Maths Y10

Curriculum Overview

Hawkley Hall High School

Key Stage 4 Curriculum Journey: Maths Year 10

	Week 1 ⟷ Week 39							
F **C/O** **H**	*Unit 1* *Number*	*Unit 2* *Algebraic Manipulation and equations*	**1- Similarity**	**2- Developing Algebra**	**3- Geometry**	**4- Proportion and proportionalchange**	**5- Delving into data**	**6- Using Number**
Key content (know that…Know how…)	BIDMAS 4 operations with: • negative numbers • Decimals Round numbers to: • Decimal places • Significant figures Factors and Multiples Powers and Roots. Related Calculations Estimation Prime factors HCF and LCM Standard Form Negative indices Fractional Indices Simplify Surds Calculate with Surds Rationalise the denominator Complex powers Product Rule Estimate powers and roots	Simplify expressions: • Addition/subtraction • Multiply/divide Substitution into expressions and formulae Expand single brackets Factorise simple expressions Function machines Solve linear equations with unknown on one side Recognise and extend sequences. Index laws Simplify expressions with brackets Factorise more complex expressions into a single bracket Solve with unknown on both sides Form and solve equations Change the subject Find the nth term of a linear sequence Recognise special sequences Factorise quadratics Solve linear inequalities Present inequalities on a number line Solve inequalities with unknown on both sides	Congruence, similarity and enlargement. Trigonometry. <u>Additional Higher content:</u> Area and volume of similar shapes Formal proof of congruency of triangles Enlarge a shape by a negative scale factor. Use trigonometry in 3D shapes. Derive and use the sine and cosine rules. Use the formula 1/2absinC to find the area of non-right angled triangles.	Representing solutions of equations and inequalities. Simultaneous equations. <u>Additional Higher content:</u> Use set notation for solutions. Solve inequalities in two variable, identifying regions. Solve quadratic equations and inequalities (by factorisation only) Solve simultaneous equations with one linear and one quadratic.	Angles and bearings. Working with circles. Vectors. <u>Additional Higher content:</u> Derive, use and prove the first four circle theorems (The rest are covered in Year 11) Understand and use the equation of a circle. Construct geometric proofs with vectors.	Ratios and fractions. Percentages and interest. Probability. <u>Additional Higher content:</u> Revise area and volume ratios Use iterative methods Calculate and interpret conditional probabilities.	Collecting, representing and interpreting data. <u>Additional Higher content:</u> Construct and interpret cumulative frequency diagrams, box-plots and histograms. Understand quartiles; use and interpret the inter-quartile range.	Non-calculator methods. Types of number and sequences. Indices and roots. Manipulating expressions. <u>Additional Higher content:</u> Calculate with surds. Find the rule for the nth term of a quadratic sequence. Understand and use fractional indices. Work with rational and irrational numbers, including recurring decimals. Work with limits of accuracy, including upper and lower bounds.

		Expressions, identities, and formula Expand triple brackets Linear equations with fractions Nth term of a quadratic Problems with geometric sequences Factorise quadratics where a>1 Difference of two squares Solve quadratics by: • Factorising • Formula • Completing the square Complete the square Finding turning points Simultaneous Equations: linear and non-linear.						
Prior Knowledge	Students will have an appreciation of place value, and recognise even and odd numbers. Students will have knowledge of using the four operations with whole numbers. Students should have knowledge of integer complements to 10 and to 100. Students should have knowledge of strategies for multiplying and dividing whole numbers by 2, 4, 5, and 10. Students should be able to read and write decimals in figures and	Students should have prior knowledge of some of these topics, as they are encountered at Key Stage 3: the ability to use negative numbers with the four operations and recall and use hierarchy of operations and understand inverse operations; dealing with decimals and negatives on a calculator; using index laws numerically. Students should be able to use inequality	-Angle rules including angles in parallel lines -Equations -Pythagoras' theorem	-Forming and solving 1 and 2-step equations and inequalities -Rearranging formulae (1 and 2 step)	-Trigonometry -Area and volumes of other shapes, and compound shapes. -Estimation, rounding and significant figures.	-Formal methods of calculation. -Fraction arithmetic.	-Pictograms, bar charts, pie charts, line graphs. -Comparing distributions. -Averages including from grouped and ungrouped frequency tables.	-Converting FDPs -Exact trigonometrical values -Area and volume formulae (without a calculator).

	words. Students will have encountered squares, square roots, cubes and cube roots and have knowledge of classifying integers.	signs between numbers. Students should be able to use negative numbers with the four operations, recall and use the hierarchy of operations and understand inverse operations. Students should be able to deal with decimals and negatives on a calculator. Students should be able to use index laws numerically. Students should be able to draw a number line.						
GCSE Assessment Objectives (in line with the Pearson scheme of work and objectives)	N3 N1/2 N13/14 N15 N15 N4/N5 N6 N3 N14 N4 N4/5 N7 N9 N7 N7 N7 N8 N8 N6 N5 N6	A1 A1 A2 A2 A4 A4 A7 A17 A23 A4 A1 A4 A4 A21 A21 A5 A23/25 A24 A4 A22 A22 A6 A4	G24 G7 R6 R6 R12 G5 G6 G17 G19 G7 G25 A12 G20 G20 G21 G20 A6 G22 G22 G23 A12 A13 A13	A1 A1 A2 A2 A4 A4 A7 A17 A23 A4 A1 A4 A4 A21 A21 A5 A23/25 A24 A4 A22 A22 A6 A4	N1 A3 A5 A5 A6 A9 A19 A21 R10 R14 G9 A16 A16 G10 G25 G3 G1 G3 G3 G3 G3 G3	N1 N10 N3 R3 N2 N1 R9 R9 R4 R5 N2/N8 N2/N8 R9 R9 R9 R9 R9 R9 R4 R5 *N10* *R9* *R5*	S2 S2 S2 S2 S4 S2 S2 S4 S6 S4 S4 S4 S1 S4 S2 S4 S4 A10 S3 S4 S4 S3	N3 N1/2 N13/14 N15 N15 N4/N5 N6 N3 N14 N4 N4/5 N7 N9 N7 N7 N7 N8 N8 N6 N5 N6

		A17 A23 A24 A4 A4 A4 A18 A18 A18 A11 A19/A21 A19		A17 A23 A24 A4 A4 A4 A18 A18 A18 A11 A19/A21 A19	G3 G6 G20 G20 G21 A6 G22 G22 G23	*R5* *R5*		
Assessments	Assessment 1	Assessment 2	End of block assessments	End of block assessments	End of block assessments	End of block assessments	End of block assessments	End of block assessments