

Year: 9

Subject: Mathematics

Autumn Term		
Overarching Topic:		
What has come before and what comes later:	Year 8 covers proportional reasoning, representations, algebraic techniques, developing number, developing geometry and reasoning with data. Following this will be number, percentages, money, deduction, rotation, translation and Pythagoras' theorem.	
	Foundation	Higher
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	<p>Can you plot a straight line graph, given an equation? Are you able to recognise the equation of a straight line? What is the general equation of a straight line? Can you interpret straight line graphs? Can you find the equation of a straight line? Are you able to use the equation? Can you reduce equations to the form of $y=mx+c$? Can you compare to linear sequences and finding the nth term? What do m and c represent in $y=mx+c$?</p> <p>Are you able to solve linear equations with 1 unknown? Are you able to solve linear equations with unknowns on both sides? Are you able to solve linear inequalities and represent their solutions on a number line? What do the symbols $<$, $>$ mean? Are you able to form equations and inequalities in a context? E.g area, perimeter... Are you able to solve linear equations and inequalities involving brackets? Are you able to change the subject of a formula?</p> <p>What is meant by a conjecture? Are you able to make justifications for questions? Are you able to test conjectures? Are you able to provide mathematical reasoning for your answers? Are you able to explore conjectures in a wide variety of problems?</p>	<p>Can you plot a straight line graph, given an equation? Are you able to recognise the equation of a straight line? What is the general equation of a straight line? Can you interpret straight line graphs? Can you find the equation of a straight line? Are you able to use the equation? Can you reduce equations to the form of $y=mx+c$? Can you compare to linear sequences and finding the nth term? What do m and c represent in $y=mx+c$? What is a perpendicular line? What are the relationships between their equations? Are you able to solve a pair of simultaneous equations using a graphical method?</p> <p>Are you able to solve linear equations with 1 unknown? Are you able to solve linear equations with unknowns on both sides? Are you able to solve linear inequalities and represent their solutions on a number line? What do the symbols $<$, $>$ mean? Are you able to form equations and inequalities in a context? E.g area, perimeter... Are you able to solve linear equations and inequalities involving brackets? Are you able to change the subject of a formula? Are you able to change the subject of more complex formula, where the subject may appear twice?</p>

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	<p>Can you define a face, edge and a vertex? Do you know the names of common prisms and non-prism? Can you identify 2-D shapes within 3-D shapes? Can you calculate the volume and surface area of cylinders and cuboids? What is the formula to calculate the volume of any prism? Are you able to find a missing length, given a volume?</p> <p>Are you able to construct 3-D shapes from a given net? Can you construct and use scale drawings? Can you construct a perpendicular bisector? What is meant by congruency? Are you able to recognise congruent shapes? Can you recognise congruent shapes through construction?</p>	<p>What is meant by a conjecture? Are you able to make justifications for questions? Are you able to test conjectures? Are you able to provide mathematical reasoning for your answers? Are you able to explore conjectures in a wide variety of problems?</p> <p>Can you define a face, edge and a vertex? Do you know the names of common prisms and non-prism? Can you identify 2-D shapes within 3-D shapes? Can you calculate the volume and surface area of cylinders and cuboids? What is the formula to calculate the volume of any prism? Are you able to find a missing length, given a volume? Are you able to calculate the volume of a cone and sphere? Are you able to calculate the surface area of a prism?</p> <p>Are you able to construct 3-D shapes from a given net? Can you construct and use scale drawings? Can you construct a perpendicular bisector? What is meant by congruency? Are you able to recognise congruent shapes? Can you recognise congruent shapes through construction? What is meant by a locus? Can you construct a locus path?</p>
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