



Yr9: ASK Yourself!

Subject: Maths
Unit: Whole Year

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
S kills				
	I need to be able to use the skills of TENSILE in maths.	I use TENSILE skills sometimes in maths.	I can use each of the TENSILE skills confidently.	I can expertly use TENSILE and see how each skill helps me learn.
K knowledge				
Pythagoras	I know what a square number is.	I can find the square root of a number with and without a calculator.	I can confidently solve problems using 2D Pythagoras.	I can confidently use 3D Pythagoras and SOHCAHTOA to solve problems.
Angles and Parallel lines	I can draw, estimate and measure angles accurately.	I can confidently calculate the sum of interior angles in a polygon, exterior and interior angles of regular polygons.	I can confidently use the polygon and parallel lines angle rules to solve problems.	I can use a formal proof to show the sum of angles in a triangle and quadrilateral.
Sketching Graphs	I can confidently plot a linear line by completing a table of results.	I can confidently use $y=mx+c$ to plot and describe a graph. I can use graphs to solve problems.	I can plot quadratic graphs.	I can use graphs of linear and quadratic functions to find approximate solutions of simultaneous equations.
Simultaneous Equations	I can solve one step equations.	I can solve equations with unknowns on both sides of the equals sign.	I can confidently solve simultaneous equations using the elimination method.	I can confidently solve simultaneous equations using the elimination and substitution methods.
Construction and Loci	I can confidently use a compass to draw a circle.	I can confidently construct triangles using a ruler and protractor.	I can confidently draw constructions using a ruler and compasses.	I can confidently use standard constructions to solve problems involving finding loci.

Enlargement and Similarity	I can confidently enlarge a shape with a given scale factor. I can identify similar shapes.	I can enlarge a shape from a given centre of enlargement. I can find the scale factor between two similar shapes and use this to enlarge a shape.	I can use a fractional or negative scale factor to enlarge a given shape on a set of axes. I can find missing lengths by using properties of similar shapes.	I can confidently describe a transformation using a single statement. I can apply the properties of similar shapes to solve problems in context.
Quadratic Sequences	I can confidently find the missing terms in a given sequence and find rules.	I can confidently find the nth term of a linear sequence and find the first few terms of a quadratic sequence.	I can find the nth term of a quadratic sequence and understand the process of splitting the sequences into its linear and quadratic parts	I can confidently find the nth term in a quadratic sequence and use to solve problems. I can generate a simple nth term from a triangular sequence.
Pie Charts	I am able to draw pie charts using a percentage scale.	I can confidently draw a pie chart from given frequencies.	I can interpret a given pie chart to determine the frequency of each category.	I can confidently compare two same size pie charts with same total frequencies.
Statistics	I can confidently find the mean, mode and range and order data to find the median. I can categorise types of data correctly.	I can complete a cumulative frequency table and find the modal class. I can draw a box plot and use it to compare 2 sets of data. I can apply random and systematic sampling to a set of data.	I can confidently plot a cumulative frequency curve and use this to both plot a box plot and solve problems in context. I can confidently apply stratified sampling to any given population.	I can confidently plot and interpret a time series graph and use moving averages to make predictions in context. I can explain which sampling method is most appropriate in any given situation including limitations.
Congruency	I can construct triangles accurately.	I can recognise when two shapes are congruent or similar.	I can explain the difference between similar and congruent shapes.	I can use congruency rules to prove why two shapes are congruent.
Indices	I can confidently use a calculator to find powers and roots.	I can confidently use powers to represent a repeated multiplication.	I can confidently use the three basic laws of indices.	I can confidently use all the laws of indices including finding negative and fractional indices.
Standard form	I can confidently multiply and divide by 10, 100 and 1000.	I can change numbers in standard form (with positive powers) into ordinary numbers.	I can apply the multiplication and division law of indices to calculate in standard form with a calculator.	I can complete standard form calculations in context including adding and subtracting numbers in

				standard form.
Bearings	I can describe a bearing from a labelled picture.	I can accurately measure a bearing and give the bearing as a three figure bearing.	I can draw two bearings to find the point of intersection	I can draw bearings accurately and solve problems in context including those that involve use of Pythagoras' theorem.
Probability Diagrams	I can confidently calculate simple probabilities of an event.	I can confidently calculate probabilities from a two-way table.	I can confidently use tree diagrams to solve independent probability problems.	I can confidently find conditional probabilities from a tree diagram or Venn diagram.
Recurring decimals	I can change simple fractions such as $\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{4}$ into decimals.	I can change simple fractions like $\frac{1}{9}$ or $\frac{4}{99}$ into a decimal.	Convert single digit recurring decimals into fractions using algebraic method.	Convert single or multiple digit recurring decimals into fractions using algebraic method e.g. 0.2343434...
Limits	I can round numbers to decimal places and significant figures.	I can find the upper and lower bounds of a rounded number.	Calculate the upper and lower bounds of a single calculation e.g. area of a rectangle or speed.	Calculate the upper and lower bound of a multi stage calculation e.g. volume or surface area.
Quadratics	I can factorise a quadratic equation.	I can use the quadratic formula.	I can complete the square and factorise an equation that has a coefficient of x^2 greater than 1.	I can solve quadratic equations using the formula, factorisation or completing the square.