



Subject: Maths	Year: 11
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11	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Aim of Unit	The aim of this term is to be able to work with and use various forms of graphs.	The aim of this term is to be able to calculate using algebra.	The aim of this term is to be able to use reasoning to solve problems.	The aim of this term is to be able to revise transformations, constructions, listing, and describing; and to understand correct communication	Revision This term will focus on teachers working with students on past papers and topics that have been identified that need further attention.	N/A
Composite Knowledge <i>(a task that requires several building blocks or components)</i>	To be able to understand gradients and lines. To be able to work with non-linear graphs. To be able to effectively use graphs.	To be able to expand and factorise. To be able to change the subject of an equation. To be able to calculate with functions.	To be able to use multiplicative reasoning. To be able to use geometric reasoning. To be able to use algebraic reasoning.	To be able to solve transformation and construction problems. To be able to work with listing and describing. To be able to understand correct methods of mathematical communication.		
Component Knowledge	To find and use equations of straight lines.	To expand a single bracket and binomials.	To review scale and enlargement.	To revisit transformations of		

<p><i>(the building blocks that together, when known, allow successful performance of a complex task)</i></p>	<p>To plot and read from quadratic curves.</p>	<p>To factorise into a single bracket.</p>	<p>To work with direct and inverse proportion.</p>	<p>shapes, linking to types of symmetry.</p>		
	<p>To understand and find roots.</p> <p>To plot cubic and reciprocal graphs.</p> <p>To reflect shapes in a given line.</p> <p>To construct and interpret speed, distance and time graphs.</p> <p>To construct and interpret real-life graphs.</p>	<p>To factorise quadratics of the form x^2+bx+c.</p> <p>To solve quadratic equations.</p> <p>To simplify complex algebraic expressions including algebraic fractions.</p> <p>To review solving linear equations.</p> <p>To change the subject of a formula, including perimeter, area and volume formulae.</p> <p>To calculate the volume of a pyramid.</p> <p>To find inputs and outputs of functions.</p> <p>To show algebraic expressions are equivalent.</p> <p>To solve problems using the kinematics formulae.</p>	<p>To calculate with pressure and density.</p> <p>To determine whether a problems requires additive or multiplicative reasoning.</p> <p>To review angle facts, focusing on the language of reasons and chains of reasoning.</p> <p>To review Pythagoras' theorem and using trigonometrical ratios.</p> <p>To work with complex indices.</p> <p>To review simplification of complex expressions and finding the nth term rule.</p> <p>To justify e.g. why a number is/isn't in a given sequence.</p>	<p>To perform standard constructions using ruler and protractor or ruler and compasses.</p> <p>To solve loci problems.</p> <p>To work with organised lists.</p> <p>To use sample spaces and probability.</p> <p>To complete and use Venn diagrams.</p> <p>To work with plans and elevations.</p> <p>To use data to compare distributions.</p> <p>To illustrate equivalence, numerically and algebraically.</p> <p>To justify answers.</p> <p>To use the language of angles rules.</p> <p>To use the conditions for congruent triangles.</p>		

Rationale (why?): Links to prior & future learning	This topic revisits solving equations and incorporates proportional reasoning e.g. conversions.	This topic revisits directed number arithmetic and links to graphs.	This topic revises non-calculator methods and revisits topics learnt throughout school.	This topic encompasses prior learning from throughout school.		
Assessment Task	3 end of block assessments on: Gradients and Lines; Non-linear graphs; and Using Graphs.	3 end of block assessment on: Expanding and Factorising; Changing the Subject; and Functions. End of term PPE Exam	3 end of block assessments on: Multiplicative Reasoning; Geometric Reasoning; Algebraic Reasoning	3 end of block assessments on: Transforming and Constructing; Listing and Describing; and Communication (Show that...)		
Enrichment	<p>Careers Activity Maths, Why Bother? MYPATH Careers Resources (mypathcareersuk.com)</p> <p>The following presentations to be used from the above website during this unit to show the students the practical applications of the Maths they are learning.</p> <p>Graphs</p>	<p>Careers Activity Maths, Why Bother? MYPATH Careers Resources (mypathcareersuk.com)</p> <p>The following presentations to be used from the above website during this unit to show the students the practical applications of the Maths they are learning.</p> <p>Algebra Quadratic Equations</p>	<p>Careers Activity Maths, Why Bother? MYPATH Careers Resources (mypathcareersuk.com)</p> <p>The following presentations to be used from the above website during this unit to show the students the practical applications of the Maths they are learning.</p> <p>Algebra Pythagoras Trigonometry</p>	<p>Careers Activity Maths, Why Bother? MYPATH Careers Resources (mypathcareersuk.com)</p> <p>The following presentations to be used from the above website during this unit to show the students the practical applications of the Maths they are learning.</p> <p>Transformations Data</p>	N/A	N/A