Mathematics DEPARTMENT Curriculum Outline 2026-27

Year 8 Delta

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic/theme	Number: Factors and powers Algebra: Working with powers	Geometry: 2D shapes and 3D solids Algebra: Real life graphs	Geometry: Transformations Number: Fractions, decimals and percentages	Geometry: Constructions and loci	Statistics: Probability Geometry: Scale drawing and measures	Algebra: Graphs
Key Skills	-Write prime factor decomposition of a number -Use prime factor decomposition to find HCF and LCM of two numbers -Work out laws of indices, use them for multiplying and dividing - Use, understand and work with powers of 10 -Calculate with powers -Rounding numbers to significant figures -Simplify and factorize algebraic expressions including brackets -Use index laws in	-Use 2D representation of 3D solids -Calculate the surface area of prisms including cylinders -Calculate the volume of right prisms and cylinders -Name different parts of circles -Calculate the area and circumference of a circle -Using Pythagoras' theorem in right-angles triangle -Recognise the values of direct proportion	-Describe and carry out transformations including: Reflections, Translations, Rotations and Enlargement -Enlarge shape using positive, negative and fractional scale factor -Transform 2D shapes using the combination of transformation -Identifying planes of reflection symmetry in 3D solids -Recognising fractional equivalent	-Draw triangles , 3D nets and solids accurately and diagrams to scale - Construct triangles, nets of 3D solids, perpendicular lines and bisectors, angle bisectors -Bisect angles using ruler and compasses -Draw accurate diagrams and solve problems -Draw and solve problems with loci	-Calculate, find, compare and estimate probabilities -Identify and find probabilities from mutually exclusive outcomes - Calculate and use relative frequency -Estimate probability using data from an experiment List all possible outcomes using sample space and Venn diagram -Use tree diagram to find probabilities of two or more events	-Plotting and find the equation of a straight-line graph -Find the gradient and the y-intercept of straight line -Plot graphs using the gradient and the y-intercept - Use y=mc + c and find the equations of straight- line graph -Identify parallel and perpendicular lines -Find the inverse of a linear function -Plot and use non-linear graphs

	algebraic calculations and expressions -Substitute integers into expressions -Construct and solve equations	-Plot graphs and read values to solve problems -Read and interpret real life graphs including distance-time graphs and misleading graphs	to some recurring decimals -Change recurring decimals into fractions -Calculate percentages: increase, decrease, (repeated)percentage change		-Use and interpret maps and scale drawings -Measure and use bearings -Draw diagrams to scale -Use and interpret scale drawings -Identify congruent and similar shapes -Use congruence to solve problems in triangles and quadrilaterals -Solve problems with 2D shapes	
Previous learning and next steps links	-Recognizing primes and powers -Working with very small and very large numbers and powers -Calculating area and perimeter of 2D shapes using algebra -Can you make every number just by multiplying prime - numbers? -Using the knowledge to think how many photos can be stored on a terabyte server -When is it a good idea to round numbers?	-Draws accurately simple shapes -Describe the faces of a solid -Calculating the surface area and volume of any solids -Predicting and interpreting information of any real-life graph -What would famous landmarks look like if photographed from above? -Why do African	-Matching simple equations to graphs. -Is there always more than one way of describing a transformation? -Round numbers to decimal places -Calculating percentages -HOw can you describe the movement of an image on the screen? -What is the center of rotation of the	-Understanding and describing the faces of all solids -Describing the properties of trapezium including area and perimeter -Describing the scale factor of an enlargement and compass points -How is triangulation used to make maps? -Which regular polygon can you draw using a ruler and compasses?	-Compare probabilities using diagrams -Using probability tree diagrams to estimate values -Understanding scale factor of enlargements -Calculating missing ratios -How do artists making special effects for film use similar shapes? -How many times do you have to flip a coin to be confident	-Plotting and reading coordinate points-Understand inverse operations -Use graphs to solve algebraic problems -Use BIDMAS -Can you predict where the line will cross the axis? -What does the gradient 12% road sign mean? -Can graphs help you solve algebraic problems?

	-What expression will simplify 9 to the power of 6?	elephants have larger ears than the Asian elephants? -What volume of water do you need to fill a swimming pool? -How long would it take to fly around the world? -How do stock-market traders use graphs to make investment decisions? -What will be the population of the world in 2050 and 2100?	Solar System? -What does the zoom function do on the camera? -What does 25% enlargement change the size of the photo? -Rounding decimals To prove that 0.99999 = 1 -How can you work out who made the biggest improvement in maths tests over the year?	-What is the shortest distance from the middle of a field to the edge? -How much of a car's windscreen can you wipe with two wipers? -How are bearings the same as angles? How are they different? -How is it difficult to draw accurate world map	that it is a fair coin? -What percentage chance of rain would make you decide to take an umbrella?	-How can you tell if two lines are at right angles -Can you find a function whose inverse is the same as the function?
Literacy opportunities/ VIPERS	Spelling key ***vocabulary*** correctly ***(VIPERS)*** Promoting the use of ***Mathematical language*** during lessons Developing literacy through ***discussion using the correct mathematical terminology***, reasoning and problem solving tasks Create opportunities for explanation of learning, ***expressing mathematical conclusion*** after completing investigative task Pupils to design a ***worded question*** based on learning Comprehension activities while learning about famous mathematicians- Diversity links					
Wider reading fiction/ non-fiction	Display mathematical Tier 3 vocabulary around the classroom Introduce new terminology but also consolidate previously used terms wherever possible Use key vocabulary in context so pupils begin to understand when/how to use it Comprehension activities while learning about famous mathematicians					
Numeracy Opportunities	Applied fluency and connecting different area of mathematics in a range of real-life contexts Making connections how mathematics can be used in every-day life situations – 'Window to the Wider World' Interlinking different area of mathematics Reason using the mathematical strategies and solve problems					
SMSC and British Values/Window into the wider	Linslade pupils receive both support and challenge needed to become increasingly confident in arithmetic, fluency, reasoning and problem solving in all areas of Mathematics. The curriculum is carefully designed and sequenced to provide our learners with an aspirational bridge between lower and upper school, understanding the world and in their future careers. We build on prior knowledge so that our learners					

world	leave us having achieved fluency in this creative and highly interconnected discipline. They will be ready to start upper school and feeling confident, prepared and with a way of thinking that will provide them with a platform to become the leaders of tomorrow. During their time with us, our learners are given the opportunity to apply their ever-growing knowledge to reasoning and problem solving questions so that they can deepen their understanding and appreciation of the beauty of mathematics. By regularly working on real-life problems, our curriculum allows learners to look through the window to the wider world and see how the maths that are taught in lessons will be applied in everyday life.