KESTEVEN AND SLEAFORD HIGH SCHOOL

Mathematics Scheme of Learning
Year 11 – Term 2

Intent – Rationale

"Maths is for everyone". AQA GCSE Mathematics is designed to be diverse, engaging and essential to equip all students with the skills and knowledge to reach their future destination. Opportunities to make connections, generalise and apply are embedded where appropriate for each individual student. References to careers and future learning and shared with students.

Sequencing – what prior learning does this topic build upon?	Sequencing – what subsequent learning does this topic feed into?
• Year 9 Transformations, Year 10 Term 6 similarity & congruence (HSL) • Year 9 proportion • Year 10 translations using column vectors	• A level circle geometry, including finding the equation of a circle with any given centre. • A level calculus, rates of change
What are the links with other subjects in the curriculum?	**What are the links to SMSC, British Values and Careers?**
• Technology, product scaling with proportion	SP2&3, C1 SP2&3, C1 GB4efghi •
What are the opportunities for developing literacy skills and developing learner confidence and enjoyment in reading?	**What are the opportunities for developing mathematical skills?**
• Please fill this in with your own suggestions alternatively the LRC team will provide some suggested titles/links	•

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Intent – Concepts

<table>
<tr><th colspan="2">What knowledge will students gain and what skills will they develop as a consequence of this topic?</th></tr>
<tr><td colspan="2"><u>Know</u>
Apply reflection, rotation, translation and enlargement (including fractional and negative scale factors)
Know and use vector notation, diagrammatic representation and column vectors.

<u>Apply</u>
Describe combined transformations as a single transformation.
Solve geometrical vector problems including using ratio and midpoints.

<u>Extend</u>
Understand invariance with combined transformations
Use vectors to construct geometrical proofs and arguments including showing parallel or on the same straight line</td></tr>
<tr><th>What subject specific language will be used and developed in this topic?</th><th>What opportunities are available for assessing the progress of students?</th></tr>
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• List key terminology and definitions	AQA topic open book assessments (homework) Exam question practice in class – open book Mini quizzes including Kahoot Multiple choice to address misconceptions Recall starters: • LLLWLTLY • Corbett 5 a day • Whiterose maths KS4 problem of the day • Mini quiz

Transformations	R	A	G
Identify and construct congruent and similar shapes			
Apply reflection, rotation, translation and enlargement (including fractional and negative scale factors)			
Describe translations using vectors			
Understand invariance with combined transformations			

Vectors	R	A	G
Know and use vector notation, diagrammatic representation of vectors and column vectors			
Apply addition and subtraction of vectors			
Apply multiplication of vectors by a scalar			
Use ratio, midpoints and shape properties in geometrical vector problems			
Use vectors to construct geometrical proofs and arguments including showing parallel or on the same straight line			

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Direct and Inverse proportion	R	A	G
Recognise direct and inversely proportional relationships			
Find the scalar constant in a proportional relationship			
Solve problems in direct or inverse proportion			
Recognise and interpret graphs which illustrate direct and inverse proportion.			

Intent – Concepts

Lesson title	Learning challenge	Higher level challenge	Suggested activities and resources
Transformations	Identify and construct congruent and similar shapes		
	Apply reflection, rotation, translation and enlargement (including fractional and negative scale factors) Describe translations using vectors.		
	Describe combined transformations as a single transformation	Understand invariance with combined transformations	
Vectors (Higher) LAP focus on addition and multiplication part a) style Qs	Know and use vector notation, diagrammatic representation of vectors and column vectors		
	Apply addition and subtraction of vectors Apply multiplication of vectors by a scalar		
	Use ratio, midpoints and shape properties in geometrical vector problems	Use vectors to construct geometrical proofs and arguments including	

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		showing parallel or on the same straight line	
Proportion	Recognise direct and inversely proportional relationships. Find the scalar constant in a proportional relationship	Squared, cubed and rooted terms	Match up activity
	Solve problems in direct or inverse proportion		
	Recognise and interpret graphs which illustrate direct and inverse proportion.		