KESTEVEN AND SLEAFORD HIGH SCHOOL

Mathematics Scheme of Learning
Year 11 – Term 4

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 10 Term 3 Real life graphs - Year 10 Term 1 expressions & equations, quadratics - Year 10 Term 4 Functions, Term 3 sketching graphs	- A level Integration and mechanics - A level Pure maths further solving of trigonometric equations and interpreting graphs - A level further use of function notation including factor theorem - A level exponential modelling
What are the links with other subjects in the curriculum?	**What are the links to SMSC, British Values and Careers?**
- Physics with Pre Calculus - Geography with growth and decay	Use the coded help guides to complete this section
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	Pre calculus in preparation for A level and kinematic links to Physics. Financial maths link in growth and decay.

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Intent – Concepts

What knowledge will students gain and what skills will they develop as a consequence of this topic?
Know From a velocity time graph calculate the distance travelled Know the exact trigonometric values of sin, cos and tan for 0, 30, 45, 60, 90 degrees and sketch each graph. Understand function notation showing graph transformations. State the coordinates of a given point after a transformation.   **Apply** Interpret graphs in distance-time, velocity-time and financial contexts Identify the turning point of a quadratic in completed square form. Identify the line of symmetry in a quadratic curve. Describe the transformation shown in words and function notation Set up and solve growth problems in the context of compound interest   **Extend** Solve trigonometric equations using the relevant graph Sketch the graph for a given transformation Set up and solve growth and decay problems working with iterative processes

What subject specific language will be used and developed in this topic?	What opportunities are available for assessing the progress of students?

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• Speed, velocity, distance, time, acceleration, rate, displacement, kinematics • Sketch, draw, curve, linear, quadratic, reciprocal, exponential, cubic, intercept, roots, axis, turning point, symmetry, coordinate, trigonometric, sine, cosine, tangent, cyclic, period, solve • Transformation, translate, reflect, stretch, symmetry, scale factor, cyclic, period • Rate of change, rate, depreciate, interest, annual, investment, decay, growth, compound, simple, iterative,	• End of topic homework tests • Exam question practice – open book • Mini quizzes including Kahoot • Recall starters: • LLLWLTLY • Corbett 5 a day • Whiterose maths KS4 problem of the day • Mini quiz on last term topics

Pre-calculus	R	A	G
Interpret graphs in distance-time, velocity-time and financial contexts			
From a velocity time graph calculate the distance travelled			

Further Graphs	R	A	G
Identify the turning point of a quadratic in completed square form. Identify the line of symmetry in a quadratic curve.			
Sketch a quadratic curve using y-intercept, roots and its turning point			
Know the exact trigonometric values of sin, cos and tan for 0, 30, 45, 60, 90 degrees			
Sketch the graphs of y = sin(x), y = cos(x), y=tan(x)			
Solve trigonometric equations using the relevant graph			

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Graph Transformations	R	A	G
Understand function notation showing graph transformations			
State the coordinates of a given point after a transformation			
Describe the transformation shown in words and function notation			
Sketch the graph for a given transformation			

Growth and Decay	R	A	G
Set up and solve growth problems in the context of compound interest			
Set up and solve growth and decay problems working with iterative processes			