quarter, three-quarters, Next to, beside, under, over, left, right circle, square, rectangle, triangle, diamond, oval, pentagon hexagon Cube, cylinder, cuboid, sphere, cylinder	➢ Order and arrange combinations of mathematical objects in patterns and sequences. **Vocabulary-** Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).
Statistics			**Knowledge** Construct simple pictograms, tally charts, block diagrams and tables. **Skills** Interpret simple pictograms, tally charts, block diagrams and tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask-and-answer questions about totalling and comparing categorical data. **Vocabulary** Most, least, tally, pictogram block diagram, table,

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When I am a Mathematician I can……	▪ I can count carefully with 1:1 correspondence ▪ I can say number names from 1- 20 and beyond ▪ I can subitise numbers to 5- Instantly recognise amounts. ▪ I know 1 more than any small number. ▪ I know 1 less than any small number. ▪ I can begin to add amounts. ▪ I can begin to subtract amounts. ▪ I know some amounts when numbers are doubled. ▪ I know how to share amounts fairly. ▪ I can spot a simple pattern. ▪ I can create a simple pattern. ▪ I can recognise some 2D and 3D shapes ▪ I can compare size, weight, capacity	▪ I can count carefully with 1:1 correspondence increasing amount. ▪ I can say number names forwards and backwards to 100. ▪ I can write numerals accurately to 100. ▪ I know 1 more and 1 less than any given number. ▪ I can compare numbers using greater than less than symbols. ▪ I know number bonds 10 with quick recall. ▪ I can count in 2's, 5's and 10's ▪ I can double up to at least double 10. ▪ I can use addition to add 2 small numbers. ▪ I can use subtraction from 20. ▪ I can recognise coins to £1 ▪ I can name 2-D and 3-D shapes. ▪ I can explore the properties of 2-D and 3-D shapes ▪ I can tell 0'clock and half past times on a clock. ▪ I can compare height, length, weight, capacity	• I can partition any two-digit number into different combinations of tens and ones, explaining the thinking verbally, in pictures or using apparatus • I can add and subtract any 2 two-digit numbers using an efficient strategy, explaining the method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) • I can recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 – 3 = 4, then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14) • I can recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary • I can identify 1/4 , 1/3 , 1/2 , 2/4 , 3/4 , of a number or shape, and know that all parts must be equal parts of the whole • I can use different coins to make the same amount • I can read scales* in divisions of ones, twos, fives and tens • I can read the time on a clock to the nearest 15 minutes • I can name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.