Curriculum Area: Year 9 Maths

2017/2018

Topics	Year Curriculum	How you can support learning at home, eg. books, websites, family learning through visits
Direct & inverse proportion **You can…** • Understand the meaning of direct and inverse proportion. • Use graphical and algebraic representations to solve direct and inverse proportion problems to find missing values. **Sequences: nth term** **You can…** • Calculate the nth term of a sequence. **Linear graphs** **You can…** • Use coordinates in all 4 quadrants. • Plot simple straight-line graphs. • Recognise the equations of straight lines parallel to the axes. • Draw straight lines parallel to the axes. • Work out the equation of a straight line from a graph. • Given the equation of straight line, identify a match from a list of other equations that have been rearranged.	AP1	Complete homework tasks on Hegarty Maths. Use the Corbett Maths website for extra practice.
Inequalities **You can…** • Solve 'single' and 'double' inequalities.	AP2	Complete homework tasks on Hegarty Maths. Use the Corbett Maths website for extra practice.

• Represent a 'single' and 'double' inequality on a number line. • Give possible values satisfying a 'double' inequality. **Quadratic graphs** **You can…** • Recognise, sketch and produce graphs of quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane. e.g. draw graph of given quadratic function: y = x2+2x +3 • Solve simple quadratic equations by drawing a graph e.g. working out roots from a quadratic graph. • Use quadratic graphs to estimate values of y for given values of x and vice versa. **Algebraic fractions** **You can…** • Simplify a range of algebraic fractions from: • Single terms numerator and denominator; • Quadratic expressions numerator and denominator. • Cross-cancels before multiplying or dividing (algebraic) fractions. • Solve equations with a single algebraic fraction. • Solve equations involving addition or subtraction of two algebraic fractions (denominators as numbers to keep it linear).		
Construction & loci **You can…** • Derive and use the standard ruler and compass constructions: o Perpendicular bisector of a line segment. o Constructing a perpendicular to a given line from/at a given point. o Bisecting a given angle; • Recognise and use the perpendicular distance from a point to a line as the shortest distance to the line.	AP3	Complete homework tasks on Hegarty Maths. Use the Corbett Maths website for extra practice.

Bearings **You can…** • Interpret maps, scale drawings and use of bearings. **Similar shapes** **You can…** • Use known results to obtain simple proofs. • Use Pythagoras' Theorem in similar triangles to solve problems involving right-angled triangles e.g. a. Explain why these two triangles are similar. b. What is the ratio of their sides? c. Use Pythagoras' theorem to calculate the length of side AC of triangle ABC. d. Write down the length of the side PR of triangle PQR.		
Surface area **You can…** • Calculate the surface area of cuboids and prisms. • Calculate the total surface area of the prism. **Simultaneous equations** **You can…** • Solve simultaneous equations using graphical method. **Alternative methods for solving equations** **You can…** • Solve equations by trial and improvements.	AP4	Complete homework tasks on Hegarty Maths. Use the Corbett Maths website for extra practice.
Quadratic equations **You can…** • Solve quadratic equations where x2 coefficient is equal to 1. • Construct and solve an equation from a geometric problem (e.g. area of rectangle).	AP5	Complete homework tasks on Hegarty Maths. Use the Corbett Maths website for extra practice.

Function notation **You can…** • Write functions in the form f(x). • Find input and output using function machines. • Perform simple manipulations of functions, such as inverse of a function. **Venn diagrams & set notation** **You can…** • List possible elements in a set. • Interpret symbols for union, intersect and complement. • Draw and interpret Venn diagrams with 2 sets. • Draw and interpret Venn diagrams with 3 sets.		
Grouped data **You can…** • Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts and vertical line (or bar) charts for ungrouped and grouped numerical data. • Calculate the mean from a grouped frequency table. • Plot cumulative frequency curve. **Scatter graphs** **You can…** • Plot scatter graphs and draw estimated line of best fit. • Describe correlation and make predictions (but know that correlation doesn't mean causation).	AP6	Complete homework tasks on Hegarty Maths. Use the Corbett Maths website for extra practice.