



Year 10: Module 13: Linear equations and Inequalities

Support (Prior knowledge from KS3)	Core	Extension
<ul style="list-style-type: none"> ▪ 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 	<ul style="list-style-type: none"> ▪ I can solve equations where the variable appears on both sides of the equals sign. ▪ I can set up equations from given information and then solve them. ▪ 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 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 ▪ 	<ul style="list-style-type: none"> ▪ 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 10: Module 14: Accuracy, Powers and Surds

Support (Prior knowledge from KS3)	Core	Extension
<ul style="list-style-type: none"> ▪ 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 write any number as the product of its prime factors ▪ I can find the HCF and LCM of a pair of numbers ▪ I can solve worded HCF and LCM questions and involving algebra. 	<ul style="list-style-type: none"> ▪ I can convert terminal decimals to fractions. ▪ I can convert fractions to recurring decimals. ▪ I can apply the rules of powers to negative and fractional powers. ▪ I can find and use the relationship between negative powers and roots. ▪ I can simplify surds. ▪ I can calculate and manipulate surds ▪ I can find the error interval or limits of accuracy of numbers that have been rounded to different degrees of accuracy. ▪ 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 	<ul style="list-style-type: none"> ▪ I can expand double brackets containing surds ▪ I can rationalise denominators ▪ I can combine limits of two or more variables together to solve problems. ▪ I can work out the number of choices, arrangements or outcomes when choosing from lists or sets.



Year 10: Module 15: Quadratic Equations

Support (Prior knowledge from KS3)	Core	Extension
<ul style="list-style-type: none"> ▪ I can solve linear equations. ▪ I can substitute into expressions. ▪ I can expand and factorise double brackets. ▪ I can rearrange equations ▪ I can draw and read values from quadratic graphs. ▪ I can solve linear simultaneous equations. ▪ I can plot linear graphs. 	<ul style="list-style-type: none"> ▪ I can solve a quadratic equation by factorisation. ▪ I can rearrange a quadratic equation so that it can be factorised. ▪ I can solve a quadratic equation by using the quadratic formula. ▪ I can recognise why some quadratic equations cannot be solved. ▪ I can solve a quadratic equation by completing the square. ▪ I can solve equations by the method of intersecting graphs. ▪ I can solve a pair of simultaneous equations where one is linear and one is non-linear, using graphs. 	<ul style="list-style-type: none"> ▪ I can identify the significant points of a quadratic function graphically.* ▪ I can identify the roots of a quadratic function by solving a quadratic equation. ▪ I can identify the turning point of a quadratic function by using symmetry or completing the square.* ▪ I can solve simultaneous equations where one equation is linear and the other is non-linear. ▪ I can solve quadratic inequalities.*



Year 10: Module 16: Sampling and more complex diagrams

Support (Prior knowledge from KS3)	Core	Extension
<ul style="list-style-type: none"> I understand the data handling cycle. I understand what is meant by sampling. I can collect unbiased reliable data for a sample. I can draw and interpret bar charts. I can calculate the mean, median, mode and range of a set of data. 	<ul style="list-style-type: none"> I understand what is meant by a random sample. I know how to calculate a stratified sample I understand the pros and cons of different sampling methods. I can explain why there may be bias in a given sample. I can draw and interpret frequency polygons. I can draw and interpret cumulative frequency graphs. 	<ul style="list-style-type: none"> I can draw and interpret histograms where the bars are of equal width. I can draw and interpret histograms where the bars are of unequal width. I can calculate the median, quartiles and interquartile range from a histogram. I can compare and contrast box plots in context. I can compare sets of data in context.

Year 10: Module 17: Combined Events

Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> 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 work out probabilities from diagrams such as two-way tables and stem and leaf diagrams 	<ul style="list-style-type: none"> I can work out the probability of two outcomes or events occurring at the same time. I can interpret and draw frequency tree diagrams* and probability tree diagrams. I can use tree diagrams to work out the probability of combined events. I can use the connectors 'and' and 'or' to work out the probabilities for combined events. 	<ul style="list-style-type: none"> 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.



Year 10: Module 18: Properties of Circles

Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> ▪ I can find missing angles in triangles ▪ I can find missing angles in quadrilaterals ▪ I can find missing angles in parallel lines. ▪ I can work out the size of angles in circles. 	<ul style="list-style-type: none"> ▪ I can find the size of angles in cyclic quadrilaterals. ▪ I can use tangents and chords to find the size of angles in circles. ▪ I can use the alternate segment theorem to find the size of angles in circles. 	<ul style="list-style-type: none"> ▪ I can prove the circle theorems. ▪ I can find the equation of a tangent to a circle at a given point*, by: <ul style="list-style-type: none"> ▪ finding the gradient of the radius that meets the circle at that point (circles all centre the origin); ▪ finding the gradient of the tangent perpendicular to it; ▪ using the given point; ▪ I can recognise and construct the graph of a circle using $x^2 + y^2 = r^2$ for radius r centred at the origin of coordinates. ▪



Year 10: Module 19: Proportionality		
Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> I can solve problems using ratio and proportion I can substitute into expressions. I can rearrange equations. I understand what is meant by direct proportion. 	<ul style="list-style-type: none"> I can solve problems where two variables have a directly proportional relationship. I can work out the constant of proportionality when variables are directly proportional. I can solve problems where two variables have an inversely proportional relationship. I can work out the constant of proportionality when variables are inversely proportional. I can describe direct and inverse proportion relationships using an equation. 	<ul style="list-style-type: none"> I can recognise graphs showing direct and inverse proportion and interpret the gradient of the straight line. I can solve direct and inverse proportion problems in context.

Year 10: Module 20: Further Pythagoras and Trigonometry		
Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> I can use Pythagoras to find missing sides of a triangle I can use SOH CAH TOA to find missing angles and sides in right-angled triangles I can solve worded Pythagoras and Trigonometric problems. 	<ul style="list-style-type: none"> I can use trigonometric ratios and Pythagoras' theorem to solve more complex two-dimensional problems. I can use trigonometric ratios and Pythagoras' theorem to solve more complex three-dimensional problems. I can sketch the graphs of sin, cos and tan. 	<ul style="list-style-type: none"> I can find the sine, cosine and tangent of any angle from 0° to 360°* I can work out and remember trigonometric values for angles of 30°, 45°, 60° and 90°.* I can use the sine rule and the cosine rule to find sides and angles in any triangle. I can work out the area of a triangle if you know two sides and the included angle.



Year 10: Module 21: Further Graphs (3 weeks)

Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> ▪ 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 and interpret linear and quadratic graphs. ▪ I can calculate the gradient of a line segment. 	<ul style="list-style-type: none"> ▪ I can read information from a velocity-time graph and use it to work out the distance travelled. ▪ I can work out the acceleration from a velocity-time graph. ▪ I can recognise and plot cubic, exponential and reciprocal graphs. ▪ I can use cubic and reciprocal graphs to find solutions to equations. ▪ I can transform the graph of any function $f(x)$ including: $f(x) + a$, $f(x + b)$, $-f(x)$ and $f(-x)$ where a and b are integers ▪ I can recognise transformations of functions and be able to write down the function of a transformation given the original function. 	<ul style="list-style-type: none"> ▪ I understand what is meant by 'rates of change' ▪ I can use areas of rectangles, triangles and trapeziums to estimate the area under a curve.* ▪ I can interpret the meaning of the area under a curve.* ▪ I can draw a tangent at a point on a curve and use it to work out the gradient at a point on a curve.* ▪ I can interpret the gradient at a point on a curve.* ▪ I can carry out transformations of the graph $y = f(x)$



Year 10: Module 22: Algebraic Fractions and Functions

Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> ▪ I can carry out the four operations with fractions. ▪ I can solve linear equations. ▪ I can solve quadratic equations. ▪ I can solve simultaneous equations ▪ I can simplify fractions. 	<ul style="list-style-type: none"> ▪ I can simplify algebraic fractions ▪ I can solve equations containing algebraic fractions. ▪ I can change the subject of a formula where the subject occurs more than once. ▪ I can find an approximate solution for an equation using the process of iteration. ▪ I can solve algebraic fractions that involve solving quadratic equations. 	<ul style="list-style-type: none"> ▪ I understand what is meant by a function and understand function notation. ▪ I can find the output of a function.* ▪ I can find the inverse function.* ▪ I can find the composite of two functions.

Year 10: Module 23: Vector Geometry

Support (Prior knowledge from year 10)	Core	Extension
<ul style="list-style-type: none"> ▪ I can understand and use vector notation for translations ▪ I can use column vector notation to describe a translation in 2D. 	<ul style="list-style-type: none"> ▪ I can understand and use vector notation ▪ I can calculate and represent graphically the sum of two vectors, the difference of two vectors and a scalar multiple of a vector ▪ I can calculate the resultant of two vectors ▪ I can understand and use the commutative and associative properties of vector addition. ▪ I can solve simple geometrical problems in 2D using vector methods ▪ 	<ul style="list-style-type: none"> ▪ I can apply vector methods for simple geometric proofs ▪ I can recognise when lines are parallel using vectors ▪ I can recognise when three or more points are co-linear using vectors ▪ I can use vectors to show three or more points are collinear. ▪ I can solve and prove more difficult geometric problems using vectors

Curriculum Overview Year 10 - Higher

