Y7 Autumn HT 1 – Algebraic thinking	Y7 Autumn HT 2 – Place value and ordering	Y7 Spring HT 1 – Applications of number	Y7 Spring HT 2 – Directed number & Fractional thinking	Y7 Summer HT 1 – Lines and angles	Y7 Summer HT 2 – Reasoning with number
Unit 1: Sequences - Describe and continue a sequence given diagrammatically. - 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. - Continue numerical non-linear sequences. - Explain the term-to-term rule of numerical sequences in words. - Find missing numbers within sequences. Unit 2 : Understand and use notation - Given a numerical input, find the output of a single function machine - Use inverse operations to find the input given the output. - Use diagrams and letters to generalise number operations.	Unit 4: Place Value - Recognise the place value of any number in an integer up to one billion. - - Understand and write integers up to one billion in words and figures. - Work out intervals on a number line. - Position integers on a number line - Round integers to the nearest power of ten. - Compare two numbers using =, ≠, , ≤, ≥ - Order a list of integers - Find the range of a set of numbers. - Find the median of a set of numbers. - Understand place value for decimals. - Position decimals on a number . - Compare and order any number up to one billion. - Round a number to 1 significant figure. - Write 10, 100, 1000 etc. as powers of ten. - Write positive integers in the form A x 10n. - Investigate negative powers of ten. - Write decimals in the form A x 10n.	Unit 6: Addition and subtraction - Properties of addition and subtraction. - Mental strategies for addition and subtraction. - Use formal methods for addition of integers. - Use formal methods for addition of decimals. - Use formal methods for subtraction of integers. - 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. - Solve problems with bar charts and line charts. - Add and subtract numbers given in standard form	Unit 9: Directed Number - Understand and use representations of directed numbers. - Order directed numbers using lines and appropriate symbols. - Perform calculations that cross zero. - Add directed numbers. - Subtract directed numbers. - Multiplication of directed numbers. - Multiplication and division of directed numbers. - Use a calculator for directed number calculations. - Evaluate algebraic expressions with directed number Introduction to two-step equations. - Solve two-step equations. - Use order of operations with directed numbers. - Roots of positive numbers. - Explore higher powers and roots. Unit 10: Fractional thinking	Unit 11: Constructing, measuring - Understand and use letter and labelling conventions including those for geometric figures. - Draw and measure line segments including geometric figures. - Understand angles as a measure of turn - Classify angles. - Measure angles up to 180°. - Draw angles up to 180°. - Draw and measure angles between 180° and 360°. - Identify perpendicular and parallel lines. - Recognise types of triangle. - Recognise types of quadrilateral. - Identify polygons up to a decagon. - 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. - Draw pie charts.	Unit 12: Geometric reasoning - Understand and use the sum of angles at a point. - Understand and use the sum of angles on a straight line. - Understand and use the equality of vertically opposite angles. - Know and apply the sum of angles in a triangle. - Know and apply the sum of angles in a quadrilateral. - Solve angle problems using properties of triangles and quadrilaterals. - Solve complex angle problems. - Find and use the angle sum of any polygon. - Investigate angles in parallel lines. - Understand and use parallel line angle rules. - Use known facts to obtain simple proofs. Unit 13: Developing number sense - Know and use mental addition and subtraction strategies for integers.

- Use diagrams and letters with single function machines -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. - Use diagrams and letters with a series of two function machines. - Find the function machines given a two-step expression. - Substitute values into two-step expressions. -Generate sequences given an algebraic rule. - Represent one-and two-step functions graphically <u>Unit 3: Equality and Equivalence</u> - Understand the meaning of equality - Understand and use fact families, numerically and algebraically. - Solve one-step linear equations involving +/−using inverse operations. - Solve one-step linear equations involving	<u>Unit 5: FDP Equivalence</u> - 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. - Convert between fractions and decimals – fifths and quarters. - Convert between fractions and decimals – eighths and thousandths. - Understand the meaning of percentage using a hundred square. - - Convert fluently between simple fractions, decimals and percentages. - Use and interpret pie charts. - Represent any fraction as a diagram. - Represent fractions on number lines. - Identify and use simple equivalent fractions. - Understand fractions as division. - Convert fluently between fractions, decimals and percentages - Explore fractions above	<u>Unit 7: Multiplication and Division</u> - Properties of multiplication and division. - Understand and use factors. - Understand and use multiples. - Multiply and divide integers and decimals by powers of 10. - Multiply by 0.1 and 0.01 - Convert metric units. - Use formal methods to multiply integers. - Use formal methods to multiply decimals. - Use formal methods to divide integers. - 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. -Solve problems using the mean. - Explore multiplication and division in algebraic expressions.	- Understand representations of fractions. - Convert between mixed numbers and fractions. - Add and subtract unit fractions with the same denominator. - Add and subtract fractions with the same denominator. - Add and subtract fractions from integers expressing the answer as a single fraction. - Understand and use equivalent fractions. - Add and subtract fractions where denominators share a simple common multiple. - Add and subtract fractions with any denominator. - Add and subtract improper fractions and mixed numbers. - Use fractions in algebraic contexts. - Use equivalence to add and subtract decimals and fractions. - Add and subtract simple algebraic fractions.		- Know and use mental multiplication and division strategies for integers. - Know and use mental arithmetic strategies for decimals. - Know and use mental arithmetic 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. - Use known algebraic facts to derive other facts. - Know when to use a mental strategy, formal written method or a calculator. <u>Unit 14: Sets and probability</u> - Identify and represent sets. - Interpret and create Venn diagrams. - Understand and use the intersection of sets. - Understand and use the union of sets. - Understand and use the complement of a set. - Know and use the vocabulary of probability.

×/÷using inverse operations. Understand the meaning of like and unlike terms. - Understand the meaning of equivalence - Simplify algebraic expressions by collecting like terms, using the ≡symbol	one, decimals and percentages	<u>Unit 8: Fraction & percentage of amounts</u> - 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%			- Generate sample spaces for single events. - Calculate the probability of a single event. - Understand and use the probability scale. - Know that the sum of probabilities of all possible outcomes is 1. <u>Unit 15: Prime numbers and proof</u> - Find and use multiples Identify factors of numbers and expressions. - Recognise and identify prime numbers. - Recognise square and triangular numbers. - Find common factors of a set of numbers including the HCF. - Find common multiples of a set of numbers including the LCM. - Write a number as a product of its prime factors. - Use a Venn diagram to calculate the HCF and LCM. - Make and test conjectures. - Use counterexamples to disprove a conjecture.