KEVICC Key Stage 4 Curriculum Subject: Mathematics	Key Vocabulary and notation.

Autumn Half-Term

Term: Year 11 Autumn Term – Block Eight   **Topic: Equation of a Circle**

What is the essential knowledge from this unit?
What do students need to remember and understand?

	Specification content	Specification notes
A16h	**Recognise and use the equation of a circle with centre at the origin** **Find the equation of a tangent to a circle at a given point.**	

Students should be able to:
- recognise the equation of a circle, centre (0, 0), radius *r*
- write down the equation of a circle, centre (0, 0) and radius *r*
- work out coordinates of points of intersection of a given circle and a given straight line
- use the fact that the angle between the tangent and radius is 90° to work out the gradient of a tangent and hence the equation of a tangent at a given point.

Key Vocabulary and notation.

Parallel	Coordinates
Horizontal	Substitute
Vertical	Satisfies
Straight line	Below
Axis	Above
Equation	Simultaneous
Graph	Equations
Intercept	Interception
Linear	Solutions
Table of	Perpendicular
values	Product
Gradient	Negative
x-intercept	Radius
y-intercept	Diameter
Parallel	Circle
Gradient	Tangent
Scale	Chord
Slope	Angle
Steep	At a given
Interpret	point
Intersect	Exact value
Line	Not drawn
Point	accurately

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.

Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.

What prior learning supports understanding of this content?
- Recognise that equations of the form *y* = *mx* + *c* correspond to straight-line graphs in the coordinate plane.
- Draw graphs of functions in which *y* is given explicitly or implicitly in terms of *x*.
- Complete tables of values for straight-line graphs.
- Calculate the gradient of a given straight-line given two points or from an equation.
- Manipulate the equations of straight lines so that it is possible to tell whether lines are parallel or not.
- Work out the equation of a line, given two points on the line or given one point and the gradient.

How does this content link to future learning?
- Know the difference between<, ⩽, ⩾, > and≠.
- Solve linear inequalities in one or two variables and quadratic inequalities in one variable; represent the solution set on a number line, using set notation and on a graph.
- Know the conventions of an open circle on a number line for a strict inequality and a closed circle for an included boundary.
- Represent the solution set on a number line, using set notation and on a graph.
- In graphical work the convention of a dashed line for strict inequalities and a solid line for an included inequality will be required.
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Reading: *Where in the unit are students supported to read complex academic text?*
- 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.

Writing: *Independent writing tasks and how they are structured*
- 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.

Key assessments:

How will do students review the information learned?

End of block assessments.

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.

End of term/year assessments and mock examinations.

End of term assessments assessing the students' progress towards targets and provide diagnostic information to modify future teaching.

End of year 9 and 10 examinations assessing the students' progress towards targets and provide diagnostic information to modify future teaching.

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.

All examinations will explore the three examination papers at both foundation and higher tiers using non-calculator and calculator requirements.

How will feedback be seen?

Marked end of block, term assessments and mock examinations.

Personalised learning checklists for all assessments identifying strengths and areas of development.

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.