Year 11 **Foundation Curriculum Overview** **Subject: Mathematics**

Year 11 Overview:
In year 11 students build towards the final exam in Summer. Students are retrieving knowledge and skills learnt prior and apply to GCSE multi-concept problems. Mock exams take place near Christmas

Autumn Term

Outline of Key Learning	Hegarty Code	Lesson
Indices & Standard form (18a, 18b) a. Find the reciprocal of an integer, decimal or fraction b. Use numbers raised to the power zero, including the zero power of 10 c. Convert large and small numbers into standard form and vice versa d. Add and subtract numbers in standard form e. Multiply and divide numbers in standard form	71 122-123 127 125,126	Indices Negative and Fractional indices Standard form
Circles, cylinders, cones & Spheres (17) a. Recall and use formulae for the circumference of a circle and the area enclosed by a circle circumference of a circle = $2\pi r = \pi d$, area of a circle = πr^2 b. Find radius or diameter, given area or perimeter of a circles c. Find the perimeters and areas of semicircles and quarter-circles d. Calculate perimeters and areas of composite shapes made from circles and parts of circles e. Calculate arc lengths, angles and areas of sectors of circles f. Find the surface area of a cylinder g. Find the volume of a cylinder h. Find the surface area and volume of spheres, pyramids, cones and composite solids	534 – 536 538 - 541	Circles Circles 2 Volume

Quadratics (16a,16b) a. Square a linear expression, e.g. $(x + 1)^2$ b. Factorise quadratic expressions of the form x2 + bx + c c. Factorise a quadratic expression $x^2 – a^2$ using the difference of two squares d. Solve quadratic equations by factorising e. Generate points and plot graphs of simple quadratic functions, then more general quadratic functions f. Identify the line of symmetry of a quadratic graph g. Find approximate solutions and turning points to quadratic equations using a graph	222 223-228 230-3 251 254 255-6	Expand double brackets Factorise quadratic expressions Quadratic Graphs
CHRISTMAS MOCK EXAMINATION		

Spring Term		
Outline of Key Learning	**Hegarty Code**	**Lesson**
Plans and Elevations (15a) a. Make accurate drawings of triangles and other 2D shapes using a ruler and a protractor b. Understand and draw front and side elevations and plans of shapes made from simple solids c. Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid	702-3 698-9, 704 837-44	Construct Triangles Drawing plans and elevations
Construction and Loci (15b) a. Use straight edge and a pair of compasses to do standard constructions b. Draw and construct diagrams from given instructions c. Use constructions to solve loci problems (2D only) d. Use and interpret maps and scale drawings e. Make an accurate scale drawing from a diagram f. Use three-figure bearings to specify direction g. Mark on a diagram the position of point B given its bearing from point A	659 – 666 683 674, 676 864, 865 492 - 494 869	Construction Loci Bearings

Vectors (19b) a. Understand and use column notation in relation to vectors b. Identify two column vectors which are parallel c. Calculate using column vectors, and represent graphically, the sum of two vectors, the difference of two vectors and a scalar multiple of a vector	623, 624 625 626	Vectors Column Vectors
Rearranging equations and graphs (20) a. Change the subject of a formula involving the use of square roots and squares b. Answer 'show that' questions using consecutive integers (n, n + 1), squares a^2, b^2, even numbers 2n, and odd numbers 2n +1 c. Solve problems involving inverse proportion using graphs, and read values from graphs d. Find the equation of the line through two given points e. Recognise, sketch and interpret graphs of simple cubic functions f. Write simultaneous equations to represent a situation g. Solve simultaneous equations (linear/linear) algebraically and graphically	280 – 282 325, 326 299, 300 207 – 209 213 195	Proportion Graphs

Summer Term	
The examination for this course is in this term. Paper 1, which is non-calculator is near the end of May. Papers 2 and 3 are calculator papers. Students will have completed at least 1 mock as well as several past papers and these highlight areas to improve as well as improving exam technique.	
Outline of Key Learning	**Unit Code**
Exam technique & practice a. Revisit prior knowledge and apply to exam questions. b. Reflect on areas of weakness and improve them	ALL