

educationGateshead Core Curriculum for Primary Mathematics Progression Grid Year 2

Year 2 Autumn	Year 2 Spring	Year 2 Summer
<p>Understanding and investigating with numbers 3 weeks</p>	<p>Understanding and investigating with numbers 3 weeks</p>	<p>Understanding and investigating with numbers 3 weeks</p>
<p>Place value, ordering and rounding</p>	<p>Place value, ordering and rounding</p>	<p>Place value, ordering and rounding</p>
<ul style="list-style-type: none"> • <i>Continue to count forwards and backwards in ones and tens from any number to 100 and beyond to establish fluency, especially across boundaries of 10s and 100s.</i> • Read and write numbers to at least 100 in numerals and words. • Compare and order numbers from 0 up to 100; use >, < and = signs. • Recognise the place value of each digit in a two-digit number (tens, ones). • Partition numbers in different ways e.g. $23 = 20 + 3$ and $23 = 10 + 13$ to support subtraction. • <i>Understand e.g. 23 as $20 + 3$ and as 2 tens and 3 ones.</i> 	<ul style="list-style-type: none"> • <i>Continue to count forwards and backwards in ones and tens from any number to 100 and beyond to establish fluency, especially across boundaries of 10s and 100s.</i> • Read and write numbers to at least 100 in numerals and words • Identify, represent and estimate numbers using different representations, including the number line and spatial representations. • Recognise the place value of each digit in a two-digit number (tens, ones). • Begin to understand zero as a place holder. • Use place value and number facts to solve problems 	<ul style="list-style-type: none"> • <i>Continue to count forwards and backwards in ones and tens from any number to 100 and beyond to establish fluency, especially across boundaries of 10s and 100s.</i> • Compare and order numbers from 0 up to 100; use >, < and = signs. • Identify, represent and estimate numbers using different representations, including the number line and spatial representations. • Recognise the place value of each digit in a two-digit number (tens, ones). • Use place value and number facts to solve problems • <i>Apply understanding of the number system to solve problems and puzzles involving numbers, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbol.</i>
<p>Properties of numbers and number sequences</p>	<p>Properties of numbers and number sequences</p>	<p>Properties of numbers and number sequences</p>
<ul style="list-style-type: none"> • Count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and back. Counting in steps of three will support later understanding of a third. • <i>Develop lines of enquiry through conjecturing relationships and generalisations and testing ideas. Identify examples for which a statement is true or false.</i> 	<ul style="list-style-type: none"> • Count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and back. Counting in steps of three will support later understanding of a third. • Recognize patterns in numbers to and beyond 100. • Find 10 more or 10 less than any given number. • <i>Recognise and extend number sequences formed by counting from any number in steps of constant size</i> • <i>Explore and discuss patterns, properties and relationships that arise in the number system</i> 	<ul style="list-style-type: none"> • Count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and back. Counting in steps of three will support later understanding of a third. • Find 10 more or 10 less than any given number • <i>Apply understanding of number properties to solve routine and non-routine problems and puzzles involving numbers, money or measure.</i> • <i>Explore and discuss patterns, properties and relationships that arise in the number system using appropriate mathematical vocabulary.</i> • <i>Develop lines of enquiry through conjecturing</i>

	<i>using appropriate mathematical vocabulary.</i>	<i>relationships and generalisations and testing ideas. Identify examples for which a statement is true or false.</i>
Fractions	Fractions	Fractions and decimals
<ul style="list-style-type: none"> • Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape and set of objects or quantity. • Write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 	<ul style="list-style-type: none"> • Use fractions as ‘fractions of’ discrete (e.g. <i>countables</i>) and continuous (e.g. <i>liquid</i>) quantities by solving problems using shapes, objects and quantities. • Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated and to measures, finding fractions of lengths, quantities, sets of objects and shapes. • Count in fractions up to 10 starting at any number and using the 1/2 and 2/4 equivalence on the number line e.g. 1 1/4, 1 2/4, (or 1 1/2) 1 3/4, 2. Reinforce the concept of fractions as numbers and that they can add up to more than one. 	<ul style="list-style-type: none"> • Use fractions as ‘fractions of’ discrete (e.g. <i>countables</i>) and continuous (e.g. <i>liquid</i>) quantities by solving problems using shapes, objects and quantities. • Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated and to measures, finding fractions of lengths, quantities, sets of objects and shapes. • Count in fractions up to 10 starting at any number and using the 1/2 and 2/4 equivalence on the number line e.g. 1 1/4, 1 2/4, (or 1 1/2) 1 3/4, 2. Reinforce the concept of fractions as numbers and that they can add up to more than one. • <i>Apply understanding of fractions to solve routine and non-routine problems and puzzles involving numbers, shapes, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.</i>
Developing and applying calculation	Developing and applying calculation	Developing and applying calculation
Addition and Subtraction 2 weeks	Addition and Subtraction 2 weeks	Addition and Subtraction 2 weeks
<ul style="list-style-type: none"> • Recall and use addition and subtraction facts to 20 fluently and derive and use related facts to 100 e.g. use $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$. • Add and subtract numbers using concrete objects, pictorial representations and mentally, including: <ul style="list-style-type: none"> ○ a two-digit number and ones ○ a two-digit number and tens ○ two two-digit numbers ○ adding three one-digit numbers • Show that addition of two numbers can be 	<ul style="list-style-type: none"> • Recall and use addition and subtraction facts to 20 fluently and derive and use related facts to 100 e.g. use $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$. • Add and subtract numbers using concrete objects, pictorial representations and mentally, including: <ul style="list-style-type: none"> • a two-digit number and ones • a two-digit number and tens • two two-digit numbers • adding three one-digit numbers • Show that addition of two numbers can be 	<ul style="list-style-type: none"> • Recall and use addition and subtraction facts to 20 fluently and derive and use related facts to 100 e.g. use $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$. • Add and subtract numbers using concrete objects, pictorial representations and mentally, including: <ul style="list-style-type: none"> • a two-digit number and ones • a two-digit number and tens • two two-digit numbers • adding three one-digit numbers • Continue to extend understanding of language

<p>done in any order (commutative) and subtraction of one number from another cannot.</p> <ul style="list-style-type: none"> • <i>Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.</i> • <i>Solve calculation problems using information from a range of pictograms, tally charts, block diagrams and simple tables.</i> 	<p>done in any order (commutative) and subtraction of one number from another cannot.</p> <ul style="list-style-type: none"> • Check calculations e.g. by adding to check subtraction and adding numbers in a different order to check addition e.g. $5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5$. This establishes commutativity and associativity of addition. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. • Continue to extend understanding of language of addition and subtraction to include sum and difference • Solve problems with addition and subtraction <ul style="list-style-type: none"> • Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. • Applying increasing knowledge of mental and written methods. • <i>Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. $4 + 6 = 5 + 5$; $17 = 19 - \Delta$).</i> • <i>Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.</i> • <i>Apply understanding of number operations to solve number puzzles and non-routine problems and explain reasoning.</i> 	<p>of addition and subtraction to include sum and difference</p> <ul style="list-style-type: none"> • Solve problems with addition and subtraction <ul style="list-style-type: none"> • Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. • Applying increasing knowledge of mental and written methods. • <i>Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.</i> • <i>Solve calculation problems using information from a range of pictograms, tally charts, block diagrams and simple tables</i> • <i>Apply understanding of number operations to solve number puzzles and non-routine problems and explain reasoning.</i>
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Multiplication and Division 2 weeks	Multiplication and Division 2 weeks	Multiplication and Division 2 weeks
<ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognizing odd and even numbers. • <i>Continue to recognise doubles and corresponding halves.</i> • Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated and to measures, finding fractions of lengths, quantities, sets of objects and shapes. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (\div) and equals (=) signs. • Solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. • Work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. Relate these to fractions and measures. • Use a variety of language to describe multiplication and division. 	<ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognizing odd and even numbers. • Connect the 2, 5 and 10 multiplication tables to each other. Connect the 10 multiplication table to place value and the 5 multiplication table to the divisions on a clock face. • <i>Continue to recognise doubles and corresponding halves.</i> • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (\div) and equals (=) signs. • Show that multiplication of two numbers can be done in any order (commutative) and division of one 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. • Work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. Relate these to fractions and measures. • Use a variety of language to describe multiplication and division. 	<ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognizing odd and even numbers. • <i>Continue to recognise doubles and corresponding halves</i> • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (\div) and equals (=) signs. • Solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. • Work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. Relate these to fractions and measures. • Use a variety of language to describe multiplication and division.

Measurement 2 weeks	Measurement 2 weeks	Measurement 2 weeks
<ul style="list-style-type: none"> • Choose and use appropriate standard units to estimate and measure, with increasing accuracy, 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. • Use appropriate language for measuring and record using standard abbreviations. • Compare and order lengths, mass, volume/capacity and record the results using >, < and =. • Compare using simple multiples such as ‘half as high’, ‘twice as wide’. • Become fluent in counting and recognizing coins <i>and notes</i>. Read and say amounts of money confidently. • Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. • Find different combinations of coins that equal the same amounts of money. • 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. 	<ul style="list-style-type: none"> • Choose and use appropriate standard units to estimate and measure, with increasing accuracy, 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. • Use appropriate language for measuring and record using standard abbreviations. • Compare and order lengths, mass, volume/capacity and record the results using >, < and =. • Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. • 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. • 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. • <i>Use all four operations to solve problems including scaling problems involving measure (e.g. length, mass, volume, money). Information required to solve a problem is often drawn from tables, and charts</i> • <i>Apply measuring skills to an appropriate degree of accuracy, alongside the skills of thinking mathematically to solve problems. These should include practical problems and might involve construction of shapes or artefacts, often in a cross curricular context.</i> 	<ul style="list-style-type: none"> • Choose and use appropriate standard units to estimate and measure, with increasing accuracy, 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. • Use appropriate language for measuring and record using standard abbreviations. • 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. • 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. • <i>Use all four operations to solve problems including scaling problems involving measure (e.g. length, mass, volume, money). Information required to solve a problem is often drawn from tables, and charts</i> • <i>Apply measuring skills to an appropriate degree of accuracy, alongside the skills of thinking mathematically to solve problems. These should include practical problems and might involve construction of shapes or artefacts, often in a cross curricular context.</i> • <i>Make and explain connections between number, measures and shape</i>

Geometry 2 weeks	Geometry 2 weeks	Geometry 2 weeks
<p>Properties of Shapes</p> <ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. 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]. Compare and sort common 2-D and 3-D shapes and everyday objects on the basis of their properties and use vocabulary precisely. Read and write names of shapes appropriate to their word reading and spelling. 	<p>Properties of Shapes</p> <ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Compare and sort common 2-D and 3-D shapes and everyday objects on the basis of their properties and use vocabulary precisely. Read and write names of shapes appropriate to their word reading and spelling. <i>Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, drawings or practical materials.</i> 	<p>Properties of Shapes</p> <ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Compare and sort common 2-D and 3-D shapes and everyday objects on the basis of their properties and use vocabulary precisely. Read and write names of shapes appropriate to their word reading and spelling. Draw lines and shapes using a straight edge <i>Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, drawings or practical materials.</i>
<p>Position and Direction</p> <ul style="list-style-type: none"> Order and arrange combinations of mathematical objects in patterns and sequences including the use of shapes in different orientations. 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). 	<p>Position and Direction</p> <ul style="list-style-type: none"> 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). Use the language of angles in practical contexts e.g. pupils moving in turns, instructing others to do so and programming robots using instructions given in right angles 	<p>Position and Direction</p> <ul style="list-style-type: none"> Order and arrange combinations of mathematical objects in patterns and sequences including the use of shapes in different orientations. 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). Use the language of angles in practical contexts e.g. pupils moving in turns, instructing others to do so and programming robots using instructions given in right angles

Statistics 1 week	Statistics 1 week	Statistics 1 week
Interpreting, Constructing and Presenting Data	Interpreting, Constructing and Presenting Data	Interpreting, Constructing and Presenting Data
<ul style="list-style-type: none"> • Interpret and construct simple pictograms, tally charts, block diagrams and simple 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. • <i>Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematic, sometimes in response to an enquiry of interest to and suggested by pupils.</i> 	<ul style="list-style-type: none"> • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Use many-to-one correspondence in pictograms with simple ratios 2, 5, 10. • <i>Pose their own questions that can be answered using information presented in different pictograms, tally charts, block diagrams and simple tables</i> • <i>Understand and use Venn and Carroll diagrams to support reasoning about numbers or shapes</i> • <i>Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematic, sometimes in response to an enquiry of interest to and suggested by pupils.</i> 	<ul style="list-style-type: none"> • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Use many-to-one correspondence in pictograms with simple ratios 2, 5, 10. • 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. • <i>Pose their own questions that can be answered using information presented in different pictograms, tally charts, block diagrams and simple tables</i> • <i>Understand and use Venn and Carroll diagrams to support reasoning about numbers or shapes</i>