Armfield Academy – Mathematics Department

Year 11 Foundation Curriculum Overview

This maths scheme of work is structured to build securely on prior learning, with concepts sequenced for progression and depth. Retrieval practice is embedded to strengthen fluency and long-term retention. Teaching is responsive, with assessment informing adaptation to meet learners' needs. All pupils are challenged through high expectations, with scaffolds to ensure inclusivity and access for all. The scheme aims to develop problem-solving, reasoning, and resilience alongside core mathematical skills. In year 11 we have the 'Higher' curriculum for pupils aiming to sit the Higher GCSE and the 'Foundation' for pupils aiming to sit the Foundation GCSE. All schemes provide key knowledge needed for their GCSE examinations. The Foundation Curriculum does have extension objectives that allows pupils to transition between tiers after year 10 and year 11 mock examinations if teacher feel it appropriate. In year 11, teachers may use GCSE past papers more often to highlight gaps in knowledge at different points of the year.

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

Term 1	
Week	Curriculum Overview
1	**Ratio and Proportion**
2	- Solve problems with ratio - Direct proportion - Best buy problems - Conversion graphs - Exchange rates - Inverse proportion - Direct proportion equations (E) - Direct and inverse proportion graphs (E)
3	**Area and Volume**
4	- Isometric drawings - Plans and elevations - Volume of a cylinder - Volume of a sphere - Volume of cones and pyramids - Surface area of a sphere - Surface area of a cylinder (E) - Surface area of pyramids (E) - Surface area of cones (E) - Convert metric units of area (E) - Convert metric units of volume (E)
5	**Similarity and Congruence**
6	- Identify similar shapes - Find unknown sides and angles in similar shapes - Identify similar triangles - Solve problems with similar shapes - Similarity and congruence - Congruent triangles
7	**Sequences and Proof**
8	- Describe and continue arithmetic and geometric sequences - Explore other sequences - Generate a sequence given an algebraic rule - nth term of a linear sequence - Represent numbers algebraically (E) - Arguments and counterexamples (E)
9	**Standard Form** - Numbers greater than 1 in standard form - Numbers between 0 and 1 in standard form

	- Adjust a number to standard form - Multiply and divide numbers in standard form (E) - Add and subtract numbers in standard form (E)
10	**Working with Circles**
11	- Area and circumference of a circle - Fractional parts of a circle (area) - Area of a sector (E) - Fractional parts of a circle (perimeter) - Arc length and perimeter (E) - Area and perimeter of compound shapes with circles - Solve problems with circles
	Term 2
Week	Curriculum Overview
1	**Set Notation and Venn Diagrams** - Venn diagrams - Set notation - Probabilities from Venn diagrams
2	**Functions and Graphs**
3	- Function machines - Write an expression or formula from a function machine - Quadratic graphs - Cubic graphs - Reciprocal graphs - Recognise and sketch graphs
4	**Equations and Formulae**
5	- Solve equations - Form and solve equations - Form and solve equations with unknowns on both sides (E) - Solve inequalities - Form and solve inequalities (E) - Form and solve more complex equations and inequalities (E) - Solve simultaneous equations - Solve problems with simultaneous equations
6	**Rates**
7	- Convert between hours and minutes - Speed, distance and time - Interpret distance-time graphs - Draw distance-time graphs - Density and pressure - Convert compound units (E)
8	**Angles, Bearings and Trigonometry**
9	- Angles in lines and shapes - Solve problems with angles in parallel lines - Solve problems with angles and algebra (E) - Compass points and related angles - Understand and represent bearings - Measure and read bearings - Scale drawings using bearings - Calculate bearings using angles rules (E) - Choose appropriate methods to solve problems with right-angled triangles - Solve bearings problems using Pythagoras and trigonometry (E)
10	**Constructions and Loci** - Use geometrical equipment - Construct triangles - Construct polygons (E) - Construct an angle bisector - Construct a perpendicular bisector - Construct a perpendicular from or to a point - Locus of distance from a point and a straight line

	- Locus equidistant from two points and perpendicular bisectors - Locus equidistant from two lines and angle bisectors - Solve problems with loci
11	**Transformations** - Enlargement (positive integer scale factor) - Enlargement (fractional scale factor) - Line symmetry and rotational symmetry - Reflection - Rotation - Translation - Describe a transformation - Find the result of a series of transformations (E)
Term 3	
Week	Curriculum Overview
all	**GCSE Exams and Revision Preparation**