Oasis Academy Lister Park Maths Curriculum – Year 9

YEAR 9 (OALP Scheme of Learning)					
In year 9, students have spent 2 years developing a **conceptual understanding** of many of the central ideas in number, algebra, and ratio, as well as **fluency** in many of the skills necessary to achieve at KS4. This year, this knowledge and these skills are utilised to explore more advanced and 'exotic' areas of Mathematics, as students prepare to begin studying the formal Mathematics of GCSE Maths next year. In Autumn 1, students are exposed to a variety of curriculum areas which cement their **fluency** and **conceptual understanding** in preparation for the more advanced ideas in the rest of Y9. In Autumn 2, students' understanding of algebra is deepened and extended as they reason with purely abstract ideas, including changing the subject, and algebraic factorisation. In this half term, **mathematical thinking** and **mathematical reasoning** feature prominently. These algebraic ideas are built on in Spring 2, when graphs are studied as an alternative **representation** of the equations and inequalities they have come to manipulate **fluently**. In Spring 1, and Summer 1, students' build on the large maps of geometry knowledge they have built over their education to encounter more nuanced **problem-solving** in spring 1, including forming and solving equations, before brand new ideas are introduced in Trigonometry. Students need to **reason mathematically** and have a **fluent, conceptual understanding** of many previous areas of the curriculum to access this well – including congruence and similarity from Y9 Spring 1, equations and algebraic manipulation from Y9 Autumn 2, and on all occasions before that as their algebraic skills developed, and number skills from across Y7 and Y8. Finally, in Summer 2, students' meet mathematical Probability for the first time. They build on their understanding of data from Y8 Spring 2 to develop a **conceptual understanding** of the difference between experimental and theoretical probability, and develop **fluency** in using the different tables and graphs which **represent** the data.					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic: Coordinates, Linear Graphs, Proportion, and Standard Form **Number + Algebra** **Ratio and Proportion**	**Topic: Algebraic Expressions** **Algebra**	**Topic: 2D geometry** **Geometry**	**Topic: Equations and Inequalities** **Algebra**	**Topic: Trigonometry** **Geometry**	**Topic: Statistics** **Probability & Statistics**
Knowledge and skills covered: Unit 1 – Coordinates Unit 2 – Linear Graphs Unit 3 – Direct, Inverse Proportion Unit 4 – Standard Form	**Knowledge and skills covered:** Unit 5 – Algebra Recap Unit 6 – Expanding and Factorising Unit 7 – Algebraic Manipulation	**Knowledge and skills covered:** Unit 8 – Constructions Unit 9 – Congruence and Similarity Unit 10 – Triangles and Quadrilaterals	**Knowledge and skills covered:** Unit 12 – Linear equations and Inequalities Unit 13 – Simultaneous Equations Unit 14 – Quadratic and other Graphs	**Knowledge and skills covered:** Unit 15 – Pythagoras Unit 16 – Trigonometry Unit 17 – Proof	**Knowledge and skills covered:** Unit 18 – Probability Unit 19 – Mean from Grouped Data Unit 20 – Comparing Distributions Unit 21 – Cumulative Frequency and Box Plots