Long Term Plan
Maths

Groveside School

Year 8

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit	Rules of Indices Accuracy Parallel Lines and Polygons	Multiplying and Dividing with Fractions Interpreting Data Area of Shapes	Ratio Algebraic Expressions Plotting Straight Line Graphs	Proportional Reasoning Circles	Percentages Constructions	Equations Probability
Skills, Knowledge, and Learning	Students will develop fluency by: Selecting and using appropriate calculation strategies to solve increasingly complex problems. Using language and properties precisely to analyse 2-D shape.s They will reason mathematically by: Making and testing conjectures about patterns and relationships; look for proofs or counter examples. Beginning to reason deductively in geometry, including using	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 to include fractions. Using language and properties precisely to analyse statistics. Using language and properties precisely to analyse 2-D and 3-D shapes They will reason mathematically by: Extending their understanding of the number system; making connections between	Students will develop fluency by: Simplifying numerical expressions, including those involving ratios, by using the highest common factor. Converting between different units, fractions, decimals, and percentages, including expressing parts of a whole in ratio format. Using efficient numerical and algebraic methods to divide quantities in a given ratio. Moving freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs].	Students will develop fluency by: Using tables and graphs effectively to represent proportional relationships. Using scale factors. Identifying direct proportion relationships algebraically, represented as y = kx. Substituting values in expressions relating to circles. They will reason mathematically by: Identifying variables and using them to solve problems. They will develop problem solving skills by:	Students will develop fluency by:: Consolidating their numerical and mathematical capability from key stage 2 and year 7 and extend their understanding of the number system and place value to include decimals, fractions and percentages. Using language and properties precisely to analyse 2-D and 3-D shapes. Solving linear equations and checking solutions. They will reason mathematically by: Extending their understanding of the	Students will develop fluency by: Using correct algebraic notation and terminology and consolidating and developing methods of solving equations. Reinforcing the foundational concepts of probability, including experiments, outcomes, events, theoretical and experimental probability, and equally likely outcomes. They will reason mathematically by: Using different methods of solving equations with one, and more, unknowns. Learning to calculate probabilities for

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	geometrical constructions. They will develop problem solving skills by: Developing their use of formal mathematical knowledge to interpret and solve problems. Solving problems and evaluating the outcomes, including multi-step problems	number relationships, and their algebraic and graphical representations. Exploring what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally. Beginning to reason deductively in geometry. They will develop problem solving skills by: Developing their mathematical knowledge through solving problems and evaluating the outcomes, including multi-step problems. Beginning to model situations mathematically and express the results using a range of formal mathematical representations Selecting appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.	Using algebra to generalise the structure of arithmetic, including to formulate mathematical relationships. Substituting values in expressions, rearrange and simplify expressions, and solve equations Developing algebraic and graphical fluency, including understanding linear and simple quadratic functions They will reason mathematically by: Recognising and using proportional relationships to compare and simplify ratios effectively. Using proportional reasoning to relate ratios, fractions, and percentages in real-world and abstract contexts. Identifying variables and express relations between variables algebraically and graphically They will develop problem solving skills by: Applying ratio and proportion calculations to real-life problems, including financial mathematics.	Solving problems using proportional reasoning in various real-life contexts. Solving problems and evaluating the outcomes, including multi-step problems. Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.	number system relating to fractions, decimals and percentages. Using various methods to solve linear equations. Beginning to reason deductively in geometry using geometrical constructions They will develop problem solving skills by: Beginning to model situations mathematically and express the results using a range of formal mathematical representations. Applying algebra to real-life contexts such as perimeter, area, and ratio problems.	independent and dependent events. Calculating probabilities for mutually exclusive and complementary events. Constructing and interpreting tree diagrams and lists determine the outcomes and probabilities of events. They will develop problem solving skills by: Interpreting and constructing equations from contextual problems (e.g. word problems, geometry). Using real world applications to calculate probability

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			Beginning to model situations mathematically and express the results using a range of formal mathematical representations. Selecting appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.			
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
Enrichment/ Experiences						
Curriculum End Point / Goal	.					