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Week	Topic	Curriculum Objective	Challenge
1	Number - percentages	• Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison. • Recall and use equivalence s between simple FDP.	• define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% and graphs] • interpret fractions and percentages as operators
2	Angles	• recognise angles as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn • identify whether angles are greater than or less than a right angle	♣ derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons ♣ apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs ♣ draw and measure line segments and angles in geometric figures, including interpreting scale drawings

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3	Geometry and statistics	• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. • Interpret and construct pie charts and line graphs and use these to solve problems. • Calculate the mean as an average. • draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	♣ understand and use the relationship between parallel lines and alternate and corresponding angles ♣ derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons ♣ apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs ♣ use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D ♣ draw and measure line segments and angles in geometric figures, including interpreting scale drawings ♣ describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric

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4	coordinates	• describe positions on a 2-D grid as coordinates in the first quadrant • describe movements between positions as translations of a given unit to the left/right and up/down • plot specified points and draw sides to complete a given polygon. •	♣ work with coordinates in all four quadrants ♣ identify properties of, and describe the results of, translations, rotations and reflections applied to given figures
5	Measurement	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3dp. • Convert between miles and kilometres. • Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3, m3 and extending to other units (mm3, km3)	• use standard units of mass, length, time, money and other measures, including with decimal quantities • understand and use place value for decimals, measures and integers of any size • use standard units of mass, length, time, money and other measures, including with decimal quantities • round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]

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5	Measurement Area and perimeter.	• Recognise that shapes with the same areas can have different perimeters and vice versa. • Recognise when it is possible to use formulae for area and volume of shapes. • Calculate the area of parallelograms and triangles.	• derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders • change freely between related standard units [for example time, length, area, volume/capacity, mass] • calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes. ♣ calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes

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6	Number: Ratio	• Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • Solve problems involving similar shapes where the scale factor is known or can be found. • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	• extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically • use ratio notation, including reduction to simplest form • divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio • understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction

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7	Algebra	• Use simple formulae • Generate and describe linear number sequences. • Express missing number problems algebraically. • Find pairs of numbers that satisfy an equation with two unknowns. • Enumerate possibilities of combinations of two variables	• substitute numerical values into formulae and expressions, including scientific formulae ♣ simplify and manipulate algebraic expressions to maintain equivalence by: understand and use standard mathematical formulae; rearrange formulae to change the subject ♣ use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ♣ use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations ♣ find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs
	Consolidate and Assess	at the beginning or end of the term for consolidatio n ,gap filling, seasonal activities, assessments , etc.	