Maths- Y11H

HALF TERM 2 NOV-DEC	Week 1 w/b 4th Nov	Week 2 w/b 11th Nov	Week 3 w/b 18th Nov	Week 4 w/b 25th Nov	Week 5 w/b 2nd Dec	Week 6 w/b 9th Dec	Week 7 w/b 16th Dec
TOPIC (S)	Trigonometry recap and extension	Trigonometry recap and extension	Further equations and their graphs	Further equations and their graphs	Equation of a circle	Mocks	Mocks
Knowledge & Skills development	**Trigonometry recap and extension** • Know the formula for Pythagoras' Theorem $a^2 + b^2 = c^2$ • Apply it to find lengths in right angled triangles and, where possible, general triangles in two and three dimensional figures • Know and use the trigonometric ratios • $\sin\theta = \frac{opposite}{hypotenuse}$, $cos\,\theta = \frac{adjacent}{hypotenuse}$, $tan\,\theta = \frac{opposite}{adjacent}$ • Apply them to find lengths in right angled triangles and, where possible, general triangles in two and three dimensional figures • Know the exact values of $\sin\theta$ and $\cos\theta$ for $\theta = 0^0$, 30^0, 45^0, 60^0 and 90^0 • Know the exact value of $\tan\theta$ for 0^0, 30^0, 45^0, 60^0 • 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; make links to trigonometric ratios **Further equations and their graphs** • solve linear equations in one unknown algebraically, including those with the unknown on both sides of the equation • solve quadratic equations (including those that require rearrangement) algebraically by: factorising, completing the square, using the quadratic formula • find approximate solutions using a graph: both linear and quadratic • recognise, sketch and interpret graphs of linear functions and quadratic functions • identify and interpret roots, intercepts and turning points of quadratic functions graphically • deduce roots algebraically • deduce turning points by completing the square • translate simple situations or procedures into algebraic expressions or formulae • derive an equation, solve the equation and interpret the solution **Equation of a Circle** • recognise and use the equation of a circle with centre at the origin • find the equation of a tangent to a circle at a given point							

Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	Use of algebra to solve real life problems involving widely used quadratic graphs Application of trigonometry in real life problems including construction Discussion of the use of growth and decay in real life including science (diseases) finance					
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	Mathematics in the Simpsons What's the point in Maths Humble pi					
Key Vocabulary	Trigonometry, Pythagoras, hypotenuse, opposite, adjacent, theta, ratio, sine, cosine, tangent, solve, equations, linear, quadratic, sketch, function, intercept, roots, turning point, tangent, radius, parallel, perpendicular,					
Digital Literacy	Microsoft Excel, DESMOS, Geogebra					
Careers	Architecture, Team Leader, Construction, Chef, Medicine, Engineer, Science, Finance.					