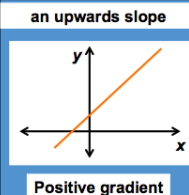
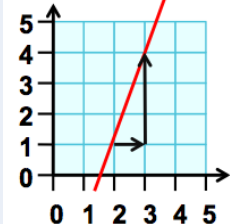
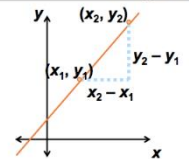
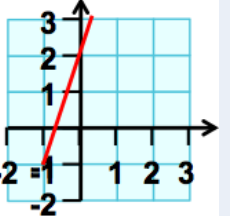
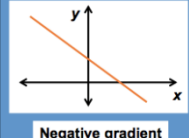
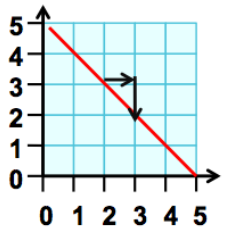
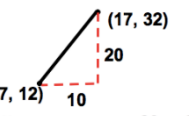
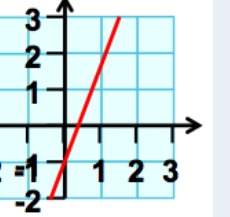
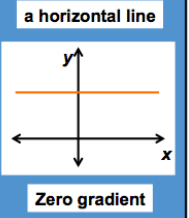
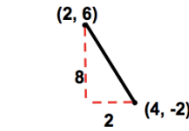


LINEAR GRAPHS

Keywords:	Axis / Co-ordinate / Parallel / perpendicular / Gradient / Linear Graph / Reciprocal							
Definition / Description:	Axis: the axes are the reference lines that form the coordinate plane	Co-ordinates: 2 numbers that locate a specific point on a coordinate plane	Parallel: lines that never meet.	Perpendicular: Two lines at right angles to one another	Gradient: The steepness of a line	Linear graph: A visual representation of a straight line.	Reciprocal: What you multiply a number by to make 1	
Knowledge points:	Gradient (slope)	Gradient: The gradient is simply for every 1 we go along the x-axis how much do we go up/down in the y-axis	Finding gradient from 2 point The gradient is the change in y compared to the change in x	Intercepts These are the points at which the line meets/crosses an axes	The equation of a line $y = mx + c$ M = gradient c = y-intercept	Finding the equation of a line from 2 points To begin find the gradient. Next substitute one co-ordinate into the equation to find the y-intercept	Finding the equation of the line which passes through (3, 6) and (2, 2) Step 1 Calculating the gradient $\frac{\text{Diff in } y}{\text{Diff in } x} = \frac{6-2}{3-2} = \frac{4}{1} = 4$ Step 2 Form the equation $y = 4x + c$ Step 3 Find the y-intercept Substitute one of the co-ordinates into the equation (3,6) $6 = 4(3) + c$ $c = -6$ Step 4 Complete the equation $y = 4x - 6$	
Knowledge point examples:	 <p>an upwards slope</p> <p>Positive gradient</p>		<p>the gradient = $\frac{\text{change in } y}{\text{change in } x}$</p>  <p>the gradient = $\frac{y_2 - y_1}{x_2 - x_1}$</p>		<p>$y = mx + c$</p> <p>the gradient</p> <p>the intercept</p>	<p>Find the equation of the line which passes through (3, 6) and (2, 2)</p> <p>Step 1 Calculating the gradient</p> $\frac{\text{Diff in } y}{\text{Diff in } x} = \frac{6-2}{3-2} = \frac{4}{1} = 4$ <p>Step 2 Form the equation</p> $y = 4x + c$ <p>Step 3 Find the y-intercept</p> <p>Substitute one of the co-ordinates into the equation (3,6)</p> $6 = 4(3) + c$ $c = -6$ <p>Step 4 Complete the equation</p> $y = 4x - 6$		
 <p>a downwards slope</p> <p>Negative gradient</p>		 <p>Diff in $y = 32 - 12 = 20$</p> <p>Diff in $x = 17 - 7 = 10$</p>						
 <p>a horizontal line</p> <p>Zero gradient</p>		 <p>Diff in $y = 6 - (-2) = 8$</p> <p>Diff in $x = 4 - 2 = 2$</p>						

Linked Knowledge Maps	Functions / Non-Linear Graphs quadratic and cubic / Non-Linear Graphs other / Solving Linear Equations / Inequalities / Simultaneous equations / Sequences / Transformations Linear Graphs – parallel and perpendicular lines / Axes and Coordinates
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