

## St John the Evangelist Maths Progression in Skills 2

Fractions						
Recognise and write						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>*recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p> <p>*recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>	<p>*recognise, find, name and write fractions, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity.</p>	<p>*count up and down in tenths; recognize that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.</p> <p>*recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>*recognise and use fractions as numbers: it fractions and non-unit fractions with small denominators.</p>	<p>*count up and down in hundredths; recognize that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p>	<p>*identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</p> <p>*recognize mixed numbers and improper fractions and convert one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [for example, <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}</math>].</p>	
Compare						
		<p>*Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></p>	<p>*recognise and show, using, using diagrams, equivalent fractions with small denominators.</p> <p>*compare and order unit fractions, and fractions with the same denominators</p>	<p>*recognize and show, using diagrams, families of common equivalent fractions.</p>	<p>*compare and order fractions whose denominators are multiples of the same number</p>	<p>*use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>*compare and order fractions, including fractions <math>&gt; 1</math></p>
Calculations						

		*write simple fractions, for example $\frac{1}{2}$ of 6 = 3	*add and subtract fractions with the same denominator within one whole [ for example, $5/7 + 1/7 = 6/7$ ]	*add and subtract fractions with the same denominator	*add and subtract fractions with the same denominator and denominators that are multiples of the same number *multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	*add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. *multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = 1/8$ ] *divide proper fractions by whole numbers [for example $1/3 \div 2 = 1/6$
<b>Solve Problems</b>						
			*solve problems that involve all of the above	*solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.		

### Fractions, Decimals and Percentages

<b>Recognise, write and compare</b>						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				*recognise and write decimal equivalents of any number of tenths or hundredths *recognise and write decimal equivalents to $1/4, 1/2, 3/4$	*read and write decimal numbers as fractions [for example $0.71 = 71/100$ *recognise and use thousandths and relate them to tenths,	*identify the value of each digit in numbers given to three decimal places

				<p>*round decimals with one decimal place to the nearest whole number</p> <p>*compare numbers with the same number of decimal places up to two decimal places</p> <p>*solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>hundredths and decimal equivalents.</p> <p>*round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>*read, write, order and compare numbers with up to three decimal places</p> <p>*recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal.</p> <p>*solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}, 1/4, 1/5, 2/5, 4/5</math> and those fractions with a denominator of a multiple of 10 or 25.</p>	<p>*associate a fraction with a division and calculate decimal fraction equivalents [for example, 0.375 for a simple fraction, for example 3/8]</p> <p>*recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p>
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## Ratio and proportion

Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						<p>*solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p> <p>*solve problems involving the calculation/use of percentages for comparison.</p> <p>*solve problems involving similar shapes where the scale factor is known or can be found.</p> <p>*solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</p>

## Algebra

Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 - ? = 9$	*recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	*solve problems, including missing number problems	*solve problems, including missing number problems	*solve problems, including missing number problems	<p>*use simple formulae</p> <p>*generate and describe linear number sequences</p> <p>*express missing number problems algebraically</p> <p>*find pairs of numbers that satisfy an equation with two unknowns.</p>

						*enumerate possibilities of combinations of two variables
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### Measurement

#### Using measures

Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>*Order two or three items by length or height</p> <p>*Order two items by weight or capacity</p> <p><i>ELG:</i> Use every day language to talk about size, weight, capacity and money to compare quantities and objects and to solve problems.</p>	<p>*compare, describe and solve practical problems for:</p> <p>#lengths and heights</p> <p>#mass/weight</p> <p>#capacity and volume</p> <p>#time</p> <p><b>Measure and begin to record the following:</b></p> <p>#lengths and heights</p> <p>#mass/weight</p> <p>#capacity and volume</p> <p>#time (hours, minutes, seconds)</p>	<p>*choose 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.</p> <p>*compare and order lengths, mass, volumes/capacity and record the results using &gt;, &lt; and =</p>	<p>*measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume and capacity (l/ml)</p>	<p>*convert between different units of measure [for example km to m; hour to minute]</p> <p>*estimate, compare and calculate different measures</p>	<p>*convert between different units of metric measure</p> <p>*understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>*use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling</p>	<p>*solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate.</p> <p>*use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to 3 d.p.</p> <p>*convert between miles and kilometres</p>

### Money

Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use everyday language relating to money	*recognise and know the value of different denominations of coins and notes	*recognise and use symbols for pounds (£) and pence (p); Combine amounts to make a particular value *find different combinations of coins	*add and subtract amounts of money to give change, using both £ and p in practical contexts	*estimate, compare and calculate different measures, including money in pounds and pence	*use all four operations to solve problems involving measure [for example, money]	

		that equal the same amount of money *solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving some change.				
Time						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
*Measure short periods of time in simple ways *Use everyday language relating to time.	*sequence events using chronological order using language [for example, before, after, next, first, today, yesterday, tomorrow,, morning, afternoon and evening] *recognise and use language relating to dates, including days of the week, weeks, months and years. *tell the time to the hour and half past the hour and draw hands on clock faces to show these times	*compare and sequence intervals of time *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 *know the number of minutes in an hour and the number of hours in a day	*tell and write the time from an analogue clock, using roman numbers from I to XII and 12 hour and 24 hour clocks. * estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock am./p.m.; morning, afternoon, noon and midnight *know the number of seconds in a minute and the number of days in each month, year and leap year. *compare durations of events [for example to calculate the time taken by a particular event or tasks]	*read, write and convert time between analogue and digital 12 and 24 hour clocks *solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	*solve problems involving converting between units of time	* use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit and vice versa.

Perimeter, area, volume						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			*measure the perimeter of simple 2d shapes	*measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m *find the area of rectilinear shapes by counting squares	*measure and calculate the perimeter of composite rectilinear shapes in cm and m *calculate and compare the area of rectangles (including squares) and including using standard units, square cm (cm <sup>2</sup> and square m <sup>2</sup> and estimate the area of irregular shapes *estimate volume [for example using blocks to build cuboids] and capacity [eg. Using water]	*recognise that shapes with the same areas can have different perimeters and vice versa *recognise when it is possible to use formulae for area and volume shapes *calculate the area of parallelograms and triangles *calculate, estimate and compare volume of cubes and cuboids, using standard units, including cubic cm (cm <sup>3</sup> ) and cubic m (m <sup>3</sup> ) and extending to other units
Geometry						
2D shapes						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
*Use familiar objects and common shapes to create and recreate patterns and build models. *Select a particular named shape. *Begin to use mathematical names for 2d shapes	*recognise and name common 2d shapes [for eg. rectangles, squares, circles and triangles)	*identify and describe properties of 2d shapes, including the number of sides and line of symmetry in a vertical line. *identify 2d shapes on the surface of 3d shapes [for eg. a circle on a cylinder and a triangle on a pyramid]	*draw 2d shapes	*compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes *identify lines of symmetry in 2d shapes presented in different orientations	*distinguish between regular and irregular polygons based on reasoning about equal sides and angles*use the properties of rectangles to deduce related facts and find missing lengths and angles	*draw 2d shapes using given dimensions and angles *compare and classify geometric shapes based on their properties and sizes *illustrate and name parts of circles, including radius, diameter and circumference and

<p>*Begin to use mathematical terms to describe shapes.</p> <p><i>ELG</i> Recognise, create and describe pattern. Explore characteristics of everyday objects and shapes and use mathematical language to describe them.</p>		<p>*compare and sort common 2d shapes and everyday objects</p>				<p>know that the diameter is twice the radius.</p>
<b>3D shapes</b>						
<b>Early Years</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<p>*Begin to use mathematical names for 3d shapes</p>	<p>*recognise and name common 3d shapes [for eg. cuboids, cubes, pyramids and spheres</p>	<p>*recognise and name common 3d shapes [for eg. cuboids, cubes, pyramids and spheres *compare and sort common 3d shapes and everyday objects</p>	<p>*make 3d shapes using modelling materials; recognise 3d shapes in different orientations and describe them.</p>		<p>*identify 3d shapes including cubes and other cuboids, from 2d representations</p>	<p>*recognise, describe and build simple 3d shapes, including making nets.</p>
<b>Angles and lines</b>						
<b>Early Years</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<p>*Describe relative position such as behind, next to.</p> <p><i>ELG</i> Use everyday language to talk about position and distance to compare and solve problems</p>			<p>*recognise angles as a property of shape or a description of a turn *identify right angles, recognise that two right angles make a half turn, three make a three quarters of a turn and four a complete turn; identify whether angles are</p>	<p>*identify acute and obtuse angles and compare and order angles up to two right angles by size. *identify lines of symmetry in 2d shapes presented in different orientations *complete a simple symmetric figure with</p>	<p>*know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles *draw given angles and measure them in degrees *identify angles at a point and one whole whole turn (total 360°)</p>	<p>*find unknown angles in any triangles, quadrilaterals, and regular polygons *recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</p>



			greater than or less than a right angle *identify horizontal and vertical lines and pairs of perpendicular and parallel lines	respect to a specific line of symmetry.	>angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) >other multiples of 90°	
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Statistics						
Present and Interpret data						
Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		*interpret and construct simple pictograms, tally charts, block diagrams and simple tables	*interpret and present data using bar charts, pictograms and tables	*interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	*complete, read and interpret information in tables, including timetables	*interpret and construct pie charts and line graphs and use these to solve problems
Solve statistical problems						
		*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	*solve one-step and two-step questions [for example, 'How many more? And How many fewer?'] using information presented in scaled bar charts and pictograms and tables	*solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	*solve comparison, sum and difference problems using information presented in a line graph.	*calculate and interpret the mean as an average