

Term 1

1. Sequences

Describe and continue a sequence given diagrammatically and Predict and check the next term(s) of a sequence

Represent sequences in tabular and graphical forms

Recognise the difference between linear and non-linear sequences, Continue numerical linear sequences and Continue numerical non-linear sequences

Explain the term-to-term rule of numerical sequences in words and H - Find missing numbers within sequences

Given a numerical input, find the output of a single function machine and Use inverse operations to find the input given the output

Use diagrams and letters to generalise number operations and Use diagrams and letters with single function machines

2. Algebraic Notation

Find the function machine given a simple expression

Substitute values into single operation expressions

Find numerical inputs and outputs for a series of two function machines and Use diagrams and letters with a series of two function machines

Find the function machine given a two-step expression; Substitute values into two-step expressions

Generate sequences given an algebraic rule

Represent one- and two-step functions graphically

Understand the meaning of equality

3. Equality and Equivalence

Understand and use fact families, numerically and algebraically

Solve one-step linear equations involving addition and subtraction using inverse operations

Solve one-step linear equations involving multiplication and division using inverse operations

Understand the meaning of like and unlike terms

Understand the meaning of equivalence and Simplify algebraic expressions by collecting the like term using the \equiv symbol

Recognise the place value of any digit in an integer up to one billion and Understand and write integers up to one billion in words and figures

Work out intervals on a number line and Position integers on a number line

4. Place Value and Ordering Numbers

Round intervals to the nearest power of 10

Compare two numbers using $=$, \neq , $<$, $>$, \leq and \geq and Order a list of integers and Compare and order any number up to one billion

Find the range of a set of numbers and Find the median of a set of numbers

Understand place value for decimals and position decimals on a number line

Round a number to 1 significant figure

H - Write 10, 100, 1000 etc as powers of 10 and H - Write positive integers in the form $A \times 10^n$

H - Investigate negative powers of 10 and H - Write decimals in the form $A \times 10^n$

Represent tenths and hundredths as diagrams

Represent tenths and hundredths on number lines

Interchange between fractional and decimal number lines, Convert between fractions and decimals - tenths and hundredths and Convert between fractions and decimals - fifths and quarters

H - Convert between fractions and decimals - eighths and thousandths

Understand the meaning of percentage using a hundred square

5. FDP Equivalence

Convert fluency between simple fractions, decimals and percentages	Use and interpret pie charts	Represent any fraction as a diagram and Represent fractions on number lines	Identify and use simple equivalent fractions and Simplify fractions (no small step on this - but this is in the assessment)	Understand fractions as division	Convert fluently between FDP and H - Explore fractions above one, decimals and percentages	Properties of addition and subtraction and mental strategies for addition and subtraction
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6. Solving Problems with Addition/ Subtraction

Use formal methods for addition of integers and use formal methods of addition of decimals	Use formal methods for subtraction of integers and use formal methods for subtraction of decimals	Choose the most appropriate method: mental strategies, formal written or calculator	Solve problems in the context of perimeter	Solve financial maths problems	Solve problems involving tables and timetables	Solve problems with frequency trees
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Term 2

Solve problems with bar and line charts	Add and subtract numbers given in standard form	Properties of multiplication and division	Understand and use factors and understand and use multiples	Multiply and divide integers and decimals by powers of 10	Multiply by 0.1 and 0.01
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7. Solving Problems with Multiplication/ Division

Convert metric units	Use formal methods to multiply integers and Use formal methods to	Use formal methods to divide integers and use formal methods to divide decimals	Understand and use order of operations	Solve problems using the area of rectangles and parallelograms	Solve problems using the area of triangles	Solve problems using the area of trapezia
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8. Fractions and Percentages of Amounts

Solve problems using the mean	Explore multiplication and division in algebraic expressions	Find a fraction of a given amount	Use a given fraction to find the whole and/or other fractions	Find a percentage of a given amount using mental methods	Find a percentage of a given amount using a calculator	Solve problems with fractions greater than 1 and percentages greater than 100%
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Understand and use representations of directed numbers and Order directed numbers using lines and appropriate symbols and perform calculations that cross zero

Add directed numbers and Subtract directed numbers

9. Operations and Equations with Directed Number

Multiplication of directed numbers and multiplication and division of directed numbers	Use a calculator for directed number calculations and Use order of	Evaluate algebraic expressions with directed number	Introduction to two-step equations and solve two step equations	Understand that positive numbers have more than one square root and explore higher	Understand representations of fraction and convert between mixed numbers
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10. Addition and Subtraction of Fractions

Add and subtract unit fractions with the same denominator and add and subtract	Add and subtract fractions from integers expressing the answer as a single	Understand and use equivalent fractions	Add and subtract fractions where denominators share a simple common multiple	Use fractions in algebraic contexts	Use equivalence to add and subtract decimals and fractions	Add and subtract simple algebraic fractions
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Term 3

11. Constructing, Measuring and Using Geometric Notation

Understand and use letter and labelling conventions including those for geometric figures and Draw and measure line segments including geometric figures	Understand angles as a measure of turn and Classify angles	Measure angles up to 180 degrees. Draw angles up to 180 degrees. and Draw and measure angles between 180 and 360 degrees	Identify parallel and perpendicular lines.	Recognise types of triangle	Identify polygons up to decagons.	Recognise types of quadrilaterals
Construct triangles using SSS	Construct triangles using SSS, SAS and ASA	Construct more complex polygons	Interpret simple pie charts using proportion, Interpret pie charts using a protractor and Draw pie charts		Understand and use the sum of angles at a point and Understand and use the sum of angles on a straight line	Understand and use the equality of vertically opposite angles

12. Developing Geometric Reasoning

Know and apply the sum of angles in a triangle, Know and apply the sum of angles in a quadrilateral and Solve angle problems using properties of triangles and quadrilaterals	Solve complex angle problems	H - Find and use the angle sum of any polygon	H - Investigate angles in parallel lines and H - Understand and use parallel line angle rules	H - Use known facts to obtain simple proofs	
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13. Developing Number Sense

Know and use mental addition and subtraction strategies for integers, Know and use mental multiplication and division strategies for integers and Know and use mental strategies for decimals	Know and use mental strategies for fractions	Use factors to simplify calculations	Use estimation as a method for checking mental calculations	Use known number facts to derive other facts and Use known algebraic facts to derive other facts
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14. Sets and Probability

Know when to use a mental strategy, formal written method or a calculator	Identify and represent sets	Interpret and create Venn diagrams	Understand and use the intersection of sets and Understand and use the union of sets	H - Understand and use the complement of sets	Know and use the vocabulary of probability	Generate sample spaces for single events and Calculate the probability of a single event
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15. Prime numbers and Proof

Understand and use the probability scale	Know that the sum of probabilities of all possible outcomes is 1	Find and use multiples and Identify factors of numbers and expressions	Recognise and identify prime numbers and Recognise square and triangular numbers	Find common factors of a set of numbers including the HCF and Find common multiples of a set of numbers including the LCM	Write a number as a product of its prime factors and H - Use a Venn diagram to calculate the HCF and LCM	Make and test conjectures and Use counterexamples to disprove a conjecture