

GCSE UNIT SUMMARY: UNIT 2 : Algebra

| Unit Description | Taught | Revision Priority |
|--|---------------|--------------------------|
| A1 - Use and interpret algebraic notation, including: <ul style="list-style-type: none"> • ab in place of $a \times b$ • $3y$ in place of $y + y + y$ and $3 \times y$ • a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$, a^2b in place of $a \times a \times b$ • in place of $a \div b$ $\frac{a}{b}$ | | |
| A2 - Substitute numerical values into formulae and expressions, including scientific formulae | | |
| A3 - Understand and use the concepts and vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors | | |
| A4 - Simplify and manipulate algebraic expressions by: <ul style="list-style-type: none"> • collecting like terms • multiplying a single term over a bracket • taking out common factors • simplifying expressions involving sums, products and powers, including the laws of indices | | |
| A5 - Understand and use standard mathematical formulae; rearrange formulae to change the subject | | |
| A6 - Know the difference between an equation and an identity; argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments | | |
| A7 -Where appropriate, interpret simple expressions as functions with inputs and outputs | | |
| A21 - Translate simple situations or procedures into algebraic expressions or formulae; Derive an equation, solve the equation and interpret the solution | | |

2a) Algebra the basics

| Unit Description | Taught | Revision Priority |
|---|---------------|--------------------------|
| Use notation and symbols correctly; | | |
| Write an expression; | | |
| Select an expression/equation/formula/identity from a list; | | |
| Manipulate and simplify algebraic expressions by collecting 'like' terms | | |
| Multiply together two simple algebraic expressions, e.g. $2a \times 3b$; | | |
| Simplify expressions by cancelling, e.g. $= 2x$; | | |
| Use index notation and the index laws when multiplying or dividing algebraic terms; | | |
| Understand the \neq symbol and introduce the identity \equiv sign; | | |

2b) Expressions and substitution into formula

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| Multiply a single number term over a bracket; | | |
| Write and simplify expressions using squares and cubes; | | |
| Simplify expressions involving brackets, i.e. expand the brackets, then add/subtract; | | |
| Argue mathematically to show algebraic expressions are equivalent; | | |
| Recognise factors of algebraic terms involving single brackets; | | |
| Factorise algebraic expressions by taking out common factors; | | |
| Write expressions to solve problems representing a situation; | | |
| Substitute numbers into simple algebraic expressions; | | |
| Substitute numbers into expressions involving brackets and powers; | | |
| Substitute positive and negative numbers into expressions; | | |
| Derive a simple formula, including those with squares, cubes and roots; | | |
| Substitute numbers into a (word) formula; | | |

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2b) Expressions and substitution into formula

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| Recognise factors of algebraic terms involving single brackets; | | |
| Factorise algebraic expressions by taking out common factors; | | |
| Write expressions to solve problems representing a situation; | | |
| Substitute numbers into simple algebraic expressions; | | |
| Substitute numbers into expressions involving brackets and powers; | | |
| Substitute positive and negative numbers into expressions; | | |
| Derive a simple formula, including those with squares, cubes and roots; | | |
| Substitute numbers into a (word) formula; | | |