|  |  |
| --- | --- |
| **F Unit 2: Algebra** | **Road Map** |
| In this unit you will learn about number. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 2a Algebra: The basics | 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. 2*a* × 3*b*;  |  |  |  |
| Simplify expressions by cancelling, e.g.  = 2*x*;  |  |  |  |
| Use index notation when multiplying or dividing algebraic terms;  |  |  |  |
| Use index laws in algebra;  |  |  |  |
| Use index notation in algebra.  |  |  |  |
| Understand the ≠ symbol and introduce the identity ≡ sign;  |  |  |  |
| 2b Expanding and factorising single brackets | 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.  |  |  |  |
| 2c Expressions and substitution into formulae | Write expressions to solve problems representing a situation;  |  |  |  |
| Substitute numbers in 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;  |  |  |  |
| Substitute numbers into a formula.  |  |  |  |

**Links:**

LG1: You will use the algebraic processes from this topic in all future algebra topics.

LG2: You will apply the algebraic processes from this topic to model written and geometric problems using algebra.

LG3: You will use your problem-solving skills and mastery of algebra to solve complex Mathematical problems such as problems to do with formulae used in real-life.

**Links:**

LG1: You will use the algebraic processes from this topic in all future algebra topics.

LG2: You will apply the algebraic processes from this topic to model written and geometric problems using algebra.

LG3: You will use your problem-solving skills and mastery of algebra to solve complex Mathematical problems such as problems to do with formulae used in real-life.

|  |  |
| --- | --- |
| **F Unit 2: Algebra** | **Road Map** |
| In this unit you will learn about number. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 2a Algebra: The basics | 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. 2*a* × 3*b*;  |  |  |  |
| Simplify expressions by cancelling, e.g.  = 2*x*;  |  |  |  |
| Use index notation when multiplying or dividing algebraic terms;  |  |  |  |
| Use index laws in algebra;  |  |  |  |
| Use index notation in algebra.  |  |  |  |
| Understand the ≠ symbol and introduce the identity ≡ sign;  |  |  |  |
| 2b Expanding and factorising single brackets | 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.  |  |  |  |
| 2c Expressions and substitution into formulae | Write expressions to solve problems representing a situation;  |  |  |  |
| Substitute numbers in 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;  |  |  |  |
| Substitute numbers into a formula.  |  |  |  |

**Links:**

LG1: You will use the algebraic processes from this topic in all future algebra topics.

LG2: You will apply the algebraic processes from this topic to model written and geometric problems using algebra.

LG3: You will use your problem-solving skills and mastery of algebra to solve complex Mathematical problems such as problems to do with formulae used in real-life.