Maths- Y10H

HALF TERM 3 JAN-FEB	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
TOPIC (S)	Trigonometry (recap Pythagoras' Theorem)	Trigonometry (recap Pythagoras' Theorem)	Algebra: Introduction to Quadratics and Rearranging Formula	Algebra: Introduction to Quadratics and Rearranging Formula	Volume	Volume	

Knowledge & Skills development	**Trigonometry (recap Pythagoras' Theorem)**
	 know the formulae for:
	 Pythagoras' theorem, $a^2 + b^2 = c^2$
	 the trigonometric ratios, sinθ=opposite/hypotenuse, cosθ=adjacent/hypotenuse and tanθ=opposite/adjacent
	 • apply them to find angles and lengths in right-angled triangles in two dimensional figures
	 • know the exact values of sinθ and cosθ for θ = 0°, 30°, 45° , 60° and 90°
	 • know the exact value of tanθ for θ = 0°, 30°, 45°, 60°
	 • apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture and derive results about angles and sides, including Pythagoras' theorem, and use known results to obtain simple proofs
	 • compare lengths using ratio notation and make links to including trigonometric ratios
	
	 Algebra: Introduction to Quadratics and Rearranging Formula
	 • simplify and manipulate algebraic expressions (including those involving surds) by:
	   • expanding products of two binomials
	   • factorising quadratic expressions of the form $x^2 + bx + c$, including the difference of two squares
	   • simplifying expressions involving sums, products and powers, including the laws of indices
	 • understand and use standard mathematical formulae
	 • rearrange formulae to change the subject
	
	 Volume
	 • compare lengths, areas and volumes using ratio notation
	 • make links to similarity and scale factors
	 • know and apply formulae to calculate volume of:
	   • cuboids
	   • other right prisms (including cylinders)
	 • Calculate the volume of:
	   • spheres
	   • pyramids
	   • cones
	   • composite solids
	 • calculate exactly with multiples of π							

Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	Use of Trigonometry in real life situations Application of area and perimeter in problem solving (material required)					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	Willingness to participate in, and respond to mathematical opportunities. Use of social skills in different contexts, including working and socialising with pupils from different religious, ethnic and socio-economic backgrounds.					
Reading opportunities	What's the point of maths? Murderous Maths, Marvellous Maths, Launch a rocket into space, Humble Pi.					
Key Vocabulary	Pythagoras, Theorem, Hypotenuse, Opposite, Adjacent, Square, Trigonometry, Sine, Cosine, Tangent, Right-angled, Expression, Equation, Formula, Term, Identity, Quadratic, Linear, Binomial, Expand, Factorise, Simplify, Index, Laws, Rearrange, Subject, Scale factor, Ratio, Volume, Units, Pi.					
Digital Literacy	Geogebra					
Careers	Engineering, Business, Architecture, Building, Gaming.					