ERNULF ACADEMY
Astrea Academy Trust
INSPIRING BEYOND MEASURE

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Year 10 Mathematics 2022_2023	Subject Intent	Our aim is to deliver an appropriately ambitious curriculum that secures subject knowledge through depth, breadth, and ambition for <u>all</u> pupils. Our carefully chosen curriculum provides atomisation, careful sequencing, alignment of content, instruction, and assessment. Pupils learn to become fluent in the fundamentals of mathematics to access complex problems and develop conceptual understanding. Pupils apply their understanding to routine and non-routine problems with increasing sophistication. We fundamentally believe in mastering and building a foundation of Mathematics to allow more complex mathematics to be taught and learnt with fidelity, accuracy, and pace.
	KS3 Subject Narrative	Our KS3 curriculum is a sequence of interconnected mathematics concepts to allow pupils to develop connected mathematical ideas. Pupils are continuously assessed on prior knowledge when being taught new knowledge – which are vitally important for more complex mathematics. We sequence the curriculum by identifying high leverage topics which more complex mathematics is taught on e.g., place value, four operations, number theory.
	KS4 Subject Narrative	KS3 topics and knowledge are revisited in greater complexity in years 10 and 11. The Year 9 curriculum is an opportunity to revise and build more complex mathematical concepts committed to long term memory in Year 7 and 8. E,g., Place value & Number properties allows pupils to identify the procedural impact of $\times/\div$ numbers by Powers of 10 and the impact of size on a number's place value. The Year 10 and 11 curriculum includes topics which are mixed concepts e.g., Linear graphs is the application of algebraic notation and linear equations in the context of coordinate geometry
	Routine Assessment Strategies	Year 10's use knowledge retrieval and procedural starters and have a fortnightly low stakes cumulative quiz which the later is marked by teachers and stored on a central spreadsheet to measure progress. Each fortnightly quiz is a SAR (Strength Action Response) task where pupils are given feedback before and after their low stake cumulative quiz.

	WHY THIS, WHY NOW?	Autumn Term – Introduction to coordinate geometry and the application of algebra in the context of graphs	Spring Term – Development of solving equations in the context of geometry	Summer Term – Introduction of geometry in the context of properties of shapes
Year 10 Mathematics 2022_2023	Key Subject Knowledge	• Linear Graphs • Y=mx + c • Compound Measures • Quadratic graphs, TP and Roots • Further expanding and factorising • Linear simultaneous equations • Further graphs • Capture & Recapture	• Proportion (further) • Properties of shapes • Circles • Volume & Surface Area • Surds • Recurring decimals • Bounds • Growth & Decay	• Statistics • Simple interest • Ratio (further) • Plans & Elevations • Constructions & Loci • Similar Shapes
	Subject Competencies	• Pupils learn the application of number and algebra in the context of geometry such as linear graphs, y = mx + c and quadratic graphs. • Pupils also learn more complex solving equations with simultaneous equations, and the introduction of non-linear graphs: cubic, exponential	• Pupils learn properties of shapes in terms of symmetry • Pupils apply rearranging formulae in the content of circles, volume and surface area where they are to find dimensions e.g., lengths, radius etc • Pupils are introduced into more complex applications of numbers using recurring decimals, and bounds as all prior knowledge required has been taught and committed to long term memory	• Pupils learn more complex statistics after learning foundational topics in Year 7 • Pupils are introduced to plans and elevations, and constructions & loci after being introduced to properties of shapes in the previous half term • Pupils also learn similar shapes where they combine their understanding of compound measure, volume & surface are and rearranging formulae.
	Summative Assessments (high stakes assessments which test cumulative knowledge)	• Weekly SAR task which is cumulative of taught concepts and topics throughout the academic year	• Mid-year test covering Y10 content to date – the test covers Autumn term and Year 7, 8 and 9's taught curriculum	• End of year test covering Y10 content to date – Autumn term, Spring term and a portion of summer term
	How does this pave the way for future study?	• Pupils learn how to further expand and factorise to access algebraic proof in Year 11 and basic vectors • Pupils learn quadratic graphs to access solving quadratic graphs and further simultaneous equations	• Pupils' knowledge of circles in Year 10 allows further development in circle theorems in Year 11 HT2	• Pupils learn statistics to access histograms taught in Year 11 HT3