

KS3 SOL (YEAR 7 AND YEAR 8)

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place Value - Understand the value of digits in decimals, measure and integers. Properties of numbers; Factors, multiples, squares and cubes. - Understand multiples - Understand integer exponents and roots - Understand and use the unique prime factorisation of a number Arithmetic procedures with integers and decimals - Understand and use the structures that underpin addition and subtraction strategies - Understand and use the structures that underpin multiplication and division strategies - Use the laws and conventions of arithmetic to calculate efficiently. Expressions and Equations - Understand and use the conventions and vocabulary of algebra including forming and interpreting algebraic expressions and equations - Simplify algebraic expressions by collecting like terms to maintain equivalence - Manipulate algebraic expressions using the distributive law to maintain equivalence	Estimation and rounding - Round numbers to a required number of decimal places - Round numbers to a required number of significant figures - Calculate by estimations and rounding Sequence - Understand the features of a sequence - Recognise and describe arithmetic sequences Graphical Representations of linear relationships - Connect coordinates, equations and graphs - Explore linear relationships Solving linear equations - Understand what is meant by finding a solution to a linear equation with one unknown - Solve a linear equation with a single unknown on one side where obtaining the solution requires one step - Solve a linear equation with a single unknown where obtaining the solution requires two or more steps (no brackets) - Solve efficiently a linear equation with a single unknown involving brackets	Plotting Coordinates - Connect coordinates, equations and graphs Perimeter and Area - Understand the concept of perimeter and use it in a range of problem-solving situations - Understand the concept of area and use it in a range of problem-solving situations Arithmetic procedures including fractions - Work interchangeably with terminating decimals and their corresponding fractions - Compare and order positive and negative integers, decimals and fractions - Know, understand and use fluently a range of calculation strategies for multiplication and division of fractions	Understanding multiplicative relationships: percentages and proportionality - Understand that multiplicative relationships can be represented in a number of ways and connect and move between those different relationships - Understand that percentages are an example of a multiplicative relationship and apply this understanding to a range of contexts - Understand proportionality Statistical representations. Measures and analysis - Understand and calculate accurate measures of central tendency and spread - Construct accurately statistical representations - Interpret reasonably statistical measures and representations - Choose appropriately statistical measures and representations.	Understanding Multiplicative relationships: Fractions and ratio - Understand the concept of multiplicative relationships - Understand that multiplicative relationships can be represented in a number of ways and connect and move between those different representations - Understand that fractions are an example of multiplicative relationship and apply this understanding to a range of contexts - Understand that ratios are an example of a multiplicative relationship and apply this understanding to a range of contexts Transformations - Understand and use translations - Understand and use rotations - Understand and use reflections - Understand and use enlargements	Perimeter, Area and Volume - Understand the concept of perimeter and use it in a range of problem-solving situations - Understand the concept of area and use it in a range of problem-solving situations - Understand the concept of volume and use it in a range of problem-solving situations Geometrical measures and construction - Understand and use angle properties - Use the relationships among pairs of angles that are vertical angles, adjacent angles, supplementary angles, and complementary angles to determine the measure of unknown angles. - Use the properties of circle in constructions - Use the properties of a rhombus in constructions

KS3 SOL (YEAR 9)

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Geometrical properties: Similarity and Pythagoras' theorem - Understand and use similarity and congruence - Verify the Pythagorean Theorem, using diagrams, concrete materials, and measurement. - Determine whether a triangle is a right triangle given the measures of its three sides. - Determine the measure of a side of a right triangle, given the measures of the other two sides. - Solve practical problems involving right triangles by using the Pythagorean Theorem. Probability - Explore, describe and analyse the frequency of outcome in a range of situations - Systematically record outcomes to find theoretical probabilities - Calculate and use probabilities of single and combined events - determine the theoretical and experimental probabilities of an event; and - investigate and describe the difference between the experimental probability and theoretical probability of an event.	Statistics - Represent data in a circle graph; - Make observations and inferences about data represented in a circle graph - Compare circle graphs with the same data represented in bar graphs, pictographs, and line plots. - Represent data and make observations and inferences about data represented in a histogram - Compare histograms with the same data represented in stem and leaf plots and pie charts - Represent data in scatterplots - Make observations about data represented in scatterplots; and - Use a drawing to estimate the line of best fit for data represented in a scatterplot.	Expressions, Equations, and Inequalities - Translate between algebraic and verbal expressions. - Evaluate algebraic expressions for given replacement values of the variables. - Solve two-step linear equations in one variable, including practical problems that require the solution of a two-step linear equation in one variable. - Solve one- and two-step linear inequalities in one variable, including practical problems, involving addition, subtraction, multiplication, and division, and graph the solution on a number line	Expression and formula - Find products of binomials - Rearrange formula to change the subject Trigonometry - Understand the trigonometric functions - Properties of special right triangles; and - Trigonometric ratios. - Use trigonometry to solve problems in a range of contexts	Standard form - Interpret and compare numbers in standard form - Recognize powers of 10 with negative exponents by examining patterns. - Represent a power of 10 with a negative exponent in fraction and decimal form. - Convert between numbers greater than 0 written in scientific notation and decimals. - Compare and order no more than four numbers greater than 0 written in scientific notation. - Compare and order no more than four rational numbers expressed as integers, fractions (proper or improper), mixed numbers, decimals, and per cents.	Graphical representations - Determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line; - Write the equation of a line when given the graph of the line; and - Graph linear equations in two variables. - Represent the solution of linear inequalities in two variables graphically; - Solve practical problems involving inequalities; and - Represent the solution to a system of inequalities graphically.