KEY STAGE 3 – YEAR 9 – MATHS

CURRICULUM MAP

Autumn Term		Spring Term		Summer Term	
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Key Themes	**Key Themes**	**Key Themes**	**Key Themes**	**Key Themes**	**Key Themes**
Expanding and simplifying single brackets Factorising single brackets Review simple linear equations and extend to solving with single brackets, negatives e.g. 3 (x - 4) = 4 – (2x + 5) Forming equations to solve problems in a multiple of settings Review Function notation and drawing linear functions Review linear expression in the from y = mx + c and the resulting graphs; (Review recognising basic equations: y=1, x=-2, y=x. y=-x, y=x2, recognising parallel lines from their equation, finding gradient from points on the line and recognising if a point is on a line) Solving simultaneous equations algebraically and graphically Changing the subject of a formula	Learn the difference between Discrete and Continuous data Read, draw and consider which is most appropriate: Bar charts, line graphs and pie charts This is to include; Classes (e.g. 30cm<height<=40cm) and tallies; When is a bar chart appropriate, i.e. only for discrete data How to draw histograms, when and why Review scatter graphs, in particular discuss lines and curves of best fit, linking to algebra Positive and Negative correlations, lines of best fit (linear only in Maths but need to consider curved fits for Science) Review extrapolation and interpolation of data – the dangers and the uses. When is any chart appropriate? Choosing the best way to display data Posing hypotheses, gathering information, analysing data and concluding with appropriate displays. Review other graphs and charts and discuss which are appropriate to reflect their data and emphasise their conclusions. Consider how charts and graphs can be used to mislead the audience. When is this acceptable? Averages of lists of data, frequency data and grouped frequency data Knowing when to choose each average and why - Recognising skewness Use of cumulative frequency to find median (and quartiles – Higher) Use of box plots to illustrate spread of data, estimate medians and quartiles, find the mean	Constructing bisectors and extend to constructing angles such as 45o, 30o, 60o, 15o, 75o without a protractor Use of these constructions in loci Constructing triangles with and without compasses and can extend to investigation into sine, cosine, tangent ratios Recognising difference between similarity and congruence Using scale factors to solve problems with similar shapes Revising and using bearings Revising Pythagoras' Theorem to solve problems including on a co-ordinate grid Using trigonometric ratios in right angled triangles Using Pythagoras and trig in cuboids (Higher; simple 3D) Proving triangles are congruent (Higher; will need to revise geometric reasoning here also covered again in 9.6)	Expanding and simplifying brackets Factorise any quadratic including completing the square (Higher; cubics) Solving quadratics from factorised form Forming equations to solve problems in a multiple of settings Solving quadratic simultaneous equations algebraically and graphically, may include simple circles Solving linear inequalities and representing solutions on a number line Revise sketching quadratics and cubics. Learn how they can be used to find the roots of an equation. Solving quadratic inequalities using a graphical sketch and shade quadratic inequalities Solve simple linear programming problems using sketches of inequalities (Higher)	Round numbers to any given number of DP or SF, use rounding to make sensible estimated answers Understand that rounding reduces accuracy, and consider upper and lower bounds. Discuss error intervals for some calculations and remind students not to round values too early Using FDP in formulae and using a calculator efficiently with standard form and roots. Investigate and apply the index rules including Fractional and Negative Indices Review adding, multiplying, dividing fractions from units 7. and 8.4 including extending to algebraic forms where appropriate with setting. Review increasing and decreasing amounts by given proportion. Revise use of multiplier and other methods to solve percentage problems like finding the original quantity and repeated proportional change. This may be new for Intermediate sets. Revise ratio and (extend to solving complex problems similar to those in the new GCSE specimen papers if appropriate – Higher sets) Using Distance time graphs and SDT formula. Using velocity time graphs and acceleration formula and areas under graphs. Pressure formula and Density	Revise geometric reasoning, emphasising need to give a reason for each stage of a calculation. Review labelling of angles such as ABC Revise 2D shapes, in particular quadrilaterals and their properties. Finding interior and exterior angles of polygons. Tessellating shape problems and solving problems with variables in shapes. Understand and use the 8 circle theorems Geometric proof in regard to geometry and circle theorems Review Congruence (9.3) if appropriate here after a review of geometry Review finding area and perimeter of all planar and compound shapes including circles Find areas and perimeters when dimensions given as variables and in terms of pi Find volumes of prisms (may extend to pyramids or cones if appropriate) Surface Area – cuboids and prisms Develop formulae for SA of cylinders and triangular prisms using Pythagoras and Trig where necessary. Finding dimensions from the volume or surface area Solve problems involving proportion and ratio in shape contexts. Solve problems with variable side lengths
Assessment / Composite Tasks	**Assessment / Composite Tasks**	**Assessment / Composite Tasks**	**Assessment / Composite Tasks**	**Assessment / Composite Tasks**	**Assessment / Composite Tasks**
Unit Test 9.1	Unit Test 9.2	Unit Test 9.3	Unit Test 9.4	Unit Test 9.5	Unit Test 9.6