

AWL – Year 9

	Number	Shape Space & Measures	Algebra	Data Handling
Excelling	Recognise and use standard form (inc. substituting and using a calculator) in calculations.	Be able to calculate volumes of frusta. Recognise how to use quadratic equations (etc) to solve problems with surface area and volume of spheres, cones and cylinders.	Be able to solve problems involving quadratics (e.g. areas of gardens, Pythagoras, etc). Be able to find parallel and perpendicular gradients.	Understand the meaning of conditional probability and how to handle questions involving it. Understanding how to answer questions without tree diagrams.
Extending	Understand how to use fractional indices.	Recognise and calculate surface areas and volumes of spheres, cones and cylinders.	Understand how to factorise and solve quadratic equations (x^2 coefficient > 1). Recognise how factorising can be used in cancelling fractions. Be able to solve simultaneous equations where one is linear and one is a circle. Understand how to solve linear simultaneous equations graphically.	Understand how to use Venn Diagrams to calculate probabilities. Recognise how to use the AND and OR rules.
Embedding	Be able to complete reverse percentages questions (finding the original amount). Be able to use trial and improvement to an extra decimal place.	Understand how surds can appear when using Pythagoras' theorem. Understand how to find areas of sectors and lengths of arc.	Understand how to use the difference of two squares to factorise a quadratic. Understand how to solve equations of the form $(x + a)(x + b) = (x + c)(x + d)$. Understand how to form and solve worded simultaneous equation problems. Recognise and find the gradient and y-intercept. Be able to use $y = mx + c$	Understand how to construct cumulative frequency diagrams and box plots. Be able to construct two way tables and use these to calculate probability.
Secure	Use the correct method to find compound interest. Be able to use the laws of indices. Understand how to use trial and improvement to solve equations.	Understand how to use the formula $A = \frac{1}{2}ab\sin C$. Be able to find surface areas and volumes of prisms. Recognise the measurements involved in capacity.	Recognise how to factorise quadratics expressions (x^2 coefficient of 1) and understand how to solve quadratics. Be able to solve linear simultaneous equations algebraically. Understand how to plot straight line graphs.	Understand how to calculate moving averages and use time series data. Be able to find the mean from grouped, ungrouped and raw data. Be able to find the mode and modal class from grouped and ungrouped data.
Developing	Be able to calculate percentage changes.	Be able to recall and use the formulas for areas of shapes and circles; circumference of circle; being able to leave answers in terms of π and estimating.	Understand the meaning of the terms 'equation', 'formula', 'identity' and 'expression'. Be able to find midpoints and lengths of line segments.	Understand how to use tree diagrams (unconditional probability only). Understand how to construct Stem and Leaf diagrams, and use them to find medians, quartiles and the IQR.
Beginning	Understand how to complete percentage increase and decreases to quantities.	For objects be able to draw plans and elevations, isometric representation and nets.	Be able to expand brackets and collect like terms. Understand how to multiply out two brackets. Be able to form and solve linear equations.	Recall basic probability, relative frequency, possibility spaces, expectation, mutually exclusive and independent events, chance of an event not happening. Recall the knowledge of the construction of bar charts, pie charts, frequency polygons, scatter diagrams.

