



Curriculum Map for Foundation Maths Year 11

YEAR 11	Autumn 1	Autumn 2
Topics	Fractions, Indices & Standard Form Congruence, Similarity & Vectors	Further Algebra
Substantive Knowledge – The Knowledge Taught By The Teacher	<ul style="list-style-type: none"> Students will learn how to multiply and divide fractions. Students will learn about positive and negative indices and the link to reciprocals. Students will learn how to write numbers in standard form and to calculate with them. Students will revise similarity and congruence. Students will learn about the ratio of length in similar shapes. Students will learn about column vectors and their link to translations. Students will learn about vector geometry and resultant vectors. 	<ul style="list-style-type: none"> Students will learn how to draw and interpret the graphs of cubic and reciprocal functions. Students will learn how to simultaneous equations graphically and algebraically. Students will learn how to rearrange more complex formulae. Students will learn about basic algebraic proof.
Disciplinary Knowledge – Concepts, Investigations, Conjecture, Proof, Problem Modelling and Problem Solving	<ul style="list-style-type: none"> Understand that negative powers lead to a reciprocal. Understand the standard layout of standard form. Understand similarity of triangles and of other plane shapes, use this to make geometric inferences and solve angle problems using similarity. Understand the effect of enlargement on the perimeter of shapes. Understand the difference between a scalar and a vector. 	<ul style="list-style-type: none"> Understand and use the concepts and vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors. Understand and use standard mathematical formulae; rearrange formulae to change the subject. <ul style="list-style-type: none"> Understand that proof is a core concept of mathematics.
Skills	<ul style="list-style-type: none"> Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions); use conventional notation for priority of operations, including brackets, powers, roots and reciprocals. Calculate with roots, and with integer indices. Calculate with and interpret standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer. Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS). <ul style="list-style-type: none"> Apply addition and subtraction of vectors, multiplication 	<ul style="list-style-type: none"> Argue mathematically to show algebraic expressions are equivalent and use algebra to support and construct arguments. Use the form $y = mx + c$ to identify parallel lines; find the equation of the line through two given points or through one point with a given gradient. Solve two simultaneous equations in two variables (linear/linear) algebraically; find approximate solutions using a graph. <ul style="list-style-type: none"> Solve problems involving direct and inverse proportion,

	by vectors by a scalar, and diagrammatic and column representations of vectors.	including graphical and algebraic representations.
Links To Prior Learning	<ul style="list-style-type: none"> Building on index laws, powers and roots from Year 9 Number and Fractions units in order to further develop calculating with fractions including worded problems, negative indices and converting numbers into standard form and calculating with standard form. Building on the Pythagoras theorem and Constructions units in order to further develop mathematical similarity and proof, vector notation, adding/subtracting and multiple vectors. 	<ul style="list-style-type: none"> Building on midpoints and line segments, straight line graphs, gradient of lines and manipulating $y=mx+c$ and real-life graphs including distance time graphs in order to further develop the drawing and interpretation of cubic, reciprocal and non-linear graphs.
Literacy/ Numeracy	<ul style="list-style-type: none"> The language of indices, similarity, congruence and standard form. 	<ul style="list-style-type: none"> The language of algebraic proof, of the graphs of functions straight lines.
Cross Curricular	<ul style="list-style-type: none"> Any areas which use indices and standard form such as Science, Technology, Engineering and Geography. Any areas which use enlargement such as Technology and Art. Any areas which use vectors such as Engineering. 	<ul style="list-style-type: none"> Any areas which use the graphs of functions such as Science and Geography. <ul style="list-style-type: none"> Any areas which use algebraic formulae.
Assessment	<ul style="list-style-type: none"> Learning checks throughout with low stakes questioning and starters. Summative assessment at the end of the topic. 	<ul style="list-style-type: none"> Learning checks throughout with low stakes questioning and starters. Summative assessment at the end of the topic.

YEAR 11	Spring 1 & 2 - Summer 1
Topics	<p>This time is used to catch up on topics that have not been finished by the end of Autumn 2.</p> <p>A structured revision programme is then put in place for each class based on gaps analysis from the Year 11 Mock Exams and in class assessments.</p>
Substantive Knowledge	
Disciplinary Knowledge	
Problem Solving	
Skills	
Links To Prior Learning	
Literacy/Numeracy	
Cross Curricular	
Assessment – GCSE Exams in May & June	