Year 11: Module 17: Statistics 2

Support (Prior knowledge from year 10)	Core	Extension
- I can obtain a random sample from a population. - I understand the data handling cycle. - I can collect unbiased and reliable data for a sample. - I can calculate the mean, median, mode and range from small data sets and frequency tables.	- I can draw and interpret pie charts. - I understand what is meant by a random sample and how samples can be biased. - I can construct and interpret two-way tables - I can draw, interpret and use scatter diagrams - I can draw and use a line of best fit. - I can identify the modal group - I can calculate an estimate of the mean from a grouped table. - I can estimate the interval that contains the median from a grouped table.	- I can compare sets of data - I can construct frequency polygons for grouped data.

Year 11: Module 18: Constructions and Loci

Support (Prior knowledge from year 10)	Core	Extension
• I can measure and draw lines to the nearest mm • I can measure and draw angles to the nearest degree • I can make accurate drawings of triangles and other 2D shapes using a ruler and a protractor • I can draw circles or part circles given the radius or diameter • I can use standard units of measure.	• I can construct the bisectors of lines and angles. • I can construct an angle of 60° • I can construct and interpret plans and elevations of 3D shapes. • I can convert measurements to calculate actual distances. • I can construct a region, for example, bounded by a circle and an intersecting line • I can draw a locus for a given rule. • I can use and interpret maps and scale drawings • I can construct scale drawings • I can use scale to estimate a length, for example use the height of a man to estimate the height of a building where both are shown in a scale drawing	• I can solve practical problems using loci. • I can describe regions satisfying several conditions. • I can construct a hexagon using a compass and a ruler.

Year 11: Module 19: Curved shapes and Pyramids

Support (Prior knowledge from year 10)	Core	Extension
• I can find the area of a triangle. • I can find the area of compound shapes. • I can find the area of compound shapes in worded problems. • I can calculate the area and circumference of a circle. • I can solve worded problems involving the area and circumference of circles. • I can calculate the volume and surface area of prisms. •	• I can calculate the length of an arc • I can calculate the area and angle of a sector. • I can solve functional problems involving arc lengths and sectors of circles. • I can calculate the volume and surface area of cylinders • I can calculate the volume and surface area of a pyramid.	• I can calculate the volume and surface area of a cone. • I can calculate the volume and surface area of a sphere. • I can calculate the volume and surface area of a hemisphere. • I can find the volume and surface area of composite solids. • I can solve worded problems involving volume and surface area.

Year 11: Module 20: Numbers and Sequences

Support (Prior knowledge from year 10)	Core	Extension
• I can recognise patterns in number sequences. • I can recognise how number sequences are built up • I can find the nth term of a linear sequence. • I can generate sequences, given the nth term.	• I can recognise and continue some special number sequences e.g. square, cube and triangular numbers. • I can recognise and continue Fibonacci type sequences • I can understand how prime, odd and even numbers interact in addition, subtraction and multiplication problems. • I can find the nth term from practical problems involving sequences.	• I understand the difference between arithmetic and geometric sequences • I understand what is meant by a quadratic sequence • I can generate a quadratic sequence • I can generate sequences derived from diagrams and complete a table of results that describes the pattern shown by the diagrams •

Year 11: Module 21: Right-Angled Triangles

Support (Prior knowledge from year 10)	Core	Extension
- I know what Pythagoras' theorem is - I can calculate the length of the hypotenuse in a right-angled triangle. - I can calculate the length of a shorter side in a right-angled triangle.	- I can solve practical problems using Pythagoras' theorem. - I can use Pythagoras' theorem in isosceles triangles. - I can define, understand and use the three trigonometric ratios. - I can use trigonometric ratios to calculate a length in a right-angled triangle. - I can use the trigonometric ratios to calculate an angle. - I can solve practical problems using trigonometry	- I can work out and remember trigonometric values for angles of 30°, 45°, 60° and 90°. - I can solve problems using an angle of elevation or an angle of depression. - I can solve bearing problems using trigonometry. - I can use trigonometry to solve problems involving isosceles triangles. - I can solve Pythagoras and Trigonometric problems in 3D.

Year 11: Module 22: Congruence and Similarity (

Support (Prior knowledge from year 10)	Core	Extension
I can enlarge shapes using a scale factor	- I can recognise similarity in any two shapes - I can show that two shapes are similar - I can work out the scale factor between similar shapes. - I can find the missing lengths of similar shapes - I can justify whether two triangles are congruent.	- I can solve problems involving the area and volume of similar shapes. - I understand and use conditions for congruent triangles: SSS, SAS, ASA and RHS

Year 11: Module 23: Combined Events

Support (Prior knowledge from year 10)	Core	Extension
▪ I can calculate simple probabilities ▪ I understand what is meant by relative frequency. ▪ I know how to calculate expected probabilities. ▪ work out the probability of different outcomes of combined events. ▪ I can read two-way tables and stem and leaf diagrams and I can use them to work out probabilities.	▪ I can work out the probabilities when two or more events occur at the same time. ▪ I can construct and use sample space diagrams. ▪ I can use Venn diagrams to record outcomes and calculate probabilities of events. ▪ I can interpret and draw frequency tree diagrams* and probability tree diagrams. ▪ I can use tree diagrams to work out the probability of independent events. ▪ I can use the connectors 'and' and 'or' to work out the probabilities for combined events.	▪ I understand what is meant by conditional probability ▪ I can work out the probability of combined events when the probabilities change after each event. ▪ I can use Venn diagrams and tree diagrams to solve conditional probability questions. ▪ I can use tree diagrams to work out the probability of independent events. ▪ I can solve worded probability problems without diagrams by constructing my own.

Year 11: Module 24: Powers and Standard Form

Support (Prior knowledge from year 10)	Core	Extension
▪ I can write a number as a power of another number ▪ I can use powers (also known as indices) ▪ I can multiply and divide by powers of 10. ▪ I can recognise rational numbers, reciprocals, terminating decimals and recurring decimals. ▪ I can find reciprocals of numbers or fractions. ▪ I can estimate powers and roots of any given positive number. ▪	▪ I can use the index rules for multiplying and dividing powers. ▪ I can ▪ I can multiply and divide numbers by powers of 10. ▪ I can write numbers in standard form and covert between ordinary numbers and numbers in standard form ▪ I can calculate with numbers in standard form. ▪ I know how to enter standard form on a calculator and perform calculations.	▪ I can solve worded standard form problems ▪ I can simplify negative indices. ▪ I can simplify fractional indices

Year 11: Module 25: Simultaneous Equations & Linear Inequalities

Support (Prior knowledge from year 10)	Core	Extension
- I can solve simple linear equations where the unknown appears on one side. - I can solve equations in which the variable (the letter) appears as part of the numerator of a fraction. - I can solve equations where you have to expand brackets first - I can solve equations where the variable appears on both sides of the equals sign.	- I can solve simultaneous linear equations in two variables using the elimination method. - I can solve simultaneous linear equations in two variables using the substitution method. - I can solve problems using simultaneous linear equations. - I can set up equations from given information and then solve them. - I can solve a simple linear inequality and represent it on a number line. - I can use systematic trial and improvement to find approximate solutions of equations where there is no simple analytical method	- I can rearrange equations - I can solve problems using simultaneous linear equations. - I can show a graphical inequality. - I can find regions that satisfy more than one graphical inequality.

Year 11: Module 26: Non-linear Graphs

Support (Prior knowledge from year 10)	Core	Extension
▪ I can interpret distance–time graphs ▪ I can plot and interpret real-life graphs ▪ I can draw a graph of the depth of liquid as a container is filled. ▪ I can plot straight line graphs ▪ I can calculate the gradient of a line segment. ▪ I understand what is meant by 'rates of change' ▪	▪ I can draw and read values from quadratic graphs. ▪ I can draw graphs to identify and interpret roots, intercepts and turning points of quadratic functions. ▪ I can identify the roots of a quadratic function by solving a quadratic equation. ▪ I can solve a quadratic equation by finding approximate solutions using a graph ▪ I can solve a quadratic equation by factorisation. ▪	▪ I can identify the turning point of a quadratic function. ▪ I can recognise, plot and interpret cubic and reciprocal graphs.