MATHS Year 9 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 algebra throughout many different programming areas **Milton Keynes** – Link to MK business and their use of algebra	**STEM** - Estimation and bounds link to real life scenarios through engineering **Milton Keynes** – link to MK business through averages	**STEM** – Standard form is used in scientific discoveries	**STEM**- Use of percentages in real life Milton Keynes – link to MK business	**STEM** – Drawings and scales – how similar shapes are used – link to careers **Sustainability** – Charts and graphs linked to several different environmental factors **Milton Keynes** – Charts and graphs linked to the growth of Milton Keynes	**Sustainability** – Volume considerations of packaging and other things and how to be sustainable
Learning End Points	By the end of this unit students will know and understand: **Algebraic Notation** By the end of this unit students will know and understand: ➢ How to factorise single brackets ➢ How to expand products of	By the end of this unit students will know and understand: **Solving equations** By the end of this unit students will know and understand: ➢ How to solve multi-step equations **Averages** By the end of this unit students will know and understand:	By the end of this unit students will know and understand: **Directed Numbers** By the end of this unit students will know and understand: ➢ How to solve problems with directed numbers **Standard form**	By the end of this unit students will know and understand: **Ratio and Proportion** By the end of this unit students will know and understand: ➢ How to write and simplify ratios in the form 1:n ➢ How to solve proportional problems	By the end of this unit students will know and understand: **Charts and graphs (including scatter graphs)** By the end of this unit students will know and understand: ➢ How to identify outliers ➢ How to use scatter graphs to predict	By the end of this unit students will know and understand: **Pythagoras and Trigonometry** By the end of this unit students will know and understand: ➢ Pythagoras' Theorem and how to solve problems involving right angled triangles.

	two or more binomials **Sequences** By the end of this unit students will know and understand: ➢ How to recognise geometric sequences ➢ How to use and find the nth term with sequences **Coordinates and graphs** By the end of this unit students will know and understand: ➢ How to plot graphs in the form y=mx+c ➢ How to identify the gradient and y-intercept of a linear graph	➢ How to calculate averages from a table of values ➢ How to make comparisons between averages and spread **Rounding, Estimation and Bounds** By the end of this unit students will know and understand: ➢ How to use approximation through rounding to significant figures to estimate answers ➢ Limits of accuracy and begin to identify upper and lower bounds	By the end of this unit students will know and understand: ➢ How to write numbers in standard form ➢ How to convert numbers from standard form ➢ Add and subtract numbers in standard form ➢ Multiply and divide numbers in standard form **Calculations using Fractions** By the end of this unit students will know and understand: ➢ How to multiply and divide mixed numbers	➢ How to solve reverse ratio questions **Angles** By the end of this unit students will know and understand: ➢ How to derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon **Percentage problems including interest** By the end of this unit students will know and understand: ➢ The difference between compound and simple interest ➢ How to calculate decimal percentages using a multiplier	trends and patterns **Compound Units and Measures** By the end of this unit students will know and understand: ➢ How to use graphs to interpret compound units ➢ How to convert and calculate compound units such as speed, unit pricing and density to solve problems **Similar shapes** By the end of this unit students will know and understand: ➢ How to identify similar shapes ➢ How to calculate scale factors	➢ How to calculate missing lengths and angles in triangles using trigonometry. **Area and volume** By the end of this unit students will know and understand: ➢ How to calculate the area and circumference of a circle using exact values ➢ How to form equations to calculate the area and perimeter of shapes ➢ How to solve volume problems by using the inverse ➢ How to calculate the volume of a cylinder using exact values **Plans and Elevations and surface area**

	➢ How to plot a linear graph ➢ How to plot a quadratic graph given a table of values **Properties of number** By the end of this unit students will know and understand: ➢ How to use Venn diagrams to calculate Highest Common Factor and Lowest Common Multiple		➢ How to solve problems with mixed numbers		between similar shapes ➢ How to calculate missing lengths using scale factors	By the end of this unit students will know and understand: ➢ How to construct views of 3D shapes including front, plan and side views ➢ How to calculate surface area of prisms ➢ Draw the net of any 3D shape
Key Vocabulary	Factorise Quadratic Coefficient Nth term Gradient Intercept	Bounds Estimate Inverse Grouped Ungrouped Frequency table Midpoint	Positive Negative Standard form Base index Mixed number	Ratio Unit Scale Proportion Polygon Interior Exterior Multiplier	Scatter graph Correlation Causation Outlier Distance Density Mass Volume	Opposite Adjacent Hypotenuse Face Cross section Net Plan Isometric

				Exact Interest Compound interest Simple interest	Multiplier Scale Congruent Similar	Exact Area Circumference