Year 9 Curriculum Map : Mathematics		
	Autumn	Spring	Summer
Assessment Objectives	AO1 Use and apply standard techniques (Foundation 50%, Higher 40%)		
	AO2 Reason, interpret and communicate mathematically (Foundation 25%, Higher 30%)		
	AO3 Solve problems within mathematics and in other contexts (Foundation 25%, Higher30%)		
Unit Length	1. **Foundation and Higher** **Unit 1** - Number: 7 weeks **Unit 2** – Algebra: 7 weeks	**Foundation** **Unit 3** – Graphs, tables and charts –4 weeks **Unit 4** – Fractions, decimals and percentages – 5 weeks **Unit 5** – Equations, inequalities and sequences – 4 weeks **Higher** **Unit 3** – Interpreting and representing data –4 weeks **Unit 4** – Fractions, ratio and percentages – 4 weeks **Unit 5** – Angles, Pythagoras and trigonometry – 4 weeks	**Foundation** **Unit 6** – Angles –3 weeks **Unit 7** – Averages – 3 weeks **Unit 8** – Area and Volume – 4 weeks **Higher** **Unit 6** – Graphs –4 weeks **Unit 7** – Area and Volume – 4 weeks **Unit 8** – Transformations – 2 weeks
Key Learning Outcomes	<u>Foundation</u> **Unit 1** - **Number:** students will study calculations with the four operations, decimals, place value, factors, multiples, squares, cubes, roots, indices and prime factors. Intentional Monitoring **Unit 2** – **Algebra:** students will study expressions, simplifying algebra, substitution, formulae, expanding brackets and factorising. Progress assessment, feedback, reteach and DIRT.	<u>Foundation</u> **Unit 3** – **Graphs, tables and charts:** students will study various ways to represent and interpret data such as two way tables, pie charts and scatter graphs. Intentional Monitoring **Unit 4** – **Fractions and percentages :** students will study calculating with fractions, converting between fractions, decimals and percentages and calculating percentages. Intentional Monitoring **Unit 5** – **Equations, inequalities and sequences :** students will study solving equations, inequalities formulae and sequences. Progress assessment, feedback, reteach and DIRT.	<u>Foundation</u> **Unit 6** – **Angles:** students will study properties of shapes, angles in parallel lines and interior and exterior angles in polygons. Intentional Monitoring **Unit 7** - **Averages :** students will study calculating the mode, median, mean and range from a set of data. They will then go on to study averages from frequency tables and sampling methods. Intentional Monitoring **Unit 8** – **Area and Volume:** students will study the perimeter and area of rectangles, triangles, parallelograms and trapezium. They will then apply this to areas of compound shapes. They will finish the unit by calculating the surface area and volume of prisms. Progress assessment, feedback, reteach and DIRT.
Prior knowledge	KS2:	KS2: "AO1: demonstrate knowledge, understanding and skills in	KS2: "AO2: demonstrate knowledge, understanding and skills in

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CEIAG Specific careers links	The specific value of maths as a required or preferred subject for particular careers, e.g.: • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians	The specific value of maths as a required or preferred subject for particular careers, e.g.: • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians	The specific value of maths as a required or preferred subject for particular careers, e.g.: • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians
RRSA	Article 2 – Non discrimination Article 12 – Respect for the views of the child Article 13 – Freedom of expression Article 14 – Freedom of thought, belief and religion Article 15 – Freedom of association Article 16 – Right to privacy Article 23 – Right to a full life if child with disability Article 28 – Right to education Article 29 – Goals of education Article 42 – Knowledge of rights	Article 2 – Non discrimination Article 12 – Respect for the views of the child Article 13 – Freedom of expression Article 14 – Freedom of thought, belief and religion Article 15 – Freedom of association Article 16 – Right to privacy Article 23 – Right to a full life if child with disability Article 28 – Right to education Article 29 – Goals of education Article 42 – Knowledge of rights	Article 2 – Non discrimination Article 12 – Respect for the views of the child Article 13 – Freedom of expression Article 14 – Freedom of thought, belief and religion Article 15 – Freedom of association Article 16 – Right to privacy Article 23 – Right to a full life if child with disability Article 28 – Right to education Article 29 – Goals of education Article 42 – Knowledge of rights
Cross curricular links	Art & Design and Maths • Symmetrical art can be analysed and the number of lines of symmetry can be found. Also, the order of rotational symmetry can be studied. • Ratio is used to mix paints. For example, to make purple, you mix 3 parts red to 7 parts blue. • You could also explore the Art through mathematics section on the NCETM website. English and Maths • Spelling mathematical vocabulary correctly and using it in the correct context. • Mastery of maths is advanced by children being able to explain their mathematical thinking to others and to justify methods and conclusions. • English skills can be used to clearly interpret and discuss results you get from collecting data in maths lessons. • Solving comprehension questions from maths comprehension cards.		

	Design & Technology and Maths • Reading Scales. • Measuring ingredients and working out proportions. • Using ratios in recipes. Geography and Maths • Collecting and representing data from field trips or for weather investigations. • Grid references and coordinates. • Using scales on Ordnance Survey maps to establish the correct distance between two points. Computing and Maths • Angles and direction which can be drawn and measured using floor robots and apps too. • Information can be represented in Excel and calculations using formula can be done on the data here too. • Logic is used in programming as is problem solving. Foreign Languages and Maths • Numbers can be used to do sums or times tables in French. • Asking what time it is in another language. Music and Maths • Time and speed can be represented by tempo which is the number of beats per minute (BPM). • Equivalent fractions can be shown using musical notation where a different type of note is worth a different fraction of a whole beat. History and Maths • Historical timelines can be used as a basis for finding the difference in dates. • Historical dates can also be utilised for sequencing events. Physical Education and Maths • Time, distance and speed of races can be incorporated into Maths sessions to enable children • Averages (Mean, Mode and Median) can be used to assess and athlete's performance.
Useful websites/videos	https://www.bbc.co.uk/bitesize/subjects/zqhs34j https://hegartymaths.com/ https://corbettmaths.com/
Wider Reading	• Research the history of algebra. Where did the word algebra derive from? Which civilizations introduced algebra? Who were the early pioneers? • Investigate Egyptian fractions. What are they? How did they work? Are they still used anywhere today? What are the benefits and drawbacks of Egyptian fractions? • Investigate misleading graphs. Where can they be seen? Why would the media use misleading charts or graphs? • Research Greek Mathematician Pythagoras of Samos. Investigate some careers where Pythagoras and trigonometry skills could be required. • Investigate where averages are used in everyday life. What jobs might require you to work with averages. • Investigate quadratic graphs. What do they look like? Where might quadratic graphs be used in real life?
Literacy Programme	• Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies	• Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies	• Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies

Independent Learning Tasks	Hegarty maths tasks Knowledge organisers	Hegarty maths tasks Knowledge organisers	Hegarty maths tasks Knowledge organisers