**CYCLE A**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Mathematics** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **AUTUMN** | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods.   **Money**   * Recognise and know the value of different denominations of coins and notes. * Solve simple problems in a practical context involving addition and subtraction of money of the same unit.   **Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods.   **Money**   * Recognise and know the value of different denominations of coins and notes. * Solve simple problems in a practical context involving addition and subtraction of money of the same unit. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). * Compare and order numbers up to 1,000. * Count from 0 in multiples of 4, 8, 50, and 100. * Read and write numbers up to 1,000 in numerals and words. * Solve problems involving numbers, including addition and subtraction, using place value.   **Addition and Subtraction**   * Add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. * Add and subtract numbers with up to three digits, using formal written methods. * Estimate and use inverse operations to check answers to a calculation. * Solve problems, including missing number problems, using addition and subtraction.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 3, 4, and 8 multiplication tables. * Write and calculate mathematical statements for multiplication and division using the multiplication tables they know. * Solve problems involving multiplication and division, including scaling and missing number problems. * Solve problems involving the distribution of quantities (e.g., grouping and sharing).   **Length and Perimeter**   * Measure and compare lengths in millimetres (mm), centimetres (cm), and metres (m). * Add and subtract lengths. * Measure the perimeter of simple 2-D shapes. * Convert between different units of length (e.g., cm to m). * Solve problems involving lengths and perimeters. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). * Compare and order numbers up to 1,000. * Count from 0 in multiples of 4, 8, 50, and 100. * Read and write numbers up to 1,000 in numerals and words. * Solve problems involving numbers, including addition and subtraction, using place value.   **Addition and Subtraction**   * Add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. * Add and subtract numbers with up to three digits, using formal written methods. * Estimate and use inverse operations to check answers to a calculation. * Solve problems, including missing number problems, using addition and subtraction.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 3, 4, and 8 multiplication tables. * Write and calculate mathematical statements for multiplication and division using the multiplication tables they know. * Solve problems involving multiplication and division, including scaling and missing number problems. * Solve problems involving the distribution of quantities (e.g., grouping and sharing).   **Length and Perimeter**   * Measure and compare lengths in millimetres (mm), centimetres (cm), and metres (m). * Add and subtract lengths. * Measure the perimeter of simple 2-D shapes. * Convert between different units of length (e.g., cm to m). * Solve problems involving lengths and perimeters. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in numbers up to 10,000,000. * Read, write, and compare numbers to at least 1,000,000 and determine the value of each digit. * Round any whole number to a required degree of accuracy. * Solve problems involving numbers up to 10,000,000, including comparing and ordering them.   **Addition and Subtraction**   * Add and subtract whole numbers with more than four digits, using formal written methods. * Solve multi-step problems involving addition and subtraction, choosing and applying appropriate strategies. * Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. * Solve problems involving mixed operations and large numbers.   **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions**   * Add and subtract fractions with the same denominator and denominators that are multiples of the same number. * Multiply proper fractions and mixed numbers by whole numbers. * Divide proper fractions by whole numbers. * Solve problems involving fractions, including calculating fractions of amounts and finding equivalent fractions. * Use fractions to represent and solve real-world problems.   **Statistics**   * Interpret and construct pie charts and line graphs. * Solve problems involving the interpretation of data in various graphical forms (e.g., pie charts, bar charts, line graphs). * Calculate and interpret the mean as an average. * Solve problems involving the analysis of data and comparing different sets of data. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in numbers up to 10,000,000. * Read, write, and compare numbers to at least 1,000,000 and determine the value of each digit. * Round any whole number to a required degree of accuracy. * Solve problems involving numbers up to 10,000,000, including comparing and ordering them.   **Addition and Subtraction**   * Add and subtract whole numbers with more than four digits, using formal written methods. * Solve multi-step problems involving addition and subtraction, choosing and applying appropriate strategies. * Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. * Solve problems involving mixed operations and large numbers.   **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions**   * Add and subtract fractions with the same denominator and denominators that are multiples of the same number. * Multiply proper fractions and mixed numbers by whole numbers. * Divide proper fractions by whole numbers. * Solve problems involving fractions, including calculating fractions of amounts and finding equivalent fractions. * Use fractions to represent and solve real-world problems.   **Statistics**   * Interpret and construct pie charts and line graphs. * Solve problems involving the interpretation of data in various graphical forms (e.g., pie charts, bar charts, line graphs). * Calculate and interpret the mean as an average. * Solve problems involving the analysis of data and comparing different sets of data. |
| **SPRING** | **Unit Names:**  **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Statistics**   * Interpret and construct simple pictograms, tally charts, block diagrams, and simple tables. * Ask and answer questions about totalling and comparing data.   **Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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. | **Unit Names:**  **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Statistics**   * Interpret and construct simple pictograms, tally charts, block diagrams, and simple tables. * Ask and answer questions about totalling and comparing data.   **Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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.   **Fractions**   * Recognise, find, and name a half as one of two equal parts of an object, shape, or quantity. * Recognise, find, and name a quarter as one of four equal parts of an object, shape, or quantity. * Write simple fractions for example, 1/2 of 6 = 3, 1/4 of 8 = 2.   **Length and Height**   * Compare, describe, and solve practical problems for lengths and heights. * Measure and record lengths and heights using non-standard units (e.g., hand spans, cubes) and standard units (e.g., centimetres and metres). | **Unit Names:**  **Multiplication and Division**   * Recall multiplication and division facts for multiplication tables up to 12 × 12. * Solve problems involving multiplication and division, including using efficient written methods (short multiplication and division). * Multiply and divide numbers mentally, drawing on known facts. * Solve problems involving scaling (e.g., scaling quantities in recipes or measuring).   **Area**   * Find the area of rectilinear shapes by counting squares. * Use the formula for area to solve simple problems involving area. * Recognise that area can be measured in square units, and solve problems involving calculating area in square centimetres and square metres.   **Money**   * Recognise and use different denominations of coins and notes. * Solve simple problems involving money, including making change and adding amounts of money. * Convert between different units of money (e.g., pounds and pence).   **Fractions**   * Recognise and show, using diagrams, equivalent fractions with small denominators. * Compare and order fractions with the same denominator. * Add and subtract fractions with the same denominator. * Solve problems involving fractions, including finding fractions of quantities.   **Decimals**   * Recognise and write decimal equivalents of fractions (e.g., 1/4 = 0.25, 1/2 = 0.5). * Compare and order decimal numbers to two decimal places. * Solve simple problems involving decimals, including adding and subtracting decimals to one or two decimal places.   **Statistics**   * Interpret and present data using bar charts, pictograms, and tables. * Solve problems using data from bar charts, pictograms, and tables. * Read and interpret data in graphs, including calculating totals and averages. | **Unit Names:**  **Multiplication and Division**   * Recall multiplication and division facts for multiplication tables up to 12 × 12. * Solve problems involving multiplication and division, including using efficient written methods (short multiplication and division). * Multiply and divide numbers mentally, drawing on known facts. * Solve problems involving scaling (e.g., scaling quantities in recipes or measuring).   **Area**   * Find the area of rectilinear shapes by counting squares. * Use the formula for area to solve simple problems involving area. * Recognise that area can be measured in square units, and solve problems involving calculating area in square centimetres and square metres.   **Money**   * Recognise and use different denominations of coins and notes. * Solve simple problems involving money, including making change and adding amounts of money. * Convert between different units of money (e.g., pounds and pence).   **Fractions**   * Recognise and show, using diagrams, equivalent fractions with small denominators. * Compare and order fractions with the same denominator. * Add and subtract fractions with the same denominator. * Solve problems involving fractions, including finding fractions of quantities.   **Decimals**   * Recognise and write decimal equivalents of fractions (e.g., 1/4 = 0.25, 1/2 = 0.5). * Compare and order decimal numbers to two decimal places. * Solve simple problems involving decimals, including adding and subtracting decimals to one or two decimal places.   **Statistics**   * Interpret and present data using bar charts, pictograms, and tables. * Solve problems using data from bar charts, pictograms, and tables. * Read and interpret data in graphs, including calculating totals and averages. | **Unit Names:**  **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions/Decimals/Percentages**   * Recognise and use equivalence between fractions, decimals, and percentages. * Convert between fractions, decimals, and percentages. * Add and subtract fractions with the same denominator and with denominators that are multiples of the same number. * Solve problems involving the use of percentages, including finding percentages of amounts. * Multiply and divide decimals by whole numbers and by 10, 100, and 1,000. * Solve real-world problems involving fractions, decimals, and percentages.   **Algebra**   * Use simple formulae and substitute numbers into them. * Generate and describe linear number sequences. * Find pairs of numbers that satisfy an equation with two unknowns. * Express missing number problems algebraically. * Solve simple algebraic equations and use algebra to solve real-world problems.   **Measures – Conversions, Perimeter, Area, and Volume**   * Convert between different units of measure, including metric and imperial units (e.g., cm to m, kg to g). * Calculate the perimeter of composite shapes. * Calculate and compare the area of rectangles, including squares, and composite shapes. * Estimate and calculate the volume of cubes and cuboids. * Solve problems involving conversions between different units of measure and the calculation of perimeter, area, and volume. | **Unit Names:**  **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions/Decimals/Percentages**   * Recognise and use equivalence between fractions, decimals, and percentages. * Convert between fractions, decimals, and percentages. * Add and subtract fractions with the same denominator and with denominators that are multiples of the same number. * Solve problems involving the use of percentages, including finding percentages of amounts. * Multiply and divide decimals by whole numbers and by 10, 100, and 1,000. * Solve real-world problems involving fractions, decimals, and percentages.   **Algebra**   * Use simple formulae and substitute numbers into them. * Generate and describe linear number sequences. * Find pairs of numbers that satisfy an equation with two unknowns. * Express missing number problems algebraically. * Solve simple algebraic equations and use algebra to solve real-world problems.   **Measures – Conversions, Perimeter, Area, and Volume**   * Convert between different units of measure, including metric and imperial units (e.g., cm to m, kg to g). * Calculate the perimeter of composite shapes. * Calculate and compare the area of rectangles, including squares, and composite shapes. * Estimate and calculate the volume of cubes and cuboids. * Solve problems involving conversions between different units of measure and the calculation of perimeter, area, and volume. |
| **SUMMER** | **Unit Names:**  **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods. * Recognise, find, and write simple fractions of objects, numbers, and quantities.   **Geometry**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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.   **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. * Compare and sequence intervals of time. * Recognise and use language relating to dates, including days of the week, weeks, months, and years. | **Unit Names:**  **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods. * Recognise, find, and write simple fractions of objects, numbers, and quantities.   **Geometry**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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.   **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. * Compare and sequence intervals of time. * Recognise and use language relating to dates, including days of the week, weeks, months, and years.   **Mass/Capacity/Temperature**   * Compare, describe, and solve practical problems for mass/weight, capacity/volume, and temperature. * Measure and begin to record mass/weight, capacity/volume, and temperature using appropriate units (e.g., kilograms, grams, litres, and degrees Celsius). | **Unit Names:**  **Position and Direction**   * Describe and identify the position of a shape following a translation, using the appropriate language (e.g., left, right, up, down). * Identify, describe, and represent the position of a shape on a grid. * Use coordinates to specify the position of points on a grid.   **Time**   * Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks. * Estimate and read time with increasing accuracy to the nearest minute. * Solve problems involving converting between units of time (e.g., hours to minutes). * Calculate time intervals, including days, weeks, and months.   **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Compare and classify shapes based on their properties and sizes. * Identify lines of symmetry in 2-D shapes.   **Mass and Capacity**   * Measure and compare mass using standard units (e.g., kilograms and grams). * Measure and compare capacity using standard units (e.g., litres and millilitres). * Solve problems involving mass and capacity, including converting between units.   **Money**   * Solve problems involving addition and subtraction of money, including giving change and making purchases. * Convert between different units of currency (e.g., pounds and pence). * Compare prices and make decisions about spending and saving money. | **Unit Names:**  **Position and Direction**   * Describe and identify the position of a shape following a translation, using the appropriate language (e.g., left, right, up, down). * Identify, describe, and represent the position of a shape on a grid. * Use coordinates to specify the position of points on a grid.   **Time**   * Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks. * Estimate and read time with increasing accuracy to the nearest minute. * Solve problems involving converting between units of time (e.g., hours to minutes). * Calculate time intervals, including days, weeks, and months.   **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Compare and classify shapes based on their properties and sizes. * Identify lines of symmetry in 2-D shapes.   **Mass and Capacity**   * Measure and compare mass using standard units (e.g., kilograms and grams). * Measure and compare capacity using standard units (e.g., litres and millilitres). * Solve problems involving mass and capacity, including converting between units.   **Money**   * Solve problems involving addition and subtraction of money, including giving change and making purchases. * Convert between different units of currency (e.g., pounds and pence). * Compare prices and make decisions about spending and saving money. | **Unit Names:**  **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and lines of symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Classify shapes by properties such as symmetry, angles, and sides. * Solve problems involving the properties of shapes, including angles in polygons. * Recognise, describe, and build 3-D shapes, including making connections between 2-D shapes and their 3-D counterparts.   **Position and Direction**   * Use coordinates to describe the position of a shape or point in the first quadrant of a grid. * Translate shapes on a grid and describe the movement in terms of position and direction. * Reflect shapes in a mirror line and describe the transformation. * Use and interpret position, direction, and movement in different contexts, including problem-solving with coordinates and transformations.   **Money**   * Solve problems involving the calculation of percentages and amounts in a financial context. * Convert between different units of money (e.g., pounds and pence), including calculations involving exchange rates. * Make financial decisions, calculating costs, change, and the effect of different prices or payments. * Solve problems related to budgeting, pricing, and purchasing.   **Area/Perimeter and Volume**   * Calculate the area of rectangles and compound shapes by counting squares or using the formula (length × width). * Calculate the perimeter of regular and irregular polygons. * Estimate and calculate the volume of cubes and cuboids using the formula (length × width × height). * Solve problems involving area, perimeter, and volume, including converting between different units of measurement (e.g., cm² to m², cm³ to m³). | **Unit Names:**  **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and lines of symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Classify shapes by properties such as symmetry, angles, and sides. * Solve problems involving the properties of shapes, including angles in polygons. * Recognise, describe, and build 3-D shapes, including making connections between 2-D shapes and their 3-D counterparts.   **Position and Direction**   * Use coordinates to describe the position of a shape or point in the first quadrant of a grid. * Translate shapes on a grid and describe the movement in terms of position and direction. * Reflect shapes in a mirror line and describe the transformation. * Use and interpret position, direction, and movement in different contexts, including problem-solving with coordinates and transformations.   **Money**   * Solve problems involving the calculation of percentages and amounts in a financial context. * Convert between different units of money (e.g., pounds and pence), including calculations involving exchange rates. * Make financial decisions, calculating costs, change, and the effect of different prices or payments. * Solve problems related to budgeting, pricing, and purchasing.   **Area/Perimeter and Volume**   * Calculate the area of rectangles and compound shapes by counting squares or using the formula (length × width). * Calculate the perimeter of regular and irregular polygons. * Estimate and calculate the volume of cubes and cuboids using the formula (length × width × height). * Solve problems involving area, perimeter, and volume, including converting between different units of measurement (e.g., cm² to m², cm³ to m³). |
| The depth thread is …  Teach – Practice - Repeat | By the end of their time at the academy, students will have developed a deep and interconnected understanding of key mathematical concepts. Starting with **Place Value**, **Addition and Subtraction**, and progressing through **Multiplication and Division**, **Fractions**, and **Statistics**, they will build the skills needed to handle complex numbers and real-world problems. **Properties of Shape**, **Position and Direction**, and **Area/Perimeter and Volume** will deepen their spatial awareness and measurement abilities, while **Money** will help them apply their learning to practical financial scenarios. These units together equip students with the tools to reason mathematically, solve problems, and make informed decisions both academically and in everyday life. | | | | | |
| SMSC development – Spiritual, Moral, Social, Cultural | **Money**   * **Moral:** Discuss ethical considerations around spending and saving, exploring topics such as financial responsibility, charity, and the importance of making informed financial choices that impact not just the individual but also the wider community. * **Social:** Engage students in debates or role-play scenarios about budgeting, the importance of saving, and the responsible use of money in various cultural contexts (e.g., cultural views on wealth and generosity). | | | | | |

**CYCLE B**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Mathematics** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **AUTUMN** | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods.   **Money**   * Recognise and know the value of different denominations of coins and notes. * Solve simple problems in a practical context involving addition and subtraction of money of the same unit.   **Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods.   **Money**   * Recognise and know the value of different denominations of coins and notes. * Solve simple problems in a practical context involving addition and subtraction of money of the same unit. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). * Compare and order numbers up to 1,000. * Count from 0 in multiples of 4, 8, 50, and 100. * Read and write numbers up to 1,000 in numerals and words. * Solve problems involving numbers, including addition and subtraction, using place value.   **Addition and Subtraction**   * Add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. * Add and subtract numbers with up to three digits, using formal written methods. * Estimate and use inverse operations to check answers to a calculation. * Solve problems, including missing number problems, using addition and subtraction.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 3, 4, and 8 multiplication tables. * Write and calculate mathematical statements for multiplication and division using the multiplication tables they know. * Solve problems involving multiplication and division, including scaling and missing number problems. * Solve problems involving the distribution of quantities (e.g., grouping and sharing).   **Length and Perimeter**   * Measure and compare lengths in millimetres (mm), centimetres (cm), and metres (m). * Add and subtract lengths. * Measure the perimeter of simple 2-D shapes. * Convert between different units of length (e.g., cm to m). * Solve problems involving lengths and perimeters. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). * Compare and order numbers up to 1,000. * Count from 0 in multiples of 4, 8, 50, and 100. * Read and write numbers up to 1,000 in numerals and words. * Solve problems involving numbers, including addition and subtraction, using place value.   **Addition and Subtraction**   * Add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. * Add and subtract numbers with up to three digits, using formal written methods. * Estimate and use inverse operations to check answers to a calculation. * Solve problems, including missing number problems, using addition and subtraction.   **Multiplication and Division**   * Recall and use multiplication and division facts for the 3, 4, and 8 multiplication tables. * Write and calculate mathematical statements for multiplication and division using the multiplication tables they know. * Solve problems involving multiplication and division, including scaling and missing number problems. * Solve problems involving the distribution of quantities (e.g., grouping and sharing).   **Length and Perimeter**   * Measure and compare lengths in millimetres (mm), centimetres (cm), and metres (m). * Add and subtract lengths. * Measure the perimeter of simple 2-D shapes. * Convert between different units of length (e.g., cm to m). * Solve problems involving lengths and perimeters. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in numbers up to 10,000,000. * Read, write, and compare numbers to at least 1,000,000 and determine the value of each digit. * Round any whole number to a required degree of accuracy. * Solve problems involving numbers up to 10,000,000, including comparing and ordering them.   **Addition and Subtraction**   * Add and subtract whole numbers with more than four digits, using formal written methods. * Solve multi-step problems involving addition and subtraction, choosing and applying appropriate strategies. * Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. * Solve problems involving mixed operations and large numbers.   **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions**   * Add and subtract fractions with the same denominator and denominators that are multiples of the same number. * Multiply proper fractions and mixed numbers by whole numbers. * Divide proper fractions by whole numbers. * Solve problems involving fractions, including calculating fractions of amounts and finding equivalent fractions. * Use fractions to represent and solve real-world problems.   **Statistics**   * Interpret and construct pie charts and line graphs. * Solve problems involving the interpretation of data in various graphical forms (e.g., pie charts, bar charts, line graphs). * Calculate and interpret the mean as an average. * Solve problems involving the analysis of data and comparing different sets of data. | **Unit Names:**  **Place Value**   * Recognise the place value of each digit in numbers up to 10,000,000. * Read, write, and compare numbers to at least 1,000,000 and determine the value of each digit. * Round any whole number to a required degree of accuracy. * Solve problems involving numbers up to 10,000,000, including comparing and ordering them.   **Addition and Subtraction**   * Add and subtract whole numbers with more than four digits, using formal written methods. * Solve multi-step problems involving addition and subtraction, choosing and applying appropriate strategies. * Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. * Solve problems involving mixed operations and large numbers.   **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions**   * Add and subtract fractions with the same denominator and denominators that are multiples of the same number. * Multiply proper fractions and mixed numbers by whole numbers. * Divide proper fractions by whole numbers. * Solve problems involving fractions, including calculating fractions of amounts and finding equivalent fractions. * Use fractions to represent and solve real-world problems.   **Statistics**   * Interpret and construct pie charts and line graphs. * Solve problems involving the interpretation of data in various graphical forms (e.g., pie charts, bar charts, line graphs). * Calculate and interpret the mean as an average. * Solve problems involving the analysis of data and comparing different sets of data. |
| **SPRING** | **Unit Names:**  **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Statistics**   * Interpret and construct simple pictograms, tally charts, block diagrams, and simple tables. * Ask and answer questions about totalling and comparing data.   **Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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. | **Unit Names:**  **Addition and Subtraction**   * Solve problems with addition and subtraction, using concrete objects and pictorial representations. * Add and subtract numbers mentally, including a two-digit number and ones, a two-digit number and tens, and two two-digit numbers. * Use addition and subtraction facts to 20 fluently.   **Place Value**   * Recognise the place value of each digit in a two-digit number (tens, ones). * Compare and order numbers from 1 to 100. * Read and write numbers to at least 100 in numerals and words.   **Statistics**   * Interpret and construct simple pictograms, tally charts, block diagrams, and simple tables. * Ask and answer questions about totalling and comparing data.   **Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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.   **Fractions**   * Recognise, find, and name a half as one of two equal parts of an object, shape, or quantity. * Recognise, find, and name a quarter as one of four equal parts of an object, shape, or quantity. * Write simple fractions for example, 1/2 of 6 = 3, 1/4 of 8 = 2.   **Length and Height**   * Compare, describe, and solve practical problems for lengths and heights. * Measure and record lengths and heights using non-standard units (e.g., hand spans, cubes) and standard units (e.g., centimetres and metres). | **Unit Names:**  **Multiplication and Division**   * Recall multiplication and division facts for multiplication tables up to 12 × 12. * Solve problems involving multiplication and division, including using efficient written methods (short multiplication and division). * Multiply and divide numbers mentally, drawing on known facts. * Solve problems involving scaling (e.g., scaling quantities in recipes or measuring).   **Area**   * Find the area of rectilinear shapes by counting squares. * Use the formula for area to solve simple problems involving area. * Recognise that area can be measured in square units, and solve problems involving calculating area in square centimetres and square metres.   **Money**   * Recognise and use different denominations of coins and notes. * Solve simple problems involving money, including making change and adding amounts of money. * Convert between different units of money (e.g., pounds and pence).   **Fractions**   * Recognise and show, using diagrams, equivalent fractions with small denominators. * Compare and order fractions with the same denominator. * Add and subtract fractions with the same denominator. * Solve problems involving fractions, including finding fractions of quantities.   **Decimals**   * Recognise and write decimal equivalents of fractions (e.g., 1/4 = 0.25, 1/2 = 0.5). * Compare and order decimal numbers to two decimal places. * Solve simple problems involving decimals, including adding and subtracting decimals to one or two decimal places.   **Statistics**   * Interpret and present data using bar charts, pictograms, and tables. * Solve problems using data from bar charts, pictograms, and tables. * Read and interpret data in graphs, including calculating totals and averages. | **Unit Names:**  **Multiplication and Division**   * Recall multiplication and division facts for multiplication tables up to 12 × 12. * Solve problems involving multiplication and division, including using efficient written methods (short multiplication and division). * Multiply and divide numbers mentally, drawing on known facts. * Solve problems involving scaling (e.g., scaling quantities in recipes or measuring).   **Area**   * Find the area of rectilinear shapes by counting squares. * Use the formula for area to solve simple problems involving area. * Recognise that area can be measured in square units, and solve problems involving calculating area in square centimetres and square metres.   **Money**   * Recognise and use different denominations of coins and notes. * Solve simple problems involving money, including making change and adding amounts of money. * Convert between different units of money (e.g., pounds and pence).   **Fractions**   * Recognise and show, using diagrams, equivalent fractions with small denominators. * Compare and order fractions with the same denominator. * Add and subtract fractions with the same denominator. * Solve problems involving fractions, including finding fractions of quantities.   **Decimals**   * Recognise and write decimal equivalents of fractions (e.g., 1/4 = 0.25, 1/2 = 0.5). * Compare and order decimal numbers to two decimal places. * Solve simple problems involving decimals, including adding and subtracting decimals to one or two decimal places.   **Statistics**   * Interpret and present data using bar charts, pictograms, and tables. * Solve problems using data from bar charts, pictograms, and tables. * Read and interpret data in graphs, including calculating totals and averages. | **Unit Names:**  **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions/Decimals/Percentages**   * Recognise and use equivalence between fractions, decimals, and percentages. * Convert between fractions, decimals, and percentages. * Add and subtract fractions with the same denominator and with denominators that are multiples of the same number. * Solve problems involving the use of percentages, including finding percentages of amounts. * Multiply and divide decimals by whole numbers and by 10, 100, and 1,000. * Solve real-world problems involving fractions, decimals, and percentages.   **Algebra**   * Use simple formulae and substitute numbers into them. * Generate and describe linear number sequences. * Find pairs of numbers that satisfy an equation with two unknowns. * Express missing number problems algebraically. * Solve simple algebraic equations and use algebra to solve real-world problems.   **Measures – Conversions, Perimeter, Area, and Volume**   * Convert between different units of measure, including metric and imperial units (e.g., cm to m, kg to g). * Calculate the perimeter of composite shapes. * Calculate and compare the area of rectangles, including squares, and composite shapes. * Estimate and calculate the volume of cubes and cuboids. * Solve problems involving conversions between different units of measure and the calculation of perimeter, area, and volume. | **Unit Names:**  **Multiplication and Division**   * Multiply and divide numbers up to four digits by a one- or two-digit number using the formal written methods of long multiplication and division. * Divide numbers up to four digits by a one-digit number, including those that leave a remainder. * Multiply and divide whole numbers and decimals by 10, 100, and 1,000. * Solve problems involving multiplication and division, including scaling and ratio problems.   **Fractions/Decimals/Percentages**   * Recognise and use equivalence between fractions, decimals, and percentages. * Convert between fractions, decimals, and percentages. * Add and subtract fractions with the same denominator and with denominators that are multiples of the same number. * Solve problems involving the use of percentages, including finding percentages of amounts. * Multiply and divide decimals by whole numbers and by 10, 100, and 1,000. * Solve real-world problems involving fractions, decimals, and percentages.   **Algebra**   * Use simple formulae and substitute numbers into them. * Generate and describe linear number sequences. * Find pairs of numbers that satisfy an equation with two unknowns. * Express missing number problems algebraically. * Solve simple algebraic equations and use algebra to solve real-world problems.   **Measures – Conversions, Perimeter, Area, and Volume**   * Convert between different units of measure, including metric and imperial units (e.g., cm to m, kg to g). * Calculate the perimeter of composite shapes. * Calculate and compare the area of rectangles, including squares, and composite shapes. * Estimate and calculate the volume of cubes and cuboids. * Solve problems involving conversions between different units of measure and the calculation of perimeter, area, and volume. |
| **SUMMER** | **Unit Names:**  **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods. * Recognise, find, and write simple fractions of objects, numbers, and quantities.   **Geometry**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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.   **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. * Compare and sequence intervals of time. * Recognise and use language relating to dates, including days of the week, weeks, months, and years. | **Unit Names:**  **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, and mental methods. * Recognise, find, and write simple fractions of objects, numbers, and quantities.   **Geometry**   * Identify and describe the properties of 2-D shapes, including the number of sides and symmetry. * 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.   **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. * Compare and sequence intervals of time. * Recognise and use language relating to dates, including days of the week, weeks, months, and years.   **Mass/Capacity/Temperature**   * Compare, describe, and solve practical problems for mass/weight, capacity/volume, and temperature. * Measure and begin to record mass/weight, capacity/volume, and temperature using appropriate units (e.g., kilograms, grams, litres, and degrees Celsius). | **Unit Names:**  **Position and Direction**   * Describe and identify the position of a shape following a translation, using the appropriate language (e.g., left, right, up, down). * Identify, describe, and represent the position of a shape on a grid. * Use coordinates to specify the position of points on a grid.   **Time**   * Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks. * Estimate and read time with increasing accuracy to the nearest minute. * Solve problems involving converting between units of time (e.g., hours to minutes). * Calculate time intervals, including days, weeks, and months.   **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Compare and classify shapes based on their properties and sizes. * Identify lines of symmetry in 2-D shapes.   **Mass and Capacity**   * Measure and compare mass using standard units (e.g., kilograms and grams). * Measure and compare capacity using standard units (e.g., litres and millilitres). * Solve problems involving mass and capacity, including converting between units.   **Money**   * Solve problems involving addition and subtraction of money, including giving change and making purchases. * Convert between different units of currency (e.g., pounds and pence). * Compare prices and make decisions about spending and saving money. | **Unit Names:**  **Position and Direction**   * Describe and identify the position of a shape following a translation, using the appropriate language (e.g., left, right, up, down). * Identify, describe, and represent the position of a shape on a grid. * Use coordinates to specify the position of points on a grid.   **Time**   * Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks. * Estimate and read time with increasing accuracy to the nearest minute. * Solve problems involving converting between units of time (e.g., hours to minutes). * Calculate time intervals, including days, weeks, and months.   **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Compare and classify shapes based on their properties and sizes. * Identify lines of symmetry in 2-D shapes.   **Mass and Capacity**   * Measure and compare mass using standard units (e.g., kilograms and grams). * Measure and compare capacity using standard units (e.g., litres and millilitres). * Solve problems involving mass and capacity, including converting between units.   **Money**   * Solve problems involving addition and subtraction of money, including giving change and making purchases. * Convert between different units of currency (e.g., pounds and pence). * Compare prices and make decisions about spending and saving money. | **Unit Names:**  **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and lines of symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Classify shapes by properties such as symmetry, angles, and sides. * Solve problems involving the properties of shapes, including angles in polygons. * Recognise, describe, and build 3-D shapes, including making connections between 2-D shapes and their 3-D counterparts.   **Position and Direction**   * Use coordinates to describe the position of a shape or point in the first quadrant of a grid. * Translate shapes on a grid and describe the movement in terms of position and direction. * Reflect shapes in a mirror line and describe the transformation. * Use and interpret position, direction, and movement in different contexts, including problem-solving with coordinates and transformations.   **Money**   * Solve problems involving the calculation of percentages and amounts in a financial context. * Convert between different units of money (e.g., pounds and pence), including calculations involving exchange rates. * Make financial decisions, calculating costs, change, and the effect of different prices or payments. * Solve problems related to budgeting, pricing, and purchasing.   **Area/Perimeter and Volume**   * Calculate the area of rectangles and compound shapes by counting squares or using the formula (length × width). * Calculate the perimeter of regular and irregular polygons. * Estimate and calculate the volume of cubes and cuboids using the formula (length × width × height). * Solve problems involving area, perimeter, and volume, including converting between different units of measurement (e.g., cm² to m², cm³ to m³). | **Unit Names:**  **Properties of Shape**   * Identify and describe the properties of 2-D shapes, including the number of sides, angles, and lines of symmetry. * Identify and describe the properties of 3-D shapes, including the number of edges, vertices, and faces. * Classify shapes by properties such as symmetry, angles, and sides. * Solve problems involving the properties of shapes, including angles in polygons. * Recognise, describe, and build 3-D shapes, including making connections between 2-D shapes and their 3-D counterparts.   **Position and Direction**   * Use coordinates to describe the position of a shape or point in the first quadrant of a grid. * Translate shapes on a grid and describe the movement in terms of position and direction. * Reflect shapes in a mirror line and describe the transformation. * Use and interpret position, direction, and movement in different contexts, including problem-solving with coordinates and transformations.   **Money**   * Solve problems involving the calculation of percentages and amounts in a financial context. * Convert between different units of money (e.g., pounds and pence), including calculations involving exchange rates. * Make financial decisions, calculating costs, change, and the effect of different prices or payments. * Solve problems related to budgeting, pricing, and purchasing.   **Area/Perimeter and Volume**   * Calculate the area of rectangles and compound shapes by counting squares or using the formula (length × width). * Calculate the perimeter of regular and irregular polygons. * Estimate and calculate the volume of cubes and cuboids using the formula (length × width × height). * Solve problems involving area, perimeter, and volume, including converting between different units of measurement (e.g., cm² to m², cm³ to m³). |
| The depth thread is …  Teach – Practice - Repeat | By the end of their time at the academy, students will have developed a deep and interconnected understanding of key mathematical concepts. Starting with **Place Value**, **Addition and Subtraction**, and progressing through **Multiplication and Division**, **Fractions**, and **Statistics**, they will build the skills needed to handle complex numbers and real-world problems. **Properties of Shape**, **Position and Direction**, and **Area/Perimeter and Volume** will deepen their spatial awareness and measurement abilities, while **Money** will help them apply their learning to practical financial scenarios. These units together equip students with the tools to reason mathematically, solve problems, and make informed decisions both academically and in everyday life. | | | | | |
| SMSC development – Spiritual, Moral, Social, Cultural | **Money**   * **Moral:** Discuss ethical considerations around spending and saving, exploring topics such as financial responsibility, charity, and the importance of making informed financial choices that impact not just the individual but also the wider community. * **Social:** Engage students in debates or role-play scenarios about budgeting, the importance of saving, and the responsible use of money in various cultural contexts (e.g., cultural views on wealth and generosity). | | | | | |