Summer Half-Term

| Term: Year 9 Summer Term – Block Six | Topic: Constructions and Loci |

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

	Specification content	Specification notes
G2	Use the standard ruler and compass constructions: perpendicular bisector of a line segment constructing a perpendicular to a given line from / at a given point bisecting a given angle 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	including constructing an angle of 60°

Students should be able to:
- measure and draw lines to the nearest mm
- measure and draw angles to the nearest degree
- make accurate drawings of triangles and other 2D shapes using a ruler and a protractor
- make an accurate scale drawing from a sketch, diagram, or description
- use a straight edge and a pair of compasses to do standard constructions
- construct a triangle
- construct an equilateral triangle with a given side or given side length
- construct a perpendicular bisector of a given line
- construct a perpendicular at a given point on a given line
- construct a perpendicular from a given point to a given line
- construct an angle bisector
- construct an angle of 60°
- draw parallel lines
- draw circles or part circles given the radius or diameter
- construct diagrams of 2D shapes
- find loci, both by reasoning and by using ICT to produce shapes and paths
- construct a region, for example, bounded by a circle and an intersecting line
- construct loci, for example, given a fixed distance from a point and a fixed distance from a given line
- construct loci, for example, given equal distances from two points
- construct loci, for example, given equal distances from two-line segments
- construct a region that is defined as, for example, less than a given distance or greater than a given distance from a point or line segment
- describe regions satisfying several conditions.

Key Vocabulary and notation.

Constructions	Degree
Loci	Scale
Construct	drawing
Pair of	Length
compasses	Given point
Protractor	Given line
Ruler	Given side
Accurate	Angle
Straight edge	bisector
Measure	Parallel lines
Bisectors	Radius
Bisect	Diameter
Mid-point	Arc
Perpendicular	Circle
Line segment	Semi-circle
Straight	Intersecting
Right angle	line
Angle	Equilateral
Line	triangle
Nearest mm	Region
Draw	Fixed
Triangle	distance
Point	Label
Sketch	Crossing
Fixed point	Equidistant
Intersecting	Constraint
Bearings	

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?
- Measure and classify angles.
- Recognise types of triangle, quadrilateral and other polygons.
- Apply the properties of:
  - angles at a point
  - angles at a point on a straight line
  - vertically opposite angles
  - Understand and use alternate and corresponding angles on parallel lines
- Calculate missing angles in triangles and quadrilaterals.

How does this content link to future learning?
- Use 2D representations of 3D shapes.
- Draw nets and show how they fold to make a 3D solid.
- Analyse 3D shapes through 2D projections and cross sections, including plans and elevations.
- Understand and draw front and side elevations and plans of shapes made from simple solids, for example a solid made from small cubes.
- Understand and use isometric drawings.

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.

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.

• Recognising terminology, numbers, and symbols.	• 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.