

Maths Workout – Straight Line Graphs

Vertical & Horizontal Lines		Level 3
Draw a vertical or horizontal straight line given the equation		
Tasks	1. Draw a vertical or horizontal straight line given the equation	

Drawing Straight Lines		Level 3
Draw a straight line by calculating and plotting points		
Tasks	1. Demo: Draw a straight line by calculating 3 points 2. Draw a straight line by calculating and plotting points: $y = 2x - 2$ 3. Draw a straight line by calculating and plotting points: $y + 3x = 2$ 4. Draw a straight line by calculating and plotting points: $2y - 3x = 12$	

Calculating the Gradient		Level 3
Calculate the gradient of a straight line between two points		
Tasks	1. Demo: Calculate the gradient of a straight line between 2 points 2. Demo: Summary of positive, negative, zero and undefined gradient 3. Calculate the gradient of a straight line between 2 given points 4. Calculate the gradient of a straight line between 2 points on a grid	

Gradient Problems		Level 3
Solve a problem involving gradients		
Tasks	1. Solve a problem involving gradients 2. Solve a problem involving gradients	

The Equation of a Straight Line 1		Level 4
Calculate the equation of a straight line by calculating the gradient and identifying the y-intercept		
Tasks	1. Identify the equation of a vertical or horizontal straight line 2. Demo: Calculate the equation of a straight line in the form $y = mx + c$ 3. Identify the equation of a straight line given the gradient and y-intercept 4. Calculate the equation of a straight line of the form $y = 3x$, $y = \frac{2}{3}x$ 5. Calculate the equation of a straight line of the form $y = 3x$, $y = \frac{2}{3}x$ 6. Calculate the equation of a straight line of the form $y = 3x + 1$ 7. Calculate the equation of a straight line of the form $y = \frac{3x}{2} + 1$	

Sketches		Level 4
Match a sketch of a graph with its equation		
Tasks	1. Match a sketch of a graph with its equation 2. Match a sketch of a graph with its equation 3. Match a sketch of a graph with its equation 4. Match a sketch of a graph with its equation	

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The Equation of a Straight Line 2		Level 5
Calculate the equation of a straight line by using points and gradient		
Tasks	<ol style="list-style-type: none"> 1. Demo: Calculate the equation of a straight line given 1 point and the gradient 2. Calculate the equation of a straight line given 1 point and the gradient (integer gradient) 3. Calculate the equation of a straight line given 1 point and the gradient (fractional gradient) 4. Demo: Calculate the equation of a straight line given 2 points 5. Calculate the equation of a straight line given 2 points (integer gradient) 6. Calculate the equation of a straight line given 2 points (fractional gradient) 7. Calculate the equation of any straight line from a graph 	
Rearranging the Equation		Level 4
Rearrange an equation to the form $y=mx+c$ to find the gradient and intercept		
Tasks	<ol style="list-style-type: none"> 1. Demo: Rearrange an equation to the form $y=mx+c$ to find the gradient and y-intercept 2. Rearrange an equation to the form $y=mx+c$ to find the gradient and y-intercept (y positive) 3. Rearrange an equation to the form $y=mx+c$ to find the gradient and y-intercept 	
Calculating the Midpoint		Level 4
Find the midpoint between 2 points		
Tasks	<ol style="list-style-type: none"> 1. Demo: Find the midpoint between 2 points 2. Find the midpoint between 2 points 3. Find the midpoint between 2 points 4. Solve a problem with midpoint 	
Calculating the Length of a Line Segment		Level 5
Calculate the length of a line segment		
Tasks	<ol style="list-style-type: none"> 1. Demo: Find the length of a line segment 2. Find the length of a line segment 3. Find the length of a line segment 4. Solve a problem with the length of a line segment 	
Parallel Lines		Level 5
Solve problems with parallel lines		
Tasks	<ol style="list-style-type: none"> 1. Demo: Find the equation of a line which is parallel to another 2. Find the equation of a line which is parallel to another 	
Perpendicular Lines		Level 7
Solve problems with perpendicular lines		
Tasks	<ol style="list-style-type: none"> 1. Demo: Find the equation of a line which is perpendicular to another using $m_1m_2 = -1$ 2. Speed response: Identify a gradient and its corresponding perpendicular gradient 3. Find the equation of a line which is perpendicular to another 	