Stage 9 – Algebraic Proficiency: Visualising

Know it!

Knowledge	
I know...	How to identify and interpret gradients and intercepts of linear functions algebraically.
I know...	How to find the equation of a line through one point with a given gradient and through two given points.
I know...	How to plot, recognise, sketch and interpret graphs of quadratic functions.
I know...	How to plot, recognise, sketch and interpret graphs of cubic functions.
I know...	How to plot, recognise, sketch and interpret graphs of reciprocal functions.
I know...	How to find approximate solutions to kinematic problems involving distance, speed and acceleration.

Link it!

Backward	Forward
Plot straight line graphs. Interpret gradients and intercepts. Recognise, sketch and interpret graphs of linear functions. Recognise simple quadratic functions.	Solving simultaneous equations graphically. Finding the equation of perpendicular lines.

Prove it!

Convince me that the lines $y = 3 + 2x$, $y – 2x = 7$, $2x + 6 = y$ and $8 + y – 2x = 0$ are parallel to each other.

What is the same and what is different: $y = x$, $y = x^2$, $y = x^3$ and $y = 1/x$?

Say it!

Vocabulary	Definition
Function	A special relationship where each input has a single output.
Equation	An equation says that two things are equal.
Gradient	How steep a line is.
Y - Intercept	The point where a line or curve crosses the y-axis of a graph.
Sketch	To draw roughly (still using a ruler) but only labelling key information.
Plot	To draw on a graph or map
Quadratic	Where the highest exponent of the variable (usually "x") is a square (^{2}).
Cubic	Where the highest exponent of the variable (usually "x") is a cube (^{3}).