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| **Subject** | **Year 11 Threshold Concepts – Spring Term** | **How to support students’ learning** |
| Mathematics | **Statistics**   * Present data using bar charts, pie charts, frequency polygons, stem and leaf diagrams * Calculate averages and explain their advantages and disadvantages * Design questionnaires and describe methods of sampling * Understand time series * Draw and interpret scatter graphs * Draw and interpret box plots, cumulative frequency curves and histograms (Higher tier only)     **Applications of graphs**   * Generate points and plot quadratic, cubic, reciprocal and exponential graphs * Relate factorising of quadratics and completing the square to quadratic graphs (Higher tier only) * Generate points and plot trigonometric graphs (Higher tier only) * Find intersection of linear and quadratic graphs (Higher tier only) * Apply translations and stretches to graphs (Higher tier only) | * At home you can help support your child with revision using [www.mathswatch.co.uk](http://www.mathswatch.co.uk/)  and [www.sparx.com](https://sparxmaths.com/)   (see your teacher for login and password) and in completing past papers on a weekly basis.   * Encourage your child to be accurate when drawing charts and diagrams |
|  | **Probability**   * Basic probabilities and expectation * Listing outcomes and sample space diagrams * Relative frequency * Frequency trees * Two way tables * Use simple set notation * Use tree diagrams * Construct and interpret Venn Diagrams (Higher tier only) * Solve problems involving conditional probability   (Higher tier only)    **Surds and Indices**   * Calculate squares, cubes and their roots * Use index laws with integer powers * Use index laws with fractional and negative powers (Higher tier only) * Manipulate surds (Higher tier only) * Use surds to give answers in exact form (Higher tier only) * Rationalise the denominator (Higher tier only) | • At home you can help support your child with revision using [www.mathswatch.co.uk](http://www.mathswatch.co.uk/)  and [www.sparx.com](https://sparxmaths.com/)  (see your teacher for login and password) and in completing past papers on a weekly basis.   * At home you can help support your child with revision using [www.mathswatch.co.uk](http://www.mathswatch.co.uk/)  and [www.sparx.com](https://sparxmaths.com/) (see your teacher for login and password) and in completing past papers on a weekly basis. |