Stage 11 – Algebraic Proficiency: Visualising I

WHAT DO WE ALREADY *know?*

- Recognise, plot and interpret exponential graphs
- Plot graphs of linear, quadratic, cubic and reciprocal functions
- Find sines, cosines and tangents of given angles

THE BIG PICTURE

- Plot and use the key features of the graph of an exponential function, $y = k^x$, for positive values of k.
- Plot and use the key features of the graph of the trigonometric functions $y = \sin x$, $y = \cos x$ and $y = \tan x$.
- Know the effects of transforming the graph $y = f(x)$: $f(ax)$, $af(x)$, $f(x) + a$, $f(x + a)$, $y = f(-x)$ and $y = -f(x)$.
- Solve problems involving the transformation of graphs.

KEYWORDS

- Exponential - As a noun in mathematics from 1784. Related: Exponentially.
- Function
- Asymptote - "straight line continually approaching but never meeting a curve," 1650s, from Greek asymptotos "not falling together,"
- Maximum
- Minimum
- Period
- Transformation
- Translation
- Reflection
- Sketch
- Plot

Algebraic Proficiency: Visualising I - Targets	Before Topic	After Topic	Teacher Mark
Plot and use the key features of the graph of an exponential function, $y = k^x$, for positive values of k.			
Plot and use the key features of the graph of the trigonometric function $y = \sin x$.			
Plot and use the key features of the graph of the trigonometric function $y = \cos x$.			
Plot and use the key features of the graph of the trigonometric function $y = \tan x$.			
Know the effects of transforming the graph $y = f(x)$: $f(ax)$, $af(x)$, $f(x) + a$, $f(x + a)$, $y = f(-x)$ and $y = -f(x)$.			
Solve simple problems involving the transformation of graphs.			
Solve more complex problems involving the transformation of graphs.			