

KEVICC Key Stage 4 Curriculum Subject: Mathematics			Key Vocabulary and notation.	
Summer Half-Term				
Term: Year 9 Summer Term – Block Five		Topic: Transformations		
What is the essential knowledge from this unit? What do students need to remember and understand?				
	Specification content		Specification notes	
G7	Identify, describe, and construct congruent and similar shapes, including on co-ordinate axes, by considering rotation, reflection, translation and enlargement (<u>including fractional and negative scale factors</u>)			
<p>Students should be able to:</p> <ul style="list-style-type: none">describe and transform 2D shapes using single rotationsunderstand that rotations are specified by a centre and an anglefind a centre of rotationrotate a shape about the origin or any other pointmeasure the angle of rotation using right anglesmeasure the angle of rotation using simple fractions of a turn or degreesdescribe and transform 2D shapes using single reflectionsunderstand that reflections are specified by a mirror linefind the equation of a line of reflectiondescribe and transform 2D shapes using translationsunderstand that translations are specified by a distance and direction (using a vector)translate a given shape by a vectordescribe and transform 2D shapes using enlargements by a positive scale factorunderstand that an enlargement is specified by a centre and a scale factordraw an enlargementfind the centre of enlargementenlarge a shape on a grid (centre not specified)recognise that enlargements preserve angle but not lengthidentify the scale factor of an enlargement of a shape as the ratio of the lengths of two corresponding sidesidentify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segmentsdescribe and transform 2D shapes using combined rotations, reflections, translations, or enlargementsdistinguish properties that are preserved under particular transformationsunderstand that distances and angles are preserved under rotations, reflections, and translations, so that any figure is congruent under any of these transformationsuse 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.				
G7h	Describe translations as 2D vectors			
<p>Students should be able to:</p> <ul style="list-style-type: none">identify the scale factor of an enlargementconstruct enlargements with fractional and negative scale factors.				
G24	Describe translations as 2D vectors			
G8h	Describe the changes and invariance achieved by combinations of rotations, reflections and translations			
<p>Students should be able to:</p> <ul style="list-style-type: none">describe a combination of transformations as a single transformationunderstand and use the term 'invariance' for points, lines and shapesmap a point on a shape under a combination of transformationsuse column vector notation for translations.				
What prior learning supports understanding of this content?			How does this content link to future learning?	
<ul style="list-style-type: none">Understand the language of faces, edges, and vertices.Know the names of common prisms and non-prisms.Identify 2-D shapes with 3-D shapes.Calculate the perimeter of rectangles, squares and triangles in mm and cm.Calculate the area of rectangles, squares and triangles in mm and cm.Write the coordinates of points on a grid.Write the equation of the line $y = x$, and of lines parallel to the x and y-axis.			<ul style="list-style-type: none">Use the standard ruler and compass constructions:<ul style="list-style-type: none">Perpendicular bisector of a line segment.Constructing a perpendicular to a given line from / at a given point.Bisecting a given angle.Constructing an angle of 60°.Know that the perpendicular distance from a point to a line is the shortest distance to the line.Use these to construct given figures and solve loci problems.	
			<div>Line</div> <div>Rotation</div> <div>symmetry</div> <div>Angle</div> <div>Regular</div> <div>Clockwise</div> <div>Polygon</div> <div>Anti-clockwise</div> <div>Isosceles</div> <div>Turn</div> <div>Equilateral</div> <div>Quarter turn</div> <div>Triangle</div> <div>Congruent</div> <div>Square</div> <div>Object</div> <div>Rhombus</div> <div>Image</div> <div>Trapezium</div> <div>Vertical</div> <div>Kite</div> <div>Horizontal</div> <div>Circle</div> <div>Vertex</div> <div>Pentagon</div> <div>Perpendicular</div> <div>Hexagon</div> <div>distance</div> <div>Semi-Circle</div> <div>Enlarge</div> <div>Reflection</div> <div>Centre of</div> <div>Reflect</div> <div>enlargement</div> <div>Line</div> <div>Scale factor</div> <div>Symmetry</div> <div>Negative</div> <div>Axis</div> <div>Ratio</div> <div>Translation</div> <div>Origin</div> <div>Translate</div> <div>Object</div> <div>Vector</div> <div>Image</div> <div>Movement</div> <div>Correspond</div> <div>Move</div> <div>Similar</div> <div>Mathematical questioning should be designed to unpick the structure of the maths and deepen the student's understanding. When students talk about mathematical concepts, they should develop the vital mathematical language that helps them explain their ideas fully.</div> <div>Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.</div>	

<p>Reading: <i>Where in the unit are students supported to read complex academic text?</i></p> <ul style="list-style-type: none"> • Reading and understanding mathematical questions and problems' – teacher input. • Decoding complex examination questions - explain what they are asking the student to do' – teacher input. • Following instructions to solve problems - break down the tasks – teacher input. • Recognising terminology, numbers, and symbols. 	<p>Writing: <i>Independent writing tasks and how they are structured</i></p> <ul style="list-style-type: none"> • Using the correct subject specific terminology for numbers and symbols – examination papers, class books. • Responding to questions that ask for an explanation or a reason – examination papers, class books. • Self-evaluation, reviewing, reflecting and analysis of own work – class books, personalised learning checklists and analysis. • Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc.
<p>Key assessments:</p> <p>How will do students review the information learned?</p> <p>End of block assessments.</p> <p>AQA end of block assessments provide a quick progress check at the end of each block of learning to make sure students have understood the content being covered. These are available for both foundation and higher tiers.</p> <p>End of term/year assessments and mock examinations.</p> <p>End of term assessments assessing the students' progress towards targets and provide diagnostic information to modify future teaching.</p> <p>End of year 9 and 10 examinations assessing the students' progress towards targets and provide diagnostic information to modify future teaching.</p> <p>Two mock examinations seasons take place during year 11 using previous years AQA 8300 examination papers. Students to experience the full suite of papers at both Foundation and higher tiers using Non-calculator and Calculator requirements.</p> <p>All examinations will explore the three examination papers at both foundation and higher tiers using non-calculator and calculator requirements.</p> <p>How will feedback be seen?</p> <p>Marked end of block, term assessments and mock examinations.</p> <p>Personalised learning checklists for all assessments identifying strengths and areas of development.</p> <p>Written teacher feedback and marking in compliance with faculty and College Marking Policies. Student responses to marking. Students self-mark using purple pen. Verbal feedback given every lesson from teacher and peers as appropriate. Teacher and student self-assessment of presentation of class books will be completed to ensure written work is of high standard and students are achieving their potential.</p>	