# Subject: Mathematics

## Overview for Autumn term in Mathematics using White Rose

### Knowledge & Skills Progression

| | Nursery | Reception | Year 1 | Year 2 |
|---|---|---|---|---|
| **Number, Counting and Place Value** | • Subitise 1, 2, 3.<br>• Touch count to 3<br>• Recognise the numbers 1 and 2 and match them to the quantity.<br>• Say one number for each item when counting.<br>• Count reliably to 5.<br>• Show finger numbers up to 5. | • Count objects, actions and sounds to 10.<br>• Match numeral and quantity to 10.<br>• Subitise numbers to 5.<br>• Order numbers to 10. | • Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.<br>• Count numbers to 100 in numerals; count in multiples of twos, fives and tens.<br>• Identify and represent numbers using objects and pictorial representations<br>• Read and write numbers to 100 in numerals.<br>• Read and write numbers from 1 to 20 in numerals and words.<br>• Given a number, identify one more and one less. | • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.<br>• Read and write numbers to at least 100 in numerals and in words.<br>• Identify, represent and estimate numbers using different representations, including the number line.<br>• Recognise the place value of each digit in a two-digit number (tens, ones).<br>• Compare and order numbers from 0 up to 100; use and = signs.<br>• Use place value and number facts to solve problems. |
| **Calculating: Addition and Subtraction** | | • Compare quantities with the language more than and fewer than.<br>• Understand the same.<br>• Find one more or one less to 10.<br>• Recall number bonds and corresponding subtraction facts to 5. | • Add and subtract one-digit and two digit numbers to 20, including zero.<br>• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = χ – 9. | • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one digit numbers.<br>• Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods |
| **Measurement** | | • Compare length, weight and capacity using suitable language. | | |
| **Geometry** | • Talk about patterns in the environment.<br>• Create ABAB patterns.<br>• Extend ABAB patterns and spot and explain errors.<br>• Explore 2D and 3D shapes.<br>• Select appropriate shapes for a purpose. | • Copy, continue and create a repeating pattern.<br>• Make patterns with varying rules<br>• Name 2D and 3D shapes.<br>• Shapes can be rotated. | • Recognise and name common 2- D shapes, for example, rectangles (including squares), circles and triangles. | • Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.<br>• Identify 2-D shapes on the surface of 3-D shapes, for example, a circle on a cylinder and a triangle on a pyramid<br>• Compare and sort common 2-D shapes and everyday objects |

# Subject: Mathematics

## Overview for Spring term in Mathematics using White Rose

### Knowledge & Skills Progression

| | Nursery | Reception | Year 1 | Year 2 |
|---|---|---|---|---|
| **Number, Counting and Place Value** | • Subitise 1, 2, 3.<br>• Say one number for each item when counting.<br>• Count reliably to 5.<br>• Show finger numbers up to 5.<br>• Link the numerals 1-5 to a quantity<br>• Understand the cardinal principle. | • Count objects, actions and sounds to 10.<br>• Match numeral and quantity to 10.<br>• Count verbally beyond 10.<br>• Order numbers to 10. | • Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.<br>• Count numbers to 100 in numerals; count in multiples of twos, fives and tens.<br>• Identify and represent numbers using objects and pictorial representations. Read and write numbers to 100 in numerals.<br>• Read and write numbers from 1 to 20 in numerals and words.<br>• Given a number, identify one more and one less. | |
| **Calculating: Addition and Subtraction** | • Know the composition of numbers to 4.<br>• Solve real world math problems with numbers to 5. | • Compare quantities with the language more than and fewer than.<br>• Understand the same.<br>• Find one more or one less to 10.<br>• Recall number bonds and corresponding subtraction facts to 5.<br>• Recall number bonds and corresponding subtraction facts to 10.<br>• Know the composition of numbers to 10.<br>• Solve real world maths problems within 10 and explain my reasoning. | • Add and subtract one-digit and two digit numbers to 20, including zero.<br>• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = $\chi$ – 9. | |
| **Calculating: Multiplication and Division** | • Solve real world math problems with numbers to 5. | | | • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.<br>• Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.<br>• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.<br>• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts |

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| **Measurement** | • Compare objects according to their size, length, weight and capacity.<br>• Develop simple ways of comparing objects. | • Compare length, weight and capacity using suitable language. | • Compare, describe and solve practical problems for:<br>lengths and heights<br>mass/weight<br>capacity and volume<br>time<br>• Measure and begin to record the following:<br>lengths and heights<br>mass/weight<br>capacity and volume<br>time (hours, minutes, seconds) | • Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and =.<br>• Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.<br>• Find different combinations of coins that equal the same amounts of money.<br>• Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. |
| **Geometry** | • Explore 2D and 3D shapes.<br>• Select appropriate shapes for a purpose.<br>• Talk about 2D and 3D shapes.<br>• Begin to use mathematical language to describe shape. | • Copy, continue and create a repeating pattern.<br>• Make patterns with varying rules<br>• Name 2D and 3D shapes.<br>• Shapes can be rotated.<br>• Explore the composition of shapes.<br>• Use my shape knowledge to investigate and solve problems.<br>• Use shape to investigate rotating shapes to make new shapes | | |

# Subject: Mathematics

## Overview for Summer term in Mathematics using White Rose

### Knowledge & Skills Progression

| | Nursery | Reception | Year 1 | Year 2 |
|---|---|---|---|---|
| **Number, Counting and Place Value** | • Count reliably to 5.<br>• Show finger numbers up to 5.<br>• Link the numerals 1-5 to a quantity<br>• Order numbers to 5.<br>• Beginning to record the numerals to 5.<br>• Verbally rote count to 10.<br>• Understand the cardinal principle. | • Count to 20 and beyond.<br>• Identify odd and even numbers.<br>• Make teen numbers with tens and ones.<br>• Count on and back from different numbers beyond 10<br>• Find missing numbers within 20.<br>• Identify numbers beyond 20 | • Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.<br>• Count numbers to 100 in numerals; count in multiples of twos, fives and tens.<br>• Identify and represent numbers using objects and pictorial representations.<br>• Read and write numbers to 100 in numerals.<br>• Read and write numbers from 1 to 20 in numerals and words.<br>• Given a number, identify one more and one less. | |
| **Calculating: Addition and Subtraction** | • Know the composition of numbers to 4.<br>• Solve real world math problems with numbers to 5. | • Compare quantities with the language more than and fewer than.<br>• Understand the same.<br>• Find one more or one less to 10.<br>• Recall number bonds and corresponding subtraction facts to 10.<br>• Know the composition of numbers to 10.<br>• Solve real world maths problems within 10 and explain my reasoning. | | |
| **Calculating: Multiplication and Division** | • Solve real world math problems with numbers to 5. | • Recall my double facts within 10.<br>• Solve real world maths problems within 10 and explain my reasoning.<br>• Share a number within 10.<br>• Understand groups of 10.<br>• Find half of a set of objects<br>• Share between 2/3/4/5<br>• Investigate problems by exploring different possibilities.<br>• Count in two's. | • Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. | |
| **Fractions** | • Solve real world math problems with numbers to 5 – finding half. | • Share a number within 10.<br>• Find half of a set of objects<br>• Share between 2/3/4/5 | • Recognise, find and name a half as one of two equal parts of an object, shape or quantity.<br>• Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. | • Recognise, find, name and write fractions 1/3, 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity.<br>• Recognise the equivalence of 2/4 and $\frac{1}{2}$.<br>• Write simple fractions for example,<br>• 1/2 of 6 = 3 |

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| **Measurement** | | | • Compare, describe and solve practical problems for: lengths and heights; mass/weight; capacity and volume; time<br>• Measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds)<br>• Recognise and know the value of different denominations of coins and notes.<br>• Sequence events in chronological order using language, for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.<br>• Recognise and use language relating to dates, including days of the week, weeks, months and years.<br>• Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | • Compare and sequence intervals of time.<br>• 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.<br>• Know the number of minutes in an hour and the number of hours in a day. |
| **Geometry** | • Talk about patterns in the environment.<br>• Create ABAB patterns.<br>• Extend ABAB patterns and spot and explain errors.<br>• Explore 2D and 3D shapes.<br>• Select appropriate shapes for a purpose.<br>• Talk about 2D and 3D shapes.<br>• Begin to use mathematical language to describe shape.<br>• Combine shapes to make new ones.<br>• Understand positional language.<br>• Beginning to use vocabulary to sequence of events using words such as first or then.<br>• Use positional language to describe the location of objects.<br>• Describe a familiar route. | • Name 2D and 3D shapes.<br>• Shapes can be rotated.<br>• Explore the composition of shapes.<br>• Use my shape knowledge to investigate and solve problems.<br>• Use shape to investigate rotating shapes to make new shapes<br>• Give and follow directions. | • Describe position, direction and movement, including whole, half, quarter and three-quarter turns. | • Order and arrange combinations of mathematical objects in patterns and sequences.<br>• 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 anticlockwise). |
| **Statistics** | | | | • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br>• Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.<br>• Ask and answer questions about totalling and comparing categorical data |