St George's School
Mathematics and Computing Faculty
Year 8 Curriculum Map for MATHEMATICS

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
THE BIG IDEAS & KNOWLEDGE *Overview of topics or key questions*	Properties of number; Fractions; Area and perimeter; Negative numbers; Sequences; Using a calculator	Written calculations; Estimation; Geometrical reasoning; Using algebra; Applying maths in context 1; Circles	Reflection; Describing data; Mental calculations; Formulas and expressions; Construction and locus	Bearings and scale drawing; Spreadsheets; Handling data; Fractions, decimals and percentages; Real life graphs; Rotations and combined transformations; Brackets and equations	Enlargement; Sequences and formulas; Applying maths in context 2; Pythagoras' theorem; Drawing and using graphs; Using ratios	More algebra; Volume of objects; Percentages; Probability; Drawing 3-dimensional objects; Statistical methods
SKILLS & STRATEGIES *Procedural knowledge, literacy and numeracy skills*	Creativity is developed in lessons by exploring concepts through different visual representations. The students are sometimes tasked with open-ended problems whereby there are multiple solutions possible. Our students may also at times be asked to problem-pose whereby they come up with their own question for a peer to solve. Our department looks to encourage flexible thinking in lessons through effective questioning. Critical thinking skills are developed as we nurture a classroom culture in which mathematical discussion is part of the daily routine. We also at times use open-ended questions and present problems for which our students have no predetermined solution strategy. Communication skills are developed in every lesson through group discussions. The examples chosen to probe such discussion have been carefully selected in advance in order to increase the fruitfulness of conversation. Collaboration skills are developed during our allocated Extension and Enrichment lessons as our students work in groups of between two and four to tackle various problem-solving style questions. Reasoning skills are developed in lessons through our teachers asking their students to conjecture abstract generalised techniques from an initial visual methodological approach. We always encourage our students to focus on 'why does this work' as opposed to 'how does this work'. Reflection skills are encouraged through tasks at the end of each lesson which can take various different forms. Students are encouraged to spend time reflecting upon their teacher's feedback following an end-of-topic homework or year-group assessment. During times where multiple solutions are possible, a discussion is encouraged among our students as to the benefits and drawbacks. Problem-solving skills are developed through the more challenging questions in each lesson, but also through tackling questions during the allocated Extension and Enrichment lessons. Our students are encouraged to use different strategies such as visualising the problem, working backwards, working systematically, reasoning logically and looking for patterns.					

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
FEEDBACK *Noteworthy tasks and assessments*	Seperate end of topic preps	Seperate end of topic preps Year-group Check Point	Seperate end of topic preps	Seperate end of topic preps Year-group Check Point	Seperate end of topic preps	Seperate end of topic preps Year-group Check Point
BREADTH *Opportunities, trips, wider reading, cultural capital*	"Can You Solve My Problems?" by Alex Bellos "How many socks make a pair?" by Rob Eastaway	Puzzle Day	"Alex's Adventures in Numberland" by Alex Bellos "How to Cut a Cake: And Other Mathematical Conundrums" by Ian Stewart	Herts for Learning Maths Challenge	UKMT Junior Maths Challenge	
KEY VOCABULARY *Important words and phrases*	Prime number Factor Multiple Square number Cube number Power Equivalent fraction Rectangle Triangle Parallelogram Trapezium Sequence Operation	Decimal Scale Estimation Rounding Quadrilateral Parallel Corresponding angles Alternate angles Expression Equation Formula Function Like terms Circle Circumference Area Pi Radius Diameter Semi-circle Quadrant	Reflection Coordinates Mean Median Mode Range Frequency table Stem and leaf diagram Locus	Bearing Spreadsheet Scatter graph Correlation Bar chart Pie chart Recurring decimals Rotation	Enlargement Scale factor nth term Mapping diagram Hypotenuse Straight line graph Ratio Congruent Tesselation Dodecagon	Volume Cuboid Prism Cylinder Probability Event Trial Expected number Success Experimental probability Isometric Front view Plan view Side view Data Questionnaire