St George's School
Mathematics and Computing Faculty
Year 7 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*	**Algebra:** Sequences; algebraic notation; equality	**Number:** Place value and ordering; fractions, decimals and percentages; addition and subtraction	**Number:** Multiplying and dividing; fractions of an amount	**Number:** Directed numbers; fractional thinking	**Shape and Space:** Construction and measuring; geometric reasoning	**Number:** Developing number sense **Handling Data:** Probability **Number:** Primes and Proof
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. During our allocated UK Mathematics Trust (UKMT) Team Challenge lessons, our students work in groups of four to tackle various problem-solving style questions. Collaboration skills are developed during our allocated UKMT Team Challenge lessons as our students work in groups of between two and four to tackle various problem-solving style questions. They will have to work in a team and strategise as to how best to utilise their time and efforts depending on the nature of the task presented to them. 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 UKMT Team Challenge lessons. Our students are encouraged to use different strategies such as visualising the problem, working backwards, working systematically, reasoning logically and looking for patterns. By ensuring our students have a strong conceptual basis in Year 7 in everything we teach, we can consequently focus attention more effectively to improving problem-solving skills.					

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FEEDBACK *Noteworthy tasks and assessments*	Separate end of topic preps	Separate end of topic preps Year-group Checkpoint	Separate end of topic preps Year-group Checkpoint	Separate end of topic preps Year-group checkpoint	Separate end of topic preps	Separate end of topic preps Year-group checkpoint
BREADTH *Opportunities, trips, wider reading, cultural capital*	"Can You Solve My Problems?" by Alex Bellos "How many socks make a pair?" by Rob Eastaway "Alex's Adventures in Numberland" by Alex Bellos "How to Cut a Cake: And Other Mathematical Conundrums" by Ian Stewart			Herts for Learning Maths Team Challenge	UKMT Junior Maths Challenge	
KEY VOCABULARY *Important words and phrases*	Sequence Term Constant Linear sequence Geometric sequence Fibonacci sequence Function Variable Coefficient Inverse Expression Substitute Evaluate Equal Equation Commutative Linear equation Like terms Unlike terms Equivalent	Integer Estimate Ascending Descending Inequality Range Median Measure of spread Round Significant figure Order of magnitude Power Standard Form Proportion Percent Sector Fraction Division Improper fraction Mixed number Difference Associative Perimeter Credit Debit Balance Profit and loss Frequency	Factor Factor pair Multiple Highest common factor Lowest common multiple Array Centi Milli Kilo Product Parallelogram Perpendicular Area Dividend Divisor Quotient Remainder Mean Operation Trapezium Unit fraction	Directed number Negative number Zero pair Solve Unknown Indices Root Numerator Denominator Non-unit fraction Common denominator	Line segment Angle Clockwise Anticlockwise Acute angle Right angle Obtuse angle Reflex angle Polygon Regular polygon Parallel Construct Side Adjacent Vertex Vertically opposite angles Kite Interior angle Transversal Corresponding angles Alternate angles Co-interior angles Proof	Decimal Derive Set Element Universal set Inclusive Intersection Union Complement Probability Sample space Biased Equally likely Outcome Prime number Square number Triangular number Prime factor decomposition Conjecture Counterexample