

Year 7 Sequencing

Autumn	Content	Rationale – Why here, why now?	Cultural Capital
Algebraic Thinking	<p>Exploring sequences</p> <ul style="list-style-type: none"> Describe and continue sequences in diagram and number forms, both linear and non-linear Compare numerical and graphical forms 	<ul style="list-style-type: none"> A good starting point after the heavy number focus in primary school Develops intrigue and interest of pupils from the outset Mixed ability classes for the first few weeks so allows us to differentiate through outcome 	<ul style="list-style-type: none"> Recognising patterns and relationships Patterns in nature - Fibonacci
	<p>Understanding and using algebraic notation</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Limited knowledge from primary school so a crucial starting point in year 7. Many future topics will look at making generalisations and will rely on these skills. 	<ul style="list-style-type: none"> Developing the ability to generalise Begin to develop problem solving strategies
	<p>Equality and equivalence</p> <ul style="list-style-type: none"> Understand equality Use fact families Form and solve one-step equations Understand equivalence of algebraic expressions Collect like terms 	<ul style="list-style-type: none"> Forms the basis of solving equations for all future number and algebra work Follows on from algebraic notation 	<ul style="list-style-type: none">
Place Value and Proportion	<p>Place value and ordering</p> <ul style="list-style-type: none"> 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 the median of a set of numbers Round numbers to positive powers of ten Round numbers to one significant figure 	<ul style="list-style-type: none"> A necessary understanding of basic number is needed before work on fractions and decimals which comes next Understanding large numbers is needed before moving on to standard in higher content yr 7 and main content yr8 Median is an application of ordering values 	<ul style="list-style-type: none"> Interpret large and small numbers in the media Median – critical thinking (use of statistics to influence)

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	<p>Fraction, decimal and percentage equivalence</p> <ul style="list-style-type: none"> • Represent tenths and hundredths on diagrams and number lines • Interchange between fractions, decimals and percentages for multiples of one tenths and one quarter • Interpret pie charts • Equivalent fractions • Convert between other fractions, decimals and percentages 	<ul style="list-style-type: none"> • Understanding of F, D and P is a pre-requisite to calculating with them • Pie charts is an application of fractions 	<ul style="list-style-type: none"> • Commonly used P, F, D in everyday life eg. Sales, discounts,
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Spring	Content	Rationale	Cultural Capital
<p style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: yellow;">Application of Number</p>	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Has to come after place value due to prior knowledge needed • Interpret addition and subtraction questions outside the abstract of working with just numbers - applications 	<ul style="list-style-type: none"> • Problem solving – real life problems, household maintenance • Interpret charts and tables in the media/real-life contexts • Cross-curricular links
	<p>Multiplication and division</p> <ul style="list-style-type: none"> • Multiply by 10, 100 and 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 of small numbers • Evaluate areas of triangles, rectangles and parallelograms • Find the mean of a set of numbers • Find simple fractions and percentages of amounts • Begin to use the order of operations 	<ul style="list-style-type: none"> • Logical step after addition and subtraction – multiplications links to addition • Applications of multiplication and division show connections with other areas of Maths • Needed before calculating with fractions and percentages 	<ul style="list-style-type: none"> • Financial awareness • Area – practical applications to life challenges and careers • Mean – critical thinking (use of statistics to influence)
	<p>Fractions and percentages of amounts</p> <ul style="list-style-type: none"> • Work out simple fractions and percentages of amounts, with and without a calculator 	<ul style="list-style-type: none"> • Skills required are based on understanding of previous topics 	<ul style="list-style-type: none"> • Financial awareness – discounts, credit, best buys

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Directed Number and Fractional Thinking	<p>Directed Number</p> <ul style="list-style-type: none"> Order directed numbers, both in contextualised and abstract situations Revisit four operations to include directed number Use a calculator with directed number Solve two-step equations (with and without a calculator) Use the order of operations 	<ul style="list-style-type: none"> Skills from place value, equality and calculations are needed Solve equations? – negative numbers 	<ul style="list-style-type: none"> Appreciation of directed number – money, debit, credit, overdraft, temperature, height above and below sea level
	<p>Adding and subtracting fractions</p> <ul style="list-style-type: none"> Represent tenths and hundredths on diagrams and number lines Convert mixed numbers and improper fractions Add and subtracting fractions with <ul style="list-style-type: none"> the same denominator one denominator a multiple of the other different denominators Add and subtract fractions and decimals e.g. $\frac{3}{4} + 0.2$ 	<ul style="list-style-type: none"> Draws on skills from place value, FDP equivalence, calculations taught previously 	<ul style="list-style-type: none"> Reading scales – baking Cross-curricular links

Summer	Content	Rationale	Cultural Capital
Lines and Angles	<p>Construction and measuring</p> <ul style="list-style-type: none"> Understand and use letting 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 	<ul style="list-style-type: none"> Pie charts – prior knowledge of interpretation before drawing Constructions are a stand alone topic but knowledge of drawing and measuring angles is needed first 	<ul style="list-style-type: none"> Appreciation of shape in every day life Critical analysis – pie charts
	<p>Geometric Reasoning</p> <ul style="list-style-type: none"> Calculate and use angles at a point, angles on a straight line and vertically opposite angles Calculate missing angles in triangles and quadrilaterals 	<ul style="list-style-type: none"> Addition and subtraction needed before calculating missing angles Knowledge of triangle types and quadrilaterals needed before calculating missing angles 	<ul style="list-style-type: none"> Cross-curricular links
Reasoning	<p>Developing Number Sense</p> <ul style="list-style-type: none"> Mental arithmetic strategies Use known facts to derive other facts, Evaluate an algebraic expression given a related fact Use estimation 	<ul style="list-style-type: none"> Unsure 	<ul style="list-style-type: none"> Developing numeracy – life skill

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	Sets and Probability <ul style="list-style-type: none">• Understand and use set notation• Draw and interpret Venn diagrams• Understand and use the language of probability• Calculate the probability of a single event• Use the sum of probabilities of an event is 1	<ul style="list-style-type: none">• F,D,P are pre requisites for probability	<ul style="list-style-type: none">• Calculating risk• Decision making
	Prime numbers and proof <ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Follows on from multiplication, dividing, factors	<ul style="list-style-type: none">• Decision making• Problem solving