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| **Subject** | **Year 9 Foundation Threshold Concepts – Spring Term** | **How to support students’ learning** |
| Mathematics | **Functions**   * Rearrange formulae to change the subject where the subject appears once only. * Form and substitute into functions   **Sequences**   * Generate sequences using the position-to-term rule * Find the position-to-term rule of arithmetic sequences * Understand and use special sequences   **Estimation and Approximation**   * Round to decimal places * Round to significant figures * Estimate calculations by rounding   **Linear Graphs**   * Plot horizontal and vertical lines * Plot straight-line graphs * Find the gradient of straight lines, graphically and using the equation of a straight-line y = mx + c * Find the intercept of straight lines, graphically and using the equation of a straight-line y = mx + c * Write straight lines in the form y = mx + c   **Ratio and Proportion**   * Write ratios in the form 1:n * Understand the link between ratios and fractions * Sharing amounts in a given ratio * Solve direct proportion word problems * Solve inverse proportion word problems * Perform currency conversions, including graphically   **Transformations**   * Perform and describe reflections * Perform and describe rotations * Perform and describe translations * Perform and describe enlargements   **Percentages**   * Increase and decrease a quantity by a simple percentage, including understanding what a multiplier is * Calculate simple interest in financial contexts | * Encourage your child to practise their algebra skills * Discuss how to substitute and use real-life formulas, e.g. cooking instructions based on weight * Encourage your child to have the correct equipment for lessons, e.g. a calculator * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books * Encourage your child to learn their times tables, prime numbers below 100 and square numbers up to 225 (152) * Discuss real-life examples of sequences, e.g. house numbers * Encourage your child to have the correct equipment for lessons, e.g. a pencil, ruler, calculator * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books * Encourage your child to understand the base 10 decimal place value system * Discuss with them situations where numbers have been rounded, e.g. football crowds, newspaper headlines * Discuss with them where to estimate answers by rounding e.g. estimating a total shopping cost by rounding each item to the nearest £. * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books * Encourage your child to use the website www.GeoGebra.org to plot functions to see what their graphs look like * Encourage your child to have the correct equipment for lessons, e.g. a pencil, ruler, calculator * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books * Encourage your child to look at real-life graphs and tables of data * Discuss real-life applications of ratio and proportion, e.g. baking and currency exchange (direct proportion), the fact it takes longer for 2 people to paint the same fence than 3 people (indirect proportion) * Encourage your child to have the correct equipment for lessons, e.g. a pencil, ruler, calculator * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books * Encourage your child to look at real-life symmetry, rotation and size changes within everyday objects * Encourage your child to have the correct equipment for lessons, e.g. a pencil, ruler * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books * Encourage your child to use a multiplier when solving percentage problems * Discuss real-life percentage problems, e.g. discounts, interest rates, tax etc * Encourage your child to have the correct equipment for lessons, e.g. a calculator * Use [www.sparx.com](https://sparxmaths.com/)for support if needed. Teachers will have provided your child with a login and password * Encourage your child to show all their working out. If they have homework online, then encourage them to write down all their working out in their exercise books |