Subject	Year	Month	
Mathematics	10	March	**Balcarras** From strength to strength

Topic:

Properties of shapes and angles on parallel lines
<div align="right">6 lessons</div>

Content (Intent)

Prior Learning
Year 9 Similar and congruent shapes February

Year 8 Angles on parallel lines February

Future Learning
Year 10 Interior and exterior angles of polygons March

Year 11 Bearings October

Objectives

- Estimate sizes of angles; measure angles using a protractor;
- Use geometric language appropriately;
- Use letters to identify points, lines and angles; use two-letter notation for a line and three-letter notation for an angle;
- Describe angles as turns and in degrees; understand clockwise and anticlockwise;
- Know that there are 360° in a full turn, 180° in a half turn and 90° in a quarter turn;
- Identify a line perpendicular to a given line; mark perpendicular lines on a diagram and use their properties;
- Identify parallel lines; mark parallel lines on a diagram and use their properties;
- Recall the properties and definitions of special types of quadrilaterals, including symmetry properties;
- Draw sketches of shapes;
- Name and classify all quadrilaterals that have a specific property;
- Given some information about a shape on coordinate axes, complete the shape;
- Understand and use the angle properties of quadrilaterals; use the fact that angle sum of a quadrilateral is 360°;
- Use geometrical language appropriately and give reasons for angle calculations;
- Recall and use properties of angles at a point, angles at a point on a straight line, right angles, and vert. opposite angles;
- Distinguish between scalene, equilateral, isosceles and right-angled triangles;
- Derive and use the sum of angles in a triangle; find a missing angle in a triangle, using the angle sum of a triangle is 180°;
- Understand and use the angle properties of triangles, use the symmetry property of isosceles triangle to show that base angles are equal; use the side/angle properties of isosceles and equilateral triangles;
- Understand and use the angle properties of intersecting lines;
- Understand a proof that the exterior angle of a triangle is equal to the sum of the interior angles at the other two vertices;
- Find missing angles using properties of corresponding and alternate angles;
- Understand and use the angle properties of parallel lines.

Pedagogical notes (implementation)	How will understanding be assessed & recorded (Impact)

<table>
<tr><td rowspan="3">

Make sure drawings are neat, labelled and accurate.
Give students lots of practice.
Angles should be accurate to within 2°.
Investigate Rangoli patterns.
Use tracing paper to assist with symmetry questions.
Ask students to find their own examples of symmetry in real life.
Emphasise that diagrams in examinations are seldom drawn accurately.
Make sure drawings are neat, labelled and accurate.
Students should have plenty of practice drawing examples to illustrate the properties and encourage them to check their drawings.
Emphasise the need to give geometric reasons when required.

</td><td>

End of half term no
End of Year Year 10 exams in April

</td></tr>
<tr><td>

How can parents help at home?

</td></tr>
<tr><td>

MathsWatch clips

Qualification KS3: G10abc, G13, G14, G16, G17, G18, G23

Qualification KS4: 13, 45, 46ab, 47, 120, 121, 122, 124

</td></tr>
</table>

Further reading/discussion			
Reading / Enrichment http://passyworldofmathematics.com/jobs-with-geometry/	**Literacy**	**Numeracy Links**	**Careers Links** Engineer, Architect Carpenter, Teacher