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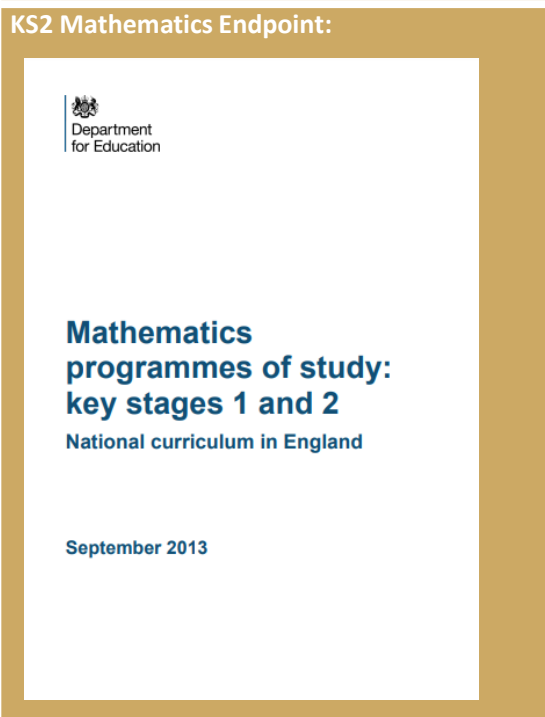
KS3 Curriculum Map



CURRICULUM MAP

Term

Core
Year 7 KS2 Transition



Key Stage 1 and 2 National Curriculum:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking

Assessment: KS2 Mathematics Assessment taken in May of the year students arrive at Uxbridge High School.

Autumn 1 Transition.

Assessment:
 Baseline Test to stream students.
 Feed Forward Period:
 -The first few weeks of year 7 will be off scheme of work as students complete a KS2 Feed Forward. During this period, teachers will be expected to use the KS2 data to plan lessons which take steps to address gaps in their students KS2 knowledge and, as a result, best prepare them for foundation mathematics.
 -Teachers will incorporate the Hegarty Maths program to aid in the session and to help students upskill from the KS2 Assessment.



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Year 7



Homework & Revision

Homework

A minimum of 2 Hegarty Maths quizzes every week.

Revisiting, revising, remembering opportunities

Memri tasks on Hegarty Maths.

Starters based on key KS2 knowledge.

Recap/refresher task at the start of lesson.

Low-stakes knowledge tests at the end of each unit.



Year 7 Key Objectives

Unit	Pathway A	Pathway B	Pathway C
Analysing and Displaying Data	I can work with simple averages and data sets to draw graphs	I can display and analyse data in charts and graphs.	I can interpret data and discuss what graphs and data sets show me with confidence.
Number Skills	I can carry out simple procedures with number.	I can read and solve number problems involving negative numbers, indices, factors and multiples.	I can apply my knowledge of number to work with problem-solving questions.
Algebra Skills	I can work with simple expressions, equations, functions and formulae	I can use expressions, equations and formulae to solve problems involving algebra	I can use equations and formulae to solve complex algebra problem solving questions
Fractions, percentages and decimals	I can work with basic fractions, percentages and decimals.	I can work with fractions, percentages and decimals and apply these skills to number problems.	I can work use my knowledge of fractions, percentages and decimals in application of complex problem solving questions.



Year 7 Key Objectives

Unit	Pathway A	Pathway B	Pathway C
Probability	I can use probability to describe and calculate simple outcomes	I can use probability to describe and calculate outcomes including involving experimental probability	I can use probability to solve complex problem solving questions
Ratio, proportion and measures	I can use ratio and proportion to solve simple problems	I can use ratio and proportion to solve day to day problems in the real world.	I can use ratio and proportion to solve complex problems in the real world.
Lines and angles	I can find missing angles using basic angle facts.	I can solve multistep angle problems by using angle facts about points, straight lines, triangles, and parallel lines.	I can solve geometrical problems showing reasoning and solve angles problems using equations.
Perimeter, area and volume	I can find missing angles using basic angle facts.	I can solve multistep angle problems by using angle facts about points, straight lines, triangles, and parallel lines.	I can solve complex worded problems based on perimeter, area and volume.
Sequences and graphs	I can work with sequences and draw simple graphs	I can work with sequences and draw and straight line graphs	I can apply my knowledge of sequences and graphs to solve complex problems
Transformations	I can carry out simple transformations.	I can transform shapes on a coordinate axis.	I can describe combination of transformations.



	Core Year 7	Term	Higher Year 7
<p>Autumn 1</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oral and written interpretations and conclusions from data.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 2:</p> <p>Pathway A: I can carry out simple procedures with number.</p> <p>Pathway B: I can read and solve number problems involving negative numbers, indices, factors and multiples.</p> <p>Pathway C: I can apply my knowledge of number to work with problem-solving questions.</p> <p>Key Objective 1:</p> <p>Pathway A: I can work with simple averages and data sets to draw graphs</p> <p>Pathway B: I can display and analyse data in charts and graphs.</p> <p>Pathway C: I can interpret data and discuss what graphs and data sets show me with confidence.</p>	<p>Unit of work: Unit 1 Number Skills and Unit 2 Analysing Data</p> <p>Assessment objectives</p> <ul style="list-style-type: none"> To be able to calculate averages To be able to construct charts and tables for continuous and discrete data To be able to interpret representations of data. Complete calculations with fluency involving all four operations To be able to find factors, multiples and primes. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> Students will be exposed to graphs in a variety of contexts including finance, environment etc. See graphs in other contexts. Finance: Time and Money <p>Assessments Unit 1 and 2 Topic Test and Autumn 1 Assessment. <u>Feed Forward lessons</u> to improve student knowledge following Autumn 1 assessment.</p>	<p>Autumn 1</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oral and written interpretations and conclusions from data.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 2:</p> <p>Pathway A: I can carry out simple procedures with number.</p> <p>Pathway B: I can read and solve number problems involving negative numbers, indices, factors and multiples.</p> <p>Pathway C: I can apply my knowledge of number to work with problem-solving questions.</p> <p>Key Objective 1:</p> <p>Pathway A: I can work with simple averages and data sets to draw graphs</p> <p>Pathway B: I can display and analyse data in charts and graphs.</p> <p>Pathway C: I can interpret data and discuss what graphs and data sets show me with confidence.</p>	<p>Unit of work: Unit 1 Number Skills and Unit 2 Displaying data</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To be able to construct and interpret graphs, charts and diagrams. To find averages from data. To calculate roots, powers and negatives. To find factors and multiples. To write a number as a product of its primes. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> STEM: Science and Maths Collaboration during first part of term. Cross-curricular investigation. A small group of HAPs in Mathematics will attend a workshop day at Brunel University during the first term. <p>Assessments</p> <p>Unit Tests and Autumn 1 Assessment</p> <p><u>Feed Forward lessons</u> to improve student knowledge following Autumn 1 assessment.</p>





	Core Year 7	Term	Higher Year 7
<p>Spring 1</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 4: Pathway A: I can work with basic fractions, percentages and decimals. Pathway B: I can work with fractions, percentages and decimals and apply these skills to number problems. Pathway C: I can work use my knowledge of fractions, percentages and decimals in application of complex problem solving questions.</p> <p>Key Objective 5: Pathway A: I can use probability to describe and calculate simple outcomes Pathway B: I can use probability to describe and calculate outcomes including involving experimental probability Pathway C: I can use probability to solve complex problem solving questions</p>	<p>Unit of work: Unit 5 Fractions and Percentages and Unit 6 Probability</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To perform the four operations with fractions. To compare and simplify fractions. To find fractions of amounts. To calculate percentages of amounts To understand and describe events using the language of probability. To calculate with probability. To complete sample space and list outcomes. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> Key literacy involving fractions: denominator, numerator, divisor etc. Percentages in everyday life. FINANCE: expected outcomes Everyday situations. The Monty Hall Dilemma. <p>Assessments: Topic Tests and Spring 1 Assessment <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>	<p>Spring 1</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 7: Pathway A: I can find missing angles using basic angle facts. Pathway B: I can solve multistep angle problems by using angle facts about points, straight lines, triangles, and parallel lines. Pathway C: I can solve geometrical problems showing reasoning and solve angles problems using equations.</p> <p>Key Objective 4: Pathway A: I can work with basic fractions, percentages and decimals. Pathway B: I can work with fractions, percentages and decimals and apply these skills to number problems. Pathway C: I can work use my knowledge of fractions, percentages and decimals in application of complex problem solving questions.</p>	<p>Unit of work: Unit 5 Angles and Shape and Unit 6 Decimals</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To calculate angles in polygons, parallel lines and around a point To complete calculations with decimals. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> Decimals measures such as conversion between units. Debate on the metric v. imperial units History of the metric and imperial systems link to empire. <p>Assessments: Unit Tests and Spring 1 Assessment <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>



Core Year 7	Core Year 7	Term	Higher Year 7
<p>Spring 2</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oracy to present answers in the correct literate manner but also to articulate problem solving.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 6:</p> <p>Pathway A: I can use ratio and proportion to solve simple problems</p> <p>Pathway B: I can use ratio and proportion to solve day to day problems in the real world.</p> <p>Pathway C: I can use ratio and proportion to solve complex problems in the real world.</p> <p>Key Objective 7:</p> <p>Pathway A: I can find missing angles using basic angle facts.</p> <p>Pathway B: I can solve multistep angle problems by using angle facts about points, straight lines, triangles, and parallel lines.</p> <p>Pathway C: I can solve geometrical problems showing reasoning and solve angles problems using equations.</p>	<p>Unit of work: Unit 7 Ratio and Proportion and Unit 8 Lines and Angles</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To understand direct proportion and the unitary method of proportion To simplify ratio To share an amount in a ratio To compare fractions and percentages as proportions To find angles in triangles, quadrilaterals, straight lines and around a point. To construct lines and angles. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> Cross-curricular: Technology, Art and Design with recipe and ratios. STEM: Calculating angles and constructions applicable to architecture, engineering and design. <p>Assessments:</p> <p>Topic Tests and Spring 2 Assessment.</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>	<p>Spring 2</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oracy to present answers in the correct literate manner but also to articulate problem solving.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 3:</p> <p>Pathway A: I can work with simple expressions, equations, functions and formulae</p> <p>Pathway B: I can use expressions, equations and formulae to solve problems involving algebra</p> <p>Pathway C: I can use expressions, equations and formulae to solve problems involving algebra</p>	<p>Unit of work: Unit 7 Equations</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To be able to form and solve equations. End point: All students should be able to solve complex linear equations. This will include equations with variables on both sides and brackets. This will include negative terms. An example endpoint equation would be “Solve $4(2-3x)=3-2(4x+2)$” <p>Enrichment/life and work skills</p> <ul style="list-style-type: none"> Interleave with unit 3 and with angles through forming and solving equations. NRICH Activities <p>Assessments</p> <p>Unit 7 Test and Spring 2 Assessment</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>



Core Year 7	Core Year 7	Term	Higher Year 7
<p>Summer 1</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 9: Pathway A: I can work with sequences and draw simple graphs Pathway B: I can work with sequences and draw and straight line graphs Pathway C: I can apply my knowledge of sequences and graphs to solve complex problems</p>	<p>Unit of work: Unit 9 Sequences and Line Graphs Assessment objectives:</p> <ul style="list-style-type: none"> To find the next terms in a sequence, identify term to term rules and recognise if a term is in a sequence. To understand arithmetic, geometric and Fibonacci sequence. To plot linear graphs in the form $y=mx+c$ <p>Enrichment/life and work skills</p> <ul style="list-style-type: none"> Fibonacci Sequence and other famous sequences <p>Assessments: Unit 9 Test and Summer 1 Assessment <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills. Extra-Curricular Trip to the Science Museum. The trip will take students to the mathematical Whitton Exhibit and explore links of maths to STEM.</p>	<p>Summer 1</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 6: Pathway 1: I can use ratio and proportion to solve simple problems Pathway 2: I can use ratio and proportion to solve day to day problems in the real world. Pathway 3: I can use ratio and proportion to solve complex problems in the real world.</p> <p>Key Objective 8: Pathway 1: I understand properties of 2D and 3D shapes. Pathway 2: I can recall area formulae and use them to work out areas of some 2D shapes, and volumes of 3d shapes. Pathway 3: I can solve geometrical problems showing reasoning and solve angles problems using equations.</p>	<p>Unit of work: Unit 8 Multiplicative Reasoning and Unit 9 Perimeter, Area and Volume Assessment objectives:</p> <ul style="list-style-type: none"> To recognise direct and inverse proportion. To use the unitary method of proportion. Use algebra to solve direct proportion To calculate perimeter, area and volume. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> Unitary method supermarket challenge. Logic problems relating to direct and inverse proportion. 60 students will take part in the UKMT maths challenge. <p>Assessments: Unit Tests and Summer 1 Assessment <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills. Extra-Curricular Trip to the Science Museum. The trip will take students to the mathematical Whitton Exhibit and explore links of maths to STEM and Maths cultural impact.</p>



Core Year 7	Term	Higher Year 7	
<p>Summer 2</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 10: Pathway A: I can carry out simple transformations. Pathway B: I can transform shapes on a coordinate axis. Pathway C: I can describe combination of transformations.</p>	<p>Unit of work: Unit 10 Transformations Assessment objectives:</p> <ul style="list-style-type: none">To describe and write translations, reflections, rotations and enlargements <p>Enrichment/life and work skills: NRICH Tasks</p> <p>Assessments Unit 10 Tasks and End of Year Assessment <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>	<p>Summer 2 <u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 9: Pathway A: I can work with sequences and draw simple graphs Pathway B: I can work with sequences and draw and straight line graphs Pathway C: I can apply my knowledge of sequences and graphs to solve complex problems</p>	<p>Unit of work: Unit 10 Sequences and Graphs Assessment objectives:</p> <ul style="list-style-type: none">To construct linear graphs.To find the nth term of linear sequences. <p>Enrichment/life and work skills</p> <ul style="list-style-type: none">Use of linear functions to represent speed, distance, time, fixed cost etc. <p>Assessments Unit Tests and End of Year Assessment <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>



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Year 8



Year 8 Key Objectives

Unit	Pathway A	Pathway B	Pathway C
Number	I can carry out simple procedures when solving number problems	I can read and solve number problems involving negative numbers, indices, factors and multiples.	I can apply my knowledge of number to work with problem-solving questions.
Area and Volume	I can identify 2D shapes and apply simple formulae to calculate area	I can apply formulae to calculate area and volume of 2D and 3D shapes.	I can apply my knowledge of area and volume to answer multi-step problems
Expressions and Equations	I can understand the vocabulary and notation of algebra and simplify simple algebraic expressions.	I can simplify, solve and manipulate algebraic expressions and equations.	I can make links between problem-solving questions and algebra in a coherent manner.
Graphs	I can explore and understand different types of graphs	I can construct and interpret different types of graphs.	I can use graphs for real-life applications and use them to make comparisons.
Fractions, decimals and percentages and ratio	I can calculate and work with simple fractions, decimals and percentages.	I can work with recurring decimals. I can solve problems involving percentages and ratio.	I can apply my knowledge of ratio in different contexts.



Year 8 Key Objectives

Unit	Pathway A	Pathway B	Pathway C
Statistics (core)	I can interpret statistical diagrams including pie charts and two-way tables.	I can draw and interpret statistical diagrams and use these to make comparisons.	
Lines and angles (core)	I can recall the properties of 2D shapes.	I can use my knowledge of shapes and angles to solve one-step problems.	
Scale drawing and measurements (higher)		I can use and understand scale diagrams, similar and congruent shapes.	I can apply my knowledge of scales, bearings, similar and congruent shapes to problem-solving questions.
Transformations	I can carry out some transformations	I can carry out the four transformations.	I can carry out more complex transformations.
Probability (higher)		I can design and work with a range of probability diagrams and use these to work out probabilities of events.	I can design and work with a range of probability diagrams and use these to work out probabilities of events.



Homework & Revision

Homework

A minimum of 2 Hegarty Maths quizzes every week.

Revisiting, revising, remembering opportunities

Memri tasks on Hegarty Maths.

Starters based on key KS2 knowledge.

Recap/refresher task at the start of lesson.

Low-stakes knowledge tests at the end of each unit.



	Core Year 8	Term	Higher Year 8
<p>Autumn 1</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oracy to present answers in the correct literate manner but also to articulate problem solving.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 1</p> <p>Pathway A: I can carry out simple procedures when solving number problems</p> <p>Pathway B: I can read and solve number problems involving negative numbers, indices, factors and multiples.</p> <p>Pathway C: I can apply my knowledge of number to work with problem-solving questions.</p> <p>Key Objective 2</p> <p>Pathway A: I can identify 2D shapes and apply simple formulae to calculate area</p> <p>Pathway B: I can apply formulae to calculate area and volume of 2D and 3D shapes.</p> <p>Pathway C: I can apply my knowledge of area and volume to answer multi-step problems</p>	<p>Unit of work: Unit 1 Number and Unit 2 Area and Volume</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To calculate with negatives, roots and powers To find factors multiples and primes To substitute numbers into expressions To calculate area and volume of shapes <p>Enrichment/life and work skills:</p> <p>NRICH Tasks:</p> <p>Arithamagons</p> <p>5 on the clock</p> <p>Negative Dice</p> <p>Game of 24 (MPN physical resource)</p> <p>Assessments:</p> <p>Unit Tests and Autumn 1 Assessment</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>	<p>Autumn 1</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oracy to present answers in the correct literate manner but also to articulate problem solving.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 1</p> <p>Pathway A: I can carry out simple procedures when solving number problems</p> <p>Pathway B: I can read and solve number problems involving negative numbers, indices, factors and multiples.</p> <p>Pathway C: I can apply my knowledge of number to work with problem-solving questions.</p> <p>Key Objective 3</p> <p>Pathway A: I can understand the vocabulary and notation of algebra and simplify simple algebraic expressions.</p> <p>Pathway B: I can simplify, solve and manipulate algebraic expressions and equations.</p> <p>Pathway C: I can make links between problem-solving questions and algebra in a coherent manner.</p>	<p>Unit of work: Unit 1 Factors and Powers and Unit 2 Working with Powers</p> <p>Assessment objectives:</p> <ul style="list-style-type: none"> To write numbers as factors, multiples and primes. To find the HCF and LCM. To know the rules of indices <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none"> Other types of number such as triangular. Key sequences: cubic, square and Fibonacci. Understand integer, irrational and their Historical/philosophical roots and history such as Pythagoreans in Ancient Greece. <p>Assessments</p> <p>Unit Tests and Autumn 1 Assessment</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>



	Core Year 8	Term	Higher Year 8
<p>Autumn 2</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oracy to present answers in the correct literate manner but also to articulate problem solving.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 3</p> <p>Pathway A: I can understand the vocabulary and notation of algebra and simplify simple algebraic expressions.</p> <p>Pathway B: I can simplify, solve and manipulate algebraic expressions and equations.</p> <p>Pathway C: I can make links between problem-solving questions and algebra in a coherent manner.</p> <p>Key Objective 4</p> <p>Pathway A: I can explore and understand different types of graphs</p> <p>Pathway B: I can construct and interpret different types of graphs.</p> <p>Pathway C: I can use graphs for real-life applications and use them to make comparisons.</p>	<p>Unit of work: Unit 4 Expressions and Equations Unit 5 Real-Life Line Graphs</p> <p>Assessment objectives:</p> <ul style="list-style-type: none">To be able to factorise, expand and simplify algebraic expressions.To be able to form and solve algebraic expressions and equations.To be able to construct and interpret real life graphs <p>Enrichment/life and work skills:</p> <p>STEM: Real life graphs relating to science, finance and business. Introduce famous graphs such as the Laffer Curve</p> <p>Assessments:</p> <p>Unit 4 and 5 Tests and Autumn 2 Assessment</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>	<p>Autumn 2</p> <p><u>Literacy / numeracy foci</u></p> <p>Key definitions.</p> <p>Oracy to present answers in the correct literate manner but also to articulate problem solving.</p> <p>Definitions in Knowledge Tests.</p> <p>Key Objective 2</p> <p>Pathway A: I can identify 2D shapes and apply simple formulae to calculate area</p> <p>Pathway B: I can apply formulae to calculate area and volume of 2D and 3D shapes.</p> <p>Pathway C: I can apply my knowledge of area and volume to answer multi-step problems</p> <p>Key Objective 4</p> <p>Pathway A: I can explore and understand different types of graphs</p> <p>Pathway B: I can construct and interpret different types of graphs.</p> <p>Pathway C: I can use graphs for real-life applications and use them to make comparisons.</p>	<p>Unit of work: Unit 3 2D and 3D Shapes and Unit 4 Real Life-Graphs</p> <p>Assessment objectives:</p> <ul style="list-style-type: none">To map 2D and 3D shapeTo construct and interpret real-life graphs. <p>Enrichment/life and work skills:</p> <ul style="list-style-type: none">Real-Life Graphs and their context.STEM: Plans and elevation. <p>Assessments:</p> <p>Unit Tests and Autumn 2 Assessment</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>



Core Year 8	Term	Higher Year 8	
<p>Spring 1</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 5 Pathway A: I can calculate and work with simple fractions, decimals and percentages. Pathway B: I can work with recurring decimals. I can solve problems involving percentages and ratio. Pathway C: I can apply my knowledge of ratio in different contexts.</p> <p>Key Objective 7: Pathway A: I can recall the properties of 2D shapes. Pathway B: I can use my knowledge of shapes and angles to solve one-step problems.</p>	<p>Unit of work: Unit 6 Decimals and Ratio and Unit 7 Lines and Angles</p> <p>Assessment objectives:</p> <ul style="list-style-type: none">• To calculate with decimals and ratio.• To find angles in polygons. <p>Enrichment/life and work skills: STEM: using ratio</p> <p>Interleaving: Revisit of Year 7 curriculum</p> <p>Assessments Unit Tests and Spring 1 Assessment</p> <p><u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>	<p>Spring 1</p> <p><u>Literacy / numeracy foci</u> Key definitions. Oracy to present answers in the correct literate manner but also to articulate problem solving. Definitions in Knowledge Tests.</p> <p>Key Objective 9: Pathway A: I can carry out some transformations Pathway B: I can carry out the four transformations. Pathway C: I can carry out more complex transformations.</p> <p>Key Objective 5 Pathway A: I can calculate and work with simple fractions, decimals and percentages. Pathway B: I can work with recurring decimals. I can solve problems involving percentages and ratio. Pathway C: I can apply my knowledge of ratio in different contexts.</p>	<p>Unit of work: Unit 5 Transformations and Unit 6 Fractions, Decimals and Percentages</p> <p>Assessment objectives:</p> <ul style="list-style-type: none">• To reflect, rotate, enlarge and translate shapes.• To describe transformations• To calculate with fractions, decimals and percentages.• To compare and order fractions, decimals and percentages. <p>Enrichment/life and work skills: NRICH Tasks</p> <p>Assessments Unit tests and Spring 1 Assessments <u>Feed Forward</u> following Assessment to fill gaps in knowledge and skills.</p>



Spring 2

Literacy / numeracy foci
Key definitions.
Oracy to present answers in the correct literate manner but also to articulate problem solving.
Definitions in Knowledge Tests.

Key Objective 5
Pathway A: I can calculate and work with simple fractions, decimals and percentages.
Pathway B: I can work with recurring decimals. I can solve problems involving percentages and ratio.
Pathway C: I can apply my knowledge of ratio in different contexts.

Core
Year 8

Unit of work: Unit 8 Fractions

Assessment objectives:

- To order and compare fractions.
- To perform the four operations with fractions.
- To perform calculations with mixed numbers.

Enrichment/life and work skills
Interleaving with topics such as percentages, ratio and decimals.

Assessments:
Unit 8 Test and Spring 2 Assessment
Feed Forward following Assessment to fill gaps in knowledge and skills.

Term

Spring 2

Literacy / numeracy foci
Key definitions.
Oracy to present answers in the correct literate manner but also to articulate problem solving.
Definitions in Knowledge Tests.

Key Objective 5
Pathway A: I can calculate and work with simple fractions, decimals and percentages.
Pathway B: I can work with recurring decimals. I can solve problems involving percentages and ratio.
Pathway C: I can apply my knowledge of ratio in different contexts.

Higher
Year 8

Unit of work: Unit 7 Multiplicative Reasoning

Assessment objectives:

- To use the unitary method of proportion to calculate answers.
- To recognise the difference between direct and inverse proportion.
- To be able to use algebra to solve both direct and inverse proportion problems.

Enrichment/life and work skills:
[Proportionality and the idea as a common conception.](#)

Assessments:
Unit Test and Spring 2 Assessment
Feed Forward following Assessment to fill gaps in knowledge and skills.
Opportunity for students to take part in the Mayor of London 'Count on Us Challenge' which seeks to extend their mathematical reasoning skills and problem solving.



Core
Year 8

Summer 1

Literacy / numeracy foci

Key definitions.

Oracy to present answers in the correct literate manner but also to articulate problem solving.

Definitions in Knowledge Tests.

Key Objective 4

Pathway A: I can explore and understand different types of graphs

Pathway B: I can construct and interpret different types of graphs.

Pathway C: I can use graphs for real-life applications and use them to make comparisons.

Key Objective 5

Pathway A: I can calculate and work with simple fractions, decimals and percentages.

Pathway B: I can work with recurring decimals. I can solve problems involving percentages and ratio.

Pathway C: I can apply my knowledge of ratio in different contexts.

Unit of work: Unit 9 straight line graphs and Unit 10 Percentages, Decimals and Fractions.

Assessment objectives:

- To plot linear graphs.
- To convert between fractions, decimals and percentages.

Enrichment/life and work skills:

- [Linear graphs linked to life and work. For example gradient representations of speed or fixed charged billing.](#)

Assessments

Unit Tests and Summer 1 Assessment

Feed Forward following Assessment to fill gaps in knowledge and skills.

Term

Higher
Year 8

Summer 1

Literacy / numeracy foci

Key definitions.

Oracy to present answers in the correct literate manner but also to articulate problem solving.

Definitions in Knowledge Tests.

Key Objective 10:

Pathway B: I can design and work with a range of probability diagrams and use these to work out probabilities of events.

Pathway C: I can construct more complex probability diagrams to calculate the probability of two or more events taking place.

Unit of work: Unit 8 Probability and Unit 9 Scale Drawings and Measurements

Assessment objectives:

- To understand key words surrounding probability.
- To calculate probabilities.
- To construct sample space to calculate probability.
- To convert between units and construct scale drawings.

Enrichment/life and work skills:

- Interleave fractions, decimals and percentages with probability.
- **FINANCE: probability in finance**
- [The Monty Hall problem](#)
- 60 students will take part in the national UKMT maths challenge.

Assessments

Unit Tests and Summer 1 Assessment.

Feed Forward following Assessment to fill gaps in knowledge and skills.



Summer 2
Literacy / numeracy foci
 Key definitions.
 Oracy to present answers in the correct literate manner but also to articulate problem solving.
 Definitions in Knowledge Tests.

Key Objective 6:
 Pathway A: I can interpret statistical diagrams including pie charts and two-way tables.
 Pathway B: I can draw and interpret statistical diagrams and use these to make comparisons.

Unit of work: Revision Work and Statistics, Tables and Diagrams
Assessment objectives:

- To be able to construct and interpret a variety of graphs.
- Time to revise and revisit topics to embed learning in long-term memory.

Enrichment/life and work skills:

- [Science/Maths collaboration on data and sharing results.](#)
- [Enrichment: Students investigate their own data such as time taken to get to school.](#)
- [Graphs of key themes and features of other subjects.](#)

Assessments:
 End of Year Assessment and KS3 Assessment in Year 9
Feed Forward following Assessment to fill gaps in knowledge and skills.

Summer 2
Literacy / numeracy foci
 Key definitions.
 Oracy to present answers in the correct literate manner but also to articulate problem solving.
 Definitions in Knowledge Tests.

Key Objective 4
 Pathway A: I can explore and understand different types of graphs
 Pathway B: I can construct and interpret different types of graphs.
 Pathway C: I can use graphs for real-life applications and use them to make comparisons.

Unit of work: Unit 10 Graphs
Assessment objectives:

- To construct linear graphs.
- To find the gradient and intercepts.
- To recognise quadratic and cubic graphs.

Enrichment/life and work skills
[Use of linear functions in relation to STEM, finance and other examples of everyday life.](#)

Assessments:
 Unit tests and End of Year Assessment
Feed Forward following Assessment to fill gaps in knowledge and skills.

Year 9

Year 9 Key Objectives

	Pathway A	Pathway B	Pathway C
General Number skills	I can carry out simple procedures when solving number problems.	I can reason, interpret and solve numerical problems.	I can apply general number skills in order to solve complex worded number problems.
Expressions, Formulae and Identities	I understand and can use correct algebraic notation.	I can expand, factorise and simplify algebraic expressions. I can substitute positive and negative integers in algebraic expressions.	I can interpret worded problems to create linear and quadratic algebraic expressions
Representing/ Interpreting data and averages	I can read and interpret some data graphs and charts and calculate some averages.	I can construct and interpret most data graphs and charts (bar charts, line graphs, scatter graphs, pie charts etc) and work out averages and range.	I can construct and interpret complex statistical diagrams and use these to compare data.
Fraction, decimals, percentages and ratio	I can identify key equivalence of FDP and convert between FDP.	I can calculate with fractions, decimals, percentage and ratio problems.	I can reason with fractions, decimals, percentages and ratio and solve combined problems.
Equations, inequalities and graphs	I can work with simple equations, inequalities and linear graphs.	I can work with simple equations, inequalities and linear graphs.	I can work with simple equations, inequalities and linear graphs.

	Pathway A	Pathway B	Pathway C
Angle facts (inc interior and exterior angles)	I can find missing angles using basic angle facts.	I can solve multistep angle problems by using angle facts about points, straight lines, triangles, and parallel lines.	I can solve geometrical problems showing reasoning. I can solve angles problems using equations.
Trigonometry and pythagoras		I can work out missing angles or lengths in right angled triangles using Pythagoras or trigonometry.	I can apply trigonometry and Pythagoras theorem in complex worded problems.
Probability	I understand the probability scale and can work out basic probabilities of independent events.	I can work out the probability of independent and dependant events using tree diagrams.	I can solve complex probability problems.
Perimeter, Area and Volume	I understand properties of 2D and 3D shapes.	I can recall area formulae and use them to work out areas of some 2D shapes, and volumes of 3d shapes.	I can solve complex worded problems based on perimeter, area and volume.
Transformations and constructions	I can carry out simple transformations.	I can combine transformations and can use scales in maps and scale drawings. I can construct some triangles.	I can describe combination of transformations. I can solve problems with bearings and loci.

Literacy/ Numeracy Focus

Outline within the units.

Homework

Homework tasks are set on Sparx in line with the Uxbridge High School Curriculum. However these tasks will be one week behind the teaching schedule.

Revisiting, revising, remembering opportunities:

Retrieval starters to include KS3 topics covered from previously learnt knowledge.

Prior knowledge checks at the start of every unit.

Formula/ knowledge tests to be conducted regularly during

Term	Foundation Year 9	Term	Higher Year 9
<p>Autumn 1 Literacy / numeracy foci: Emphasis on the difference between factor, multiple and prime factor Using strategies for multiplying and dividing by multiples of 10 Identify square, cube and prime numbers Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 1 Pathway A – I can carry out simple procedures when solving number problems. Pathway B – I can reason, interpret and solve numerical problems. Pathways C – I can apply general number skills in order to solve complete worded number problems.</p>	<p>Unit of work: Unit 1 - Number</p> <p>Assessment objectives: Calculations with positive and negative integers, and decimals Find factors, multiples and primes Squares, cubes and roots Index notation and prime factors</p> <p>Enrichment/life and work skills: Shop transactions Working with wages Accounting – completing balance sheets or similar accounting sheets Squares and roots will link to Pythagoras theorem</p> <p>Assessments: 2 unit tests and 1 half term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Unit tests can be peer marked</p>	<p>Autumn 1 Literacy / numeracy foci: Emphasis on the difference between factor, multiple and prime factor Rational and irrational numbers Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 1 Pathway A – I can carry out simple procedures when solving number problems. Pathway B – I can reason, interpret and solve numerical problems. Pathways C – I can apply general number skills in order to solve complete worded number problems.</p>	<p>Unit of work: Unit 1 – Number</p> <p>Assessment objectives: Estimation Find factors, multiples and primes Calculating with powers Standard form Surds and rationalising</p> <p>Enrichment/life and work skills: Estimation used when measuring distance in space with a scientific context Surds link to A level maths study Squares and roots will link to Pythagoras theorem which is taught later in the year Standard form links to science and geography</p> <p>Assessments: 2 unit tests and 1 half term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Unit tests can be peer marked</p>
<p>Autumn 2 Literacy / numeracy foci: Understanding the differences and similarities of the terminologies used like expression, equations and identities. Understanding what method to use for when manipulating expressions Making clear links between the previous number topic.</p> <p>Key Objective 2 Pathway A – I can understand and use correct algebraic notation. Pathway B – I can expand, factorise and simplify algebraic expressions, I can substitute positive and negative integers in algebraic expressions. Pathways C – I can interpret worded problems to create linear and quadratic algebraic expressions.</p>	<p>Unit of work: Unit 2 - Algebra</p> <p>Assessment objectives: Working with algebraic expressions Substitution into formulae Expanding and factorising</p> <p>Enrichment/life and work skills: Substitution into formulae links with application within science Jobs that typically involved maths and science e.g. Cryptologists and Astronomers Lesson based on deciphering code</p> <p>Assessments: 2 unit tests and 1 end of term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. End of term assessment to be cumulative. Unit tests can be peer marked</p>	<p>Autumn 2 Literacy / numeracy foci: Understanding the differences and similarities of the terminologies used like expression, factorise and substitute Identifying linear and quadratic equations as well as sequences Making links to previous number topic Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 2 Pathway A – I can understand and use correct algebraic notation. Pathway B – I can expand, factorise and simplify algebraic expressions, I can substitute positive and negative integers in algebraic expressions. Pathways C – I can interpret worded problems to create linear and quadratic algebraic expressions.</p>	<p>Unit of work: Unit 2 – Algebra</p> <p>Assessment objectives: Solving equations including quadratics Substitution into formulae Rearranging Formulae Expanding and factorising Sequences</p> <p>Enrichment/life and work skills: Substitution into formulae links with application within science Jobs that typically involved maths and science e.g. Cryptologists and Astronomers Lesson based on deciphering code Derive equations and solve real life problems 'The lift problem' - inequality to understand how to determine lift safety as a job Sequences for real life events</p> <p>Assessments: 2 unit tests and 1 end of term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Unit tests can be peer marked</p>

Term	Foundation Year 9	Term	Higher Year 9
<p>Spring 1 <u>Literacy / numeracy foci:</u> Interpreting data from various diagrams and text. Writing descriptions for correlation Keywords for describing fractions Knowing that percent literally translates to ‘per 100’ or ‘out of 100’ Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 3 Pathway A – I can read and interpret some data graphs and charts and calculate some averages. Pathway B - I can construct and interpret most data graphs and charts (bar charts, line graphs, scatter graphs, pie charts, etc) and work out averages and ranges . Pathway C – I can construct and interpret complex statistical diagrams ad use these to compare data.</p> <p>Key Objective 4 Pathway A – I can identify key equivalence of FDP and convert between FDP. Pathway B – I can calculate with fractions, decimals, percentage and ratio problems. Pathway C – I can reason with fractions, decimals, percentages and ratio and solve combined problems.</p>	<p>Unit of work: Unit 3 – Graphs Unit 4 – Fractions and percentages</p> <p>Assessment objectives: Representing data – Frequency tables, two way tables, bar graphs and line graphs Stem and leaf diagrams and pie charts Scatter graphs and lines of best fit Conversions between fractions, decimals and percentages Operations with fractions Calculations with percentages</p> <p>Enrichment/life and work skills: Data analyst career taste real life understanding of scatter graphs Shopping with sales on items Loan repayment including finding interest VAT</p> <p>Assessments: 2 unit tests and 1 half term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Half term assessment to be cumulative. Unit tests can be peer marked</p>	<p>Spring 1 <u>Literacy / numeracy foci:</u> Differentiating between types of averages Worded problem solving including percentages, ratio and fractions Multiplying and dividing by multiples of 10 Conversions between different metric units Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 3 Pathway A – I can read and interpret some data graphs and charts and calculate some averages. Pathway B - I can construct and interpret most data graphs and charts (bar charts, line graphs, scatter graphs, pie charts, etc) and work out averages and ranges . Pathway C – I can construct and interpret complex statistical diagrams ad use these to compare data.</p> <p>Key Objective 4 Pathway A – I can identify key equivalence of FDP and convert between FDP. Pathway B – I can calculate with fractions, decimals, percentage and ratio problems. Pathway C – I can reason with fractions, decimals, percentages and ratio and solve combined problems.</p>	<p>Unit of work: Unit 3 – Interpreting data Unit 4 – Fractions, ratio and percentages</p> <p>Assessment objectives: Representing data – Frequency tables, two way tables, bar graphs and line graphs Averages and range from tables Scatter graphs and lines of best fit Calculations with percentages, ratio and fractions Compound Interest/ Depreciation</p> <p>Enrichment/life and work skills: Averages applied to real life scenarios and different professions Data analyst career taste real life understanding of scatter graphs Ratio linked with food tech. Loan repayment including finding interest - Finance and economic links Scatter graphs on real data - linked to science, business and geography Conversions between metric and imperial units Exchange rates – Finance and economic links</p> <p>Assessments: 2 unit tests and 1 half term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Half term assessment to be cumulative. Unit tests can be peer marked</p>
<p>Spring 2 <u>Literacy / numeracy foci:</u> Use of keywords such as integer, functions, equation, etc. Algebraic terminology like solving equations means finding the value of the unknown Arithmetic and geometric sequences Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 5 Pathway A – I can work with simple equations, inequalities and linear graphs. Pathway B – I can use equations, inequalities and linear graphs. Pathway C – I can solve complex algebraic problems with equations, inequalities and graphs.</p>	<p>Unit of work: Unit 5 – Equations, inequalities and sequences</p> <p>Assessment objectives: Solving equations Introduction to inequalities Substituting values into Formulae Rearranging Formulae Generating sequences, finding the nth term</p> <p>Enrichment/life and work skills: Sequences for real life events Solving links to many other topics including Pythagoras and trig. and finding parallel lines Derive equations and solve real life problems 'The lift problem' - inequality to understand how to determine lift safety as a job</p> <p>Assessments: 1 unit test and 1 end of term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. End of term assessment to be cumulative. Unit tests can be peer marked</p>	<p>Spring 2 <u>Literacy / numeracy foci:</u> Terminology for angles and formulas Sine, Cosine and Tangent Worded problem solving questions to be incorporated into everyday teaching and assessments.</p> <p>Key Objective 6 Pathway A – I can find missing angles using basic angle facts. Pathway B – I can solve multistep angle problems by using angle facts about points, straight lines, triangles and parallel lines. Pathway C – I can solve geometrical problems showing reasoning. I can solve angle problem using equations.</p> <p>Key Objective 7 Pathway A – N/A Pathway B – I can work out missing angles or lengths in right angled triangles using Pythagoras or Trigonometry.</p>	<p>Unit of work: Unit 5 – Angles and Trigonometry</p> <p>Assessment objectives: Interior and exterior angles Pythagoras theorem and trigonometry</p> <p>Enrichment/life and work skills: Develop investigation skills with investigation interior and exterior angles Pythagoras linked into DT Real life application of trigonometry Teaching bearings to links to Geography</p> <p>Assessments: 2 unit test and 1 end of term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. End of term assessment to be cumulative. Unit tests can be peer marked</p>

Term	Foundation Year 9	Term	Higher Year 9
<p>Summer 1 <u>Literacy / numeracy foci:</u> Properties of shape Parallel and perpendicular Terminology for shape, angles and formulas Differentiating between types of averages</p> <p><u>Key Objective 6</u> Pathway A – I can find missing angles using basic angle facts. Pathway B - I can solve multi-step angle problems by using angle facts about points, straight lines, triangles, and parallel lines. Pathway C – I can solve geometrical problems showing reasoning. I can solve angle problems using equations.</p> <p><u>Key Objective 3</u> Pathway A – I can read and interpret some data graphs and charts and calculate some averages. Pathway B - I can construct and interpret most data graphs and charts (bar charts, line graphs, scatter graphs, pie charts, etc) and work out averages and ranges . Pathway C – I can construct and interpret complex statistical diagrams ad use these to compare data.</p>	<p>Unit of work: Unit 6 – Angles Unit 7 – Averages and range</p> <p>Assessment objectives: Angles in parallel lines and triangles Exterior and interior angles Averages and range</p> <p>Enrichment/life and work skills: Develop investigation skills with investigation interior and exterior angles Links to bearings and mechanics at A levels Averages applied to real life scenarios and different professions</p> <p>Assessments: 2 unit tests and 1 half term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Half term assessment to be cumulative. Unit tests can be peer marked</p>	<p>Summer 1 <u>Literacy / numeracy foci:</u> Terminology for different graphs (e.g. parabola) Formulas for more complex shapes Properties of 3d shapes Multiplying and dividing by multiples of 10 Worded problems to identify when to work with volume and surface area</p> <p><u>Key Objective 5</u> Pathway A – I can work with simple equations, inequalities and linear graphs. Pathway B – I can use equations, inequalities and graphs. Pathway C – I can solve complex algebraic problems with equations, inequalities and graphs.</p> <p><u>Key Objective 9</u> Pathway A – I understand properties of 2D and 3D shapes. Pathway B – I can recall area formulae and use them to work out areas of some 2D shapes, and volumes of 3D shapes. Pathway C – I can solve complex worded problems based on perimeter, area and volume.</p>	<p>Unit of work: Unit 6 – Graphs Unit 7 – Area and Volume</p> <p>Assessment objectives: Linear and quadratic graphs Non linear graphs including cubic and reciprocal graphs Real life graphs Surface area and volume of 3D shapes including cylinders</p> <p>Enrichment/life and work skills: Linked into geography - rainforest data handling with area Graph plotting linked to science and astronomy DIY with area for flooring Designer job - group activity that demonstrates the real life application of drawing, surface area and volume</p> <p>Assessments: 2 unit tests and 1 half term test – Assessments to cover fluency, problem solving skills and interleaving topic areas. Half term assessment to be cumulative. Unit tests can be peer marked</p>
<p>Summer 2 <u>Literacy / numeracy foci:</u> Properties of 3d shapes and mathematical terms to describe them Properties of shapes and their formulas Multiply and divide by multiples of 10 Conversions between metric units</p> <p><u>Key Objective 9</u> Pathway A – I understand properties of 2D and 3D shapes. Pathway B – I can recall area formulae and use them to work out areas of some 2D shapes, and volumes of 3D shapes. Pathway C – I can solve complex worded problems based on perimeter, area and volume.</p>	<p>Unit of work: unit 8 – Perimeter, area and volume</p> <p>Assessment objectives: Area of rectangles, triangles, trapeziums and parallelograms Area of compound shapes Surface area of 3D solids Volume of 3D solids</p> <p>Enrichment/life and work skills: DIY with area for flooring Heavy links with DIY work for example knowing much paint is needed to paint a room by knowing the surface area Designer job - group activity that demonstrates the real life application of drawing, surface area and volume</p> <p>Assessments: 1 unit test and 2 end of year test – Assessments to cover fluency, problem solving skills and interleaving topic areas. End of year assessment to be cumulative. 1 calculator and the other non calculator. Unit tests can be peer marked</p>	<p>Summer 2 <u>Literacy / numeracy foci:</u> Differentiating between transformations Use of scale factor</p> <p><u>Key Objective 10</u> Pathway A – I can carry out simple transformations. Pathway B – I can combine transformations and can use scales in maps and scale drawings, I can construct some triangles. Pathway C – I can describe combinations of transformations. I can solve problems with bearing and loci.</p>	<p>Unit of work: Unit 8 – Transformation and constructions</p> <p>Assessment objectives: Rotate, enlarge, translate and reflect 2D shapes Bearings and scale drawings Constructions and Loci</p> <p>Enrichment/life and work skills: Ability to think about maths in real life situations by spotting rotations and describing them Reading maps - linked into geography Build engineering skills by designing your own theme park</p> <p>Assessments: 2 unit test and 2 end of year test – Assessments to cover fluency, problem solving skills and interleaving topic areas. End of year assessment to be cumulative. 1 calculator and the other non calculator. Unit tests can be peer marked</p>