

Y10 Unit 4 Overview- Algebra

Test Date: WB 22nd June, 2020.

Target grade for tests:

You will learn about:

- The language of algebra.
- Sequences.
- Solving equations.

You will be able to:

- Understand and use the concepts and vocabulary of expressions, equations, formulae and terms.
- Use and interpret algebraic notation, including: 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/b in place of $a \div b$, brackets.
- Simplify and manipulate algebraic expressions by collecting like terms and multiplying a single term over a bracket.
- Where appropriate, interpret simple expressions as functions with inputs and outputs.
- Substitute numerical values into formulae and expressions.
- Use conventional notation for priority of operations, including brackets.
- Generate terms of a sequence from a term-to-term rule.
- Solve linear equations in one unknown algebraically.



Lesson Overview	Key Words
<p><u>ALGEBRAIC PROFICIENCY: TINKERING</u></p> <ul style="list-style-type: none">• Know the meaning of expression, term, formula, equation, function• Know basic algebraic notation (the rules of algebra)• Use letters to represent variables• Identify like terms in an expression• Simplify an expression by collecting like terms• Know how to multiply a (positive) single term over a bracket• Substitute positive numbers into expressions and formulae• Given a function, establish outputs from given inputs• Given a function, establish inputs from given outputs• Use a mapping diagram (function machine) to represent a function• Use an expression to represent a function• Use the order of operations correctly in algebraic situations <p><u>SEQUENCES</u></p> <ul style="list-style-type: none">• Use a term-to-term rule to generate a linear sequence• Use a term-to-term rule to generate a non-linear sequence• Find the term-to-term rule for a sequence• Describe a number sequence• Solve problems involving the term-to-term rule for a sequence• Solve problems involving the term-to-term rule for a non-numerical sequence <p><u>SOLVING EQUATIONS</u></p> <ul style="list-style-type: none">• Choose the required inverse operation when solving an equation• Identify the correct order of undoing the operations in an equation• Solve one-step equations when the solution is a whole number or fraction• Solve two-step equations (including the use of brackets) when the solution is a whole number or fraction• Solve three-step equations (including the use of brackets) when the solution is a whole number or fraction• Check the solution to an equation by substitution	<p>Refer to http://studymaths.co.uk/glossary.php for definitions of the key words</p> <p>Algebra, algebraic, algebraically Expression, Term, Formula (formulae), Equation, Function, Variable Mapping diagram, Input, Output Represent Substitute Evaluate Like terms Simplify / Collect Unknown Operation Solve Solution Brackets Symbol</p> <p>Notation The lower case and upper case of a letter should not be used interchangeably when worked with algebra $2xa$ is written as $2a$ (we don't use x signs) $2a$ is used rather than a^2. Division is written as a fraction</p> <p>Pattern Sequence Linear Term Term-to-term rule Ascending Descending</p>

Suggested reading or support/ challenge available

Support is available from a Maths teacher in 'MORALE' in M1 daily from 1:30pm -1:45pm

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Cross curricular

SMSC:

1.1 Exploring, understanding and respecting cultural diversity e.g. exploration of different methods of calculation.

3.1 Developing personal qualities and using social skills (regular paired/ group work communication).

3.2 Participating, cooperating and resolving conflicts (paired/group activities).

4.2 Experiencing fascination, awe and wonder of mathematics.

4.4 Using imagination and creativity in learning.

Literacy:

Verbal communication of understanding using key words in the correct context.

Development of written communication of methods and strategies to problem solve.

NAC:

Science – Distinguish between formulae for perimeter, area and volume. Use simple formulae.

Business – Use simple formulae (Year 11).

Research	
Note-making	
Group work & discussion	
Memorisation	
Precision & accuracy	
Independence	
Reflection	