Curriculum Map

Subject: Maths

Year 10 Foundation/Higher

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1 Foundation	Summer 2 Foundation	Summer 1 Higher	Summer 2 Higher
Knowledge /Skills	**Percentage change compound interest, growth and decay**	**Simultaneous Equations** substitution, elimination, graphical	**Linear Graphs** Equation of a straight line, perpendicular and parallel lines	**Compund measures** density and pressure	**Sequences** arithmetic and geometric	**Rounding** Error intervals	**Sequences** arithmetic and geometric	**Rounding Bounds**
	Surface Area Surface area of cones, frustrums, spheres, pyramids- Water Buggy project	**Formulae** Rearranging formulae	**Real life graphs** Plotting and interpreting real life graphs, equations of real life graphs	**Ratio** ratio and algebra, combining and changing ratio	**Sampling,** sampling for bias	**Indices** index laws	**Sampling,** sampling and capture recapture	**Indices Index laws**
	Volume cones, frustrums, spheres, pyramids	**Trigonometry** right angled trig, exact trig values, elevation and depression	**Set Notation** venn diagrams and set notation	**Graphs** velocity time graphs, cubic, reciprocal and exponential graphs	**Proportion** Direct and inverse proportion	**Brackets** expanding and factorising brackets	**Proportion** Direct and inverse proportion	**Recurring Decimals fractions to recurring decimals**
		Constructions construction and loci, bisectors	**Tree Diagrams** independent and dependent events	Financial Maths proje	**Transformations** transforming shapes	**Handling data and statistical diagrams** grouped data and drawing /interpreting statistical diagrams	**Transformations** transforming shapes	**Brackets** expanding and factorising brackets
Skills	percentages of an amount, decimal multipliers, formulae for area of shapes, formulae for volume of shapes, units of measure	Adding and subtracting terms, directed number, substitution, inverse operations, factorising, identifying sides of a right angled triangle, use of calculator to square root , use of compass	Be able to identify the gradient and y intercept, understand how gradients are the same or different for perpendicular or parallel lines, coordinates, understand conversion graphs,	Formulae for density/mass /volume/pressure, simplifying ratios, algebraic manipulation,plotting and identifying graphs, use of bank statements and bills	addition, subtraction, division, multiplication, proportional graphs and algebraic manipulation, measuring, plotting coordinates and identifying mirror	place value, rounding, power laws, roots, reciprocals, multiplication, division of terms, simplifying terms, frequency tables, scatter graphs, pie charts, bar charts	addition, subtraction, division, multiplication and algebraic manipulation, measuring, plotting coordinates and identifying mirror lines, use of scale factors	**Handling Data and statistical diagrams cummulative frequency and box plots**
								Understanding of error intervals, rounding decimals, power laws, roots,

Key Questions								
	Where is percentage change used, does it matter if we take the original amount from the new? How is surface area to volume?	What does simultaneous mean? how could we respresent this graphically? Why would we need to rearrange formulae? How would we deal with the subject on both sides? is the calculation for a smaller side different to finding the hypotenuse? How do we identify the hypotenuse? what is the definition of a loci and give an example of real life ?	How does the gradient change for parallel and perpendicular lines? how is a stationary point identified on a time distance graph? What is the difference between dependent and independant events? When do we add and when do we multiply on a tree diagram?	How do we know what units to use when calculating density? can ratio calculations be related to fractions? what does a debit and a credit mean?	What is the common difference? what is the common ratio? what factors can cause bias when sampling? what type of smapling is appropriate for this question? can we apply direct and inverse proportion to real life?, how do we represent a vector translations in different quadrants?	Why do we need to use error intervals ? how do we find the highest possible value?, what is a fractional index?	What is the common difference? what is the common ratio? what factors can cause bias when sampling? what type of smapling is appropriate for this question? can we apply direct and inverse proportion to real life?, how do we represent a vector translations in different quadrants?	Why do we need to use error intervals ? how do we find the highest possible value?, what is a fractional index?, what does the interquartile range tell us? what should be use to compare two sets of data?

Assessment	Students sit an end of term test at the end of each term, these are marked by the teacher and a full ReACT to the test is completed in lesson, teachers will use a visualiser to model the answers and identify marks and common misconceptions. Continued low stake questioning in class. Peer mentoring. AFL whiteboards and encouragement **AO1: Use and apply standard techniques** Students should be able to: -accurately recall facts, terminology and definitions. -use and interpret notation correctly. -accurately carry out routine procedures or set tasks requiring multi-step solutions. **AO2: Reason, interpret and communicate mathematically** Students should be able to: -make deductions, inferences and draw conclusions from mathematical information. -construct chains of reasoning to achieve a given result interpret and communicate information accurately. -present arguments and proofs. -assess the validity of an argument and critically evaluate a given way of presenting information. **AO3: Solve problems within mathematics and in other contexts** Students should be able to: -translate problems in mathematical or non-mathematical contexts into a process or a series of mathematical processes. -make and use connections between different parts of mathematics. -interpret results in the context of the given problem. -evaluate methods used and results obtained. -evaluate solutions to identify how they may have been affected by assumptions made.

Literacy/ numeracy/ SMSC/ Character	**Literacy:Key word as above, additional knowledge organisers provided to students at the beginning of a new topic , collins dictionary definitions shared https://www. collinsdictionary.com/word-lists/mathematics-mathematical-terms. Knowledge organisers will be stuck into books at the beginning of every new topic, to promote literacy and key vocabulary and skills.** **Freya Model, defining mats:(definition, facts, examples and non examples, including misconceptions). VCOP support models to aid students in using connectives and other language devices to explain a mathematical model or compare data.https://www.missbsresources.com/maths-resources/literacy-within-mathematics** **Numeracy:Key skills are outlined** **Character/SMSC/:https://www.bbc.co.uk/bitesize/tags/zrsg6v4/jobs-that-use-maths/1 links to jobs that relate to maths are relayed regularly in lessons, opportunities for cross curricular links outlined in scheme of work.** **Oracy: encourage teacher-led discussion with equal emphasis on speaking and listening. Group work/paired work. Teacher models correct mathematical processes. Opportunities for logical reasoning and dialogue e.g via Inquiry Maths and reasoning/proof tasks. No hands up questioning approached used**
Enrichment opportunities and futures	Intermediate maths challenge Revision sessions after school STEM club Statistics project -Real life application to collate and analyse data Maths buddies- opportunities to work with different ages groups and ability Trips, outside speakers and futures links within curriculum.