

Westfield Academy - Curriculum Information

Building on the knowledge and skills developed in Years 7 and 8, your child will extend their understanding of mathematical concepts and apply them in more challenging and unfamiliar contexts.

They will develop greater fluency in algebra, geometry, proportion and data handling while strengthening their ability to solve multi-step problems, reason logically and make connections across different areas of mathematics. Students will continue to develop their mathematical literacy by communicating their ideas using precise mathematical language, explaining their reasoning and constructing well-justified solutions, helping to prepare them for the demands of GCSE study.

Maths

Head of Department	C. Okemadu	
Head of Department email	cho@westfield.academy	
Lessons per 2 week cycle	7	
Specification/Board details/Key stage	OCR/Edexcel	

Term by term

Autumn 1	Autumn 2	Spring 1
Factors, Multiples, HCF & LCM Square and Cube roots Algebraic Expressions involving fractions Negative numbers: all four operations Fractions, Decimals and Percentages. Convert recurring decimals to fractions Standard Form Estimation, Rounding Upper and Lower bounds Review of basic algebra: simplify, Expressions, Expand brackets	Factorise expressions Equations with integer coefficients Equations with simple fractions Represent and solve inequalities Changing the subject of an equation Multiplying out and factorising single and double brackets Linear sequences Non-linear sequences (geometric, quad	Review of angle facts Angles in polygons Standard constructions using compasses Problems involving loci and intersecting loci Pythagoras' theorem in 2 and 3 dimensions Trigonometry in right-angled triangles Student Research

Student Research/Problem Solving	Nth term of a quadratic sequence Student Research/Problem Solving	
Spring 2	Summer 1	Summer 2
<p>Mid-point, length and gradient of a line segment</p> <p>Review of plotting linear graphs</p> <p>Use and understand $= + c$</p> <p>Simultaneous equations: graphical solutions</p> <p>Simultaneous equations: algebraic solutions</p> <p>Plot quadratic, cubic and reciprocal graphs</p> <p>Sketching graphs</p> <p>Student Research</p>	<p>Ratio & Proportion</p> <p>Direct proportion</p> <p>Graphs of quantities in direct proportion</p> <p>Ratio calculations</p> <p>Percentages and percentage changes without a calculator</p> <p>Percentages and percentage changes with a calculator</p> <p>Reverse percentages</p> <p>Compound interest and depreciation</p> <p>Compound measures, including speed and density</p> <p>Student Research/Problem Solving</p>	<p>Area and perimeter of shapes</p> <p>Arcs, Sectors and Segments</p> <p>Volume and Surface area Solids</p> <p>Student Research</p>
Key Skills developed	<p>Number and Numerical Fluency – Developing confidence with factors, multiples, prime numbers, HCF and LCM, indices, roots, surds, fractions and directed numbers, applying these skills accurately in a range of contexts.</p> <p>Algebra and Mathematical Reasoning – Expanding and simplifying expressions, substituting into formulae, solving increasingly complex equations and inequalities, rearranging formulae, and identifying rules for linear sequences.</p> <p>Graphs and Functions – Drawing and interpreting linear, quadratic, cubic and reciprocal graphs, understanding their key features, and solving simultaneous equations using graphical and algebraic methods.</p> <p>Ratio, Proportion and Financial Mathematics – Solving problems involving ratio, direct and inverse proportion,</p>	

	<p>percentage change, reverse percentages, compound interest and depreciation.</p> <p>Geometry and Trigonometry – Applying angle rules, polygon properties, constructions and loci, using Pythagoras' Theorem and trigonometry in two and three dimensions, and developing geometric reasoning skills.</p> <p>Measure and Mensuration – Solving problems involving perimeter, area, arcs, sectors, volume and surface area of a range of 2D and 3D shapes.</p> <p>Problem Solving, Reasoning and Mathematical Communication – Tackling multi-step problems, selecting efficient strategies, justifying solutions, and communicating mathematical ideas clearly using accurate mathematical vocabulary and notation.</p>
Useful Websites	<p>https://maths.sparx-learning.com/teacher/school-settings/sucription</p> <p>https://corbettmaths.com/</p> <p>https://mathsgenie.co.uk/</p>
Reading/Literacy requirements /Key Words	<p>Factor Multiple Index Expression Angle Polygon Locus Gradient Simultaneous Equation Ratio Proportion Subject of Formula Area Circumference</p>
Homework requirements	Once a week
Personal Development Links	<p>https://corbettmaths.com/5-a-day/gcse/</p> <p>https://sites.google.com/westfield.academy/ks3maths/home</p>
Trips/Visits (If applicable)	Bletchley Park): The mission is to develop historically

	<p>informed, analytically skilled, and technologically aware learners. Through our visit to Bletchley Park, students gain a unique insight into World War II intelligence and the origins of modern computing.</p> <p>Through hands-on workshops led by expert staff, students engage in collaborative problem-solving activities inspired by real codebreaking challenges. Like our wider enrichment programmes, the experience strengthens teamwork, critical thinking, and resilience while deepening their understanding of history, mathematics, and computing in a real-world context.</p> <p>Robotic Project: The mission is to develop future Space scientists and AI Engineers. We joined the National Robotics & STEM Project, organised by First Tech Challenge UK and Ireland (https://firstuk.org/), designed to equip our students with hands-on experience in engineering, coding, problem-solving, teamwork, and innovation.</p> <p>UKMT Challenge: The mission is to develop confident, high-level mathematical thinkers through participation in the nationally recognised UK Mathematics Trust Challenge. This prestigious national competition attracts students from schools across the UK, providing an opportunity to compete at a recognised national standard.</p> <p>Students tackle rigorous, non-routine problems that strengthen logical reasoning, precision, and resilience under timed conditions, raising aspirations and celebrating mathematical excellence.</p>
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