



Year 11 Maths Learning Journey

Autumn Term 1

Graphs: Gradients and Lines

Core knowledge	Reference
Equations of lines parallel to the axis (R) “Which axis is $y=4$ parallel to? How do you know?”	Worksheet
Plot straight line graphs (R) “What is the minimum number of points needed to plot a straight line graph?”	Worksheet
Interpret $y=mx+c$ (R) “in $y=mx+c$ what do m and c represent?”	Worksheet
Find the equation of a straight line from a graph (1) (R) “How do you know if a straight line has a positive or negative gradient?”	Worksheet
Find the equation of a straight line from a graph (2) (R) “How do you know if a straight line has a positive or negative gradient?”	Worksheet
Equation of a straight-line graph given one point and gradient “What does it mean when two lines are parallel?”	Worksheet
Equation of a straight-line graph given two points “What is the X-coordinate at the y-intercept? How do you know?”	Worksheet
Determine whether a point is on a line “How do you know if a line passes through a point?” (H) – “How do you find the gradient of a tangent to a curve?”	Worksheet
Solve linear simultaneous equations graphically (R) “How many solutions do a pair of linear simultaneous equations have?”	Worksheet
Recognise when straight lines are perpendicular (H) “When two lines are perpendicular, why must one gradient be positive and the other be negative?”	Worksheet
Find the equations of perpendicular lines (H) “Once you know the gradient, how do you find the y-intercept?”	Worksheet

Learning Checkpoints

LC Title	Completed	Dirt
Gradients and Lines		

Key Vocabulary:

Coordinate: A set of values that show an exact position.

Gradient: The measure of the steepness of a straight line.

Graph: A pictorial representation or a diagram that represents data or values in an organized manner.

Linear: Linear functions are those whose graph is a straight line.

Negative Reciprocal: A negative reciprocal is the inverse of a number with the opposite sign.

Parallel: A pair of line that have a constant distance between them.

Perpendicular: Perpendicular lines are lines that intersect at a 90-degree angle.

Scale: A scale is a set of numbers that help to measure or quantify objects.

Solution: A value or values which, when substituted for a variable in an equation, make the equation true.

Table of Values: The table of values defines the list of numbers which are used to substitute in the variable.

Y- Intercept: The point where a line or curve crosses the y-axis of a graph.