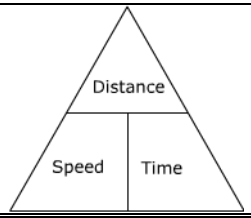
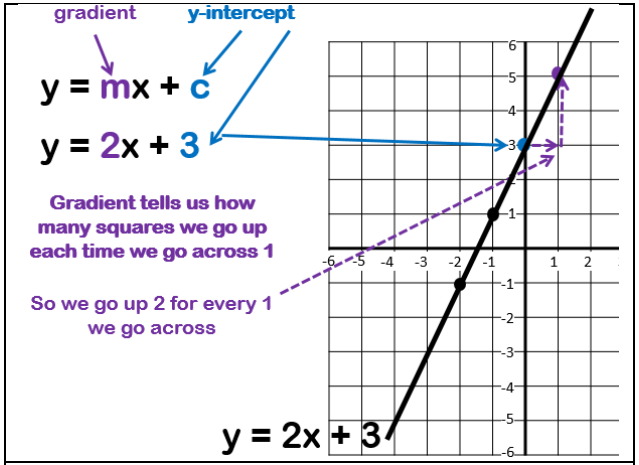
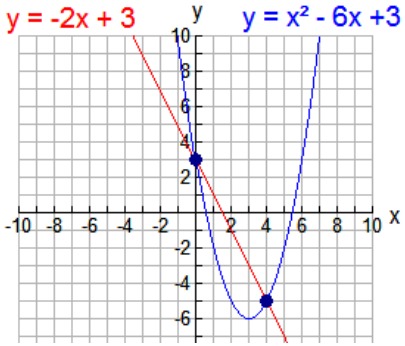
MATHEMATICS Unit 13: Algebraic proficiency: visualising	Year Group: 8 set 1-3

Key Vocabulary

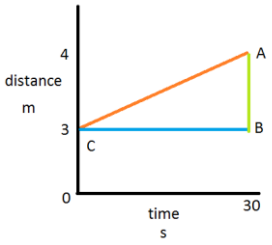
Equation (of a graph)	The equation of a straight line on a graph is made up of a y term, an x term and a number, and can be written in the form of y = mx + c "c" being the y-intercept
Gradient	The slope of the line is known as the gradient and is represented by the value of m in the equation
y-intercept	the point where the line intersects the y- axis
Function	A function is an equation for which any x that can be plugged into the equation will yield one y out of the equation.
Formula	A group of mathematical symbols used to solve a problem
Linear	A straight line when plotted on a graph
Coordinate plane	The plane containing the "x" axis and "y" axis.
Substitute	Replace unknowns "x" or "y" with a value.
Speed, Distance, Time formula	

Key facts / Diagrams





Linear equation is a straight line.
Quadratic equation is curved.



Speed = distance/time

The gradient of the graph

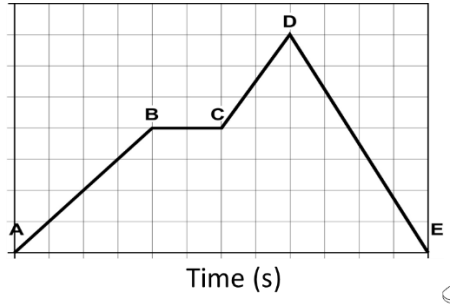
Speed = AB/BC

Common misconceptions

- When plotting linear graphs some pupils may draw a line segment that stops at the two most extreme points plotted
- Some pupils may think that a sketch is a very rough drawing. It should still identify key features, and look neat, but will not be drawn to scale
- Some pupils may think that a positive gradient on a distance-time graph corresponds to a section of the journey that is uphill
- Some pupils may think that the graph y = x2 + c is the graph of y = x2 translated horizontally.

Worked examples

What do you think is happening to his speed at A, B, C & D?



A-Constant Speed
B-Stopped
C-Constant speed but faster than A
D-Constant speed returning to the place where he started