

Main Scheme - 7 x 1hrs per fortnight

Operations and Equations with Directed Numbers	Understand and use representations of directed numbers
	Order directed numbers using lines and appropriate symbols
	Perform calculations that cross zero
	Add directed numbers
	Subtract directed numbers
	Multiplication of directed numbers
	Multiplication and division of directed numbers
	Use a calculator for directed number calculations
	Evaluate algebraic expressions with directed number
	Use order of operations with directed numbers
Measuring and Using Geometric Notation	Understand and use letter and labelling conventions including those for geometric figures
	Draw and measure line segments including geometric figures
	Understand angles as a measure of turn
	Classify angles
	Measure angles up to 180 degrees. Draw angles up to 180 degrees.
	Draw and measure angles between 180 and 360 degrees
	Identify parallel and perpendicular lines.
	Recognise types of triangle
	Recognise types of quadrilaterals
	Identify polygons up to decagons.
Developing Geometric Reasoning	Understand and use the sum of angles at a point
	Understand and use the sum of angles on a straight line
	Understand and use the equality of vertically opposite angles
	Know and apply the sum of angles in a triangle
	Know and apply the sum of angles in a quadrilateral
	Solve angle problems using properties of triangles and quadrilaterals (angle reasoning)
	Solve multi-step angle problems
Prime Numbers and Proof	Understand and use divisibility tests
	Find and use multiples
	Find common multiples of a set of numbers including the LCM
	Identify factors of numbers and expressions
	Find common factors of a set of numbers including the HCF
	Recognise and identify prime numbers
	Recognise square and triangular numbers
	Write a number as a product of its prime factors
	H - Use a Venn diagram to calculate the HCF and LCM
	Make and test conjectures; Use counterexamples to disprove a conjecture
Ratio and Scale	Understanding the meaning and representation of ratio; Understand and use ratio notation
	Solve problems involving ratios of the form 1:n or n:1
	Solve problems involving the ratio m:n
	Divide a value into a given ratio
	Express ratios in their simplest integer form
	H - Express ratios in the form 1:n
	Compare ratios and related fractions

Multiplicative Change	Solve problems involving direct proportion
	Explore conversion graphs
	Convert between currencies
	H - Explore direct proportion graphs
	Explore relationships between similar shapes
	Understand scale factors as multiplicative relationships
	Draw and interpret scale diagrams
	Interpret maps using scale factors and ratio
Multiplying and dividing fractions	Represent multiplication of fractions
	Multiply a fraction by an integer
	Find the product of a pair of unit fractions
	Find the product of a pair of any fractions
	Divide an integer by a fraction
	Divide a fraction by a unit fraction
	Understand and use the reciprocal
	Divide any pair of fractions
	H - Multiply and divide improper and mixed fractions
	H - Multiply and divide algebraic fractions
Expressions & equations	Form algebraic expressions
	Multiply out a single bracket
	Factorise into a single bracket
	Expand multiple single brackets and simplify
	H - Expand a pair of binomials
	Introduction to two-step equations
	Solve two-step equations
	Solve equations (unknown on one side), including with brackets
	Form and solve equations (unknown on one side) with brackets
	H - Solve equations and inequalities with unknowns on both sides
	H - Form and solve equations and inequalities with unknowns on both sides
	Identify and use formulae, expressions, identities and equations

Sequences	Generate sequences given a rule in words
	Generate sequences given a simple algebraic rule
	Generate sequences given a complex algebraic rule
	Find the rule for the nth term of a linear sequence
Indices	Adding and subtracting expressions with indices
	Simplifying algebraic expressions by multiplying indices
	Simplifying algebraic expressions by dividing indices
	Using the addition law for indices
	Using the addition and subtraction laws for indices
	Explore powers of powers
	H - Understand and use negative indices
Standard Index Form	Work with numbers greater than 1 in standard form
	Investigate negative powers of 10
	Work with numbers between 0 and 1 in standard form
	Compare and order numbers in standard form
	Mentally calculate with numbers in standard form
	Add and subtract numbers in standard form
	Multiply and divide numbers in standard form
	Use a calculator to work with numbers in standard form
Fractions and Percentages	<i>R - Convert fluently between key fractions, decimals and percentages</i>
	<i>R - Calculate key fractions and percentages of amounts with/without a calculator</i>
	Convert between decimals and percentages more than 1/100%
	Percentage decrease with a multiplier
	Calculate percentage increase and decrease using a multiplier
	Express one number as a fraction or a percentage of another without a calculator
	Express one number as a fraction or a percentage of another using calculator methods
	Work with percentage change
	Choose appropriate methods to solve percentage problems
	H - Find the original amount given the percentage less than 100%
	H - Find the original amount given the percentage more than 100%
	H - Choose appropriate methods to solve complex percentage problems
Angles in parallel lines and polygons	<i>R - Understand basic angle rules and notation</i>
	Investigate angles between parallel lines and the transversal
	Identify and calculate with alternate and corresponding angles
	Identify and calculate with co-interior, alternate and corresponding angles
	Solve complex problems with parallel line angles
	Investigate the properties of special quadrilaterals
	Identify and calculate with sides and angles in special quadrilaterals.
	H - Understand and use the properties of diagonals of quadrilaterals
	Understand and use the sum of exterior angles of any polygon
	Understand and use the sum of interior angles of any polygon
	Calculate missing interior angles in regular polygons
	H - Prove simple geometric facts

Area and perimeter	<i>R - Find area of 2-D shapes (rectangles, parallelograms, triangles)</i>
	Calculate the area of a trapezium
	Investigate the area (and circumference) of a circle
	Calculate the circumference of a circle (and arc lengths) with/without a calculator
	Calculate the area of a circle and parts of a circle with/without a calculator
	Calculate the perimeter and area of compound shapes
Sets, tables and Probability	Identify and represent sets
	Interpret and create Venn diagrams
	Understand and use the intersection, union and complement of sets
	Know and use the vocabulary of probability; Understand and use the probability scale
	Calculate the probability of a single event
	Know that the sum of probabilities of all possible outcomes is 1
	Construct sample spaces for 1 or more events
	Find probabilities from sample space
	Find probabilities from two-way tables
	Find probabilities from Venn diagrams