

| Year Group                | Year 11  |  |  |   |   |          |  |
|---------------------------|--|--|--|---|---|----------|--|
| Subject intent            | Our curriculum will enable students to:  - Learn within a coherent and exciting framework which does not limit students' ambitions.  - Develop new skills through a variety of interesting contexts to foster enjoyment.  - Develop a rich, deep and secure subject knowledge.  - Understand what they are doing well and how they need to improve.  - Explore the breadth and depth of the national curriculum.  - Improve their spiritual, social, moral and cultural understanding to develop confidence in their own financial and numerical understanding |  |  |   |   |          |  |
| Subject<br>Implementation | Autumn 1   | Autumn 2   | Spring 1   | Spring 2  | Summer 1  | Summer 2 |  |
| Knowledge                 | Year 11 Higher: - Vectors and geometric proof  Year 11 Foundation: - Vectors and geometric proof - GCSE exam practice  | Year 11 Higher: - Proportion and graphs  Year 11 Foundation: - Proportion and graphs  - GCSE exam practice | Year 11 Higher: - Circle theorems  ear 11 Foundation: - Circle theorems - GCSE exam practice | Year 11 : - GCSE exam practice                            | Year 11 r: - GCSE exam practice                                       |          |  |
| Skills                    | Addition, subtraction of vectors. Represent a vector as a column vector. Use vectors in simple   | Sketch translations and reflections of a given function.   | Understand and use the terms sector and segment.   | Build exam skills and review previously taught content in | Build exam skills and review previously taught content in exam style. |          |  |

## ST MARTIN-IN-THE-FIELDS HIGH SCHOOL FOR GIRLS

## **Mathematics Framework for Learning 2022-2023**



|                | and complex geometric arguments and proofs.   | Sketch and interpret graphs of linear, quadratic and non-linear functions.  Solve problems involving direct and inverse proportion, including graphical and algebraic representations.  | Understand and apply circle theorems  Prove the theorem that two angles in the same segment are equal.  Solve a problem using circle theorems.  | exam style. |  |
|----------------|---|---|---|-------------|--|
| Subject Impact | apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors; use vectors to construct geometric arguments and proofs | Calculate or estimate gradients of graphs and areas under graphs (including quadratic and other non-linear graphs), and interpret results in cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts (this does not include calculus). Understand and use proportion as equality of ratios. Understand that X is inversely proportional to Y is equivalent to X is proportional to 1/Y; | 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.  Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment.  Apply and prove the standard circle theorems concerning |             |  |

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|            |                         | construct and interpret equations that describe direct and inverse proportion. Interpret the gradient of a straight line graph as a rate of change; recognise and interpret graphs that illustrate direct and inverse proportion. Interpret the gradient at a point on a curve as the instantaneous rate of change; apply the concepts of average and instantaneous rate of change (gradients of chords and tangents) in numerical, algebraic and graphical contexts (this does not include calculus). | angles, radii, tangents and chords, and use them to prove related results. |                         |                         |                         |
|------------|-------------------------|--|--|-------------------------|-------------------------|-------------------------|
| Assessment | Summative and formative | Summative and formative  | Summative and formative  | Summative and formative | Summative and formative | Summative and formative |