



Year 8						
Term 1: Autumn 1	Term 1: Autumn 2	Term 2: Spring 1	Term 2: Spring 2	Term 3: Summer 1	Term 3: Summer 2	ARE
Number: Factors, multiples and Powers Purpose: To deepen students' understanding of number properties and use these concepts to solve a wider range of problems efficiently. Overview of the knowledge and skills covered in this unit: - Highest common factor and Lowest common multiple - Prime factor decomposition - Write numbers in Standard form - Index laws - Use BIDMAS - Applying all the above to real life problem solving. Prior knowledge: - Factors and Multiples +, -, x, ÷ decimals - Prime numbers - Calculator skills - Powers - Understand what Standard form is +, -, x, ÷ negative numbers - What terms are and how to simplify them	Algebra: form and simplify Purpose: To develop skills in algebraic thinking and problem-solving. Moving students' mindsets from concrete arithmetic to abstract reasoning, which is a fundamental shift in mathematical understanding. Overview of the knowledge and skills covered in this unit: - Work backwards using function machines - Solve equations: - with brackets - without brackets - unknowns on both sides - brackets and unknowns on both sides - Write expressions and equations from worded questions and shapes. Prior knowledge: - Input and output machines - Understand what a term is and why $2a$ is different from a^2 +, -, x, ÷ like terms - Expand and factorise single brackets - Understand what expressions, equations and formulas are. - Write equations, including brackets and dividing	Shapes and solids Purpose: To go beyond simply identifying shapes to develop spatial reasoning and apply formulas for area and volume, which are essential skills for solving real-world problems Overview of the knowledge and skills covered in this unit: - Name of 2D shapes - Properties of quadrilaterals - Find areas of rectangles, triangles, parallelograms, trapeziums and compound shapes (shapes with 2 or more shapes in them) - Name 3D shapes and identify faces, edges and vertices - Nets of other prisms - Volume of prisms Prior knowledge: - Area of rectangles and squares - Perimeter of shapes - Name at least 3 2D shapes - Basic nets (cuboids and cubes) +, -, x, ÷ numbers	Sequences and graphs Purpose: To bridge students' knowledge between number and algebra and help students further develop their skills in more complex sequences. Overview of the knowledge and skills covered in this unit: - Nth term - Create values and draw 1 step and 2 step equations onto a graph - Solve equations using a graph - Identify links between the graph and the equation Prior knowledge: - Find the term to term rule - Generate and describe linear sequences - Plot and describe coordinates in all 4 quadrants - Interpretation of time graphs	Transformations Purpose: To understand how shapes can be moved and changed in different ways without altering their size or form. It's a key step in developing visual and spatial reasoning skills. Overview of the knowledge and skills covered in this unit: - Understand Congruence - Tessellation - Translation using column vectors - Rotation given centre of rotation or find a centre of rotation - Reflection in diagonals and using equations of lines - Enlargement using a positive scale factor Prior knowledge: - Translation (left/right and up/down) - Rotation (clockwise, anti-clockwise) - Reflection (vertically and horizontally) - Multipliers - Create values and draw 1 step and 2 step equations onto a graph - Plot and describe coordinates in all 4 quadrants	Probability Purpose: To develop knowledge on how to measure the likelihood of an event happening. It's a key topic that moves beyond simple chance and introduces them to the mathematical rules for predicting outcomes. It provides a framework for making informed decisions in everyday life Overview of the knowledge and skills covered in this unit: - Understand the probability scale in words and numbers - Find probabilities of independent events - Use probability to estimate how often something will happen - Experimental probability - Venn diagrams to calculate probability Prior knowledge: - Convert between fractions, decimals and percentages +, -, x decimals and fractions - Understand what the numerator and denominator of a fraction mean.	- Write and solve 1 and 2 step equations (including brackets) - Perimeter, area (Squares, Rectangles, Triangles, Parallelograms and Trapeziums) and volume of shapes (Cubes and Cuboid) - Draw equations of lines such as $y=3$ and $y=2x+5$ - Index laws - Translation, rotation and reflection - Probability of an independent event - Venn diagrams