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

Topic:

Transformations
<div align="right">4 lessons</div>

Content (Intent)

Prior Learning	**Future Learning**
Year 9 KS3 recap of transformations May	Year 11 Vectors January Year 11 Similarity and congruence January

Objectives

- Distinguish properties that are preserved under particular transformations;
- Recognise and describe rotations – know that that they are specified by a centre and an angle;
- Rotate 2D shapes using the origin or any other point (not necessarily on a coordinate grid);
- Identify the equation of a line of symmetry;
- Recognise and describe reflections on a coordinate grid – know to include the mirror line as a simple algebraic equation, $x = a$, $y = a$, $y = x$, $y = -x$ and lines not parallel to the axes;
- Reflect 2D shapes using specified mirror lines including lines parallel to the axes and also $y = x$ and $y = -x$;
- Recognise and describe single translations using column vectors on a coordinate grid;
- Translate a given shape by a vector;
- **Understand the effect of one translation followed by another, in terms of column vectors (to introduce vectors in concrete way);**
- Enlarge a shape on a grid without a centre specified;
- Describe and transform 2D shapes using enlargements by a positive integer, positive fractional, and negative scale factor;
- Know that an enlargement on a grid is specified by a centre and a scale factor;
- **Identify the scale factor of an enlargement of a shape as the ratio of the lengths of two corresponding sides;**
- Enlarge a given shape using a given centre as the centre of enlargement by counting distances from centre, and find the centre of enlargement by drawing;
- **Find areas after enlargement and compare with before enlargement, to deduce multiplicative relationship (area scale factor); given the areas of two shapes, one an enlargement of the other, find the scale factor of the enlargement (whole number values only);**
- **Use congruence to show that translations, rotations and reflections preserve length and angle, so that any figure is congruent to its image under any of these transformations;**
- **Describe and transform 2D shapes using combined rotations, reflections, translations, or enlargements;**
- **Describe the changes and invariance achieved by combinations of rotations, reflections and translations.**

Pedagogical notes (implementation)	How will understanding be assessed & recorded (Impact)
Emphasise the need to describe the transformations fully, and if asked to describe a 'single' transformation students should not include two types. Find the centre of rotation, by trial and error and by using tracing paper. Include centres on or inside shapes.	**End of half term** no **End of Year** Mocks in April
	How can parents help at home?
	MathsWatch clips (Qualification KS4)

Further reading/discussion			
Reading / Enrichment	**Literacy**	**Numeracy Links**	**Careers Links** Soldiers, Coast guard Game developer, Architect