GCSE UNIT SUMMARY: UNIT 9: Real-life and algebraic linear graphs

9a) Real-life graphs

Unit Description	Taught	Revision Priority
Use input/output diagrams;		
Draw, label and scale axes;		
Use axes and coordinates to specify points in all four quadrants in 2D;		
Identify points with given coordinates and coordinates of a given point in all four quadrants;		
Find the coordinates of points identified by geometrical information in 2D (all four quadrants);		
Find the coordinates of the midpoint of a line segment; Read values from straight-line graphs for real-life situations;		
Draw straight line graphs for real-life situations, including ready reckoner graphs, conversion graphs, fuel bills graphs, fixed charge and cost per unit;		
Draw distance–time graphs and velocity–time graphs;		
Work out time intervals for graph scales;		
Interpret distance–time graphs, and calculate: the speed of individual sections, total distance and total time;		
Interpret information presented in a range of linear and non-linear graphs;		
Interpret graphs with negative values on axes;		
Interpret gradient as the rate of change in distance–time and speed–time graphs, graphs of containers filling and emptying, and unit price graphs.		

9b) Straight-line graphs

Unit Description	Taught	Revision Priority
By the end of the sub-unit, students should be able to:		
Use function machines to find coordinates (i.e. given the input x, find the output y);		
Plot and draw graphs of $y = a$, $x = a$, $y = x$ and $y = -x$;		
Recognise straight-line graphs parallel to the axes;		
Recognise that equations of the form $y = mx + c$ correspond to straight-line graphs in the coordinate plane;		
Plot and draw graphs of straight lines of the form $y = mx + c$ using a table of values;		
Sketch a graph of a linear function, using the gradient and y-intercept;		
Identify and interpret gradient from an equation $y = mx + c$;		
Identify parallel lines from their equations;		
Plot and draw graphs of straight lines in the form $ax + by = c$;		
Find the equation of a straight line from a graph;		
Find the equation of the line through one point with a given gradient;		
Find approximate solutions to a linear equation from a graph;		
Find the gradient of a straight line from real-life graphs too.		