Y7 Strand	PLC
Sequences	1. Describe and continue a sequence given diagramatically
	2. Predict and check the next term(s) in a sequence
	3. Represent sequences in tabular and graphical form
	4. Recognise the difference between linear and non-linear sequences
	5. Continue numerical linear sequences
	6. Continue numerical non-linear sequences
	7. Explain the term-to-term rule of numerical sequences in words
Algebraic notation	1. Given a numerical input, find the output of a single function machine
	2. Use inverse operations to find the input given the output
	3. Use diagrams and letters to generalise number operations
	4. Use diagrams and letters with single function machines
	5. Find the function machine given a simple expression
	6. Substitute values into single operation expressions
	7. Find numerical inputs and outputs for a series of two function machines
	8. Use diagrams and letters with a series of two function machines
	9. Find the function machines given a two-step expression
	10. Substitute values into two-step expressions
	11. Generate sequences given an algebraic rule
	12. Represent one and two-step function machines graphically
	1. Understand the meaning of equality

Equlaity and Equivalence	2. Understand and use fact families, numerically and algebraically
	3. Solve one-step linear equations involving +/- using inverse operations
	4. Solve one-step linear equations involving ÷/x using inverse operations
	5. Understand the meaning of like and unlike terms
	6. Understand the meaning of equivalence
	7. Simplify algebraic expressions by collecting like terms, using the identity symbol
Place value, Integers and Decimals	1. Recognise the place value of any number in an integer up to one billion
	2. Understand and write integers up to one billion in words and figures
	3. Work out intervals on a number line
	4. Position integers on a number line
	5. Round integers to the nearest power of ten
	6. Compare two numbers using =, ≠, <, >, ≤, ≥
	7. Order a list of integers
	8. Find the range of a set of numbers
	9. Find the median of a set of numbers
	10. Understand place value for decimals
	11. Position decimals on a number line
	12. Compare and order any number up to one billion
	13. Round a number to 1 significant figure
	14. **(H)** Write 10, 100, 1000 etc as a power of ten
	15. **(H)** Write positive integers in the form A x 10^n

	16. **(H)** Investigate negative powers of ten
	17. **(H)** Write decimals in the form A x 10^n
Fractions, decimals and percentages	1. Represent tenths and hundredths as diagrams
	2. Represent tenths and hundredths on number lines
	3. Interchange between fractional and decimal number lines
	4. Convert between fractions and decimals - tenths and hundredths
	5. Convert between fractions and decimals - fifths and quarters
	6. **(H)** Convert between fractions and decimals - eighths and thousandths
	7. Understand the meaning of percentage using a hundred square
	8. Convert fluently between simple fractions, decimals and percentages
	9. Use and interpret pie charts
	10. Represent any fraction as a diagram
	11. Represent fractions on number lines
	12. Identify and use simple equivalent fractions
	13. Understand fractions as division
	14. Convert fluently between fractions, decimals and percentages
	15. **(H)** Explore fractions, decimals and percentages above one
	1. Properties of addition and subtraction
	2. Mental strategies for addition and subtraction
	3. Use formal methods for addition of integers and decimals
	4. Use formal methods for subtraction of integers and decimals

Problem solving with + and -	5. Choose the most appropriate method: mental strategies,formal written or calculator
	6. Solve problems in the context of perimeter
	7. Solve financial maths problems
	8. Solve problems involving tables and timetables, frequency trees, bar charts and line charts
	9. **(H)** Add and subtract numbers given in standard form
Problem solving with X and ÷	1. Properties of multiplication and division
	2. Understand and use factors
	3. Understand and use multiples
	4. Multiply and divide integers and decimals by powers of 10
	5. (H) Multiply by 0.1 and 0.01
	6. Convert metric units
	7. Use formal methods to multiply integers
	8. Use formal methods to multiply decimals
	9. Use formal methods to divide integers
	10. Use formal methods to divide decimals
	11. Understand and use order of operations
	12. Solve problems using the area of rectangles and parallelograms
	13. Solve problems using the area of triangles
	14. **(H)** Solve problems using the area of trapezia
	15. Solve problems using the mean
	16. **(H)** Explore multiplication and division in algebraic expressions

Fractions and percentages of amounts	1. Find a fraction of an amount
	2. Use a given fraction to find the whole and/or other fractions
	3. Find a percentage of a given amount using mental methods
	4. Find a percentage of a given amount usinga calculator
	5. (**H**) Solve problems with fractions > 1 and percentges > 100%
Directed number	1. Understand and use representations of directed numbers
	2. Order directed numbers using lines and appropriate symbol
	3. Perform calculations that cross zero
	4. Add directed numbers
	5. Subtract directed numbers
	6. Multiplication of directed numbers
	7. Multiplication and division of directed numbers
	8. Use a calculator for directed number calculations
	9. Evaluate algebraic expressions with directed number
	10. Introduction to two-step equations
	11. Solve two-step equations
	12. Use order of operations with directed numbers
	13. **(H)** Understand that positive numbers have more than one square root
	14. **(H)** Explore higer powers and roots
	1. Understand representations of fractions
	2. Convert between mixed numbers and fractions

Addition and subtraction of fractions	3. Add and subtract unit fractions with the same denominator
	4. Add and subtract fractions with the same denominator
	5. Add/subtract fractions from integers expressing answer as a single fraction
	6. Understand and use equivalent fractions
	7. Add/ subtract fractions where denominators share simple common multiple
	8. Add and subtract fractions with any denominator
	9. Add and subtract improper fractions and mixed numbers
	10. Use fractions in algebraic contexts
	11. Use equivalence to add and subtract decimals and fractions 12. (H) Add and subtract simple algebraic fractions
Construction, measuring and angles	1. Understand/use labelling conventions, including those for geometric figures
	2. Draw and measure line segments including geometric figures
	3. Understand angles as a measure of a turn
	4. Classify angles
	5. Measure angles up to 180 degrees
	6. Draw angles up to 180 degrees
	7. Draw and measure angles between 180 and 360 degrees
	8. Identify perpendicular and parallel lines
	9. Recognise types of triangle
	10. Recognise types of quadrilateral
	11. Identify polygons up to a decagon
	12. Construct triangles using SSS

	13. Construct triangles using SSS, SAS and ASA
	14. Construct more complex polygons
	15. Interpret simple pie charts using proportion
	16. Interpret pie charts using a protractor
	17. Draw pie charts
Angles and polygons	1. Understand and use the sum of angles at a point
	2. Understand and use the sum of angles on a straight line
	3. Understand and use the equality of vertically opposite angles
	4. Know and apply the sum of the angles in a triangle
	5. Know and apply the sum of angles in a quadri;ateral
	6. Solve angle problems using properties of triangles and quadrilaterals
	7. Solve angle problems using properties of triangles and quadrilaterals
	8. Solve complex angle problems
	9. **(H)** Find and use the angle sum of any polygon
	10. **(H)** Investigate angles in parallel lines
	11. **(H)** Understand and use parallel line angle rules
	12. **(H)** Use known facts to obtain simple proofs
	1. Know and use mental addition and subtraction strategies for integers
	2. Know and use mental multiplication and division strategies for integers
	3. Know and use mental arithmetic strategies for decimals
	4. Know and use mental arithmetic strategies for fractions

Number Sense	5. Use factors to simplify calculations
	6. Use estimation as a method for checking mental calculattions
	7. Use known number facts to derive other facts
	8. Use known algebraic facts to derive other facts
	9. Know when to use a mental strategy, formal written method or a calculator
Sets and Probability	1. Identify and represent sets
	2. Interpret and create Venn diagrams
	3. Understand and use the intersection of sets
	4. Understand and use the union of sets
	5. **(H)** Understand and use the compliment of a set
	6. Know and use the vocabulary of probability
	7. Generate sample spaces for single events
	8. Calculate the probability of a single event
	9. Understand and use the probability scale
	10. Know that the sum of probabilities of all possible outcomes is 1
Prime Numbers and proof	1. Find and use multiples
	2. Identify factors of numbers and expressions
	3. Recognise and identify prime numbers
	4. Recognise square and triangular numbers
	5. Find common factors of a set of numbers including HCF
	6. Find common multiples of a set of numbers including the LCM

	7. Write a number as a product of its prime factors
	8. Make and test conjectures
	9. Use counterexamples to disprove a conjecture