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** – Likelihood of events occurring and use of this within STEM areas	**Sustainability** – Volume considerations of packaging and other things and how to be sustainable **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
Learning End Points	**Algebraic Notation** By the end of this unit students will know and understand: ➢ How to factorise single brackets. ➢ How to expand products of two or more binomials. **Sequences** By the end of this unit students will	**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. **Rounding, Estimation and Bounds** By the end of this unit students will know and understand:	**Fractions** By the end of this unit students will know and understand: ➢ How to multiply and divide mixed numbers. ➢ How to solve problems with mixed numbers. **Ratio and Proportion** By the end of this unit students will know and understand: ➢ How to write and simplify	**Equations, Inequalities and changing the subject** By the end of this unit students will know and understand: ➢ How to solve multi-step equations. ➢ How to solve one and two step inequalities. ➢ How to change the subject of a formula involving one or two steps.	**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. **Similar shapes** By the end of this unit students will know and understand:	**Transformations including enlargement** By the end of this unit students will know and understand: ➢ How to identify congruent and similar shapes. ➢ How to enlarge shapes with a positive scale factor. ➢ How to perform a combination of transformations.

	know and understand: ➢ How to recognise geometric sequences. ➢ How to use and find the nth term with sequences. **Graphs (linear and quadratic)** 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 plot a linear graph. ➢ How to plot a quadratic graph given a table of values.	➢ How to use approximation through rounding to significant figures to estimate answers. ➢ Limits of accuracy and begin to identify upper and lower bounds. **Averages** By the end of this unit students will know and understand: ➢ How to calculate averages from a table of values. ➢ How to make comparisons between averages and spread. **Directed Numbers** By the end of this unit students will know and understand: ➢ How to solve problems with	ratios in the form 1:n. ➢ How to solve proportional problems. ➢ How to solve reverse ratio questions. **Probability including diagrams** By the end of this unit students will know and understand: ➢ How to calculate relative frequency and make predictions. ➢ How to construct and complete a Venn diagram and calculate probabilities using it. ➢ How to complete a tree diagram and calculate probabilities using it.	**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 **Percentage problems including interest** By the end of this unit students will know and understand: ➢ The difference between compound and	➢ How to identify similar shapes. ➢ How to calculate scale factors between similar shapes. ➢ How to calculate missing lengths using scale factors. **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. ➢ How to calculate missing lengths and angles in triangles using trigonometry.	**Plans and Elevations and surface area** 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. **Loci and constructions** By the end of this unit students will know and understand: ➢ How to construct angle bisectors and perpendicular bisectors. ➢ How to construct triangles.

	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.	directed numbers. **Standard form** 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.		simple interest. ➢ How to calculate decimal percentages using a multiplier.		**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 trends and patterns. ➢ How to construct and interpret a frequency polygon. ➢ How to interpret a histogram.
Key Vocabulary	Factorise Quadratic Coefficient Nth term Gradient Intercept Distance Density Mass Volume	Venn diagram Intersection Bounds Estimate Limits Standard form Decimal Powers of 10 Index Base	Venn diagram Intersection Complement Tree diagram Branches Relative Frequency Part Whole Simplify	Multiplier Exact Inequality Inverse Subject Interest Compound interest Simple interest	Opposite Adjacent Hypotenuse Scale factor Polygon Exterior Interior	nlarge Scale factor Centre Face Bisector Perpendicular Loci Locus Histogram Frequency Polygon Frequency density Class width