



## Year 1 Spring 1

### Starter suggestions for Number

- Read and write numbers to 100 in figures.
- Count on and back in 1s from any one or two-digit number including across 100.
- Count on and back in multiples of 2, 5 and 10.
- Order a set of random numbers to 100.
- Recall addition and subtraction facts for each number up to 20.
- Recall doubles of numbers to  $10 + 10$
- Recall halves of even numbers to 20.
- Add a single digit number to any number up to 20.
- Take away a single digit number from any number up to 20.
- Identify number patterns on number lines and hundred squares.

### Starter suggestions for Measurement, Geometry and Statistics

- Identify 2-D shapes in different orientations and begin to describe them.
- Identify 3-D shapes in different orientations and begin to describe them.
- Compare and sort common 2-D and 3-D shapes and everyday objects.
- Order and arrange combinations of mathematical objects in patterns and sequences.
- Describe position, direction and movement.
- Estimate the length and height of familiar items using uniform non-standard and standard units.
- Estimate mass and capacity of familiar items using non-standard and standard units.
- Identify time on an analogue clock to the hour and half past the hour.
- Use the language of time to sequence events.
- Recognise and know the value of different denominations of coins and notes.

	Main learning	Rationale
<p><b>Week 1</b> <i>Number, place value and measures</i></p> <p>Links to Framework for Mathematics Y1 – A1, A2, A3, B1 Y2 – A1, A2, A3</p>	<ul style="list-style-type: none"> <li>• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</li> <li>• Read and write numbers from 1 to 20 in numerals and words.</li> <li>• Count, read and write numbers to 100 in numerals.</li> <li>• <i>Begin to recognise the place value of numbers beyond 20 (tens and ones).</i></li> <li>• Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.</li> <li>• Given a number, identify one more and one less.</li> <li>• <i>Given a number, identify ten more and ten less.</i></li> <li>• <i>Order numbers to 50.</i></li> <li>• <i>Solve problems and practical problems involving all of the above.</i></li> </ul>	<p>When counting, children should be encouraged to recognise patterns in the spoken numbers and the numbers used to represent them.</p> <p>Children should use practical equipment, familiar items and pictures to represent the numbers they are working with – children should understand the notion of grouping in tens i.e. 10 ones is the same as 1 ten and that in two-digit number the first digit refers to the number of groups of ten.</p> <p>Children use their understanding of numbers to identify one more/less and ten more/less than a given number, using different representations, including the number line. Children recognise the number line when measuring length using a ruler and volume using a measuring jug.</p> <p>Children should understand the purpose of counting in twos, fives and tens and relate this to efficiently counting large quantities in practical contexts and also when counting money. When counting in twos, the concept of odd and even numbers can be explored.</p>
<p><b>Week 2</b> <i>Measurement - mass</i></p> <p>Links to Framework for Mathematics Y1 – C1, C2, C3, D1, D2, D3 Y2 – C1, C2, C3, D1, D2</p>	<ul style="list-style-type: none"> <li>• Compare and describe mass/weight (for example, heavy/light, heavier than, lighter than).</li> <li>• Measure and begin to record mass/weight, using non-standard and then standard units (kg and g) within children's range of counting competence.</li> <li>• Solve practical problems for masses/weights.</li> <li>• Solve simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems, such as <math>7 = \square - 9</math>.</li> </ul>	<p>The terms mass and weight are used interchangeably at this stage. Children should work practically to measure mass/weight, applying their knowledge of the number system and number lines. Children make direct comparisons of masses/weights before measuring using uniform non-standard units progressing to manageable standard units and equipment.</p> <p>When solving problems, children apply their knowledge and understanding of calculations in the context of mass/weight.</p>
<p><b>Week 3</b> <i>Shape</i></p> <p>Links to Framework for Mathematics Y1 – B1, B2, B3 Y2 – B1, B3</p>	<ul style="list-style-type: none"> <li>• Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles.</li> <li>• Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres.</li> </ul>	<p>When learning about shapes, children should handle them, name them and begin to describe them. Children should recognise these shapes in different orientations and also in different sizes, and know that rectangles, triangles, cuboids and pyramids are not always similar to each other. Children could make pictures and structures using these shapes, explaining why certain shapes have been used (and not used) for particular parts of the picture or structure.</p>
<p><b>Week 4</b> <i>Counting and money</i></p> <p>Links to Framework for Mathematics Y1 – D3, A1, A2, A3, D2, B3, E2 Y2 – B1, A1, A2, A3, D1, D2, D3</p>	<ul style="list-style-type: none"> <li>• Count in multiples of, twos, fives and tens.</li> <li>• Recognise and know the value of different denominations of coins and notes.</li> </ul>	<p>When counting, children should explore patterns that emerge and relationships that can be seen e.g. when counting in tens, the unit digit does not change; when counting in fives the units digit alternates; when counting in twos the units digits will repeat 2, 4, 6, 8, 0 or 1, 3, 5, 7, 9. This can lead to discussion around odd and even numbers and what other numbers will occur in the sequence if it continued.</p> <p>Counting should also be related to real life, such as counting money.</p> <p>Larger value coins may be introduced at this stage as the children's understanding of numbers and the number system is growing. Children need to understand how many pennies each coin is worth and exchange between pennies and 2p, 5p, 10p, 20p and 50p coins. This could be done in a bank role play area.</p>

	<b>Main learning</b>	<b>Rationale</b>
<p><b>Week 5</b> <i>Multiplication – problem solving</i></p> <p>Links to Framework for Mathematics Y1 – E1, E2, E3 Y2 – B1, B2, B3, D1, D2, D3, E1, E2, E3</p>	<ul style="list-style-type: none"> <li>• Add one-digit and two-digit numbers to 20, including zero.</li> <li>• <i>Recall and use doubles of all numbers to 10 and corresponding halves.</i></li> <li>• Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</li> </ul>	<p>Children should be introduced to multiplication as repeated addition, using real life contexts and practical / pictorial representations of these. Children should make connections between arrays, number patterns and counting in twos, fives and tens.</p> <p>Children should realise that doubling is adding a number to itself, which is also multiplying by 2.</p>
<p><b>Week 6</b> <i>Division – problem solving</i></p> <p>Links to Framework for Mathematics Y1 – E1, E2, E3 Y2 – B1, B2, B3, D1, D2, D3, E1, E2, E3</p>	<ul style="list-style-type: none"> <li>• Subtract one-digit and two-digit numbers to 20, including zero.</li> <li>• <i>Recall and use doubles of all numbers to 10 and corresponding halves.</i></li> <li>• Solve one-step problems involving division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</li> </ul>	<p>Children should be introduced to division as sharing and grouping (or repeated subtraction), using real life contexts and practical / pictorial representations of these. Again, children should make connections between arrays, number patterns and counting back in twos, fives and tens.</p> <p>Children should realise that halving is dividing a number or quantity by 2. The link should be made between division by sharing and finding a fraction of an amount. Children should find simple fractions of objects, numbers and quantities.</p>



## Year 2 Spring 1

### Starter suggestions for Number

- Read and write numbers to 100 in figures and words.
- Count on and back in 1s from any one or two-digit number.
- Count on and back in steps of 2, 3 and 5 from 0.
- Count on and back in 10s from any number.
- Recall multiplication facts for the 2x, 5x and 10x tables.
- Recognise odd and even numbers.
- Order a set of random numbers to 100.
- Recall addition and subtraction facts for each number up to 20, and related facts up to 100.
- Recall doubles of simple 2-digit numbers i.e. numbers in which the ones total less than 10.
- Recall halves of simple even numbers i.e. numbers in which the tens are even.
- Add a single digit number to any 2-digit number.
- Take away a single digit number from 2-digit number.
- Identify number patterns on number lines and hundred squares.

### Starter suggestions for Measurement, Geometry and Statistics

- Identify 2-D shapes in different orientations and begin to describe them.
- Identify 3-D shapes in different orientations and begin to describe them.
- Compare and sort common 2-D and 3-D shapes and everyday objects.
- Order and arrange combinations of mathematical objects in patterns and sequences.
- Describe position, direction and movement, including whole, half, quarter and three-quarter turns.
- Estimate the length and height of familiar items using standard units.
- Estimate mass and capacity of familiar items using standard units.
- Tell the time to the nearest five minutes on an analogue clock.
- Know the number of minutes in an hour and the number of hours in a day.
- Recognise and count amounts of money.
- Interpret simple pictograms, tally charts, block diagrams and tables.

	Main learning	Rationale
<p><b>Week 1</b> <i>Number, place value and measures</i></p> <p>Links to Framework for Mathematics Y2 – A1, A2, A3, B1, B2, B3, E1, E2, E3 Y3 – A1, A2, A3, E3</p>	<ul style="list-style-type: none"> <li>• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</li> <li>• Read and write numbers to at least 100 in numerals.</li> <li>• Recognise the place value of each digit in a two-digit number (tens, ones).</li> <li>• Identify, represent and estimate numbers using different representations, including the number line.</li> <li>• Compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs.</li> <li>• Find 1 or 10 more or less than a given number.</li> <li>• Round numbers to at least 100 to the nearest 10.</li> </ul>	<p>Children's understanding of the number system should now include numbers up to and beyond 100. They should use practical equipment, familiar items and pictures to represent the numbers they are working with – children should understand the notion of grouping in tens i.e. 10 ones is the same as 1 ten and that in two-digit number the first digit refers to the number of groups of ten. Children should experience numbers in different ways to support other place value understanding e.g. ordering numbers on a number line to support comparing and rounding numbers, and also make links between the number line and measuring scales. All of the place value objectives in this week should be presented in the context of measurement.</p>
<p><b>Week 2</b> <i>Measurement - mass</i></p> <p>Links to Framework for Mathematics Y2 – C1, C2, C3, D1, D2, D3 Y3 – C1, C2, C3, D1, D2, D3</p>	<ul style="list-style-type: none"> <li>• Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales.</li> <li>• Compare and order mass and record the results using &gt;, &lt; and =.</li> <li>• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</li> </ul>	<p>Children should use the term mass instead of weight. Children should work practically to measure the mass of different items. They should use standard units and then consolidate their place value knowledge by comparing and ordering masses. The understanding of positioning numbers on a number line is applied to measuring scales and estimating and identifying masses of familiar items. Children should use measuring scales that use increments of 1, 2, 3, 5 or 10 and should be using numbers up to and beyond 100.</p>
<p><b>Week 3</b> <i>Shape</i></p> <p>Links to Framework for Mathematics Y2 – B1, B2, B3 Y3 – B1, B2, B3, B2, C1, C2</p>	<ul style="list-style-type: none"> <li>• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.</li> <li>• Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid).</li> <li>• Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.</li> <li>• Compare and sort common 2-D and 3-D shapes and everyday objects.</li> </ul>	<p>When learning about shapes, children should handle, name and describe them. Children should recognise shapes in different orientations and also in different sizes, and know that some shapes can look differently to other shapes with the same name. When describing 2-D shapes, it is useful for children to consistently use the terms side and corner. When describing 3-D shapes, it is useful for children to consistently use the terms face, edge and vertex (vertices). When sorting shapes in different ways, children should use various diagrams including sorting tables, Venn and Carroll diagrams.</p>
<p><b>Week 4</b> <i>Counting and money</i></p> <p>Links to Framework for Mathematics Y2 – B1 Y3 – D1, B2</p>	<ul style="list-style-type: none"> <li>• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</li> <li>• Recognise and use symbols for pounds (£) and pence (p).</li> <li>• Combine amounts to make a particular value.</li> <li>• Find different combinations of coins that equal the same amounts of money.</li> <li>• Add and subtract money of the same unit, including giving change.</li> <li>• Solve simple problems in a practical context involving addition and subtraction of money.</li> </ul>	<p>Children should become fluent in recognising the values of different coins. Children continue to understand how many pennies each coin is worth and exchange between pennies and 2p, 5p, 10p and 20p coins. This could be done in a Bank role play area. Children should apply their skill of counting in 2s, 5s and 10s to counting coins of these values. Shop role play could be used when teaching about paying for amounts exactly. This is a good opportunity for children to experience finding all possibilities problems. Combining coins to make given amounts should be linked to addition and number sentences e.g. how many ways can you pay exactly for an item costing 14p? At this stage, children should record £ and p separately. Formal recording of money using decimal places occurs in Year 4.</p>

	<b>Main learning</b>	<b>Rationale</b>
<p><b>Week 5</b> <i>Multiplication – problem solving</i></p> <p>Links to Framework for Mathematics Y2 – B1, B2, B3, E1, E2, E3, A2, A3, C1, C2, C3 Y3 – B1, B2, A2, A3, E1, E2, E3, C1, C2</p>	<ul style="list-style-type: none"> <li>• <i>Understand multiplication as repeated addition.</i></li> <li>• Show that multiplication of two numbers can be done in any order (commutative).</li> <li>• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</li> <li>• <i>Understand the connection between the 10 multiplication table and place value.</i></li> <li>• Calculate mathematical statements for multiplication (<i>using repeated addition</i>) within the multiplication tables and write them using the multiplication (<math>\times</math>) and equals (=) signs.</li> <li>• Solve problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</li> </ul>	<p>When counting, children should be encouraged to identify patterns in the sequences and reason as to why these patterns emerge.</p> <p>Rote counting should be linked to repeated addition and the creation of arrays. Children should learn that multiplication is a convenient way of repeatedly adding a number to itself e.g. <math>2+2+2+2+2+2</math> can be said as <math>2 \times 6</math> (2 added to itself 6 times). The array created can then be used to demonstrate commutativity i.e. that <math>2 \times 6</math> is the same as <math>6 \times 2</math>. Children should make links to real life application of multiplication as repeated addition.</p> <p>Children should begin to relate counting in steps of 2, 3, 5 and 10 to the multiplication tables. The <math>2x</math> table and counting in 2s from different starting points should be used alongside practical equipment to enable children to understand even and odd numbers.</p>
<p><b>Week 6</b> <i>Division – problem solving</i></p> <p>Links to Framework for Mathematics Y2 – B1, B2, B3, E1, E2, E3, A2, A3, C1, C2, C3 Y3 – B1, B2, A2, A3, E1, E2, E3, C1, C2</p>	<ul style="list-style-type: none"> <li>• <i>Understand division as sharing and grouping.</i></li> <li>• Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</li> <li>• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</li> <li>• Calculate mathematical statements for division within the multiplication tables and write them using the division (<math>\div</math>) and equals (=) signs.</li> <li>• Solve problems involving division, using materials, arrays, <i>repeated subtraction and sharing</i>, mental methods, and multiplication and division facts, including problems in contexts.</li> </ul>	<p>Children should be introduced to division using contexts that involve sharing. Division as grouping should also be explored practically and linked to the arrays from the previous week. This helps children see the inverse relationship between multiplication and division by exploring 'How many groups of... are there in...?' The contexts for grouping should be ones children can relate to, for example making teams of equal size from a given number of children; putting 5 sweets in each bag and finding how many bags can be filled using 47 sweets? These real life scenarios support children in understanding that some numbers do not divide equally and this gives rise to remainders.</p>



## Year 3 Spring 1

### Starter suggestions for Number

- Count on and back in 1s, 10s or 100s from any two- or three-digit number.
- Partition three-digit numbers in different ways, (e.g.  $325 = 300 + 20 + 5$  but is also  $200 + 125$  etc)
- Order a set of random numbers to 1000.
- Recall addition and subtraction facts for each number up to 20.
- Recall addition and subtraction facts for 100 (multiples of 5 and 10).
- State the addition fact that links to a subtraction fact and vice versa.
- Recall multiplication facts for 2, 3, 4, 5 and 10 times tables and derive associated division facts.
- Describe and extend number sequences involving counting on or back in different steps.
- State the multiplication fact that links to a division fact and vice versa.
- Double any number up to 100.
- Double any multiple of 50 up to 500.
- Halve any number up to 100.

### Starter suggestions for Measurement, Geometry and Statistics

- Read scales to nearest whole unit.
- Use vocabulary of time including o'clock, a.m./p.m., morning, afternoon, noon and midnight.
- Tell and write time from an analogue clock and 12-hour and 24-hour clocks.
- Identify and describe 2-D shapes, considering sides, corners and symmetry.
- Identify and describe 3-D shapes, considering faces, edges and vertices.
- Compare and sort common 2-D and 3-D shapes and everyday objects.
- Interpret and answer questions based on pictograms, tally charts, block diagrams and tables.

	Main learning	Rationale
<p><b>Week 1</b> <i>Place value, counting on and mental addition and subtraction</i></p> <p>Links to Framework for Mathematics Y2 – A1, A2, A3, D1, D2, D3 Y3 – A1, A2, B1, B2, B3, D2, E1 Y3 – A1, D1, A2</p>	<ul style="list-style-type: none"> <li>• Find 1, 10 or 100 more or less than a given number.</li> <li>• Count from 0 in multiples of 50 and 100.</li> <li>• Describe and extend number sequences involving counting on or back in different steps.</li> <li>• Add and subtract mentally:               <ul style="list-style-type: none"> <li>- a three-digit number and ones</li> <li>- a three-digit number and tens</li> <li>- a three digit number and hundreds.</li> </ul> </li> <li>• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:               <ul style="list-style-type: none"> <li>- a 2-digit number and ones</li> <li>- a 2-digit number and tens</li> <li>- two 2-digit numbers. (Year 2 objective)</li> </ul> </li> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context.</li> <li>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> </ul>	<p>It is useful to begin a term with learning related to place value, as further learning in the term will be reliant on secure understanding of the number system. The place value work in this week is in the context of sequences and calculation. Children should continue to count in ones, tens and hundreds. Children should also mentally calculate with two-digit numbers in which the answer is a three-digit number.</p>
<p><b>Week 2</b> <i>Fractions</i></p> <p>Links to Framework for Mathematics Y3 – E2, B3, E3, D1, E1, D2, E2, E3 Y4 – E1, E2, E3</p>	<ul style="list-style-type: none"> <li>• Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</li> <li>• Understand that finding a fraction of an amount relates to division.</li> <li>• Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> <li>• Show practically or pictorially that a fraction is one whole number divided by another (for example, <math>\frac{3}{4}</math> can be interpreted as <math>3 \div 4</math>).</li> </ul>	<p>The learning of fractions is an extension in understanding of the number system. Learning how to calculate fractions of amounts by sharing in practical contexts, is a valuable experience before making the link to division. Children's understanding of fractions should go beyond the 0-1 interval.</p>
<p><b>Week 3</b> <i>Fractions and written and mental division</i></p> <p>Links to Framework for Mathematics Y3 – E2, B3, E3, D1, E1, D2, E2, E3, A3, D3 Y4 – E1, E2, E3</p>	<ul style="list-style-type: none"> <li>• Understand that finding a fraction of an amount relates to division.</li> <li>• Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> <li>• Understand how division statements can be represented using arrays.</li> <li>• Understand division as sharing and grouping and use each appropriately.</li> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> <li>• Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers divided by one-digit numbers, using mental and progressing to formal written methods.</li> </ul>	<p>Children build on their understanding of fractions of shapes, using these shapes when sharing items into equal groups. The link between finding fractions of amounts and division is made. When children are calculating fractions of amounts, this should be in a context e.g. length, money, time to consolidate previous learning. When finding fractions of amounts, children need to understand that this is division by sharing.</p>
<p><b>Week 4</b> <i>Measures and calculation in the context of volume and capacity and</i></p>	<ul style="list-style-type: none"> <li>• Measure, compare, add and subtract volumes and capacities.</li> <li>• Measure, compare, add and subtract masses.</li> <li>• Solve problems involving and measures.</li> </ul>	<p>Children gain valuable practical experience of volume and capacity, and learn to understand the difference between the two. At this stage, volume refers to the amount of liquid within a container, and capacity is the maximum amount of liquid a container can hold. Both therefore are measured in l and ml.</p>

<p>mass</p> <p>Links to Framework for Mathematics Y4 – D3</p>		<p>Children should develop an understanding of a 'benchmark' for estimating volume/capacity e.g. a can of fizzy drink is 330ml. Practical experiences should also further children's knowledge and understanding of mass, including the units of gram (g) and kilogram (kg), and they should develop an understanding of a 'benchmark' mass of a common familiar object e.g. a bag of sugar having a mass of 1kg. Children should call upon their knowledge of place value and calculations in the context of measurement.</p>
<p><b>Week 5</b> <i>Counting, sequences, multiplication facts, mental and written multiplication</i></p> <p>Links to Framework for Mathematics Y3 – E1, D2, E2, A3, D3, E3 Y4 – A1, B2, A2, D2, A3, E3</p>	<ul style="list-style-type: none"> <li>• Count from 0 in multiples of 8.</li> <li>• Recall and use multiplication and division facts for the 8 multiplication tables.</li> <li>• Use sorting diagrams to compare and sort numbers.</li> <li>• Describe and extend number sequences involving counting on or back in different steps.</li> <li>• Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</li> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> </ul>	<p>Children build on their knowledge of the 4 times table to derive the 8 times table, recognising the relationship between the answers in both.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>
<p><b>Week 6</b> <i>Mental and written multiplication, in the context of pictograms, measurements and money.</i></p> <p>Links to Framework for Mathematics Y3 – E1, D2, E2, A3, D3, E3 Y4 – A2, D2, A3, E3</p>	<ul style="list-style-type: none"> <li>• Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</li> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> <li>• Solve problems involving money and measures.</li> <li>• Solve problems, including missing number problems involving multiplication, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</li> </ul>	<p>Children are introduced to pictograms in which each symbol is worth more than 1. They use their knowledge of multiplication and counting in equal steps to calculate in the context of pictograms. Other opportunities to consolidate measurement and money should be taken when asking children to calculate.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>

## Year 4 Spring 1

### Starter suggestions for Number

- Read and write numbers with one decimal place.
- Count on and back in 0.1s, 1s, 10s or 100s from any number up to 10,000.
- Count forwards and backwards in equal steps and describe any patterns in the sequence.
- Order a set of random numbers to at least 10,000 including amounts of money and measures involving decimals.
- Recall addition and subtraction facts for 100.
- Recall multiplication facts for 2, 3, 4, 5, 6, 8 and 9x tables and derive associated division facts.
- Identify patterns of similar calculations, e.g. *if I know  $7 \times 8$ , I also know  $0.7 \times 0.8$ ,  $70 \times 8$ ,  $70 \times 80$  etc.*
- Multiply and divide numbers by 10, including those which have answers to one decimal place.
- Double any multiple of 10 or 100.
- Count in fraction steps, e.g.  $\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{3}{5}$  ...

### Starter suggestions for Measurement, Geometry and Statistics

- Recognise 2D and 3D shapes in different orientations and describe them.
- Use a variety of sorting diagrams to compare and classify numbers and geometric shapes based on their properties.
- Identify right angles and acute and obtuse angles.
- Estimate and compare lengths, volumes/capacities and masses.
- Read measuring scales to an appropriate degree of accuracy.
- Convert between different units of measure.
- Describe positions on a square grid labelled with letters and numbers.
- Tell and write the time from an analogue clock and 12 and 24-hour clocks.
- Calculate time durations in minutes, hours and days.
- Interpret data in bar charts, pictograms and tables.

	Main learning	Rationale
<p><b>Week 1</b> <i>Place value, counting, including negative numbers</i></p> <p>Links to Framework for Mathematics Y4 – A1, A3 Y5 – A1</p>	<ul style="list-style-type: none"> <li>• Read Roman numerals to 100 (I to C) and know that, over time, the numeral system changed to include the concept of zero and place value.</li> <li>• Count in multiples of 6, 8, 25 and 1000.</li> <li>• Count backwards through zero to include negative numbers.</li> <li>• <i>Order temperatures including those below <math>0^{\circ}\text{C}</math>.</i></li> <li>• <i>Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps.</i></li> </ul>	<p>Children learn about an alternative number system (Roman numerals) and relate this to our Base 10 system, appreciating the efficiency of place value and the concept of zero, including its use as a place holder.</p> <p>Children's understanding of the number system is extended to include negative numbers. It is useful to introduce these in ways children can easily identify, such as floors below ground level in a building or steps into a swimming pool some above and some below the surface of the water. This understanding can then be applied to more abstract concepts such as temperature.</p>
<p><b>Week 2</b> <i>Fractions</i></p> <p>Links to Framework for Mathematics Y4 – E1, E2, E3 Y5 – E1, E2, E3</p>	<ul style="list-style-type: none"> <li>• <i>Understand that a fraction is one whole number divided by another (for example, <math>\frac{3}{4}</math> can be interpreted as <math>3 \div 4</math>).</i></li> <li>• Add and subtract fractions with the same denominator.</li> <li>• Recognise and show, using diagrams, families of common equivalent fractions.</li> <li>• Recognise and write decimal equivalents of any number of tenths or hundredths.</li> <li>• Recognise and write decimal equivalents to <math>\frac{1}{4}</math>; <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math>.</li> <li>• <i>Count on and back in steps of unit fractions.</i></li> <li>• <i>Compare and order unit fractions and fractions with the same denominator (including on a number line). (Year 3 objective)</i></li> </ul>	<p>The learning of fractions is an extension in understanding of the number system. Equivalent fractions should be learned through practical experiences and using pictorial representations. Children should use factors and multiples to recognise equivalent fractions and simplify where appropriate.</p> <p>Children learn that to convert a fraction into a decimal, an equivalent fraction with a denominator of 10 or 100 is required. Children relate the fractions tenths and hundredths to our Base 10 number system.</p>
<p><b>Week 3</b> <i>Fractions and written and mental division</i></p> <p>Links to Framework for Mathematics Y4 – E3 Y5 – E1, E2, E3</p>	<ul style="list-style-type: none"> <li>• <i>Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators.</i></li> <li>• <i>Select a mental strategy appropriate for the numbers involved in the calculation.</i></li> <li>• <i>Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</i></li> <li>• 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.</li> <li>• Solve simple measure and money problems involving fractions and decimals to two decimal places.</li> </ul>	<p>Children build on their understanding of fractions of shapes, using these shapes when sharing items into equal groups. The link between finding fractions of amounts and division is made. When children are calculating fractions of amounts, this should be in a context e.g. length, money, time to consolidate previous learning. Children should learn that finding fractions is division by sharing and the activities should reflect this. Later, children should learn that grouping is a more efficient method of performing written division, even in contexts of sharing.</p> <p>When calculating, children should learn which methods suit the numbers involved and why. Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>
<p><b>Week 4</b> <i>Position and direction</i></p> <p>Links to Framework for Mathematics Y5 – D1, B2, D3</p>	<ul style="list-style-type: none"> <li>• Describe positions on a 2-D grid as coordinates in the first quadrant.</li> <li>• Describe movements between positions as translations of a given unit to the left/right and up/down.</li> <li>• Plot specified points and draw sides to complete a given polygon.</li> <li>• Complete a simple symmetric figure with respect to a specific line of symmetry.</li> </ul>	<p>Children are introduced to coordinate grids and apply their knowledge of 2-D shapes when completing partly drawn polygons. Translations are introduced and children's learning of symmetry is extended from identifying lines of symmetry in shapes to completing symmetric figures using a specific line of symmetry. This could be vertical, horizontal or oblique, depending on children's ability.</p>
<p><b>Week 5</b> <i>Area, counting in equal steps</i></p> <p>Links to Framework for Mathematics Y4 – D3</p>	<ul style="list-style-type: none"> <li>• <i>Understand that area is a measure of surface within a given boundary.</i></li> <li>• Find the area of rectilinear shapes by counting squares.</li> </ul>	<p>Children are introduced to area as a measure of surface within a given boundary. They count the number of squares within rectilinear shapes, utilising their skills of counting in equal steps. NB –rectilinear shapes are ones made up of sides meeting at right angles. Children should relate area to arrays and multiplication.</p>

	Main learning	Rationale
<p><b>Week 6</b>  <i>Written addition and subtraction in contexts of money and measures.</i></p> <p>Links to Framework for Mathematics Y4 – A2, D2, A3, B3, D3</p>	<ul style="list-style-type: none"> <li>• Add and subtract numbers with up to 4 digits and decimals with one decimal place using the formal written methods of columnar addition and subtraction where appropriate.</li> <li>• <i>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</i></li> <li>• Estimate and use inverse operations to check answers to a calculation.</li> <li>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	<p>Children develop and rehearse the processes involved in written addition and subtraction. Practical and visual resources may be used to support understanding of these processes.</p> <p>Calculations are presented in different contexts of money and measures to consolidate these areas and support children in understanding when to use their calculation skills.</p> <p>When calculating, children should learn which methods suit the numbers involved and why.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>





## Year 5 Spring 1

### Starter suggestions for Number

- Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents.
- Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal.
- Count forwards and backwards in equal steps and describe any patterns in the sequence.
- Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places.
- Know by heart facts for all multiplication tables up to  $12 \times 12$ .
- Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers).
- Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).
- Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places).
- Derive related facts from those already known (e.g.  $4 \times 0.8$  linked to  $4 \times 8$  or  $3 + 7 = 10$  linked to  $0.3 + 0.7 = 1$ )
- Use partitioning to double or halve any number, including decimals to two decimal places.
- Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg etc.
- Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places.
- Count in fraction steps and convert equivalent fractions (e.g. count in steps of  $\frac{1}{12}$  converting to  $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \dots$ ).

### Starter suggestions for Measurement, Geometry and Statistics

- Convert between metric units of measure by multiplying and dividing by powers of 10.
- Read, write and convert between units of time.
- Identify and describe properties of 2D and 3D shapes, including regular and irregular.
- Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of shapes).
- Identify angles which are acute, obtuse and reflex.
- Estimate the size of angles.
- Compare and classify geometric shapes based on their properties.
- Read scales to an appropriate degree of accuracy.
- Read and plot coordinates in the first quadrant.
- Read and interpret information in all types of graph and table, including line graphs and timetables.

	Main learning	Rationale
<p><b>Week 1</b> Place value (Counting including negative numbers)</p> <p>Links to Framework for Mathematics Y5 – A1, A2, A3</p>	<ul style="list-style-type: none"> <li>• Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero.</li> <li>• Calculate difference in temperature, including those that involve a positive and negative temperature.</li> <li>• Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal.</li> <li>• Continue to order temperatures including those below <math>0^{\circ}\text{C}</math>.</li> <li>• Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> </ul>	<p>Children's understanding of negative numbers is developed from Year 4. It is useful to introduce these in ways children can easily identify, such as floors below ground level in a building or steps into a swimming pool some above and some below the surface of the water. This understanding can then be applied to more abstract concepts such as temperature. Children should use number lines to support their understanding of moving through zero.</p> <p>All work on reading and recognising Roman numerals could be carried out in History lessons on this period.</p>
<p><b>Week 2</b> Addition and subtraction including problem solving</p> <p>Links to Framework for Mathematics Y5 – A1, A2, A3, B1, B3, D1, D2, D3, E1, E3</p>	<ul style="list-style-type: none"> <li>• Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places.</li> <li>• Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction).</li> <li>• Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> <li>• Calculate difference in temperature, including those that involve a positive and negative temperature.</li> <li>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</li> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>• Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation.</li> </ul>	<p>Children learn and explain when it is appropriate to use mental and written methods of calculation.</p> <p>Children make links with their knowledge of rounding numbers to the nearest 10, 100 and 1000 to estimate the answers to calculations. Calculations should be in contexts including, money, measures, real life problems and number enquiries.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>
<p><b>Week 3</b> Mental and written multiplication</p> <p>Links to Framework for Mathematics Y5 – A1, A2, A3, E1, E3</p>	<ul style="list-style-type: none"> <li>• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>• Multiply and divide numbers mentally drawing upon known facts.</li> <li>• Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.</li> <li>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</li> </ul>	<p>Children should be given a variety of calculations and encouraged to select the most appropriate method for finding a solution, whether that is relying on multiplication facts, using a mental method or using a written method. They should apply their knowledge of multiplication facts up to <math>12 \times 12</math> to larger numbers. When learning about multiplication, children need to maintain the understanding that it is repeated addition or scaling up or down i.e. making an amount a number of times larger (if the scale factor is a fraction then the amount will decrease in size).</p>

	<ul style="list-style-type: none"> <li>• Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>• Solve problems involving multiplication including using their knowledge of factors and multiples, cubes and squares.</li> <li>• Solve problems involving multiplication, including scaling by simple fractions and problems involving simple rates.</li> </ul>	Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.
<p><b>Week 4</b> <i>Measurement (length, mass and capacity)</i></p> <p>Links to Framework for Mathematics Y5 – C1, C2, C3, D1, D2, D3</p>	<ul style="list-style-type: none"> <li>• Use, read and write standard units of length and mass to a suitable degree of accuracy.</li> <li>• Estimate (and calculate) capacity.</li> <li>• Multiply and divide numbers and those involving decimals by 10, 100 and 1000.</li> <li>• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).</li> </ul>	Children's work in Measurement should be predominantly practical and purposeful. It can be linked to other areas of the curriculum e.g. science, DT, PE or other real life situations. Pupils use their knowledge of place value and multiplication and division to convert between standard units. Children should be taught precise definitions of terms so that they are able to distinguish between mass and weight. This may fit in when children learn about Earth and Space or Forces in science.
<p><b>Week 5</b> <i>Geometry (shape, reflection and translation)</i></p> <p>Links to Framework for Mathematics Y5 – B2, D1, D2, D3</p>	<ul style="list-style-type: none"> <li>• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>• Describe positions on the first quadrant of a coordinate grid.</li> <li>• Plot specified points and complete shapes.</li> <li>• Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</li> </ul>	Children should compare lengths and angles to decide if a polygon is regular or irregular. They then apply this knowledge (as well as other knowledge about the properties of shapes) when plotting coordinates of the corners of 2-D shapes in the first quadrant, and also when reflecting and translating shapes. Reflection should be in lines parallel to the axes.
<p><b>Week 6</b> <i>Geometry (angles)</i></p> <p>Links to Framework for Mathematics Y6 – D2 Y5 – D2, D3</p>	<ul style="list-style-type: none"> <li>• Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</li> <li>• Draw given angles, and measure them in degrees (<math>^{\circ}</math>).</li> <li>• Identify angles at a point and one whole turn (total <math>360^{\circ}</math>).</li> <li>• Identify angles at a point on a straight line and a turn (total <math>180^{\circ}</math>).</li> <li>• Identify other multiples of <math>90^{\circ}</math>.</li> </ul>	Building on their knowledge that an angle is a measure of a turn and can be static or dynamic, pupils become accurate in measuring with a protractor. They use conventional markings for right angles. Pupils use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals, for example using dynamic geometry ICT tools including the ITP Fixing Points. Pupils use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems. The ITP Calculating Angles can be used for this. When calculating angles around a point, children could explore this when finding shapes that tessellate.



## Year 6 Spring 1

### Starter suggestions for Number

- Know by heart facts for all multiplication tables up to  $10 \times 10$ .
- Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1, 10.
- To derive related facts from those already known (e.g.  $4 \times 0.8$  linked to  $4 \times 8$  or  $3 + 7 = 10$  linked to  $0.3 + 0.7 = 1$ ).
- Mentally multiply and divide two-digit and single-digit numbers.
- Use partitioning to double or halve any number.
- Mentally multiply and divide pairs of multiples of 10 and 100.
- Mentally multiply and divide two-digit decimals by a single digit number, e.g.,  $(U.t \times U \text{ or } U.t \div U)$ .
- Identify the multiples/factors of given numbers.
- Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents.
- Compare and order two or more different positive and/or negative integers and/or decimal numbers with up to 3 decimal places, say which is the least / greatest ;use the symbols  $<$ ,  $>$  and  $=$  correctly and place on a number line.
- Calculate differences in temperature, including those that involve a positive and negative temperature.
- Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal.
- Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places).
- Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg etc.
- Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places.
- Count in fraction steps (e.g. of  $\frac{1}{12}$ , i.e.  $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}$ ).

### Starter suggestions for Measurement, Geometry and Statistics

- Know and use standard metric units of measure.
- Estimate and calculate length (including perimeter), mass, volume/capacity and area.
- Convert between units by multiplying and dividing by powers of 10.
- Know metric and imperial equivalences of feet, inches, pints and pounds.
- Read, write and convert between units of time.
- Identify and describe properties of 2D and 3D shapes, including regular and irregular.
- Find missing angles and lengths using properties of shape.
- Estimate and identify acute, obtuse and reflex angles.
- Describe positions on the first quadrant of a coordinate grid.
- Solve comparison, sum and difference problems using information presented in all types of graph.
- Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes).

	<b>Main learning</b>	<b>Rationale</b>
<b>Week 1</b> Place value, sequences and coordinates  Links to Framework for Mathematics Y6 – B1,B2,B3,D2	<ul style="list-style-type: none"> <li>• Count forwards or backwards in steps of integers, decimals or powers of 10 for any number.</li> <li>• Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal.</li> <li>• Use simple formulae.</li> <li>• Generate and describe linear number sequences.</li> <li>• Describe positions on the full coordinate grid (all four quadrants).</li> </ul>	Children link counting in steps of different size to sequences and describe and generate formulae for these sequences. A linear number sequence is one that increases or decreases by the same amount each time. The generalising of sequences is then related to the coordinate grid, where children recognise the values of the vertical and horizontal lines. They apply their knowledge of negative numbers to the second, third and fourth quadrants.
<b>Week 2</b> 2D shape, coordinates, translation and reflection  Links to Framework for Mathematics Y6 – D2	<ul style="list-style-type: none"> <li>• Describe positions on the full coordinate grid (all four quadrants).</li> <li>• Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</li> </ul>	Children combine their understanding of shapes and coordinates. When identifying the coordinates of missing corners of shapes, the coordinate grid should be on plain paper, so children are applying their knowledge of shapes, rather than simply counting squares. When reflecting and translating shapes, children should identify relationships between coordinates of the corners and use these relationships when identifying and checking the coordinates of the transformed shape.
<b>Week 3</b> Measurement, temperature and mean  Links to Framework for Mathematics Y6 – A1,A2,A3 C1,C2,C3	<ul style="list-style-type: none"> <li>• Use negative numbers in context, and calculate intervals across zero.</li> <li>• Order and compare numbers including integers, decimals and negative numbers.</li> <li>• Calculate and interpret the mean as an average.</li> </ul>	Children use and calculate with negative numbers using the context of temperature (as it is often very cold at this time of year). When ordering numbers from a set of data, they can be introduced to averages. The median could be found once the numbers have been ordered, then leading on to finding the mean, consolidating their addition and division skills.
<b>Week 4</b> Calculating with fractions  Links to Framework for Mathematics Y6 – A1,A2,A3,E1 E2,E3	<ul style="list-style-type: none"> <li>• Identify common factors, common multiples and prime numbers.</li> <li>• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</li> <li>• Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</li> <li>• Multiply simple pairs of proper fractions, writing the answer in its simplest form (using diagram) (e.g. <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>).</li> <li>• Divide proper fractions by whole numbers (using diagram) (e.g.</li> </ul>	Children use knowledge of multiplication facts to identify factors and multiples of different numbers. In doing so, they can learn that prime numbers are ones whose only factors are themselves and 1. Children apply their knowledge of common factors to create equivalent fractions in order to compare, order and position on a number line. Children apply their knowledge of common multiples in order to add and subtract fractions with different denominators, by converting to equivalent fractions.

	$\frac{1}{3} \div 2 = \frac{1}{6}$ . <ul style="list-style-type: none"> <li>Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>).</li> </ul>	<p>When multiplying and dividing fractions, it is essential that children use diagrams and knowledge of multiplication and division of whole numbers to understand the concept of calculating with fractions.</p> <p>Children recognise that fractions, decimals and percentages are all ways of expressing a proportion. Decimals (decimal fractions) are ways of writing fractions in our Base 10 number system, so converting to tenths, hundredths and thousandths is essential understanding.</p>
<p><b>Week 5</b>  <i>Mental and written division</i></p> <p>Links to Framework for Mathematics Y6 – A1,A2,A3,D1 D2,D3,E1,E3</p>	<ul style="list-style-type: none"> <li>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.</li> <li>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.</li> <li>Use written division methods in cases where the answer has up to two decimal places.</li> <li>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</li> <li>Solve problems which require answers to be rounded to specified degrees of accuracy.</li> </ul>	<p>Children learn when it is appropriate to use mental and written methods of calculation.</p> <p>Children make links with their knowledge of rounding numbers to estimate the answers to calculations. Calculations should be in contexts including, money, measures, real life problems and number enquiries.</p> <p>Children should also explore missing number problems using algebraic notation, including pairs of numbers to satisfy and equation with two unknowns and generalising the relationship between the two numbers.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>
<p><b>Week 6</b>  <i>Mental and written multiplication</i></p> <p>Links to Framework for Mathematics Y6 – A1,A2,A3,D1 D2,D3,E1,E3</p>	<ul style="list-style-type: none"> <li>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</li> <li>Multiply one-digit numbers with up to two decimal places by whole numbers.</li> <li>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</li> <li>Select a mental strategy appropriate for the numbers involved in the calculation.</li> <li>Solve problems which require answers to be rounded to specified degrees of accuracy.</li> <li>Enumerate possibilities of combinations of two variables.</li> </ul>	<p>Children learn when it is appropriate to use mental and written methods of calculation.</p> <p>Children make links with their knowledge of rounding numbers to estimate the answers to calculations. Calculations should be in contexts including, money, measures, real life problems and number enquiries.</p> <p>Children should also explore missing number problems using algebraic notation, including pairs of numbers to satisfy and equation with two unknowns and generalising the relationship between the two numbers.</p> <p>Children should explore finding all possibilities problems when there are two variables e.g. using the two variables of colour and parts of a house, how many different houses are possible if the walls, roof and door can be either red, blue or yellow. When all combinations have been found, then the children should identify and generalise about the number of combinations and the choices for each variable.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>