

Overview of Structure

	1.0	2.0	3.0	4.0	5.0	6.0	
Algebraic properties of numbers and operations		• use associative, commutative properties for addition calculations	• use associative, commutative and distributive properties in multiplication calculations	• know + & - and $\times$ & $\div$ are inverse operations	• expand knowledge of properties of - and $\div$	• link division of fractions with multiplication by inverse • link subtraction of negatives with addition of inverse	• use properties of surds and exponents
Symbols and Expressions			• identify number patterns and describe the general rule verbally • understand the meaning of '=' • first use of a formula (area of rectangle)	• use recursion rules and formulas e.g. to calculate a sequence of numbers	• write algebraic rules from verbal descriptions and tables • recognise and make equivalent expressions (collect terms, expand, substitute, rearrange formulas, cancel)	• factorise (common factors, binomial factors etc) • use exponent laws • make equivalent expressions including four operations with simple algebraic fractions	
Functions and graphs			• use column graphs	• use coordinates and line graphs • describe verbally relationships between everyday life variables and sketch informally	• represent linear functions with tables, rules and graphs • model situations with linear and other selected functions (e.g. $xy = 30$) • link rate of change with slope of a linear graph	• identify tables, rules and graphs of linear, quadratic and exponential functions • recognise roles of parameters in function rules • formulate functions for real world modelling	
Solving Equations		• construct number sentences	• solve number sentences with missing numbers, by observation or known facts • use tables to organise guess-check-improve	• solve number sentences with missing numbers and simple word equations by guess-check-improve and in simple cases with inverse operations	• solve linear and some other equations by inspection, backtracking & inverse operations (do same to both sides) • solve equations from tables of values; graphs; guess-check-improve	• solve quadratic, simultaneous linear equations and linear inequalities algebraically & graphically. • solve equations of form $f(x) = k$ graphically & by guess-check-improve	
Sets	• form sets from descriptions • describe sets	• recognise sets and subsets	• venn diagrams and karnaugh maps showing relation between 2 attributes or 2 sets		• test validity of statements with <i>and</i>, <i>or</i>, <i>not</i>, <i>none</i>, <i>some</i>, <i>all</i> • power sets	• express relations between 2, then 3, sets using membership, complement, intersection, union, and subset	
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