MATHS Year 8 Curriculum End Points and Key Vocabulary

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Ethos Links	**STEM** - Use of graphs in many STEM related careers	**STEM** - Encourage use of rounding and estimation in shopping	**Milton Keynes** – Use of maps and scale – use the map of Milton Keynes	**STEM** – Use of plans and elevations and careers where they are relevant, use of percentages in real life context **Sustainability** – In production of packaging	**Sustainability** – Comparison of landfill and recycling scatter graph **STEM** – use of scatter graphs within STEM – Link to science	**STEM, Sustainability and Milton Keynes** – all used in many applications with charts and graphs and averages
Learning End Points	**Directed Numbers** By the end of this unit students will know and understand: ➢ How to add, subtract, multiply and divide positive and negative numbers with both integers and decimals. ➢ How to solve problems involving directed numbers.	**Properties of Number** By the end of this unit students will know and understand: ➢ How to calculate Highest Common Factor and Lowest Common Multiple of 2 or 3 numbers and consider the different methods for calculating this. ➢ How to apply and use BIDMAS to	**Fractions** By the end of this unit students will know and understand: ➢ How to convert between mixed numbers and improper fractions. ➢ How to add and subtract mixed numbers.	**Percentages** By the end of this unit students will know and understand: ➢ How to calculate percentages of any amount with and without a calculator. ➢ How to calculate percentage increases and decreases using a multiplier.	**Angles and parallel lines** By the end of this unit students will know and understand: ➢ The relationship between angles and parallel lines and be able to identify corresponding, alternate, and co-interior angles. **Volume** By the end of this unit students will know and understand:	**Charts and graphs** By the end of this unit students will know and understand: ➢ How to draw pie charts ➢ How to interpret pie charts **Averages** By the end of this unit students will know and understand: ➢ How to calculate

	Algebra Notation By the end of this unit students will know and understand: ➢ How to simplify expressions involving multiplication. ➢ Substitution of both positive and negative numbers. ➢ Expanding single brackets and expanding two single brackets and simplifying. **Sequences** By the end of this unit students will know and understand: ➢ The different types of sequence e.g. arithmetic, geometric, Fibonacci. ➢ How to describe patterns and sequences. **Linear Graphs**	answer complex questions involving brackets and indices ➢ Squares, cubes and their associated roots **Rounding and estimation** By the end of this unit students will know and understand: ➢ Round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures). ➢ How to use approximation through rounding to estimate answers. **Measures and Converting units**	**Probability** By the end of this unit students will know and understand: ➢ How to generate sample space diagrams for single and combined events. ➢ How to calculate the probability of an event not happening. ➢ Mutually exclusive events. **Ratio Notation** By the end of this unit students will know and understand: ➢ How to solve ratio problems where the original value has to be calculated. ➢ How to simplify ratios in the form 1:n. ➢ How to use ratios in	• How to solve problems involving percentages **Plans, elevations and surface area** By the end of this unit students will know and understand: ➢ How to calculate the surface area of cubes and cuboids. ➢ How to draw the plan, side and front view of a 3D shape. ➢ How to draw using isometric paper. **Properties of shape** By the end of this unit students will know and understand: ➢ The properties of 3D shapes and how to	➢ How to calculate volume of prisms. ➢ How to calculate the volume of a cylinder. **Scatter graphs** By the end of this unit students will know and understand: ➢ Correlation and how to describe the relationship between two variables. ➢ How to plot a scatter graph.	averages and spread from any list of data. ➢ How to calculate mode, range and mean from a discrete table of values.

	By the end of this unit students will know and understand: ➢ Horizontal and vertical straight-line graphs and their labels. ➢ How to recognise the graph y = x.	By the end of this unit students will know and understand: ➢ How to multiply and divide by powers of 10. ➢ Convert between standard units of length, area and volume. Area (circles focus) By the end of this unit students will know and understand: ➢ How to calculate the circumference of a circle. ➢ How to calculate the area of a circle. ➢ How to calculate perimeter and area of compound shapes. **Equations** By the end of this unit students will know and understand: ➢ How to use algebraic methods to	context e.g. map scales. **Transformations** By the end of this unit students will know and understand: ➢ How to reflect a shape in a given line or axis. ➢ How to rotate a shape given a centre of rotation, direction and angle. ➢ How to translate a shape using both words and vectors. ➢ How to enlarge a shape with a positive scale factor.	identify them.		

		solve two step linear equations. ➢ How to solve equations involving brackets.				
Key Vocabulary	Positive Negative Integer Expression Expand Horizontal Vertical Line	Square root Cube root Inverse Equation Area Volume Metric Radius Diameter Circumference	Sample space Part Whole Scale Mixed number Improper fraction Reflection Rotation Translation Enlargement Centre	Multiplier Plan Front Side Vertices Edges Faces	Prism Cross-section Correlation Parallel Alternate Corresponding Co-interior	Mean Mode Median Range Average Spread Pie chart Proportion Frequency