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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
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* 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
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* 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
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