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| **Subject** | **Year 9 Foundation Threshold Concepts – Autumn Term** | **How to support students’ learning** |
| Mathematics | **Integers and Indices**   * Use order of operations * Simplify using laws of indices * Perform standard form conversions * Interpret and order numbers in standard form * Use a calculator to perform calculations in standard form   **Factors and Multiples**   * Perform prime factor decomposition * Find the highest common factor and lowest common multiple using prime factor decomposition   **Expressions and Formulae**   * Substitute positive and negative numbers into increasingly complex formulae * Form expressions * Simplify expressions by collecting like terms * Simplify algebraic products & quotients using the laws of indices * Factorise into single brackets * Expand double brackets   **Equations and Inequalities**   * Solve linear equations, i.e. one and two-step including brackets * Solve equations involving fractions (including unknown in the denominator) * Solve equations with the unknown on both sides. * Construct and solve equations * Understand inequality symbols * Solve linear inequalities in one variable * Represent inequalities on number lines   **Angles**   * Review basic angle facts * Calculate angles in triangles and quadrilaterals * Calculate angles on parallel lines * Find interior angles of polygons * Find exterior angles of polygons   **Fractions and Decimals**   * Add, subtract, multiply and divide fractions and mixed numbers * Calculate fractions of amounts * Express one quantity as a fraction of another * Convert between fractions, decimals and percentages * Order fractions, decimals and percentages * Multiply decimals (including negatives) * Divide by decimals (including negatives)   **Theoretical and Experimental Probability**   * Calculate theoretical probabilities, including equally likely outcomes * Calculate experimental probability * Calculate an expected frequency * Systematically list outcomes * Create and interpret sample space diagrams * Calculate probabilities from Venn Diagrams (including set notation) | * Encourage your child to look at real-life examples of standard form numbers, e.g. very small (biological cells) and very large scientific numbers (astronomical weights and distances) * 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) * 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 practise their algebra skills and multiples and factors of numbers * Discuss with your child where they can see negative numbers in real-life, e.g. lifts, temperatures, money * 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 practise their algebra skills, order of operations knowledge (BIDMAS) and multiples of factors of 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 learn the rules associated with the angle facts taught in lessons * Encourage your child to have the correct equipment for lessons, e.g. a protractor, 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 review their knowledge of fractions and how to divide without a calculator * 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 review their prior knowledge of probability * Discuss real-life applications of probability, e.g. weather forecasting, financial investment and everyday decision making * 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 |