St Mary's Catholic School
Key Stage 5 – Bridging Course for Year 11

Overview of Bridging Course

Department: **Mathematics – Further Maths**

What is the focus of this bridging course?

- Students will re-cap their knowledge of four key areas of GCSE mathematics and Level 2 Further Mathematics that will be built upon and developed at A Level.
- Students will learn to use key study skills required for independent learning in mathematics.
- Students will apply their understanding to complete a subject knowledge assessment.

w/b 27 April	*Overview of what students will cover this week:*
	• Students will develop skills in Matrix arithmetic, looking at:
	  ○ Dimensions of a matrix
	  ○ Addition and subtraction of matrices
	  ○ Multiplying a matrix by a scalar
	  ○ Multiplying a matrix by a matrix
	  ○ The identity matrix
	• Students will be directed to videos and textbook examples to review their understanding of this area.
	• Students will be directed to exercises to work through to apply their understanding.

w/b 4 May	• Students will develop their knowledge of Matrices to include transformations, looking at:
	  ○ How matrices can represent transformations to points in 2D or 3D space.
	  ○ Transformations of the unit square in the x-y plane; reflections, rotations and enlargements
	  ○ Combined transformations
	• Students will be directed to videos and textbook examples to review their understanding of this area.
	• Students will be directed to exercises to work through to apply their understanding.

w/b 11 May	• Students will re-cap and develop their knowledge of Vector Geometry to provide the fundamentals for Mechanics and Further Maths, looking at:
	  ○ Vector proof including the triangle law for vector addition
	  ○ Parallel vectors
	  ○ Collinear points
	  ○ The magnitude of a vector including unit vectors
	• Students will be directed to videos and textbook examples to review their understanding of this area.
	• Students will be directed to exercises to work through to apply their understanding.

w/b 18 May	• Students will re-cap and develop their knowledge of Sequences, looking at:
	  ○ The value of the *n*th term of a sequence for any given value of n
	  ○ The limiting value for a given sequence or for a given *n*th term as *n* approaches infinity
	  ○ The nth term of a given linear or a given quadratic sequence
	  ○ Different types of sequences including arithmetic, geometric and Fibonacci, increasing, decreasing and periodic
	  ○ Recurrence relationships
	• Students will be directed to videos and textbook examples to review their understanding of this area.
	• Students will be directed to exercises to work through to apply their understanding.

Work that students will receive feedback on:

- Students will complete and submit a subject knowledge assessment at the end of week 4, which will be marked in detail.