Long Term Plan
Maths

Groveside School

Year 9

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit	Percentages Transformations Equations of Straight Line Graphs	Pythagoras' Theorem Prisms and Cylinders Formulae	Compound Measures Standard Form	Probability and Venn Diagrams	Modelling Proportions Trigonometry	Recap and revise KS3 topics as applicable
Skills, Knowledge, and Learning	Students will develop fluency by: Consolidating their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value relating to percentages Using language and properties precisely to analyse 2-D and 3-D shapes. Moving freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs] Developing algebraic and graphical fluency,	Students will develop fluency by: Using language and properties precisely to analyse 2-D and 3-D shapes. Using algebra to generalise the structure of arithmetic, including formulating mathematical relationships. Selecting and using appropriate calculation strategies to solve increasingly complex problems. Substituting values in expressions, rearrange and simplify expressions, and solve equations They will reason mathematically by: Making and testing conjectures about	Students will develop fluency by: Selecting and using appropriate calculation strategies to solve problems relating to compound measure. Converting, comparing, ordering and calculating standard form and ordinary numbers. They will reason mathematically by: Recognising the correct operation to use and substituting values into given formulae. Using the 4 operations to adjust and convert powers. They will develop problem solving skills by: Developing their mathematical knowledge,	Students will develop fluency by: Developing critical thinking skills, problem-solving abilities, and visual literacy. Consolidating their algebraic skills and extending their knowledge of equations. They will reason mathematically by: Comparing and contrasting different sets of objects and solve problems and analyse real-life scenarios. Use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics. Explore what can and cannot be inferred in	Students will develop fluency by: Using mathematical modelling to solve mathematical problems from the real world around them. They will draw on knowledge learnt in the areas of mathematics. Building on geometric to knowledge of right angled triangles and Pythagoras Theorum to use trigonometry. They will reason mathematically by: Identifying, understanding, assessing various mathematical-modelling approaches to solve problems, and choose the most efficient method using correct	

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	including understanding linear and simple quadratic functions They will reason mathematically by: Understanding how to work backward from a percentage change. Comparing interest methods. Making and testing conjectures about patterns and relationships; looking for proofs or counter-examples Beginning to reason deductively in geometry, including using geometrical constructions. Identifying variables and expressing relations between variables algebraically and graphically. They will develop problem solving skills by: Using percentages and interest in real life financial situations.	patterns and relationships; looking for proofs or counter-examples Beginning to reason deductively in geometry, number and algebra, including using geometrical constructions. They will develop problem solving skills by: Developing their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems. Developing their use of formal mathematical knowledge to interpret and solve problems Beginning to model situations mathematically and expressing the results using a range of formal mathematical representations Selecting appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.	in part through solving problems and evaluating the outcomes, including multi-step problems and applying proportional reasoning to find unknown quantities. Developing the application to real-world contexts (e.g., scientific measurements, astronomical distances).	statistical and probabilistic settings, and begin to express their arguments formally. Solve problems: Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems. Begin to model situations mathematically and express the results using a range of formal mathematical representations	formulas and mathematics. Recognising and applying trigonometric ratios. They will develop problem solving skills by: Considering a variety of contexts to solve problems from real life scenarios. Considering real life situations and applying solutions.	

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	Beginning to model situations mathematically and expressing the results using a range of formal mathematical representations. Selecting appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.	Understanding the role of variables in a formula.				
NC/Qualification Objectives	• N1 • N4 • N5 • N6 • N3 • N7 • A15 • A16	• N13 • N14 • N6 • N2 • G5 • G6	• G15 • G7 • A3 • A1 • A4 • A2 • N5 • R1 • N10	• R4 • R5 • A14 • N12 • R1 • G3 • G10	• N4 • N10 • R8 • N6 • A7 • N12 • G2 • G1 • A5	• A8 • G9 • G16 • S1 • S2

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Enrichment/ Experiences	
Curriculum End Point / Goal	.