



Year Group	7	Subject	Maths	Taught in	Autumn 1
Title	Sequences				
Summary	Describe and continue sequences in diagram and number forms, both linear and non-linear				
Key Skills	<ul style="list-style-type: none"> - Describe and continue a sequence given diagrammatically - Predict and check the next terms of a sequence - Represent sequences in tabular and graphic forms - Recognise the difference between linear and non-linear sequences - Continue numerical linear sequences - Continue numerical non-linear sequences - Explain the term to turn rule of numerical sequences in words - Find missing numbers in sequences 				
Prior Learning	<ul style="list-style-type: none"> - Negative numbers - Four operations - Intervals - Multiples, factors primes, square and cubed numbers 				

Year Group	7	Subject	Maths	Taught in	Autumn 1
Title	Algebraic Thinking using notation				
Summary	Understanding and using algebraic notation				
Key Skills	<ul style="list-style-type: none"> - Given a numerical input, find the output of a single function machine - Use inverse operations to find the input when given the output - Use diagrams and letters to generalise number operations - Use diagrams and letters with single function machines - Find the function machine when given a simple expression - Substitute values into single operation expressions - Find numerical inputs and outputs when using 2 step function machines - Use diagrams and letters with 2 step function machines - Find the function machine when given a 2 step expression - Substitute values into 2 step expressions - Generate sequences given an algebraic rule - Represent one and two step functions graphically 				
Prior Learning	<ul style="list-style-type: none"> - Knowledge of negative numbers - Inverse operations - BIDMAS - Four operations - Intervals - Multiples, factors primes, square and cubed numbers 				



Year Group	7	Subject	Maths	Taught in	Autumn 2
Title	Equality and equivalence				
Summary	<ul style="list-style-type: none"> - Forming and solving one step linear equations, building on inverse operations - Use of calculator to solve problems rather than spotting solutions - Understand the relationship between Equality and equivalence 				
Key Skills	<ul style="list-style-type: none"> - Understand the meaning of equality - Understand and use fact families numerically and algebraically - Solve one step linear equations using all four operations and inverse operations - Understand the meaning of like and unlike terms - Understand the meaning of equivalence - Simplify algebraic expressions by collecting like terms and using the relevant symbol 				
Prior Learning	<ul style="list-style-type: none"> - Four operations and use of inverse - BIDMAS - Bar modelling - Negative numbers - Substitution 				

Year Group	7	Subject	Maths	Taught in	Autumn 2
Title	Place value and ordering integers and decimals				
Summary	-Explore: integers up to 1 billion and decimals to hundredths; standard form; rounding; use of numbers lines; significant figures; positive and negative integers fractions; decimals; symbols and averages				
Key Skills	<ul style="list-style-type: none"> - Recognise the place value of any number up to 1 billion - Understand and write integers up to 1 billion in words and figures - Calculate intervals on a number line - Position integers on a number line - Round integers to the nearest power of 10 - Compare 2 numbers using symbols e.g. =, <, > - Order a list of integers - Find the median and range from a set of numbers - Understand place value for decimals - Position decimals on a number line - Compare and order any number up to 1 billion - Round a number to one significant figure - Write 10,100,1000 as a power of 10 - Write positive integers and decimals in the form $a \times 10$ to the power of n - Investigate negative powers of 10 				
Prior Learning	<ul style="list-style-type: none"> - Integer place value up to 10 million - Decimal place value to hundredths - Working out and using number lines - Comparing and ordering numbers - Calculating the range and the median - Rounding to positive powers of ten and to one significant figure - Fraction, decimal and percentage equivalence - Representing tenths and hundredths on diagrams and number lines - Interchanging between fractions, decimals and percentages for multiples of tenths and quarters - Understanding of inequality symbols - Negative numbers - Squared and cubed numbers - BIDMAS 				
Year Group	7	Subject	Maths	Taught in	Autumn 2



Title	Fractions, decimals, percentages, equivalence
Summary	To develop a deeper understanding of the relationship between fractions, decimals and percentages
Key Skills	<ul style="list-style-type: none">- Represent tenths and hundredths as diagrams and on number lines- Interchange between fractional and decimal number lines- Convert between fractions and decimals- Relate tenths and hundredths to their decimal equivalents- Relate Fifths and quarters to their decimal equivalents- Relate eights and thousandths to their decimal equivalents- Understand the meaning of percentage using a hundred square- Convert fluently between simple fractions and percentages- Use and interpret pie charts- Represent fraction as a diagram and on number lines- Identify and use simple equivalent fractions- Understand fractions as division- Convert fluently between fractions, decimals and percentages- Explore fractions, decimals and percentages above 1
Prior Learning	<ul style="list-style-type: none">- Place value- Use of number lines- Missing numbers- Interpreting pie charts- Four operations- BIDMAS- Place value



Year Group	7	Subject	Maths	Taught in	Spring 1
Title	Application of Number				
Summary	Solving problems with all four operations with and without a calculator				
Key Skills	<ul style="list-style-type: none"> - Properties of addition and subtraction - Mental strategies for addition and subtraction - Use formal methods of addition and subtraction for integers and decimals - Choose appropriate method: mental, formal or calculator - Solve problems in context of perimeter - Solve financial maths problems - Solve problems with tables and timetables - Solve problems with frequency trees - Solve problems with bar charts and line graphs - Add and subtract numbers in standard form - Properties of multiplication and division - Understand and use factors and 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 and divide integers and decimals - Understand and use BIDMAS - Solve problems with area of rectangles, parallelograms, triangles and trapezia - Solve problems using the mean - Solve problems involving fractions and percentages of amounts - Explore multiplication and division in algebraic expressions 				
Prior Learning	<ul style="list-style-type: none"> - Uses of Significant figures - Equations- 1 step/2 step - Fractions, percentages - Multiplying by 10,100,1000 - Factors, multiples substitution - Simplification - BIDMAS 				



Maths

Year 7 Long Term Overview

Year Group	7	Subject	Maths	Taught in	Spring 2
Title	Application of number- Fractions and percentages of amounts				
Summary	Find fraction and percentage of quantities and the links between the two.				
Key Skills	<ul style="list-style-type: none">- Find the fraction of a given amount- Use a fraction to find a whole and or other fraction- Find the percentage of a given amount, mentally and with uses of a calculator- Solve problems with fractions greater than one and percentages greater than 100				
Prior Learning	<ul style="list-style-type: none">- Four operations- Place value and fractional understanding- Understanding of fractions and percentages				

Year Group	7	Subject	Maths	Taught in	Spring 2
Title	Directed Number Operations and equations with directed number				
Summary	Explore, use and understand the interchangeable relationship of directed number				
Key Skills	<ul style="list-style-type: none">- Understand and use representations of directed number- Order directed numbers using lines and appropriate symbols- Perform calculations that cross zero- Adding directed numbers- Subtracting directed numbers- Multiplication of directed numbers- Multiplication and division of directed numbers- Using a calculator for directed number calculations- Evaluating algebraic expressions with directed number- Introduction to two step equations- Solving two step equations- Use order of operations with directed number- Understand that positive numbers have more than one square root- Explore higher powers and roots				
Prior Learning	<ul style="list-style-type: none">- Negative numbers- All four operations- BIDMAS- Use of number lines				



Year Group	7	Subject	Maths	Taught in	Spring 2
Title	Directed Number- fractional thinking				
Summary	Add and subtract fractions and decimals in varying forms				
Key Skills	<ul style="list-style-type: none"> - Understand representations of fractions - Covert 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 - Understand and use equivalent fractions - Add and subtract fractions where denominators share a common multiple - Add and subtract fractions with any denominator - Add and subtract mixed numbers and improper fractions - Use fractions in algebraic context - Use equivalence to add and subtract decimals and fractions - Add and subtract simple algebraic fractions 				
Prior Learning	<ul style="list-style-type: none"> - Negative Numbers - Ordering directed numbers with and without context - Revisit four operations to include directed number - Using a calculator with directed number - Order of operations - Adding and subtracting fractions - Use diagrams and graphs to represent - Add, subtract fractions with same/different denominator - Inequality symbols - Representing tenths and hundredths on diagrams and number lines - Revisit equivalent fractions - Use of the inverse - BIDMAS - Calculating with negative numbers 				



Year Group	7	Subject	Maths	Taught in	Summer 1
Title	Constructing and measuring and using geometric notation				
Summary	Construct, draw and interpret angles, polygons and pie charts				
Key Skills	<ul style="list-style-type: none"> - Understand and use letter and labelling conventions for geometric figures - Draw and measure line segments including geometric figures - Understand angles as a measure of turn - Classify angles - Draw and measure angles up to 180 degrees - Draw and measure angles between 180 and 360 - Identify perpendicular and parallel lines - Recognise types of triangles and quadrilaterals - Identify polygons up to a decagon - Construct triangles using SSS,SAS,ASA - Construct more complex polygons - Interpret simple pie charts using proportion - Interpret pie charts using a protractor - Draw pie charts 				
Prior Learning	<ul style="list-style-type: none"> - Drawing and measuring lines and angles using ruler and protractor - Understanding and using notation for lines and angles - Understand parallel and perpendicular - Recognise types of triangle, quadrilateral and other polygons - Drawing triangles given SSS, SAS, ASA - Drawing and interpreting pie charts - Calculating using angles at a point, angles on a straight line and vertically opposite angles - Calculating missing angles in triangles and quadrilaterals 				

Year Group	7	Subject	Maths	Taught in	Summer 1
Title	Developing geometry reasoning				
Summary	Understand and use angle rules, geometry language and properties of polygons				
Key Skills	<ul style="list-style-type: none"> - Understanding and use the sum of angles at a point and on a straight line - Understand and use the equality of vertically opposite angles - Know and apply the sum of angles in a triangle and a quadrilateral - Solve angles 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 know facts to obtain simple proofs 				
Prior Learning	<ul style="list-style-type: none"> - Types of angles - Parallel and perpendicular - Properties of quadrilaterals and triangles - Four operations 				



Year Group	7	Subject	Maths	Taught in	Summer 2
Title	Reasoning with number- Developing number sense				
Summary	Using mental, written and calculator methods to find facts and use for four operations				
Key Skills	<ul style="list-style-type: none"> - Know and use mental addition/subtraction/ multiplication/division strategies for integers - Know and use mental arithmetic strategies for fractions and decimals - Use factors to simplify calculations - Use estimation 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 				
Prior Learning	- Factors, multiples, HCF, LCM, primes, four operations, formal methods, mental strategies				

Year Group	7	Subject	Maths	Taught in	Summer 2
Title	Reasoning with number – Sets and probability				
Summary	Understand about probability, sets, set notation and listing strategies				
Key Skills	<ul style="list-style-type: none"> - 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 - Generate sample spaces for single events - Calculate the probability of a single event - Understand and use the probability scale - Know that the sum of probability of all possible outcomes is 1 				
Prior Learning	Addition and subtraction with integers and decimals				

Year Group	7	Subject	Maths	Taught in	Summer 2
Title	Reasoning with number – prime numbers and proof				
Summary	Understand and use different types of numbers				
Key Skills	<ul style="list-style-type: none"> - Use and find 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 (Highest common factor) - Find common multiples of a set of numbers including the LCM (Lowest common factor) - 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 counter examples to disprove a conjecture 				
Prior Learning	- Factors, multiples, primes, HCF, LCM, odd, even, square, triangular,				