


Subject	Year	Month		
Mathematics	8	February		
Topic:				
PARALLEL LINES AND POLYGONS				6 LESSONS
Content (Intent)				
<p>Prior Learning</p> <p>Y7 Jan</p> <ul style="list-style-type: none"> - Use angles at a point, angles on a line and vertically opposite angles - Sum of the angles in a triangle is 180° <p>Y8 Nov</p> <ul style="list-style-type: none"> - Bearings (in which bearing of A from B vs. B from A might or might not have been mentioned) 	<p>Future Learning</p> <p>Y10 (Higher) January Polygons, angles and parallel lines</p> <p>Y10 (Foundation) March Polygons and parallel lines</p>			
<p>Objectives</p> <ul style="list-style-type: none"> • Solve missing angle problems involving alternate and corresponding angles • Use knowledge of alternate and corresponding angles to calculate missing angles in geometrical diagrams • Know and prove the fact that angles in a triangle must total 180° • Establish the size of an exterior angle in a regular polygon • Establish the size of an interior angle in a regular polygon • Solve missing angle problems in polygons 	<p>For teaching purposes</p> <p>Possible Questions</p> <ul style="list-style-type: none"> • Show me a pair of alternate (corresponding) angles. And another... • Jenny thinks that hexagons are the only polygon that tessellates. Do you agree? Explain your reasoning. • Convince me that the angles in a triangle total 180°. • Convince me that the interior angle of a pentagon is 54°. • Always/ Sometimes/ Never: <ul style="list-style-type: none"> ○ The sum of the interior angles of an n-sided polygon can be calculated using $\text{sum} = (n - 2) \times 180^\circ$. ○ The sum of the exterior angles of a polygon is 360°. <p>Misconceptions</p> <ul style="list-style-type: none"> • may think that alternate and/or corresponding angles have a total of 180° rather than being equal. • may think that the sum of the interior angles of an n-sided polygon can be calculated using $\text{Sum} = n \times 180^\circ$. • may think that the sum of the exterior angles increases as the number of sides of the polygon increases. 			
Pedagogical notes (implementation)			How will understanding be assessed & recorded (Impact)	
<p><i>Insist on correct mathematical language (not F-angles or Z-angles)</i></p> <p>Notation</p> <p>Dash: equal lengths Arrow heads: parallel lines SUM angles in n-sided polygon = $(n - 2) \times 180^\circ$.</p> <p>Pupils established the fact that angles in a triangle total 180° in Y7. Using alternate angles they are now able to prove this fact.</p> <p>SUM angles in n-sided polygon = $(n - 2) \times 180^\circ$.</p>			<p>End of term Assessment in March End of Year Assessment in June</p> <p>How can parents help at home?</p> <p>MathsWatch clips (Qualification KS3) G18, G19</p>	
Further reading/discussion				
<p>Reading / Enrichment</p> <p>The KM: Perplexing parallels KM: Alternate and corresponding angles KM: Perplexing parallels KM: Investigating polygons KM: Maths to Infinity: Lines and angles KM: Stick on the Maths: Alternate and corresponding angles KM: Stick on the Maths: Geometrical problems NRICH: Ratty</p>	<p>Literacy</p> <p>Degrees Right angle, acute angle, obtuse angle, reflex angle Vertically opposite Geometry, geometrical Parallel, Alternate angles, corresponding angles Interior angle, exterior angle Regular polygon</p>	<p>Numeracy Links</p>	<p>Careers Links</p> <p>Engineer Architect Carpenter</p>	