


Subject	Year	Month	
Mathematics	8	November	
ENLARGEMENTS AND BEARINGS			7 LESSONS
Content (Intent)			
<p>Prior Learning</p> <p>Y7 Dec:</p> <ul style="list-style-type: none"> - Measuring angles - Measuring lines <p>Y7 June :</p> <ul style="list-style-type: none"> - Coordinates - Transformations: Reflect, rotate and translate <p>Year 8 students only learn about <u>angles on parallel lines in February</u> so it is not required at this stage to understand bearings of A from B, when B from A is given.</p>	<p>Future Learning</p> <p>Y8 – February Parallel lines and polygons</p> <p>Y9 – May Recap of Transformations</p> <p>Y10 – May Constructions, Loci & Bearings</p>		
<p>Objectives</p> <ul style="list-style-type: none"> • Interpret plans and elevations • Use scale diagrams, including maps • Use the centre and scale factor to carry out an enlargement with positive integer scale factor • Use the centre and scale factor to carry out an enlargement with fractional scale factor • Find the centre of enlargement • Find the scale factor of an enlargement • Understand and use bearings <p>Construct scale diagrams and solve geometrical problems using bearings</p>	<p>For teaching purposes</p> <p>Possible questions</p> <ul style="list-style-type: none"> • Give an example of a shape and its enlargement (e.g. scale factor 2) with the guidelines drawn on. How many different ways can the scale factor be derived? • Show me an example of a sketch where the bearing of A from B is between 90° and 180°. And another... • Provide the plan and elevations of shapes made from some cubes. Challenge pupils to build the shape and place it in the correct orientation. <p>Misconceptions</p> <ul style="list-style-type: none"> • may think that the centre of enlargement always has to be (0,0) • may think that the centre of enlargement is in the centre of the shape. • If the bearing of A from B is 'x', then some pupils may think that the bearing of B from A is '180 – x' and forget about clockwise. 		
Pedagogical notes (implementation)	How will understanding be assessed & recorded (Impact)		
<p>Describing enlargement as a 'scaling' will help prevent confusion when dealing with fractional scale factors</p> <p><i>Visualise the effect of moving the centre of enlargement, and the effect of varying the scale factor.</i></p>	<p>End of term Assessment in December End of Year Assessment in June</p> <p>How can parents help at home?</p> <p>MathsWatch clips (Qualification KS3) G28 (Qualification GCSE) 124</p>		
Further reading/discussion			
<p>Reading / Enrichment</p> <p>KM: Missing powers</p> <p>KM: Laws of indices. Some useful questions.</p> <p>KM: Maths to Infinity: Indices</p> <p>KM: Scientific substitution (Note that page 2 is hard)</p> <p>NRICH: Temperature</p>	<p>Literacy</p> <p>Similar, Similarity, Enlarge, enlargement, Scaling Scale factor, Centre of enlargement, Object, Image Scale drawing, Bearing, Plan, Elevation</p> <p>Notation</p> <p>Bearings are always given as three figures; e.g. 025°. Coordinates: separated by a comma and enclosed by brackets</p>	<p>Numeracy Links</p>	<p>Careers Links</p> <p>Fisherman Sailor</p>