Le Rocquier Mathematics: Y9 Criteria-Led Progression Grid

Le Rocquier School
Learn, Respect and Succeed

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Excelling	• Identify any transformation giving all required information (e.g., centre of rotation, centre of enlargement, mirror line). • Can complete questions that combine two, or more, different transformations upon the same pre-image.	• Can use the formula for: speed, distance, and time with or without the need for rearrangement and can combine this with metric conversions (e.g., m/s to Km/h). • Use of the inverse to work out the principal amount from given percentages in both simple and compound interest problems.	• Can find missing values when given any average including when working with grouped and ungrouped frequency tables. • Solving probability problems across concepts, including algebraic equations.	• Use of the formula y = mx + c to discern if certain coordinates fall on a line. • Able to plot and read quadratic graphs.	• Combines the skills of constructing perpendicular bisectors and angle bisectors to construct different angles without a protractor. • Uses Pythagoras' Theorem and Trigonometry to find the length of any side on a triangle, or any angle in it, within contexts (i.e., bearings).	• Through plotting and reading quadratic graphs, can solve quadratic equations graphically.
Secure	• Can work with algebraic vector notation including adding, subtracting, and scaling vectors. • Can reflect shapes in horizontal, vertical, or diagonal mirror lines whether the pre-image is touching the mirror line or not. • Rotate a shape the correct number of degrees, in the correct direction about a point on, or away from, the pre-image. • Enlargement of a shape by a given scale factor from a point on, or away from, the pre-image. • Can work with both positive and negative scale factors for enlargement.	• Can complete two-step conversions (i.e., cm to Km). • Can add, subtract, multiply, and divide numbers in standard form. • Can use the formula for: speed, distance and time with information drawn from distance and time graphs. • Use of the inverse to work out the principal amount from given percentages in both simple interest problems.	• Can find missing values when given any average. • Uses and understands probability trees for replacement and non-replacement problems.	• Solve equations with unknowns on both sides including equations with negative or decimal answers. • Find the gradient and y-intercept of linear graphs on blank grids, combining both in the form y = mx + c. • Recognition of a parabola as a graph of a quadratic equation. • Factorising quadratic brackets fluently regardless of the operations in the equation. • Solving simultaneous equations where one or more equation(s) needs to be altered.	• Uses Pythagoras' Theorem to find the length of any side on a triangle within problem solving contexts. • Using Trigonometry to find unknown angles. • Can select between Pythagoras' Theorem and Trigonometry to solve problems involving right-angled triangles.	• Can state values of x and y that would satisfy multiple inequalities based on their shared region. • Finds the region that satisfies multiple graphical inequalities with, or without, grid lines. • Solves simultaneous equations graphically.
Developing	• Describe translations using vector notation. • Can translate from instructions given in words or in vector notation. • Plot and identify lines parallel to the axis within contexts, including reflection. • Can reflect shapes in horizontal and vertical mirror lines whether the pre-image is touching the mirror line or not. • Can identify a mirror line following a reflection, including diagonal mirror lines. • Able to identify line and rotational symmetry. • Rotate a shape the correct number of degrees, in the correct direction about a point on the pre-image. • Enlargement of a shape by a given scale factor from a point on the pre-image.	• Confidently converts between mm, cm, m, Km, g, Kg, ml, and L. • Writes numbers in standard form. • Can multiply and divide numbers in standard form. • Can use the formula for: speed, distance, and time with or without the need for rearrangement. • Read and interpret distance and time graphs. • Use of direct proportion to solve multi-step problems including currency/exchange rate conversions. • Able to read and interpret problems involving inverse proportion. • Calculate compound interest on amounts.	• Given the median, find missing values. • Given the mean, find missing values. • Draw and interpret line graphs. • Draw and interpret scatter graphs. • Use of a line of best fit to predict other results on scatter graphs. • Calculates relative frequency and can explain convergence. • Uses and understands probability trees for replacement problems.	• Solve equations with unknowns on both sides with positive, integer answers. • Plot linear graphs. • Can identify parallel linear graphs. • Find the gradient and y-intercept of linear graphs on grid paper, combining both in the form y = mx + c. • Expanding and factorising from/into a single bracket. • Expanding quadratic brackets. • Factorising quadratic brackets. • Solving simultaneous equations where neither equation needs to be altered.	• Substitution to find the area of circles and semi-circles, giving the answer in terms of pi or as a rounded decimal. • Constructing perpendicular bisectors. • Constructing angle bisectors. • Uses Pythagoras' Theorem to find the length of any side on a triangle. • Using Trigonometry to find missing side lengths.	• Solving three-part/compound inequalities. • Solving more complex inequalities (e.g., inequalities with unknowns on both sides, inequalities with brackets). • Plot diagonal linear graphs of inequalities, shading appropriately. • Finds the region that satisfies multiple graphical inequalities with grid lines.
Foundation	• Read coordinates in all four quadrants. • Plot coordinates in all four quadrants. • Describe translations in words. • Can translate from instructions given in words. • Plot and identify lines parallel to the axis. • Can reflect shapes in horizontal or vertical mirror lines when the pre-image is touching the mirror line. • Able to identify lines of symmetry. • Rotate a shape the correct number of degrees, in the correct direction. • Enlargement of a pre-image by a given scale factor.	• Remembers the metric conversions for mm, cm, m, km, g, Kg, ml, and L. • Positive and negative powers of ten. • Use of the formula for: speed, distance, and time without the need for rearrangement. • Use of direct proportion to solve simple problems including basic currency/exchange rate conversions. • Calculate simple interest on amounts.	• Can tell the difference between discrete and continuous data. • Drawing and interpreting tally charts, pictograms, and bar charts. • Find and interpret the range, mode, median and mean. • Given the range, find missing values. • Given the mode, find missing values. • Can identify positive and negative correlation and plot a line of best fit on scatter graphs. • Identify the mode and range from ungrouped frequency tables. • Identify the modal class from grouped frequency tables. • Expresses possibilities as fractions.	• Solving one-step equations. • Solving simple two-step equations. • Finding the output from a function machine. • Finding the input from a function machine, given the output. • Continuing a linear sequence from a simple algebraic rule. • Expanding single brackets. • Understand that linear graphs must be straight an attempt plotting, with most points correct. • Find the y-intercept of linear graphs.	• Area of rectangles (including squares), parallelograms and triangles. • Substitution to find the area of trapeziums. • Substitution to find the area of circles in terms of pi. • Calculating missing angles on a straight line, around a point and within a triangle. • Calculate missing angles within common quadrilaterals. • Able to identify and use alternate, corresponding and co-interior angles. • Constructing perpendicular lines. • Remembers the formula for Pythagoras' theorem. • Identify adjacent, hypotenuse and opposite sides on a triangle.	• Understand the meaning of <, >, ≤, ≥ and understands how to draw and shade these for each symbol graphically. • Find the y-intercept of linear graphs. • Solving simple one and two-step inequalities. • Representing inequalities on number lines. • Plot and identify lines of inequality parallel to the axis, shading appropriately.