Curriculum Map template

Subject:

Year:

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content Knowledge	<u>Higher and foundation</u> Calculating with percentages. Measures. <u>Higher only</u> Indices. Surds. <u>Foundation only</u> Standard form.	<u>Higher and foundation</u> Statistical measures. <u>Higher only</u> Properties of polygons. <u>Foundation only</u> Indices. Pythagoras theorem.	<u>Higher and foundation</u> Congruence and similarity. <u>Higher only</u> Number recap and review. Pythagoras theorem and basic trigonometry. <u>Foundation only</u> Algebra recap and extension. Introduction to trigonometry.	<u>Higher only</u> Simultaneous equations. Probability. Statistics recap and review. <u>Foundation only</u> Further perimeter and area. Graphs recap and extension. Further circumference and area.	<u>Higher only</u> Algebra: introduction to quadratics and rearranging formulae. Volume. <u>Foundation only</u> Simultaneous equations. Properties of polygons.	<u>Higher only</u> Algebra recap and review. Linear and quadratic equations and their graphs. Geometry and measures recap and review. <u>Foundation only</u> Real life graphs. Review of basic probability. Probability.
Skills	Convert between FDP; Percentages of amounts; Use a multiplier to increase or decrease by a percentage in any scenario; calculator and non calculator	Interpret, construct and solve problems with two-way tables problems; draw and interpret visual diagrams involving bar-charts, vertical line graphs,pie-charts and pictograms.	Understand and use SSS, RHS, ASA, SAS;proof;understand similarity; scale factor;Area and Volume; frustums of cones; problem solving.	Solve algebraically and graphically Simultaneous equations; solve advanced problems given in context. Application of the sum of probabilities is 1;	Expand double brackets; Know that squaring a linear expression is same as expanding double brackets; factorise quadratic expressions in the form of $x^2 + bx + c$;	<u>Algebra recap and review</u> Straight line graphs; Plotting linear, quadratic ,cubic functions and reciprocal functions. Understand key features and relationships of

	methods to work out reverse percentages. Upper and lower bounds; speed , density and pressure; Index laws; powers and roots; positive , fractional and negative indices; calculator and non - calculator methods; estimating roots. Understand surd notation; simplifying surds; four operations with surds;rationalising denominator. Standard Form Convert large and small numbers into standard form and vice versa;	Plot, draw and compare box-plots/cumulative frequency diagrams. Construct, interpret and compare histograms inclusive of their appropriate uses. Plot and interpret Scatter diagrams; understand the concept of correlation; draw lines of best fit; knowledge of interpolation and extrapolation when relating to estimation. Identify types of polygons and its properties; lines of symmetry and rotational symmetry. Understand and calculate interior and exterior angles of a polygon and applied problems involving algebra to solve problems.	Recap and review Recurring decimals;limits of accuracy; Sequences; surds; indices. Pythagoras Theorem and basic Trig Understand, recall and use of Pythagoras theorem in 2D; Problem solving with Pythagoras; Pythagoras in 3D Sine, Cos, Tan;application of them to find angles and lengths; angles of elevation and depression; exact values of $\theta = 0, 30, 45, 60, 90$; Non calculator trigonometry. Algebra Recap and Review Key terminology;writing expressions; formulae;substituti	calculate probabilities of independent and dependent events; use and apply tools such as tree diagrams, venn diagrams to solve more complex problems. Statistics Review and recap Graphical representation and interpretation of box-plots; two-way tables and pie-charts;Cumulative frequency diagrams, histograms and scatter diagrams. Shape terminology; Perimeter problem solving with shapes; areas of composite shapes involving algebra; areas of triangles/parallelograms/trapezia. Total surface area of composite	factorise using diff of two squares Change the subject of the formula, including cases where the subject is on both sides, involving fractions and small powers of the subject. Volume Area and volume of similar shapes; Volume of prisms (cuboids,cylinders); Volume of spheres, cones, pyramids and composite solids. Simultaneous equations Solve two linear simultaneous equations; find approximate solutions using a graph. Properties of Polygons Recall the properties and definitions of	these graphs. Geometry and measures recap and review Plotting coordinates; sketch transformations of a function; applied shape problem problem solving. Conversion graphs and interpretation; understand and matching real-life graphs; speed-time graphs; Understand and interpret step-graph; Identify y=mx + c and contextual of components; Review of basic probability Record, describe and analyse outcomes of probability; use tables and/or frequency trees; relate expected

	four operations with numbers in standard form; skill of using calculators for calculations.	Basic laws of Indices; Recall and apply Pythagoras' Theorem to solve right-angle geometry problems.	on; algebraic expressions;nth term; linear equations with unknowns on one side and both sides. Understand and use trig ratios Sin, Cos and Tan to find missing angles and lengths.	shapes. Coordinate geometry; Calculating gradients and midpoints. Straight line graphs; parallel and perpendicular problems in context. Circle properties; circumference and area; Calculation of surface areas of cones and spheres; Calculate arc lengths and areas.	special types of quadrilaterals;use geometrical language and give reasons for angle calculations; derive and use the angle sum in any polygon; triangles and other shapes.	frequencies to theoretical probabilities; use relevant probability language to describe events; usage of tables, venn diagrams and sample sace diagrams. Understand and calculate the probability of independent and dependent events using tree diagrams..
Key Questions	-Work out 2^5; -Prove that the square root of 45 lies between 6 and 7. -Evaluate $(2^3 \times 2^5) \div 2^4$; 4^0; $8^{\frac{-2}{3}}$ -Find n in $40 = 5 \times 2^n$	Four of the exterior angles of a pentagon are the same. The fifth angle is 60°. Calculate the size of one of the other exterior angles. A triangle has a base of 5 cm, a height of 12 cm and a hypotenuse of 13		Mathias rolls an ordinary dice once. It has faces marked 1, 2, 3, 4, 5 and 6. Write down the probability he gets an 8? Solve the following simultaneous equations: $2x - 5y = 11$ $x - 4y = 4$		Nadia has £5 to buy pencils and rulers. Pencils are 8p each. Rulers are 30p each. She says "I will buy 15 pencils. Then I will buy as many rulers as possible. With my change I will buy more pencils." How many pencils and how many rulers does she

		cm. Is the triangle right-angled? Simplify $5xy \times 2y$ Write down the value of $49^{0.5}$		Find the midpoint of the line segment which joins points A:(2,3) and B:(10,−7)?		buy? OAB is a sector of a circle, centre O. Angle AOB = 60º. OA = OB = 12 cm. Work out the length of the arc AB. Give your answer in terms of π The probability of a seed developing into a plant is 0.32. If 1000 seeds are used, how many would be expected to develop into a plant?
Assessment	End of topic tests. End of half term tests.	End of topic tests.	End of topic tests. End of half term tests.	End of topic tests.	End of topic tests.	End of topic tests. End of year 10 exams.
Literacy/numeracy/ SMSC/Character		Problem solving approach - considering the whole task		Perseverance - coping with new mathematical concepts		Critical thinking - skills of analysis, evaluation and reflection

Enrichment opportunities and futures		Pythagoras: https://nrich.maths.org/6553		BBC Bitesize: https://www.bbc.co.uk/bitesize/guides/zsrq6yc/revision/6		Geogemetry and measures: https://nrich.maths.org/11650