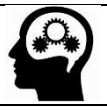
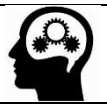
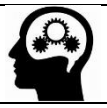
CURRICULUM MAP FOR MATHS

YEAR 8

Ormiston Horizon Academy

Block 1: Ratio and Scale By the end of this unit of learning all students will be able to - Understand and use ratio notation - Solve problems involving ratios of the form 1:n or n:1 - Solve proportional problems involving the ratio m:n - Divide a value into a given ratio - Express ratios in their simplest integer form - Express ratios in the form 1:n - Compare ratios and related fractions - Understand π as the ratio between diameter and circumference - Understand gradient of a line as a ratio		Division Factors HCF
		Ratio Part Equal parts Order Factors
		End of block assessment Knowledge Organiser
		Ratio and Scale block Lower Attainer Guidance Higher Attainer Guidance
Block 2: Multiplicative change By the end of this unit of learning all students will be able to - Solve problems involving direct proportion - Explore conversion graphs - Convert between currencies - Explore relationships between similar shapes - Understand scale factors as multiplicative relationships - Draw and interpret scale diagrams - Interpret maps using scale factors and ratios		Multiplication
		Proportion Axes Variable Approximation Scale factor
		End of block assessment Knowledge Organiser
		Multiplicative change block Lower Attainer Guidance Higher Attainer Guidance
Block 3: Multiplying and dividing fractions By the end of this unit of learning all students will be able to - 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 - **Multiply and divide improper and mixed fractions** - **Multiply and divide algebraic fractions**		Representation of fractions Multiplication
		Numerator Denominator Unit Fraction Non-unit fraction Reciprocal
		End of block assessment Knowledge Organiser
		Multiplying and dividing fractions block Lower Attainer Guidance Higher Attainer Guidance

CURRICULUM MAP FOR MATHS

YEAR 8

Ormiston Horizon Academy

Block 4: Representing data By the end of this unit of learning all students will be able to - Read and plot co-ordinates in the first quadrant - Read and plot co-ordinates in all four quadrants - Draw and interpret scatter graphs - Understand and describe linear correlation - Draw and use line of best fit - Identify non-linear relationships - Identify different types of data - Read, interpret and complete ungrouped frequency tables - Read, interpret and complete grouped frequency tables - Represent data in two-way tables		Co-ordinates Tally charts
		Variable Linear Relationship Correlation Outlier Quantitative Qualitative
		End of block assessment Knowledge Organiser
		Representing data block Lower Attainer Guidance Higher Attainer Guidance
Block 5: Tables and probability - Probability of events occurring - Listing outcomes - Construct sample spaces for 1 or more events - Find probabilities from sample space - Find probabilities from two-way tables - Find probabilities from Venn diagrams - **Use the product rule for finding the total number of possible outcomes**		Probability scale Representing as fractions
		Outcome Probability Set Event Biased
		End of block assessment Knowledge Organiser
		Tables and probability block Lower Attainer Guidance Higher Attainer Guidance
Block 6: Indices - Adding and subtracting expressions with indices - Simplifying algebraic expressions by multiplying indices - Simplifying algebraic expressions by dividing indices - Using the addition and subtraction laws for indices - **Exploring powers of powers**		Collecting like terms
		Simplify Power Base Coefficient Product
		End of block assessment Knowledge Organiser
		Indices block Lower Attainer Guidance Higher Attainer Guidance
		
Progress Point 1		

CURRICULUM MAP FOR MATHS

YEAR 8

Ormiston Horizon Academy

Block 8: Brackets, equations and inequalities By the end of this unit of learning all students will be able to - Form algebraic expressions - Use directed number with algebra - Multiply out a single bracket - Factorise into a single bracket - Expand multiple single brackets and simplify - Expand double brackets with positives - **Expand a pair of binomials** - Solve equations, including with brackets - Form and solve equations with brackets - Understand and solve simple inequalities - Identify and use formulae, expressions, identities and equations - **Solve equations and inequalities with unknowns on both sides** - **Form and solve equations and inequalities with unknowns on both sides**		Collecting like terms Multiplying within algebra Factors
		Product Coefficient Simplify Substitute Equivalent
		End of block assessment Knowledge Organiser
		Brackets, equations and inequalities block Lower Attainer Guidance Higher Attainer Guidance
Block 9: Sequences By the end of this unit of learning all students will be able to - Describe and continue a sequence given diagrammatically - Recognise the difference between linear and non-linear sequences - Continue numerical linear sequences - Continue numerical non-linear sequences - Explain the term-to-term rule of numerical sequences in words - Find missing numbers within 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		Patterns Using function machines Pictorial sequences
		Sequence Term Position Difference Linear Non-linear
		End of block assessment Knowledge Organiser
		Sequences (1) block Sequences (2) block Lower Attainer Guidance Higher Attainer Guidance
Block 10: Fractions and percentages By the end of this unit of learning all students will be able to - Convert fluently between key fractions, decimals and percentages - Calculate key fractions, decimals and percentages of an amount without a calculator - Convert between decimals and percentages more than 1/100% - 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 - **Find the original amount given the percentage less than 100%** - **Find the original amount given the percentage greater than 100%** - **Choose appropriate methods to solve complex percentage problems**		Representing fractions Fractions of amounts
		Percent VAT Integer Increase Decrease
		End of block assessment Knowledge Organiser
		Fractions and percentages block Lower Attainer Guidance Higher Attainer Guidance

CURRICULUM MAP FOR MATHS

YEAR 8

Ormiston Horizon Academy

Block 11: Number sense and Standard index form By the end of this unit of learning all students will be able to - Calculate with the order of operations - Multiply and divide by powers of 10 - Round to nearest integer up to nearest 1000 - Round numbers to a number of decimal places - Round numbers to 1 significant figure - Estimate the answer to a calculation - Calculate with money - Convert metric units of length, weight and capacity - Solve problems involving time and the calendar - Convert to and from numbers greater than one in standard form - Convert to and from numbers between 0 and 1 in standard form		Calculating with the four operations Multiply and divide by 10,100 and 1000 Make sensible guesses
		Significant Estimate Base Power Indices
		End of block assessment Knowledge Organiser
		Number sense block Lower Attainer Guidance Higher Attainer Guidance Standard index form block Lower Attainer Guidance Higher Attainer Guidance
Progress Point 2		
Block 12: Angles in parallel lines and polygons By the end of this unit of learning all students will be able to - Understand basic angle rules and notation - Identify and calculate with co-interior, alternate and corresponding angles (separately and combined) - Construct triangles and special quadrilaterals - Identify and calculate with sides and angles in special quadrilaterals. - Understand and use the properties of angles in 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 - **Prove simple geometric facts** - **Construct an angle bisector** - **Construct a perpendicular bisector of a line segment**		Measuring angles Names of angles and shapes Angle sums of triangles, straight lines, right angle, around a point
		Parallel Transversal Isosceles Polygon Vertex
		End of block assessment Knowledge Organiser
		Angles in parallel lines and polygons block Lower Attainer Guidance Higher Attainer Guidance
Block 13: Area of trapezia and circles By the end of this unit of learning all students will be able to - Calculate the area and perimeter of triangles, squares and rectangles. - Calculate the area of a trapezium - Calculate the perimeter and area of compound polygons - Calculate the circumference of a circle - Investigate the area of a circle - Calculate the area of a circle and parts of a circle without a calculator - Calculate the area of a circle and parts of a circle with a calculator		Area by counting squares
		Congruent Area Perimeter Perpendicular Formula
		End of block assessment Knowledge Organiser
		Area of trapezia and circles block Lower Attainer Guidance Higher Attainer Guidance

Ormiston
Horizon Academy

Block 14: Lines of symmetry and reflection By the end of this unit of learning all students will be able to - Recognise lines of symmetry - Reflect a shape in a pre-drawn line of symmetry (including the x and y axis) - Draw y = a and x = b lines - Reflect shapes in y = a and x = b lines - Reflect a shape in a diagonal line (touching and not touching the mirror line)		Reflecting images Rotational symmetry
		Mirror line Horizontal Vertical Object Image
		End of block assessment Knowledge Organiser
		Lines of symmetry and reflection block Lower Attainer Guidance Higher Attainer Guidance
Block 15: The data handling cycle By the end of this unit of learning all students will be able to - Set up a statistical enquiry - Draw and interpret multiple bar charts - Draw and interpret pie charts - Draw and interpret line graphs - Choose the most appropriate diagram for a given set of data - Represent and interpret grouped quantitative data - Find and interpret the range - Compare distributions using charts - Identify misleading graphs		Draw and interpret simple tables including bar charts Tally/frequency charts Simple pictograms
		Primary data Secondary data Hypothesis Sample
		End of block assessment Knowledge Organiser
		The data handling cycle block Lower Attainer Guidance Higher Attainer Guidance
Block 16: Measures of location - Understand and use the mean, median and mode - Choose the most appropriate average - Find the mean from an ungrouped frequency table - **Find the mean from an grouped frequency table** - Identify outliers - Compare distributions using averages and the range		Midpoint of two numbers Tally/frequency charts
		Spread Total Frequency Outlier
		End of block assessment Knowledge Organiser
		Measures of location block Lower Attainer Guidance Higher Attainer Guidance
Progress Point 3		