

Subject: Maths

Year group: Year 10

Department Curriculum Vision: *Northwood Mathematicians work towards fluency in Mathematics, and focus on mastering the resilience and problem solving skills essential for life beyond secondary school.*

	Autumn Term 1	Autumn Term 2
Content: (Know what...)	Algebraic Manipulation, Expanding and factorising expressions, forming and solving equations Indices and surds Evaluating and simplifying indices. Working in standard form. Manipulating and rationalising surds	Coordinate geometry - Linear Graphs Plotting coordinates and linear graphs. Understanding the equation of a linear graph and using this to solve problems Probability Calculating single and multiple event probability using representations such as probability trees and venn diagrams
Skills: (know how...)	- to expand single, double and triple (H) brackets - to factorise single and double brackets - to solve quadratic equations by factorising and using the quadratic formula (H) - to form and solve linear and quadratic (H) equations - to identify types of numbers, calculate powers and roots - to apply the rules of indices - to calculate negative indices - to convert numbers to and from standard form and carry out calculations in standard form - to simplify, manipulate and rationalise surds	- To plot coordinates and find midpoints - to plot linear graphs - To find the gradient and equation of a straight line - To find the equation of parallel and perpendicular (H) lines - To draw and interpret real life graphs including speed time graphs (H) - To find the theoretical probability of an event - To list outcomes systematically and use the product rule for counting - To draw and interpret a probability tree to work out the probability of multiple events occurring - To draw and interpret a venn diagram
Key vocabulary	Expand, factorise, simplify solve, expression, equation, identity, formula, indices, powers, roots, reciprocal, standard form, surd, rationalise, proof	Coordinates, axis, linear graph, plot, gradient, intercept, parallel, perpendicular, probability, chance,

Mid Term Assessment	Algebraic Manipulation	Linear Graphs
End Term Assessment	Algebraic Manipulation, Indices and Surds	Linear graphs and probability
	Spring 1	Spring 2
Content: (Know what...)	Analysing and Representing data Analyse and represent data in a variety of graphical formats and calculate measures of average and spread Transformations and vectors (first half) Carry out and describe the four main transformations of shapes	Transformations and vectors (second half) Carry out and describe the four main transformations of shape. Use and apply vectors to geometric problems Ratio and proportion Calculate percentages in a range of contexts
Skills: (Know how...)	- To calculate mean, median, mode and range from a data in listed or tabled data - To represent and interpret data in graphs such as line, bar, and stem and leaf charts - To represent and interpret data in a histogram (H) - To represent and interpret data in a cumulative frequency graph and a box plot (H) - To rotate a shape around a given point - To reflect a shape in a given mirror line - To translate a shape by a vector	- To enlarge a shape around a point by a positive, fractional and negative (H) scale factor - To manipulate vectors and solve geometric problems with vectors - To calculate percentages, repeated percentages and reverse percentages - To draw and interpret pie charts

Key vocabulary	Mean, Mode, Median, Range, continuous, discrete, axis, frequency, midpoint, rotation, reflection, vector,	Enlargement, vector, percentage, compound interest, simple interest, angle,
Mid Term Assessment	Analysing and representing data	Transformations and vectors
End Term Assessment	Analysing and representing data, transformations	Transformations, vectors and percentages
	Summer 1	Summer 2
Content: (Know what...)	Ratio and Proportion (second half) Work with ratio in a range of contexts and problems. Use similarity and proportional reasoning to solve problems Non Linear graphs Plot non linear graphs and recognise their key features such as roots and turning points, linking this to their equations	Trigonometry Find missing sides and angles in right angled and non right angled (H) triangles Constructions and loci Carry out constructions using a compass and straight edge. Draw and interpret loci problems, draw and calculate bearings
Skills: (Know how...)	- To share in a given ratio and problem solve questions involving ratio - to identify similar shapes and calculate the length (F) volume and area of similar shapes (H) - To calculate amounts in direct and indirect proportion including square and square root (H) - Plot non linear graphs - To find the solutions of a quadratic equation by	- To find missing sides and angles on a right angled triangle - To use and apply Pythagoras' Theorem - Be able to find the missing sides, angles and area of non -right angled triangles (H)

	factorising or other methods and identify these on a graph - To complete the square to find the turning point of a quadratic (H)	
Key vocabulary	Ratio, share, similarity, congruence, proportion, direct, indirect, graph, coordinates, turning point, solution, root,	Angle, side, area, right angled, trigonometry, perpendicular, bisector, straight edge, measure, equidistant
Mid Term Assessment	Ratio and Proportion	Trigonometry
End Term Assessment	Ratio and Proportion, Non Linear Graphs	End of Year Exam (all topics)
Additional information		
Homework	Sparx: Ensure you attempt all questions, watch the videos if you are unsure or seek help from your teacher if you still require help after watching the videos. You must write each bookwork code in your Sparx book and show all working out.	
Extra curricular and enrichment opportunities	Additional maths classes: This is run both as an extra curricular club with also opportunities to sit an additional qualification UK Mathematical Challenges Attending the Maths Feast competition	
Useful links that will support learning	Sparx Independent learning Students can start using GCSE resources and revision books including sites like MathsGenie, Corbett Maths,	

How parents can support learning	Check students Sparx weekly to ensure that it is complete. Look at assessments and feedback in students' books. Encourage students to do independent learning on Sparx to further their knowledge and retain prior skills.
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