Armfield Academy – Mathematics Department

Year 10 Higher Curriculum Overview

Hegarty Home Support Guide.pdf

Home Learning is completed using Hegarty Maths. A Home Support guide can be found here.

Half Term 1		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 02/09	**3D Shapes** - Know names of 2D and 3D shapes - Recognise prisms - Accurate nets of cuboids and other 3D shapes - Plans and elevations - Find area of 2D shapes - Surface are of cubes and cuboids - Surface area of triangular prisms	822 2D Shapes 829 3D Shapes 833 Nets 837 Plans and Elevations
WC 06/09		584 Surface area of cuboids 585 Surface area of prisms
WC 13/09	**Congruency and Similar Shapes** - Enlarge a shape by a positive integer scale factor - Enlarge a shape by a fractional scale factor - Identify similar shapes - Work out missing sides and angles in a pair given similar shapes - Use parallel line rules to work out missing angles - Establish a pair of triangles are similar - Understand the difference between congruency and similarity - Understand and use conditions for congruent triangles	642 Enlargements (1) 644 Enlargements (3) 608 Similar Polygons
WC 20/09		680 Congruence (1)
WC 27/09	**Trigonometry** - Explore ratio in similar right angled triangles - Work fluently with the hypotenuse, opposite and adjacent sides - Use the tangent ratio to find missing side lengths - Use the sine and cosine ratios to find missing side lengths - Use sine, cosine and tangent to find missing side lengths - Use sine, cosine and tangent to find missing angles - Calculate sides in right-angled triangles using Pythagoras' Theorem - Select the appropriate method to solve right angled triangles problems - Work with key angles in right angled triangles	508 Trigonometry introduction 509 Trigonometry (find side) 511 Trigonometry (find angle) 501 Pythagoras (applied)
WC 04/10		
WC 11/10		

WC 12/10		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 01/11	**Algebra Recap** - Simplifying expressions - Expanding brackets - Factorising expressions	

WC 08/11	**Number Recap** - Types of number - Mental methods - Arithmetic with fractions	
WC 15/11	**Equations and Inequalities** - Understand the meaning of a solution - Form and solve one-step and two-step equations - Form and solve one-step and two-step inequalities - Show solutions to inequalities on a number line - Interpret representations on number line as inequalities - Draw straight line graphs - Find solutions to equations using straight line graphs - Form and solve equations with unknowns on both sides - Form and solve inequalities with unknown on both sides - Form and solve more complex equations and inequalities	176 Forming equations 179-182 Solve 2-step equations 184 Solve equations with x on both sides
WC 22/11		206 Straight line graphs
WC 29/11		267 Integer solutions to inequalities 269-271 Solve linear inequalities 265 Representing inequalities on a number line 273 Linear inequalities as graph regions
WC 06/12	**Simultaneous Equations** - Understand that equations can have more than one solution - Determine whether a given coordinate is a solution to a pair of linear equations - Solve a pair of linear simultaneous equations using graphs - Solve a pair of linear simultaneous equations by adding or subtracting equations - Use a given equation to derive related facts - Solve a pair of linear simultaneous equations by adjusting one equation - Solve a pair of linear simultaneous equations by adjusting both equations - Form a pair of linear simultaneous equations from given information - Form and solve a pair of linear simultaneous equations from given information	
WC 13/12	**Revision**	
Half Term 3		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 03/01	**Angles and Bearings**	
WC 10/01	- Draw and interpret scale diagrams - Understand and represent bearings - Measure and read bearings - Make scale drawings using bearings - Calculate bearings using angle rules - Solve bearings problems using Pythagoras and trigonometry	
WC 17/01	**Working with circles**	
WC 24/01	- Recognise and label parts of a circle - Calculate the fractional parts of a circle - Calculate the length of an arc - Calculate the area of a sector - Understand and use the volume of a cylinder and cone - Understand and use the volume of a sphere - Understand and use the surface area of a sphere - Understand and use the surface area of a cylinder and cone	
WC 31/01	**Vectors**	
WC 07/02	- Understand and represent vectors - Use and read vector notation - Draw and understand vectors multiplied by a scalar - Draw and understand addition and subtraction of vectors	
Half Term 4		

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WC 21/02 WC 28/02	**Ratios and Fractions** - Compare quantities using a ratio - Link ratios and fractions - Share in a ratio (given total or one part) - Use ratios and fractions to make comparisons - Link ratios and graphs - Solve problems with currency conversion - Link ratios and scales - Use and interpret ratios of the form 1:n and n:1 - Solve best buy problems - Combine a set of ratios - Link ratio and algebra - Mixed ratio problems	
WC 07/03 WC 14/03	**Percentages and Interest** - Convert and compare fractions, decimals and percentages - Work out percentages of amounts (with and without a calculator) - Increase and decrease by a given percentage - Express one number as a percentage of another - Calculate simple and compound interest - Repeated percentage change - Find the original value after a percentage change - Solve problems involving growth and decay - Solve problems involving percentages, ratios and fractions	
WC 21/03 WC 28/03	**Probability** - Know how to add, subtract and multiply fractions - Find probabilities using equally likely outcomes - Use the property that probabilities sum to 1 - Using experimental data to estimate probabilities - Find probabilities from tables, Venn diagrams and frequency trees - Construct and interpret sample spaces for more than one event - Calculate probabilities with independent events - Use tree diagrams for independent events - Use free diagrams for dependent events	
Half Term 5		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 19/04 WC 26/04 WC 02/05 WC 09/05 WC 16/05 WC 23/05	**Collecting, Representing and Interpreting Data** - Understand populations and samples - Construct a stratified sample - Primary and secondary data - Construct and interpret frequency tables and frequency polygons - Construct and interpret two-way tables - Construct and interpret line and bar charts (including composite bar charts) - Construct and interpret pie charts - Criticise charts and graphs - Find and interpret averages from a list - Find and interpret averages from a table - Construct and interpret time series graphs - Construct and interpret stem and leaf diagrams - Construct and interpret scatter graphs - Draw and use a line of best fit - Understand extrapolation	

Half Term 6		
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WC 06/06	**Non Calculator Methods**	
WC 13/06	- Mental/written methods of integer/decimal addition and subtraction - Mental/written methods of integer/decimal multiplication and division - The four rules of fraction arithmetic - Exact answers - Rounding to decimal places and significant figures - Estimating answers to calculations - Understand and use limits of accuracy - Use number sense - Solve financial maths problems - Break down and solve multi-step problems	
WC 20/06	**Types of Number and Sequences**	
WC 27/06	- Understand the difference between factors and multiples - Understand primes and express a number as a product of its prime factors - Find the HCF and LCM of a set of numbers - Describe and continue arithmetic and geometric sequences - Explore other sequences - Find the rule for the nth term of a linear sequence	
WC 04/07	**Indices and Roots**	
WC 11/07	- Square and cube numbers - Calculate higher powers and roots - Powers of ten and standard form - The addition and subtraction rules for indices - Understand and use the power zero and negative indices - Work with powers of powers - Calculate with numbers in standard form	
WC 18/07		