2a) Algebra: the basics, setting up, rearranging and solving equations

Unit Description	Taught	Revision Priority
Use algebraic notation and symbols correctly;		
Know the difference between a term, expression, equation, formula and an identity;		
Write and manipulate an expression by collecting like terms;		
Substitute positive and negative numbers into expressions such as $3x + 4$ and $2x^3$ and then into expressions involving brackets and powers;		
Substitute numbers into formulae from mathematics and other subject		
Simplify expressions by cancelling, e.g. $(4x)/2 = 2x$;		
Use laws of indices for positive integer;		
Use laws of indices, including use of zero, fractional and negative powers;		
Multiply a single term over a bracket and recognise factors of algebraic terms involving single brackets and simplify expressions by factorising, including subsequently collecting like terms;		
Expand the product of two linear expressions, i.e. double brackets working up to negatives in both brackets and also similar to $(2x + 3y)(3x - y)$;		
Know that squaring a linear expression is the same as expanding double brackets;		
Factorise quadratic expressions of the form $ax^2 + bx + c$;		
Factorise quadratic expressions using the difference of two squares;		
Set up simple equations from word problems and derive simple formulae;		
Understand the $\neq$ symbol (not equal), e.g. $6x + 4 \neq 3(x + 2)$, and the identity $\equiv$ sign;		
Solve linear equations, with integer coefficients, in which the unknown appears on either side or on both sides of the equation;		
Solve linear equations which contain brackets, including those that have negative signs occurring anywhere in the equation, and those with a negative solution;		
Solve linear equations in one unknown, with integer or fractional coefficients;		
Set up and solve linear equations to solve to solve a problem;		
Derive a formula and set up simple equations from word problems, then solve these equations, interpreting the solution in the context of the problem;		
Substitute positive and negative numbers into a formula, solve the resulting equation including brackets, powers or standard form;		
Use and substitute formulae from mathematics and other subjects, including the kinematics formulae $v = u + at$, $v^2 - u^2 = 2as$, and $s = ut + \frac{1}{2}at^2$;		
Change the subject of a simple formula, i.e. linear one-step, such as $x = 4y$;		
Change the subject of a formula, including cases where the subject is on both sides of the original formula, or involving fractions and small powers of the subject;		
Simple proofs and use of $\equiv$ in "show that" style questions; know the difference between an equation and an identity;		
Use iteration to find approximate solutions to equations, for simple equations in the first instance, then quadratic and cubic equations.		

2b) Sequences

Unit Description	Taught	Revision Priority
Recognise simple sequences including at the most basic level odd, even, triangular, square and cube numbers and Fibonacci-type sequences;		
Generate sequences of numbers, squared integers and sequences derived from diagrams;		
Describe in words a term-to-term sequence and say if a term cannot be in the sequence;		
Generate specific terms in a sequence using the position-to-term rule and term-to-term rule;		
Find and use (to generate terms) the nth term of an arithmetic sequence;		
Use the nth term of an arithmetic sequence to decide if a given number is a term in the sequence, or find the first term above or below a given number;		
Identify which terms cannot be in a sequence by finding the nth term;		
Continue a quadratic sequence and use the nth term to generate terms;		
Find the nth term of quadratic sequences;		
Distinguish between arithmetic and geometric sequences;		
Use finite/infinite and ascending/descending to describe sequences;		
Recognise and use simple geometric progressions (rn where n is an integer, and r is a rational number > 0 or a surd);		
Continue a geometric series and find term to term rule, including negative, fraction and decimal terms;		
Solve problems involving sequences from real life situations.		

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Use laws of indices for positive integer;		
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Expand the product of two linear expressions, i.e. double brackets working up to negatives in both brackets and also similar to $(2x + 3y)(3x - y)$;		
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Set up simple equations from word problems and derive simple formulae;		
Understand the $\neq$ symbol (not equal), e.g. $6x + 4 \neq 3(x + 2)$, and the identity $\equiv$ sign;		
Solve linear equations, with integer coefficients, in which the unknown appears on either side or on both sides of the equation;		
Solve linear equations which contain brackets, including those that have negative signs occurring anywhere in the equation, and those with a negative solution;		
Solve linear equations in one unknown, with integer or fractional coefficients;		
Set up and solve linear equations to solve to solve a problem;		
Derive a formula and set up simple equations from word problems, then solve these equations, interpreting the solution in the context of the problem;		
Substitute positive and negative numbers into a formula, solve the resulting equation including brackets, powers or standard form;		
Use and substitute formulae from mathematics and other subjects, including the kinematics formulae $v = u + at$, $v^2 - u^2 = 2as$, and $s = ut + \frac{1}{2} at^2$;		
Change the subject of a simple formula, i.e. linear one-step, such as $x = 4y$;		
Change the subject of a formula, including cases where the subject is on both sides of the original formula, or involving fractions and small powers of the subject;		
Simple proofs and use of $\equiv$ in "show that" style questions; know the difference between an equation and an identity;		
Use iteration to find approximate solutions to equations, for simple equations in the first instance, then quadratic and cubic equations.		

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Generate specific terms in a sequence using the position-to-term rule and term-to-term rule;		
Find and use (to generate terms) the nth term of an arithmetic sequence;		
Use the nth term of an arithmetic sequence to decide if a given number is a term in the sequence, or find the first term above or below a given number;		
Identify which terms cannot be in a sequence by finding the nth term;		
Continue a quadratic sequence and use the nth term to generate terms;		
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Distinguish between arithmetic and geometric sequences;		
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Recognise and use simple geometric progressions (rn where n is an integer, and r is a rational number > 0 or a surd);		
Continue a geometric series and find term to term rule, including negative, fraction and decimal terms;		
Solve problems involving sequences from real life situations.		