

Summer Learning Journey for Maths

Year 8H Unit 10 Graphs

How does this unit link to prior learning?

- Be able to substitute numbers into formulas
- Plotting coordinates in four quadrants
- Be able to simplifying ratios
- Calculate the midpoint between two numbers

Prior Knowledge Check

1. Find the value of $2x + 3$ when $x = 4$

2. Describe how you would plot these coordinates $(3,2)$ $(-2, 4)$

3. Simplify this ratio 28:14

4. What number is halfway between 8 and 14?

What will you be learning about?

Plot linear graphs from a table and directly from an equation.
 Find the gradient and intercept of straight-line graphs.
 Identifying parallel and perpendicular lines.
 Plot non-linear graphs.

We will develop our learning each week by focusing on:

	RAG		RAG
1. Plotting linear graphs (<i>GCSE Statistics</i>) <ul style="list-style-type: none"> • Plot straight-line graphs. • Find the y-intercept of a straight-line graph. 		2. The gradient (<i>GCSE Statistics</i>) <ul style="list-style-type: none"> • Find the gradient of a straight-line graph. • Plot graphs using the gradient and y-intercept. 	
3. $y = mx + c$ (<i>GCSE Statistics</i>) <ul style="list-style-type: none"> • Use $y = mx + c$ • Find the equation of a straight-line graph. 		4. Parallel and perpendicular lines <ul style="list-style-type: none"> • Identify parallel and perpendicular lines. 	
5. Inverse functions <ul style="list-style-type: none"> • Find the inverse of a linear function. 		6. STEM: Non-linear graphs <ul style="list-style-type: none"> • Plot and use non-linear graphs. 	
7. Revision Lesson <ul style="list-style-type: none"> • Select topics you feel the class need to revise. • Classroom based or Mathswatch. 		8. Assessment Lesson <ul style="list-style-type: none"> • Do 10-minute top up and go through answers together, students self-assess. • Open book assessment done in silence 	
9. Feedback Lesson <ul style="list-style-type: none"> • Student to highlight their traffic light sheet. • Teacher to go through test and students to self-assess in green. • Students to complete the NOW section of the WOW-HOW-NOW sheet. 			

Key Vocabulary

Parallel	Perpendicular	Gradient	Plot	Equation	Linear	Function
Inverse	axis	Coordinate	Graph	y-intercept	Line segment	

How will this help you in the future?

KS4	Beyond LHS
<p>Plotting linear graphs</p> <ul style="list-style-type: none"> You'll need to plot straight-line graphs accurately in GCSE exams. Finding the y-intercept helps you understand where a graph crosses the y-axis. This is a key skill for algebra and graph questions. Often appears in both foundation and higher papers. <p>The gradient</p> <ul style="list-style-type: none"> Gradient tells you how steep a line is – a key GCSE skill. You'll use gradient with y-intercepts to draw graphs quickly. Important for solving graph and algebra questions. Links to understanding rates of change. <p>$y = mx + c$</p> <ul style="list-style-type: none"> This is one of the most important graph formulas in GCSE. Helps you: <ul style="list-style-type: none"> Identify gradient (m) and intercept (c) Write equations of lines Comes up regularly in exam questions. Needed for both graph drawing and algebra problems. <p>Parallel and perpendicular lines</p> <ul style="list-style-type: none"> You need to recognise: <ul style="list-style-type: none"> Parallel lines (same gradient) Perpendicular lines (negative reciprocal gradients – higher tier) Builds on your knowledge of gradient and equations of lines. Common in coordinate geometry questions. <p>Inverse functions</p> <ul style="list-style-type: none"> You'll need to reverse processes in GCSE algebra. Inverse functions help you “undo” a calculation. Important for solving equations and working with formulas. More common in higher tier GCSE. <p>Non-linear graphs</p> <ul style="list-style-type: none"> GCSE includes curved graphs (e.g. quadratics). You'll need to plot and interpret non-linear relationships. Helps you understand how graphs can change shape. Important for higher tier topics. 	<p>Plotting linear graphs</p> <ul style="list-style-type: none"> Used to show how two things are related (e.g. time and distance). Helps in jobs that use graphs (science, business, engineering). Useful for reading charts and data in everyday life. Important in careers involving data and trends. <p>The gradient</p> <ul style="list-style-type: none"> Used in construction (e.g. designing ramps and roofs). Helps in science for understanding speed and change. Important in engineering and architecture. Useful in jobs that involve analysing graphs. <p>$y = mx + c$</p> <ul style="list-style-type: none"> Used in computing and coding (creating graph models). Helps businesses predict trends (e.g. profit over time). Important in science and engineering calculations. Used anywhere relationships between values are modelled. <p>Parallel and perpendicular lines</p> <ul style="list-style-type: none"> Used in construction and design (e.g. buildings, roads, layouts). Important in engineering and architecture. Helps with technical drawings and plans. Useful in graphics, design, and manufacturing. <p>Inverse functions</p> <ul style="list-style-type: none"> Used in computing (reversing processes or algorithms). Important in science when rearranging formulas. Helps in finance (working backwards from totals). Useful in problem-solving jobs. <p>Non-linear graphs</p> <ul style="list-style-type: none"> Used in science (e.g. acceleration, growth, decay). Important in economics (e.g. supply and demand curves). Helps in data analysis and predicting trends. Used in engineering, medicine, and environmental studies.