



Algebraic Proficiency: Visualising ABE

Number of weeks (between 8&12)	Content of the unit:	Assumed prior learning (tested at the beginning of the unit)
3	<ul style="list-style-type: none"> <li>Plot graphs of equations that correspond to straight-line graphs in the coordinate plane</li> <li>Identify and interpret gradients and intercepts of linear functions graphically and algebraically</li> <li>Recognise, sketch and interpret graphs of linear functions and simple quadratic functions</li> </ul> Plot and interpret graphs and graphs of non-standard ( <i>piece-wise linear</i> ) functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance and speed	<ul style="list-style-type: none"> <li>Express simple functions in words, then using symbols; represent them in mappings</li> </ul>
Assessment points and tasks	Written feedback points	Learning Outcomes (tested at the end and related to subject competences)
KM: <a href="#">Matching graphs</a> KM: <a href="#">Autograph 1</a> KM: <a href="#">Autograph 2</a> KM: <a href="#">The hare and the tortoise</a>  <b>Learning review</b> <a href="http://www.diagnosticquestions.com">www.diagnosticquestions.com</a>	<ul style="list-style-type: none"> <li>Some pupils do not rearrange the equation of a straight line to find the gradient of a straight line. For example, they think that the line <math>y - 2x = 6</math> has a gradient of -2.</li> <li>Some pupils may think that gradient = (change in x) / (change in y) when trying to equation of a line through two given points.</li> <li>Some pupils may incorrectly square negative values of x when plotting graphs of quadratic functions.</li> <li>Some pupils think that the horizontal section of a distance time graph means an object is travelling at constant speed.</li> <li>Some pupils think that a section of a distance time graph with negative gradient means an object is travelling backwards or downhill</li> <li>Convince me the lines <math>y = 3 + 2x</math>, <math>y - 2x = 7</math>, <math>2x + 6 = y</math> and <math>8 + y - 2x = 0</math> are parallel to each other.</li> <li>Sketch a distance/time graph of your journey to school. What is the same and what is different with the graph of a classmate?</li> </ul>	<ul style="list-style-type: none"> <li>Use the form <math>y = mx + c</math> to identify parallel lines</li> <li>Rearrange an equation into the form <math>y = mx + c</math></li> <li>Find the equation of a line through one point with a given gradient</li> <li>Find the equation of a line through two given points</li> <li>Interpret the gradient of a straight line graph as a rate of change</li> </ul> Find approximate solutions to kinematic problems involving distance, speed and acceleration



Lesson	Clear learning intentions	Clear success criteria	Hook	Presentation of content	Guided practice	Independent practice (homework)	Closure
1 & 2	<ul style="list-style-type: none"> <li>Plot graphs of equations that correspond to straight-line graphs in the coordinate plane</li> </ul>	Find co-ordinate pairs that satisfy the equation Plot them on a grid Draw a straight line through the points Label the axes and the line	Foundation Book Fluency & Warm Up  Page 244	Boardworks A6.2	Foundation Book Page 245- 246 Page 247-248		Traffic lights
3 & 4	<ul style="list-style-type: none"> <li>Identify and interpret gradients and intercepts of linear functions graphically and algebraically</li> </ul>	<ul style="list-style-type: none"> <li>Use the form <math>y = mx + c</math> to identify parallel lines</li> <li>Rearrange an equation into the form <math>y = mx + c</math></li> <li>Find the equation of a line through one point with a given gradient</li> <li>Find the equation of a line through two given points</li> </ul>	Foundation Book Fluency & Warm Up  Page	Boardworks A8.2, A8.3	Foundation Book Page (Gradient): 250-252 Page ( $y = mx + c$ ): 252 -254		Mini whiteboards
5 & 6	<ul style="list-style-type: none"> <li>Recognise, sketch and interpret graphs of linear functions</li> </ul>	<ul style="list-style-type: none"> <li>Interpret the gradient of a straight line graph as a rate of change</li> </ul>	Foundation Book Fluency & Warm Up  Page 254	Boardworks A6.5	Foundation Book Page 254-257	My maths- GRAPHS /GRADIENTS	Mini whiteboards
7	Teacher feedback lesson				Pupil responses & checking		
8	Homework Review lesson						
9 & 10	Plot and interpret graphs and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance and speed	Find approximate solutions to kinematic problems involving :  distance, speed and acceleration	Foundation Book Fluency & Warm Up  Page 258 Page 262	Boardworks A6.1, A6.3, A6.4	Foundation Book  Page 258/259-262 Page 263		
11	TEST Yourself Revision Lesson	INDEPENDENT TASK-TEST CONDITIONS	INDEPENDENT TASK-TEST CONDITIONS	INDEPENDENT TASK-TEST CONDITIONS	Foundation Book Page 266- 276		PEER FEEDBACK
12	HALF TERM TEST						