



Armfield Academy – Mathematics Department



Year 9 Curriculum Overview

****Note: Objectives in blue are additional higher content for extension****



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 06/09	Line Symmetry and Reflection <ul style="list-style-type: none"> - Recognise line symmetry - Reflect a shape in a horizontal or vertical line 1 (shapes touching the line) - Reflect a shape in a horizontal or vertical line 2 (shapes not touching the line) - Reflect a shape in a diagonal line 1 (shapes touching the line) - Reflect a shape in a diagonal line 2 (shapes not touching the line) 	827 Line Symmetry 639 Reflections (1) 640 Reflections (2) 641 Reflections (3)
WC 13/09	Area of Circles <ul style="list-style-type: none"> - Investigate the area of a circle - Calculate the area of a circle and parts of a circle without a calculator - Calculate the area of a circle and parts of a circle with a calculator - Calculate the area of compound shapes 	539 Area of a circle (1) 540 Area of a circle (2) 541 Area of a circle (3)
WC 20/09	Data Handling Cycle <ul style="list-style-type: none"> - Set up statistical enquiry - Design and criticise questionnaires - Draw and interpret pictograms, bar charts , vertical line charts and multiple bar charts - Draw and interpret pie charts - Draw and interpret line graphs 	401 Data Collection sheets 399 Surveys and Questionnaires (1) 426 Pictograms 425 Bar Charts and Vertical Line graphs 427 Pie charts (1) 428 Pie Charts (2) 410 Range 414 Range from frequency tables
WC 27/09	<ul style="list-style-type: none"> - Calculate and interpret the range - Identify misleading graphs - Compare distributions 	
WC 04/10	Measures of Location <ul style="list-style-type: none"> - Calculate the mean, median and mode - Find the mean from ungrouped frequency tables - Find the mean from grouped frequency tables - Identify outliers and compare distributions 	405 - 408 Mean 417 Mean from frequency tables (1) 418 Mean from frequency tables (2) 409 Median 404 Mode
WC 11/10	Straight Line Graphs <ul style="list-style-type: none"> - Identify vertical and horizontal lines with their equations - Plot lines of $y = mx + c$ - Recap $y=mx+c$ 	205 Drawing Line graphs from coordinates 206 Straight line graphs 207 Straight line graphs
WC 12/10		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 01/11	Straight Line Graphs <ul style="list-style-type: none"> - Calculate the gradient of a line - Find the equation of a line from a graph - Interpret gradient and intercept of real life graphs 	201 Gradient of a line segment 202 Gradient of a line segment (negative) 208 Straight line graphs (3) 894 Interpret real life graphs

	<ul style="list-style-type: none"> - Write an equation in the form $y=mx+c$ - Explore perpendicular lines 	
WC 08/11	Forming and Solving Equation <ul style="list-style-type: none"> - Revisit and extend to equations and inequalities with unknowns on both sides - Using different contexts e.g. angles, probability, area - Changing the subject of the formula - Changing the subject of the complex formula 	179 Solve 2 step equations 269 Solve inequalities 184 Solve equations with x on both sides
WC 15/11		280 Change the subject of the formula (1 step) 281 Change the subject of the formula (2 step)
WC 22/11	Testing Conjectures <ul style="list-style-type: none"> - Test conjectures in a wide range of contexts e.g. <ul style="list-style-type: none"> Sums and Products of odd and even numbers Is a given number in a sequence? Is this shape...? Are these lines parallel? What would happen if...? 	324 Proof and counterexamples
WC 29/11	Three Dimensional Shapes <ul style="list-style-type: none"> - Faces, Edges and Vertices - Names of prisms and non-prisms - Identifying 2D shapes within 3D shapes - Volume and surface area of cuboids and cylinders - Volume of any prisms - Missing lengths given area and/or volume - Explore volumes of cones, spheres, and complex shapes - Surface area of any prism 	829 3D Shapes 830 3D Shapes 831 Naming the faces of 3D Shapes
WC 06/12		584 Surface area of cuboids 585 Surface Area of prisms 586 Surface Area of cylinders' 589 Surface Area (multi step)
WC 13/12		567 Counting cubes 568 Volume of cuboids 570 Volume of prisms

Half Term 3

Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 04/01 WC 10/01	Constructions and Congruency <ul style="list-style-type: none"> - Draw and measure angles recap - Construct and interpret scale drawings recap - Locus of distance from a point or straight line - Locus equidistant from two points - Construct perpendicular bisectors - Construct angle bisector - Identify congruent figures - Explore and identify congruent triangles 	458 - 460 Measuring angles 864 - 866 Scale Diagrams 674 Loci (1) 675 Loci (2) 676 Loci (3) 677 Loci (4) 660 Construct a perpendicular bisector 662 Construct a perpendicular from a point to a line 663 Construct a perpendicular from a point on a line 661 Construct an angle bisector 680 Congruence (1) 682 Congruent triangles
WC 17/01 WC 23/01	Numbers <ul style="list-style-type: none"> - HCF and LCM – recap - Integers, Real and Rational numbers - Understand and use surds (H) - Work with Directed Number (Negative number) - recap - Work with Fractions – recap 	WhiteRose Maths videos 34, 35, 36 Lowest Common Multiple 31, 32 Highest Common Factor 39, 40 Add and Subtract Negative Numbers 42, 43 Multiply and Divide Negative Numbers 65, 66 Add and Subtract Fractions 68, 70 Multiply and Divide Fractions
WC 31/01 WC 07/02	Using Percentages <ul style="list-style-type: none"> - Percentages (recap) - Percentage increase and decrease - Finding percentage change - Using multipliers - Reverse percentages - Repeated percentage change 	WhiteRose Maths Videos 83 – Convert Percentages to decimals 84 – Percentages of Amounts (Non calc) 87 – Percentages of Amounts (Calc) 88 – Percentage increase or decrease (non-calc) 89 – Percentage/Decimal multipliers 90 – Percentage Increase or decrease 91 – Repeated percentage increase or decrease 96 – Reverse Percentages

Half Term 4

Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 21/02	Mathematics and Money	755 – Income and rates of pay

	<ul style="list-style-type: none"> - Wages and taxes - Bills and bank statements - Interest - Unit pricing (best buys) 	756 – Income and rates of pay (2) 757 – Financial Statements 758 – Financial Statements (2) 93 – Simple Interest 92 – Compound Interest 95 – Depreciation 763 – Best Buys
WC 28/02		
WC 07/03	Deduction <ul style="list-style-type: none"> - Solve angle problems using chains of reasoning. - Angles problems with algebra - conjectures with angles and shapes - Link constructions and geometrical shapes 	487 Angles in a triangle (3) 814 Angles around a point (3) 565 Angles in polygons using algebra
WC 14/03	Rotation and Translation <ul style="list-style-type: none"> - Identifying the order of rotational symmetry - Rotating shapes - Translating points and shapes - Combined transformations 	828 – Rotational Symmetry 648 – Rotations (1) 649 – Rotations (2) 637 – Translations (1) 638 – Translations (2) 656 – Combined transformations (1)
WC 21/03		
WC 28/03	Pythagoras’ Theorem <ul style="list-style-type: none"> - Identifying the hypotenuse of a right-angled triangle - Determining whether a triangle is right angled - Calculating missing sides in a right-angled triangle 	497 – Pythagoras’ Theorem (Proof) 498 – Pythagoras (longer side) 499 – Pythagoras (shorter side)
Half Term 5		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 19/04	Pythagoras’ Theorem ... Continued <ul style="list-style-type: none"> - Calculating missing sides in a right-angled triangle - Exploring proofs of Pythagoras’ theorem - Using Pythagoras’ theorem in 3D shapes 	501 – Pythagoras (applied) 502 – Pythagoras (applied 2) 505 – Pythagoras (multi-step)
WC 26/04	Enlargement and Similarity <ul style="list-style-type: none"> - Enlarge shapes by a positive scale factor, including from a given point - Calculate the lengths of missing sides in similar shapes - Enlarge shapes by negative scale factor - Similar triangles 	642 – Enlargements (1) 643 – Enlargements (2) 614 – Similar Shapes (problem solving) 646 – Enlargements (5) negative scale factor 611 – Similar triangles
WC 02/05		
WC 09/05	Ratio and Proportion <ul style="list-style-type: none"> - Solve problems with direct proportion recap - Direct proportion and conversion graphs - Solve problems with inverse proportion - Graphs of inverse relationships - Solve ratio problems given the whole or a part recap - Solve best buys problems - Solve problems involving ratio and algebra 	339 Direct Proportion (1) 340 Direct Proportion (2) 712 Conversion graphs (1) 713 Conversion Graphs (2) 342 Inverse Proportion 332 - 334 Share into a given Ratio 763 - 765 Best Buys 335 Harder problems involving ratio 336 Harder problems involving ratio (2)
WC 16/05		
WC 23/05	Rates <ul style="list-style-type: none"> - Solve speed, distance and time problems - Use distance-time graphs - Solve problems with density, mass and volume 	716 Speed (1) 719 Speed (4) 721 Speed (6) 874 Distance time graphs (1) 875 Distance time graphs (2) 725 Density (1) 728 Density (4) 729 Density (5)
Half Term 6		
Date	Curriculum Overview	Home Learning Hegarty Maths Video and Quiz Numbers
WC 06/06	Rates ... continued <ul style="list-style-type: none"> - Solve flow problems and their graphs - Rates of change and their units 	899 Sketch graphs for water flows (1) 900 Sketch graphs for water flows (2) 738 Other compound units

	- Convert compound units	
WC 13/06	Probability	
WC 20/06	<ul style="list-style-type: none"> - Single event probability recap - Relative frequency - Expected outcomes - Independent events - Use tree diagrams - Use tree diagrams to solve without replacement problems - Use diagrams to work out probabilities 	351 Probability of single events (1) 352 Probability of single events (2) 356 Experimental probability and relative frequency 360 Independent events 361 Independent events and probability trees (1) 362 Independent events and probability trees (2) 364 Conditional Probability (1) 365 Conditional probability (2)
WC 27/06	Algebraic Representation	
	<ul style="list-style-type: none"> - Draw and interpret quadratic graphs - Interpret graphs - Investigate graphs of simultaneous equations - Represent inequalities 	251 Drawing quadratic graphs from a table 300 reciprocal graphs (1) 218 Solving simultaneous equations using straight lines (1) 265 Representing inequalities on a number line 273 Linear inequalities as graph regions (1) 274 Linear inequalities as graph regions (2)
WC 04/07	Revision	
WC 11/07	End of year Exams	
WC 18/07	Recap	