

St Helen's Catholic Primary School
Mathematics Curriculum Map 2015 – 2016



Subject content - Key stage 1

	Autumn	Spring	Summer
Year 1	<p>1.1 <u>Number Sense – 3 weeks</u> Pupils can represent and explain what happens when counting forwards and backwards in ones and can compare two measures and describe the relationship.</p> <p>1.2 <u>Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems using their knowledge of one more and one less and number bonds</p> <p>1.3 <u>Geometry Reasoning – 2 weeks</u> Pupils can recognise and identify shapes in their environment and justify their thinking.</p> <p>1.4 <u>Number Sense – 2 weeks</u> Pupils can represent and explain how they know one more or one less than any given number and read and compare numbers under 100</p> <p>1.5 <u>Additive Reasoning - 2 weeks</u> Pupils can solve addition and subtraction problems using their number bonds for ten to derive bonds for 20 and their knowledge of one more and one less.</p>	<p>1.6 <u>Number Sense – 3 weeks</u> Pupils can represent and explain what happens when counting in two and tens and connect this with adding and subtracting two and ten. They can explain how they know which numbers are multiples of ten and which are multiples of two.</p> <p>1.7 <u>Multiplicative Reasoning – 3 weeks</u> Pupils can represent and explain how to solve problems involving multiplying and dividing by two and ten, with support.</p> <p>1.8 <u>Number Sense – 3 weeks</u> Pupils can represent and explain how to use their counting to measure lengths, weights and capacities.</p> <p>1.9 <u>Additive Reasoning – 2 weeks</u> Pupils can solve, represent and record addition and subtraction problems, appropriately choosing and using their number facts and counting (using numbers up to 20).</p> <p>1.10 <u>Geometric Reasoning – 2 weeks</u> Pupils can recognise and identify shapes in their environment and justify their thinking and create simple repeating patterns</p>	<p>1.11 <u>Number Sense – 3 weeks</u> Pupils can represent and explain what happens when counting in different steps and connect this with adding and subtracting and measuring. They can explain how they know which numbers are multiples of two, five and ten.</p> <p>1.12 <u>Additive Reasoning – 3 weeks</u> Pupils can solve, represent and record addition and subtraction problems, appropriately choosing and using their number facts and counting (using numbers up to 20).</p> <p>1.13 <u>Multiplicative Reasoning – 3 weeks</u> Pupils can represent and explain what happens when doubling and halving in the context of both discrete objects and continuous measures. They can show and tell the time, on an analogue clock, on the hour and half past.</p> <p>1.14 <u>Geometric Reasoning – 2 weeks</u> Pupils can use their understanding of halves and quarters to talk about shapes and movement (turns) and solve related problems.</p>
Year 2	<p>2.1 <u>Number Sense – 3 weeks</u> Pupils can represent and explain what happens when counting forwards and backwards in tens and can compare and order two-digit numbers in different contexts.</p> <p>2.2 <u>Additive Reasoning - 3 weeks</u> Pupils can represent and solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting.</p> <p>2.3 <u>Geometric Reasoning - 2 weeks</u> Pupils can recognise and identify shapes in their environment and explain the properties of the shapes including lines of symmetry.</p> <p>2.4 <u>Number Sense – 2 weeks</u> Pupils can represent and explain how they know ten more and ten less than any given number and read compare and record comparison of numbers up to 100.</p> <p>2.5 <u>Additive Reasoning – 2 weeks</u> Pupils can represent, explain and record the relationship between addition and subtraction. They can represent and solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting.</p>	<p>2.6 <u>Number Sense – 3 weeks</u> Pupils can use their understanding of counting in twos, fives and tens to interpret data. They can represent and explain the difference between odd and even numbers and use this understanding to identify large multiples of two.</p> <p>2.7 <u>Multiplicative Reasoning – 3 weeks</u> Pupils can represent and explain how to use their multiplication facts to solve division problems. They can represent and solve multiplication and division problems in different contexts.</p> <p>2.8 <u>Number Sense – 3 weeks</u> Pupils can measure in different contexts, choosing the appropriate unit and equipment and reading the scales to the nearest number.</p> <p>2.9 <u>Additive Reasoning - 2 weeks</u> Pupils can represent and solve addition and subtraction problems involving two two-digit numbers in different contexts, appropriately choosing and using number facts, understanding of place value and counting.</p> <p>2.10 <u>Geometric Reasoning - 3 weeks</u> Pupils can identify different possible 3-D shapes from seeing one of the faces and describe the properties of the face (2-D shape) and the 3-D shapes.</p>	<p>2.11 <u>Number Sense – 3 weeks</u> Pupils can measure in different contexts, choosing the appropriate unit and equipment and reading the scales to the nearest number.</p> <p>2.12 <u>Additive Reasoning – 3 weeks</u> Pupils can represent and solve addition and subtraction problems involving two two-digit numbers in different contexts, appropriately choosing and using number facts, understanding place value and counting.</p> <p>2.13 <u>Multiplicative Reasoning – 3 weeks</u> Pupils can represent and explain how to find halves, thirds and quarter in the context of both discrete objects and continuous measures. They can show and tell the time, on an analogue clock, including quarter past and quarter to the hour.</p> <p>2.14 <u>Geometric Reasoning – 2 weeks</u> Pupils can use their understanding of fractions to talk about shapes and movement (turns) and solve related problems.</p>

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Subject content - Lower Key stage 2

	Autumn	Spring	Summer
Year 3	<p><u>3.1 Number Sense – 3 weeks</u> Pupils can explain and show how and when their counting is useful for adding and subtracting. They can make appropriate decisions about when to use their understanding of place value for solving problems, including adding and subtracting.</p> <p><u>3.2 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting. They explain their decision making and justify their solutions.</p> <p><u>3.3 Multiplicative Reasoning – 3 weeks</u> Pupils can explain and represent multiplication as both repeated addition and scaling and division as both sharing and grouping. They use this understanding to derive facts and solve problems.</p> <p><u>3.4 Geometric Reasoning – 2 weeks</u> Pupils can explain and show angle as a measure of turn and can draw, make and identify shapes with right-angles.</p>	<p><u>3.5 Number Sense – 2 weeks</u> Pupils can explain and show how and when their counting is useful for adding and subtracting and make appropriate decisions about when to use their understanding of place value for solving problems including adding and subtracting.</p> <p><u>3.6 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts (including extracting the necessary information from graphs, charts and tables), appropriately choosing and using number facts, understanding of place value and counting. They can explain their decision making and justify their solutions</p> <p><u>3.7 Number Sense – 3 weeks</u> Pupils can represent fractions as numbers and explain and show how they know that for unit fractions, as the denominator increases, the size of the number decreases</p> <p><u>3.8 Multiplicative Reasoning – 3 weeks</u> Pupils can explain and represent multiplication as both repeated addition and scaling; and division as both sharing (including finding fractions), and grouping. They use this understanding to derive facts and solve problems.</p> <p><u>3.9 Geometric reasoning – 2 weeks</u> Pupils can recognise and identify horizontal and vertical lines and pairs of perpendicular and parallel lines and justify their thinking. They can identify acute, obtuse and right angles in the context of a 2-D shape and justify their thinking.</p>	<p><u>3.10 Number Sense – 2 weeks</u> Pupils can explain and show how and when their counting is useful for adding and subtracting. They can explain and show how to tell the time and use knowledge of different units of time to solve problems.</p> <p><u>3.11 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting, and mental and written methods. They can explain their decision making and justify their solution.</p> <p><u>3.12 Number Sense – 2 weeks</u> Pupils can represent fractions as numbers and explain and show how they know one fraction is bigger than or equivalent to another.</p> <p><u>3.13 Multiplicative Reasoning – 3 weeks</u> Pupils can explain and represent multiplication as both repeated addition and scaling, and division as both sharing, (including finding fractions), and grouping. They use this understanding to derive facts and solve problems including two-digit by one-digit multiplications.</p> <p><u>3.14 Geometric Reasoning – 2 weeks</u> Pupils can measure the perimeter of simple 2-D shapes and describe properties of the shapes related to the angles.</p>
Year 4	<p><u>4.1 Number Sense – 3 weeks</u> Pupils can make appropriate decisions about when to use their understanding of counting, place value and rounding for solving problems including adding and subtracting.</p> <p><u>4.2 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting and mental and written methods. They can explain their decision making and justify their solutions.</p> <p><u>4.3 Multiplicative Reasoning – 3 weeks</u> Pupils can explain the relationship between multiplication and division and the distributive and associative laws. They use this understanding to derive facts and solve problems.</p> <p><u>4.4 Geometric Reasoning – 2 weeks</u> Pupils can explain the properties of different triangles and quadrilaterals including angles and lines of symmetry.</p> <p><u>4.5 Number Sense – 2 weeks</u> Pupils can make appropriate decisions about when to use their understanding of counting (including counting below zero), place value and rounding for solving problems including adding and subtracting. Pupils can explain the representation of two-digit positive numbers as Roman numerals.</p>	<p><u>4.6 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting and mental and written methods. They can explain their decision making and justify their solutions.</p> <p><u>4.7 Number Sense – 3 weeks</u> Pupils can represent and explain the multiplicative nature of the number system including how it extends into decimal numbers, as whole numbers are divided by 10 or 100 and connect this understanding to units of measure. Pupils can represent and explain the relationship between decimals and fractions. They use this understanding to solve problems.</p> <p><u>4.8 Multiplicative Reasoning – 3 weeks</u> Pupils can explain the relationship between multiplication, division and fractions. They use this understanding to derive facts and solve problems.</p> <p><u>4.9 Geometric Reasoning – 2 weeks</u> Pupils can explain how to locate points on a grid in the first quadrant and use this knowledge and understanding to solve problems.</p> <p><u>4.10 Number Sense – 2 weeks</u> Pupils can make appropriate decisions about when to use their understanding of counting (including counting below zero), place value and rounding for solving problems including adding and subtracting. They can explain how to tell the time in both 12- and 24-hour clocks and can solve problems using their understanding of how to convert between different units of time.</p>	<p><u>4.11 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and counting and mental and written methods. They explain their decision making and justify their solutions.</p> <p><u>4.12 Number Sense – 2 weeks</u> Pupils can represent and explain how the multiplicative nature of the number system extends into decimal numbers, as whole numbers are divided by 10 or 100, and connect this understanding to units of measure. Pupils can represent and explain the relationship between decimals and fractions. They use this understanding to solve problems.</p> <p><u>4.13 Multiplicative Reasoning – 3 weeks</u> Pupils can solve problems involving multiplication, division and fractions in different contexts, appropriately choosing and using number facts, understanding of place value and counting and mental and written methods, explain their decision making and justify their solutions</p> <p><u>4.14 Geometric Reasoning – 2 weeks</u> Pupils can explain how to find the perimeter and area of a shape and how to complete a symmetrical shape with a given line of symmetry, using this knowledge and understanding to solve problems.</p>

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Subject content - Upper Key stage 2

	Autumn	Spring	Summer
Year 5	<p><u>5.1 Number Sense – 3 weeks</u> Pupils can represent and explain the multiplicative nature of the number system, understanding how to multiply and divide by 10, 100 and 1000. Pupils make appropriate decisions about when to use their understanding of counting, place value and rounding for solving problems including adding and subtracting.</p> <p><u>5.2 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions.</p> <p><u>5.3 Multiplicative Reasoning – 3 weeks</u> Pupils can solve problems involving multiplication and division in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions.</p> <p><u>5.4 Geometric Reasoning – 2 weeks</u> Pupils can explain angle as a measure of turn, draw and measure angles and use their understanding of angle to describe the properties of different shapes.</p> <p><u>5.5 Number Sense – 2 weeks</u> Pupils can make appropriate decisions about when to use their understanding of counting (including counting below zero), place value and rounding for solving problems including adding and subtracting. Pupils can explain the representation of three-digit positive numbers as Roman numerals.</p>	<p><u>5.6 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions.</p> <p><u>5.7 Number Sense – 3 weeks</u> Pupils can represent and explain the relationship between decimals, fractions and percentages. They use this understanding to solve problems.</p> <p><u>5.8 Multiplicative Reasoning – 3 weeks</u> Pupils can explain and show properties of prime, composite, square and cube numbers and explain factor pairs related to these sets of numbers. They understand and can explain the relationship between multiplication, division, fractions and percentages. They use this understanding to derive facts and solve problems.</p> <p><u>5.9 Geometric Reasoning – 2 weeks</u> Pupils can explain how to reflect and translate shapes on a grid in the first quadrant and use this knowledge and understanding to solve problems.</p> <p><u>5.10 Number Sense – 2 weeks</u> Pupils can use their understanding of the multiplicative nature of the number system to convert between different units of measures, using how to multiply and divide by 10, 100 and 1000. Pupils make appropriate decisions about when to use their understanding of counting (including in fractions), place value and rounding for solving problems including adding and subtracting.</p>	<p><u>5.11 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems (including with fractions) in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions</p> <p><u>5.12 Number Sense – 2 weeks</u> Pupils can represent and explain the relationship between decimals, fractions and percentages and how decimals and fractions fit into the number system. They use this understanding to solve problems</p> <p><u>5.13 Multiplicative Reasoning – 3 weeks</u> Pupils can solve problems involving multiplication and division in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions. They can explain and represent the connection between fractions and division.</p> <p><u>5.14 Geometric Reasoning – 2 weeks</u> Pupils can explain how to find the perimeter and area of different shapes, using this knowledge and understanding to solve problems.</p>
Year 6	<p><u>6.1 Number Sense – 3 weeks</u> Pupils can represent and explain the multiplicative nature of the number system, understanding how to multiply and divide by 10, 100 and 1000. Pupils make appropriate decisions about when to use their understanding of counting, place value and rounding for solving problems including adding & subtracting.</p> <p><u>6.2 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions and levels of accuracy.</p> <p><u>6.3 Multiplicative Reasoning – 3 weeks</u> Pupils can solve problems involving multiplication and division and fractions and percentages in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions.</p> <p><u>6.4 Geometric Reasoning – 2 weeks</u> Pupils can use their understanding of angle and properties of shapes to solve problems.</p> <p><u>6.5 Number Sense – 2 weeks</u> Pupils can make appropriate decisions about when to use their understanding of counting (including counting below zero), place value and rounding for solving problems including adding and subtracting.</p>	<p><u>6.6 Additive Reasoning – 3 weeks</u> Pupils can solve addition and subtraction problems in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solution and level of accuracy</p> <p><u>6.7 Number Sense – 2 weeks</u> Pupils can represent and explain the relationship between decimals, fractions, and percentages and equivalences within fractions. They use this understanding to solve problems.</p> <p><u>6.8 Multiplicative Reasoning – 3 weeks</u> Pupils can explain the relationship between multiplication, division, ratio and proportion. They use this understanding to derive facts and solve problems.</p> <p><u>6.9 Geometric Reasoning – 2 weeks</u> Pupils can explain how to reflect and translate shapes on a grid with four quadrants and use this knowledge and understanding to solve problems. They can explain how to find the volume of cubes and cuboids and use this understanding to solve problems.</p> <p><u>6.10 Number Sense – 2 weeks</u> Pupils can use their understanding of the multiplicative nature of the number system to convert between different units of measures, knowing when it is appropriate to use their understanding of how to multiply and divide by 10, 100 and 1000. Pupils make appropriate decisions about when to use their understanding of counting, place value and rounding for solving problems including adding and subtracting.</p>	<p><u>6.11 Additive Reasoning – 3 weeks</u> Pupils can solve calculation problems in different contexts, appropriately choosing and using operations, number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions and levels of accuracy.</p> <p><u>6.12 Number Sense – 2 weeks</u> Pupils can represent and explain the relationship between decimals, fractions and percentages and how decimals and fractions fit into the number system. They use this understanding to solve problems.</p> <p><u>6.13 Multiplicative Reasoning – 3 weeks</u> Pupils can solve calculation problems in different contexts, including those involving ratio and proportion, appropriately choosing and using operations, number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions and level of accuracy.</p> <p><u>6.14 Geometric Reasoning – 3 weeks</u> Pupils can use their understanding of properties of shapes, area and volume to solve problems and make generalisations.</p>

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