Yr10: ASK Yourself!

Subject: Maths
Unit: Higher (Whole Year)

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
Skills				
	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.
Knowledge				
Quadratic Inequalities	I can confidently identify and use the inequality symbols.	I can confidently solve a single linear inequality and represent on a number line.	I can confidently solve quadratic inequalities and represent the solution on a number line.	I can confidently solve multiple inequalities where one is quadratic stating the region satisfied by all inequalities.
Trigonometry	I can confidently use Pythagoras theorem to solve problems.	I can confidently recall some exact values of sin, cos and tan.	I can confidently use Pythagoras and trigonometry to solve problems involving right angled triangles.	I can confidently use Pythagoras and trigonometry to solve problems in 3 dimensions.
Sampling	I know what a random sample is and can carry one out with confidence.	I know several different sampling techniques and can carry most of them out with confidence.	I can confidently carry out a stratified sample and explain in detail to someone else what I have done.	I can confidently carry out a wide variety of sampling techniques and select the correct technique to use dependent on the question.
Averages	I can calculate averages with confidence for a list of data and a frequency table.	I can calculate averages with confidence for a grouped frequency table with confidence.	I can pick the correct average to use depending on the context of the question.	I can pick the correct average to use and calculate it with confidence depending on the context of the question.
Plot and Interpret Graphs	I can confidently plot linear and quadratic graphs by finding coordinates.	I can confidently plot and interpret quadratic and cubic graphs.	I can confidently plot and interpret non-linear graphs including reciprocal, exponential and	I can confidently plot and interpret non-linear graphs and use these to find approximate

			trigonometric.	solutions to equations.
Direct and Inverse Proportion	I can confidently use linear/conversion graphs to solve proportion problems using rate of change.	I can confidently solve direct proportion problems using an algebraic method.	I can confidently solve inverse proportion problems using an algebraic method.	I can confidently solve complex problems using direct and inverse proportion with an algebraic method.
3D Shapes	I can confidently calculate the volume of a prism.	I can confidently apply the formula for the volume and surface area of a pyramid, cone and sphere.	I can confidently solve problems involving 3D shapes in context including calculating density.	I can confidently solve problems involving 3D shapes by finding missing dimensions.
Statistical Graphs	I can confidently draw and interpret bar charts, pictograms and stem and leaf diagrams.	I can confidently draw and interpret scatter graphs.	I can confidently draw and interpret cumulative frequency curves and box plots.	I can confidently decide the best graph to draw for the data I have.
Similar Shapes	I can confidently use a scale factor to find a new length.	I can confidently find missing values in 2D similar shapes.	I can confidently find missing values in 3D similar shapes.	I can confidently solve problems in 2D or 3D similar shapes in context.
Histograms	I can calculate frequency density with confidence for a histogram with equal width bars.	I can calculate frequency density with confidence for a histogram with unequal width bars.	I can interpret histograms.	I can interpret histograms and create the frequency table from the histogram.
Kinematics	I can draw and interpret a distance time graph.	I can draw an interpret a straight line velocity-time graph.	I can calculate average speed, acceleration and distance travelled from a straight line velocity-time graph.	I can calculate average speed, acceleration and distance travelled from a curved velocity time graph.
Functions	I can confidently evaluate functions such as f(1), g(2).	I can confidently evaluate or simplify a composite function.	I can calculate with confidence the inverse of a function.	I can confidently solve function problems.
Ratio Problem Solving	I can confidently simplify a ratio and share using a ratio.	I can use my knowledge of ratios to solve problems.	I can confidently use my knowledge of ratios to solve problems.	I can confidently solve complex problems involving ratios and algebra.
Surds	I can recognise irrational numbers and simplify a number given in surd form.	I can multiply and divide numbers in surd form and simplify solutions.	I can confidently rationalise a denominator.	I can confidently solve problems in context by rationalising denominators and simplifying solutions.

Geometric Sequences	I can identify if a sequence is geometric.	I can identify the common ratio of the sequence	I can solve problems involving numbers and geometric sequences.	I can solve problems involving algebra and geometric sequences with confidence.
Circle Theorems	I can confidently find a missing angle using a circle theorem.	I can confidently use a combination of angle facts and circle theorems to find missing angles.	I can confidently solve problems involving Pythagoras or trigonometry within circle theorem problems.	I can confidently solve problems given involving circle theorems including where roofs are needed.
Coordinate Geometry	I can confidently identify the equation of a circle and draw tangents on a curve.	I can identify the centre of a circle and its radius from its equation. I can also confidently use a tangent to represent the instantaneous rate of change.	I can find the equation of a tangent of a circle. I can also confidently estimate the gradient of a curve by using a tangent.	I can solve simultaneous equation problems involving circles. I can also confidently estimate the area underneath a curve and reflect upon this in context.