

Mathematics

Year Group 9

Autumn Term 1

Number of Weeks	Reasoning with Algebra
2	Straight line graphs
2	Forming and solving equations
2	Testing conjectures
Reasons behind order of topic in this half term	
<ul style="list-style-type: none">• The first block builds on Y8 content where the students plot simple straight line graphs. They now study $y = mx + c$ as the general form of the equation of a straight line, interpreting m and c in abstract and real life contexts. Higher topics will investigate inverse relationships.• Students revisit and extend their knowledge of forming and solving equations and inequalities. They explore rearranging formula, seeing how this links to solving equations and reinforcing their understanding of the algebraic terminology.• Testing conjectures give students the opportunity to revisit primes, factors and multiples, which provides an opportunity to make and test conjectures. As well as testing conjectures, students are encouraged to create and test their own.	

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Autumn Term 2

Number of Weeks	Constructing in 2 and 3 Dimensions
3	Three-dimensional shapes
3	Constructions and congruency
Reasons behind order of topic in this half term	
<ul style="list-style-type: none">Students are reminded about the associated vocabulary in relation to KS3. As well as surface area and volume, students will also explore plans and elevations. Higher strand students will investigate volumes of other 3D shapes.Constructions and congruency builds on the constructions studied during Y7 and Y8 to look at the locus and standard constructions using a straight edge and a pair of compasses.Congruency is also explored taking a practical approach before looking at the formal aspect of identifying congruent triangles.	

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Spring Term 3

Number of Weeks	Reasoning with Number
2	Numbers
2	Using percentages
2	Maths and money
Reasons behind order of topic in this half term	
<ul style="list-style-type: none">Students will develop their knowledge of the number system to include rational and real numbers. (Higher strands will look at simple surds). Standard form and HCF/LCM are also revisited.All students will revise fractions from the previous block as well as looking at reverse percentage problems and repeated percentage change.Students will practise their number skills in a number of financial contexts. Simple ideas of tax and wages are introduced.	

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Spring Term 4

Number of Weeks	Reasoning with Geometry
2	Deduction
2	Rotation and translation
2	Pythagoras' Theorem
Reasons behind order of topic in this half term	
<ul style="list-style-type: none">Students will revise and extend their knowledge of angle rules and properties of shape, applying them to increasingly complex problems. The block looks at deduction from a geometric perspective.Having studied line symmetry and reflection in Y8, students now look at rotational symmetry and rotation. They move on to study translations, which are described in vector form.Squares and square roots are covered as a prerequisite to investigating the relationship between the sides of a right-angled triangle. Students explore using the theorem in a variety of context, including on coordinate axes, and a higher step is included using 3D shapes.	

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Summer Term 5

Number of Weeks	Reasoning with Proportion
2	Enlargement and similarity
2	Solving ratio & proportion problems
2	Rates
Reasons behind order of topic in this half term	
<ul style="list-style-type: none">• Students develop their knowledge to include enlargement, learning the mathematical meaning for similar. There is an opportunity to cover negative scale factors. Trigonometric ratios are investigated and using trigonometric ratios formally is introduced.• Building on previous experience of the topic, students formally study inverse proportion and if applicable will look at graphs of inverse relationships.• Students develop their knowledge of inverse relationships to explore speed, distance and time in detail. Students go on to include other compound measures such as, density and pressure.	

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Summer Term 6

Number of Weeks	Representations and Revision
2	Probability
1	Algebraic representation
3	Revision
Reasons behind order of topic in this half term	
<ul style="list-style-type: none">• In this block build on their knowledge of calculating probabilities of single and combined events. The focus is to introduce independent events and the use of the multiplication rule. Students will look at a variety of diagrams to facilitate probability.• The first non-linear algebraic graph is explored, where students are encouraged to look for symmetry and read off x/y values. They also explore reciprocal and exponential graphs.	

Reasons behind order of topics in this Year

The scheme is a spiral scheme of work at KS3 – topics are interwoven and link appropriately from Y7 – Y9.