Maths

Year	RATIONALE
7	The year 7 curriculum is designed to build the key fundamental ideas taught at KS2 to give the students a solid foundation of knowledge to build upon. It begins with sequences and the development of using algebra to generalise and continues with linking number to equations. KS2 number work is further extended with approximation & significant figures, interleaving averages & representation of data previously met. Calculation methods follow on, including use in contexts such as areas & averages, then extending to all integers & fractions. Term 3 has a focus on angles & lines, demanding recall from KS2, specifically properties of polygons, and extending into notation & angles in parallel lines. Again there is interleaving between areas of the curriculum with pie charts. Students use protractors, rulers & compasses in accurate constructions. Mathematical reasoning skills are specifically developed when conjecture is introduced in the last half term, including drawing on the use of counter examples. New learning with set notation in Venn diagrams is included in the new area of probability in the last term
8	The year 8 curriculum develops concepts from Year 7 & introduces new ones & contexts, starting with ratio- found previously in Y6 additional content. Links to multiplicative reasoning & scale, including maps & currencies with use of graphs follows. Fraction calculation is extended from Y7 to include multiplication & division. Coordinates from Y6 are revisited & developed to equations of linear functions, through to scatter graphs, linking data and algebra. Topics interleaved include Venn diagrams & calculation with directed numbers. Term 2 begins with learning about new algebraic techniques, linked back to Y7 term 1, and includes using in different contexts. Students learn new vocabulary to identify the 4 types of mathematical “sentence”. More complex sequences are created from representations & students are expected to predict & explain reasons. Methods of finding FDPR are revisited & developed, links to Science are made in use of standard form & estimation methods are further developed. Term 3 begins with recall of angle knowledge & leads to simple proof. Shape focus continues with recall of area knowledge from Y6&7, new shapes include trapeziums, circles & compound shapes. Estimation skills are brought into context through use of significant figures to check calculation. With easy recall, symmetrical properties of 2D shapes are explored & equations of lines are used in transformations. Term 3 provides the opportunity to bring together all previously learned methods of comparing & representing data in a survey setting. Students will also examine misleading graphs & charts, to decide which is the most appropriate to use
9	The Y9 curriculum is designed to extend concepts taught in Y7&8, with a focus on reasoning. Term 1 begins with revisiting linear equations, first in graphs to formalise y=mx+c & link to nth term in sequences, then in solving linking to inequalities & other contexts. The fundamentals & language of proof are taught via testing simple conjectures. Students recall 2D area links to 3D surface area & volume in the next unit, with estimation again used to check solutions & reference to real world objects further supporting this. Exploration of the creation of 3D objects, identifying & constructing accurate nets teaches contextual use of compasses, rulers & protractors previously met in Y7. Term 2 number work demands good recall to support teaching of FDPR in context, so time is given to revisit & secure key skills in fraction, % & standard form. Maths & money unit teaches the fundamentals of interest, bills & statements, as well as getting the best buy. Following the model of learn, forget, retrieve, learn...we recall angle facts but with a focus on developing chains of reasoning, using accurate mathematical language. Recall of properties of 2D shapes is extended to include rotation & translation by vectors. Hypotenuse is then introduced as reasoning around lengths in right angled triangles is taught for the first time (Pythagoras). Term 3 begins with retrieval of knowledge on transformations, leading to enlargement by a positive scale factor with implicit links to coordinates, ratio & multipliers. Confident with recall on coordinates students learn about graphical representation of direct proportion, linking back to currency conversions & forward to distance time graphs. Inverse proportion is then explored before students learn about compound measures. Term 3 continues with recall of probability knowledge, this is then developed in experimental contexts learning about expectation, relative frequency & independent events. The final unit draws back on graph constructions. Students are taught to use the scientific calculator efficiently to generate points, and be able to check accuracy from graph shapes, including quadratic, reciprocal & piecewise representations. Inequalities, first taught at the start of year 9, but some symbols met from y2 (<>) are linked number lines, with solved solution sets accurately represented using notation. Throughout Y9 the emphasis is on formal notation, reasoning (including estimation) & accurate language, to best prepare students for more abstract maths.
10	THIS IS CURRENT YEAR 10 BUT WILL ALTER AS Y9 GO THROUGH Students begin Y10 with revisiting probability
11	Year 11 curriculum focuses on completion of units & preparing for public exams. Frequent recall of prior learning, interleaving to aid embedding of knowledge, The higher tier students further explore angle facts & reasoning skills in circles.