


KS4 Mathematics Curriculum Coverage: 2025-26

Year 10F Summer Term 							
Sequenced	Interpret and represent data	Non-linear graphs	Angles	Statistics: graphs and diagrams	Vectors	Factors and powers	Pythagoras and trigonometry
Key Knowledge	<p>To know:</p> <ul style="list-style-type: none">there are three mathematical averages (mean, median and mode)the range is a measure of spreadlarge data sets can be represented in frequency tableshow to calculate the median (in class intervals)the meaning of bias	<p>To know:</p> <ul style="list-style-type: none">how to substitute values into an expressionplot coordinates in four quadrantsthat $x \times x = x^2$ and $x \times x \times x = x^3$that the points plotted to form a quadratic or cubic graph should be joined with a smooth curve	<p>To know:</p> <ul style="list-style-type: none">angles around a point sum to 360°angles on a straight line sum to 180°vertically opposite angles are equalangles in a triangle sum to 180° and in a quadrilateral to 360°the difference between interior and exterior angles of polygonsthat sum of the interior angles of polygons increases as the number of sides increasesthe sum of the exterior angles of a polygon is 360°the angle facts involving parallel lines (alternate, corresponding, co-interior)	<p>To know:</p> <ul style="list-style-type: none">how to measure anglesthat the angles around a point sum to 360°how to draw a number line with equal intervalsthe difference between discrete and continuous datahow to find the midpoint of a class interval (the midpoint of $0 \leq t < 5$ is 2.5)how to read from a scalehow to calculate averages (mean, median, mode) and the range	<p>To know:</p> <ul style="list-style-type: none">that vectors have magnitude and directionthat vectors can be represented by diagrams or by numbers in a column vectorhow to calculate with directed numbersthat to translate a point is to move it to a different position on a grid	<p>To know:</p> <ul style="list-style-type: none">the difference between the factors of a number and the multiples of a numberthat a prime number has exactly two factorsany number can be expressed as a product of prime factorsthe meaning of HCF and LCMthat when a number is multiplied by itself it results in a square numberthat when a number is multiplied by itself and then again, it results in a cube numberthe root symbol and its meaningthat negative indices represent the reciprocal of a numberwhat is meant by irrational numbers and surdshow to expand brackets	<p>To know:</p> <ul style="list-style-type: none">a right-angled triangle has one 90° anglethe longest side on a right-angled triangle is opposite the right angle and is called the hypotenusethe three trigonometric ratios: sine, cosine, tangenthow to use the trig functions on a calculatorthe exact trig values for 0°, 30°, 45°, 60° and 90°how to solve one step equations
Key Skills	<p>To be able to:</p> <ul style="list-style-type: none">calculate averages (mean, median, mode) and the rangecalculate averages from an ungrouped frequency tablecalculate averages from a grouped frequency tableuse data to compare distributionsrecognise different types of datarecognise and use different sampling methodsuse the capture and recapture method to calculate population and sample sizesplot interpret scatter graphs and understand correlation	<p>To be able to:</p> <ul style="list-style-type: none">recognise and plot quadratic graphs using a table of valuesrecognise and plot cubic graphs using a table of valuesapproximate solutions to equations using graphsidentify the intercepts and roots of quadratic graphsgive the coordinates of the turning point	<p>To be able to:</p> <ul style="list-style-type: none">use angle facts (angles around a point, angles on a straight line, vertically opposite angles) to calculate the size of missing anglescalculate the size of angles in a trianglecalculate angles in a quadrilateralcalculate interior and exterior angles of polygonssolve problems involving angles in polygonscalculate alternate, corresponding and co-interior angles in parallel linesexplain why an angle is a certain size using the correct mathematical termsprove geometric facts	<p>To be able to:</p> <ul style="list-style-type: none">draw and interpret pictogramsdraw and interpret line and bar chartsdraw and interpret dual and composite bar chartsdraw and interpret pie chartsdraw and interpret time series graphsdraw and interpret frequency polygonsdraw and interpret stem and leaf diagrams	<p>To be able to:</p> <ul style="list-style-type: none">understand and represent vectorsuse vector notationtranslate by a column vectormultiply a vector by a scalaradd vectorssubtract vectorssolve problems with vectors	<p>To be able to:</p> <ul style="list-style-type: none">recognise factors, multiples and primesexpress a number as a product of prime factorsfind the HCF and LCM of two or more numbersrecognise and generate square and cube numbersfind powers and rootsfind the value of numbers with negative indicesrecognise irrational numbers and surdssimplify expressions with surdsexpand brackets with surds	<p>To be able to:</p> <ul style="list-style-type: none">identify the hypotenuse on a right-angled triangleuse Pythagoras' theorem to calculate the hypotenuseus Pythagoras' theorem to calculate any sidecalculate with squares and square rootsexplore the ratios in right angled triangles (by scale drawing and measuring)use the tangent, sine and cosine ratios to calculate unknown side lengthsuse the tangent, sine and cosine ratios to calculate unknown anglesdiscover and apply exact trigonometric values without a calculator
Subject specific vocabulary	average, mean, median, mode, range, frequency, grouped data, ungrouped data, class interval, sample, population, correlation, scatter graph, consistent	plot, graph, coordinates, quadratic, cubic, intercept, root, turning point, substitute	angle, turn, parallel, corresponding, alternate, co-interior, vertically opposite, interior, exterior, polygon, triangle, quadrilateral	pictogram, bar chart, dual, composite, pie chart, frequency, frequency polygon, stem and leaf, key, class interval, discrete data, continuous data, mean, median, mode, range	vector, column vector, scalar, magnitude, direction, translate	factor, multiple, prime, square number, cube number, HCF, LCM, indices, powers, roots, simplify, expression, expand, bracket, irrational number, rational number, surd	right-angled triangle, hypotenuse, opposite, adjacent, sine, cosine, tangent, Pythagoras' theorem, square, square root, sum, exact value