	BOA Digital	Subject Curriculum Map Mathematics		Year Group	7
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Algebraic Thinking	Place Value and Proportion	Applications and Reasoning with Number	Directed Numbers and Fractional Thinking	Lines & Angles	Reasoning with Number
Big Question	How can I use algebra to form expressions and problem solve?	How can I understand and use numbers including fractions, decimals percentages and convert between these?	How can I apply my number skills and knowledge of shapes to solve problems and reason?	How can I convert and express numbers in different ways?	How can I understand and manipulate angles and lines to find relationships and formulae?	How can I reason with number and evaluate the likelihood of events?
Content	**1. Sequences** • Describe and continue sequences in diagram and number forms, both linear and non-linear **2. Understanding and using algebraic notation** • Use single function machines and series of two function machines with numbers, bar models and letters • Use and interpret algebraic notation • Understand and use inverse operations • Form and substitute into expressions, including to generate sequences • Represent functions graphically **3. Equality and Equivalence** • Understand	**1. Place value and ordering** • Recognise and use integer place value up to one billion • Recognise and use decimal place value to at least hundredths • Work out intervals and use number lines • Compare and order numbers • Use ordered lists to find the range and median of a set of numbers • Round numbers to positive powers of ten and to one significant figure. **2. Fraction, decimal and percentage equivalence** • Represent tenths and hundredths on diagrams and number lines • Interchange	**1. Addition and Subtraction** • Use mental and formal written methods of addition with integers and decimals, including choosing the most appropriate method • Solve problems in the context of perimeter, money and frequency trees and tables • Solve problems in the context of bar charts and line charts **2. Multiplication and division** • Multiply by 10, 100, 1000, 0.1 and 0.01, and convert metric units • Use mental and formal written methods of multiplication and division • Find the HCF and LCM or small numbers • Evaluate areas of triangles, rectangles and parallelograms • Find the mean of a set	**1. Directed number** • Order directed numbers, both in contextualised and abstract situations • Revisit four operations to include directed numbers • Solve two-step equations (with and without a calculator) • Use the order of operations **2. Adding and subtracting fractions** • Convert mixed numbers and improper fractions • Adding and subtracting fractions with the same denominator/one denominator a multiple of the other/different denominators • Add and subtract fractions and decimals e.g. ¾ + 0.2 **3. Fractions, decimals, percentages**	**1. Construction and measuring** • Understand and use letters and labelling notation for lines and angles • Draw and measure lines and angles accurately • Classify angles • Identify and draw parallel and perpendicular lines • Recognise types of triangle, quadrilateral and other polygons • Construct triangles given SSS, SAS, ASA • Draw and interpret pie charts **2. Geometric Reasoning** • Calculate and use angles at a point, angles on a straight line and vertically opposite angles • Calculate missing angles in triangles	**1. Developing number sense** • Consolidate and extend understanding of the number system and place value, including decimals, fractions, powers and roots. • Select and use appropriate calculation strategies to solve increasingly complex problems • Reason deductively in number and algebra. **2. Sets and probability** • Record, describe and analyse the frequency of outcomes of simple probability experiment involving randomness, fairness, equally

	equality • Use fact families • Forma and solve one-step equations • Understand equivalence of algebraic expressions • Collect like terms	between fractions, decimals and percentages for multiples of one tenths and one quarter • Interpret pie charts • Equivalent Fractions • Converting between any fraction, • decimal and percentage	of numbers • Begin to use the order of operations **3. Developing Number Sense** • Mental arithmetic strategies • Use known facts to derive other facts • Evaluate an algebraic expression given a related fact Use estimation	Find simple fractions and percentages of amounts. •	and quadrilaterals	and unequally likely outcomes, using appropriate language and the 0-1 probability scale. • Understand the probabilities of all possible outcomes sum to 1. • Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams. • Generate theoretical sample spaces for single and combined events with equally likely/mutually exclusive outcomes and use to calculate theoretical probabilities. **3. Prime numbers and proof** • Recognise prime, square and triangle numbers • Express a number as a product of prime factors • Powers and roots • Make and test conjectures Understand and use counterexamples
Digital skills	Using function machines and understanding processes computers use to input and output specific requirements Binary code – sequences and	Understanding a calculator and inputting fractions/decimals/percentages and converting Money problems— using and inputting into	Drawing shapes and changing the dimensions to understand the impact on perimeter, area, volume (Geogebra)	Sale and discount codes – how shops calculate and use formulae to take money off items Using directed number tiles to make zero pairs	Use of Geogebra to craft angles and look for key properties Parallel and perpendicular lines constructing and exploring these	

	understanding this	spreadsheets/considering bills	Research and consideration of capacity of venues (estimation and space)	Considering the use of programs/excel to show the impact of adding & subtracting negatives	Prime numbers and the use in cryptography	
Cross-curriculum themes & Birmingham theme How will the subject use this in the content and skills?	Commonwealth Games Themes & Millenium Point resource Expressions for unknowns and solving problems Substitution	Harry Potter Number, worded and money problems with cost of work/buildings	Culture and Museums (Symphony Hall trip) Area and perimeter problems and capacity/distance – opportunities to estimate and predict	Architecture in Birmingham and beyond (HS2?) Examining production lines (further algebra solving equations) Fractions and proportion in recipes	Industry in Birmingham (Cadbury World) Angles and shapes – considering routes and directions and location of key points	Birmingham Canal network
Assessment	Autumn 1 – no formal assessment Autumn 2 – low stakes end of topic and termly assessment		Spring 1 – low stakes end of topic	Spring 2 – low stakes end of topic Spring End of Term Test	Summer 1 – low stakes end of topic	Summer 2 – low stakes end of topic Spring End of Term Test