Long Term Plan
Maths

Groveside School

Year 8

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit	• Calculating • Number and the number system • Visualising and constructing	• Understanding risk • Algebraic Proficiency: tinkering	• Exploring FDP • Proportional Reasoning	• Patterns • Investigating Angles • Calculating FDP	• Solving Equations • Calculating Space • Algebraic Proficiency: Visualising	• Understanding risk II • Presentation of data • Measuring data
Skills, Knowledge, and Learning	Over the course of this term pupils will be further developing their knowledge and understanding from Year 7, by demonstrating their knowledge of place value for large and small numbers before progressing on the use of standard form; applying the basic four operations for integers and whole numbers, further developing fluency to include the use of brackets and powers within BIDMAS. Pupils will then further develop their mathematical knowledge by understanding prime numbers, factors, multiples and further developing their mathematical knowledge with Highest Common Factors & Lowest Common Multiples. Pupils will be developing their	Over the course of this term pupils will be developing their mathematical knowledge of probability. Pupils will understand the difference between expected and theoretical probabilities, as well as calculating the probability of events occurring, further applying this knowledge to problem solving questions. Pupils will develop their fluency and knowledge of Algebra, recalling basic skills and key vocabulary from year 7, and further developing in their mathematical understanding by factorising expressions involving common factors and laws of indices, pupils will also be rearranging simple formula to change the subject using their	During this term pupils will be further developing their mathematical fluency with decimals and fractions, focussing on conversions between fractions and terminating decimals. Pupils will be recalling facts about ratio and make further connections between ratio and fractions. They will then be further developing their fluency and reasoning skills with ratio and proportion. Pupils will be introduced to proportionality, using proportion solve problems involving direct proportion. Pupils will introduce to compound units such as speed, rates of pay and use these to solve problems in context further developing pupils' fluency and reasoning skills.	During this term pupils will be further developing their mathematical reasoning and fluency skills with sequences; being able to generate sequences and form an algebraic expression for the nth term of a sequence. Pupils will be recalling basic angle facts from Year 7, applying theses to problem solving questions as well as understanding and new angles rules for parallel lines and using angle facts for triangles to deduce angles in polygons further developing their fluency and reasoning skills. Pupils will be recalling prior knowledge of FDP, focussing on percentages. Pupils will understand how to interpret percentages and fractions as operators,	Pupils will recall their knowledge for solving one and two step equations and apply these skills to solving equations with unknown on both sides, including solving worded problems. Pupils will understand how equations can look on graphs, and how connect ed equations can be solve graphically. Pupils will use their knowledge of measurements to develop skills for calculating perimeter and area of basic shapes including circles, including reasoning and problem solving questions. Pupils will also be using formula to find the volume of some 3D prisms, using formula from area of 2D shape, further developing the fluency and reasoning skills. Pupils will develop	During this final term pupils will be revisiting probability and recalling basic terminology used for probability, as well as applying systematic listings to determine outcomes. Pupils will begin to use visual representation of probability in the forms of frequency trees, Venn diagrams and sample space diagrams. Pupils will then spend the last weeks of terms developing their statistical knowledge, recalling, and developing fluency in data collection and presentation; understanding the optimum charts or graph to display information effectively including the use and interpretation of scatter graphs of bivariate data. Pupils will develop

problem solving skills by applying their knowledge to functional based questions. Pupils will also begin to understand the sue of standard form for large and small numbers, pupils will be developing their mathematical knowledge to convert between standard form and normal numbers, using the place value and powers of ten. Pupils will develop their Geometry knowledge from Year 7, identifying, describing, and constructing similar shapes including on a coordinate grid by considering enlargements. Pupils will understand the use of scale factors for scale diagrams as well as maps and bearings.	mathematical knowledge of inverse operations		work with larger percentages and using percentages to solve financial problems including simple interest. Pupils will then combine their FDP knowledge to solve multi step questions, further developing their problem solving skills.	the connection between algebra and geometry, using basic formula to substitute in values to calculate solutions. Pupils will begin to understand how to generate coordinates from equations of lines and plot them accordingly. Pupils will further develop their understanding of the key features of a linear graph and how to calculate them using a graph. Some pupils will begin to understand the difference between linear and quadratic graphs and the key features of each.	their reasoning skills in in analysis the data from graphs, draw conclusion and justify them. Pupils will also further develop their understanding of averages and how averages can be used for groups of data to effectively draw conclusions from data.
NC/Qualification Objectives	• N3 • N4 • N5 • N8 • N13 • G3 • G9 • R2	• P1 • P2 • P4 • A1 • A2 • A4 • A5 • N3	• N9 • R5 • R6 • R7 • R10	• A14 • A15 • G11 • G12 • N10 • N11 • R8	• A7 • A9 • A11 • A12 • R4 • G1 • G2 • G7	• P3 • P4 • S1 • S2 • S3
Enrichment/ Experiences	- Silverstone Museum – Compound measures, SDT. Links with Science & STEM workshops. - Nature Reserve– estimating distances, collecting data, Understanding directions & bearings					

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Curriculum End Point / Goal	Over the course of Year 8, pupils will have been recalling and developing their mathematical fluency, reasoning and problem solving skills from year 7. Pupils will have demonstrated their knowledge of the number system, recalling place value for large and small number before understanding and applying standard form. Pupils will have secured their knowledge of basic Geometry, and began to develop their understanding of directions and bearing