



Northumberland's P.R.U.

# Mathematics Programme of Study (2023-24)

	Week 1	Week 2	Week 3		Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15
	Autumn 1 – ‘Equality & Diversity’								Autumn 2 – ‘Living in the Wider World’						
	Subject Area Topic - Algebraic Thinking								Subject Area Topic - Place Value & Proportion						
	1.  <b>Sequences</b> <ul style="list-style-type: none"><li>Describe and continue sequences in diagram and number forms, both linear and non-linear</li></ul>	2.  <b>Sequences</b> <ul style="list-style-type: none"><li>Describe and continue sequences in diagram and number forms, both linear and non-linear</li><li>Finding and using the Nth term of a linear sequence</li></ul>	3.  <b>Understanding and Using Algebraic Notation</b> <ul style="list-style-type: none"><li>Using single function machines and series of two function machines with numbers, bar models and letters.</li></ul>	4.  <b>Understanding and Using Algebraic Notation</b> <ul style="list-style-type: none"><li>Forming and substituting into expressions, including generating sequences.</li><li>Representing functions graphically</li></ul>	5.	6.	7.  <b>Equality and Equivalence</b> <ul style="list-style-type: none"><li>Understanding equality and fact families.</li><li>Forming and solving one-step equations.</li><li>Understanding equivalence.</li><li>Collecting like terms.</li><li>Mid-term assessments</li></ul>	8.	1.  <b>Place Value and Ordering</b> <ul style="list-style-type: none"><li>Decimal place value to hundredths</li><li>The range and the median.</li><li>Rounding to positive powers of 10 and to 1 significant figure</li></ul>	2.	3  <b>Fraction, Decimal and Percentage Equivalence</b> <ul style="list-style-type: none"><li>Representing tenths and hundredths on diagrams and number lines.</li><li>Interchanging between fractions, decimals and percentages for multiples of tenths and quarters.</li><li>Interpreting pie charts (use wider world for data)</li><li>Equivalent fractions.</li><li>Converting between any fraction, decimal and percentage</li></ul>	4	5	6.  <b>Revision</b>	7.  End of Term Assessments
	<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Use of calculator throughout, including informal estimation.</li><li>All revisited and extended in the next unit.</li></ul>			<b>Additional Higher Content</b> <p>This introductory unit is designed to be accessed by all learners - different tasks will be determined based on prior knowledge.</p>			<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Revisit simplifying and equations with negatives.</li><li>Equations with fractions, including fractional coefficients.</li><li>Revisit FDP equivalence.</li><li>Fractional sequences.</li></ul>		<b>Additional Higher Content</b> <ul style="list-style-type: none"><li>Exploring and using standard index form.</li><li>Exploring fractions above one.</li></ul>						

Spring 1 – ‘The Circle of Life’				Spring 2 – ‘Conflict’			
Subject Area Topic - Application of Number				Subject Area Topic – Directed Number & Fractional Thinking			
1.  2. <b>Addition and Subtraction</b> <ul style="list-style-type: none"><li>Use formal methods of addition with integers &amp; decimals.</li><li>Solve problems in the context of perimeter, money and frequency trees and tables.</li></ul>	3.  4. <b>Multiplication and Division</b> <ul style="list-style-type: none"><li>Multiplying by 10, 100 and 1,000; unit conversions</li><li>Formal methods of multiplication and division.</li><li>HCF and LCM.</li><li>Areas of triangles, rectangles and parallelograms.</li><li>Finding fractions and percentages of amounts.</li><li>Solving two-step equations (with and without a calculator)</li><li>Introduction to the order of operations.</li><li>Mid-term Assessments</li></ul>	5.  6	1.  2. <b>Negative Numbers</b> <ul style="list-style-type: none"><li>Ordering directed numbers with or without context.</li><li>Revisit four operations to include directed number.</li><li>Using a calculator with directed number.</li><li>Order of operations.</li></ul>	3  4 <b>Adding and Subtracting Fractions</b> <ul style="list-style-type: none"><li>Representing tenths and hundredths on diagrams and number lines.</li><li>Adding/subtracting fractions with a common denominator, including with answers above one.</li><li>Revisit equivalent fractions.</li><li>Adding and subtracting fractions with simple different denominations e.g. quarters/eighths, thirds/sixths.</li><li>Mixed questions e.g. 3/4 + 0.2</li><li>End of Term Assessments</li></ul>	5		
<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Perimeter problems to revisit equations &amp; simplifying.</li><li>Tables inc distance charts &amp; simple timetables.</li><li>Revisit rounding.</li><li>When to use mental, written or calc methods.</li><li>Revisit order of operations with negative no’s.</li></ul>	<b>Additional Higher Content</b> <ul style="list-style-type: none"><li>Addition in standard form.</li><li>Area of a trapezium.</li><li>Algebraic HF/LCM.</li><li>Algebraic area.</li><li>Improper fractions.</li></ul>		<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Include inequality number lines.</li><li>Revisit sequences, substitution and equations.</li></ul>	<b>Additional Higher Content</b> <ul style="list-style-type: none"><li>Negative square roots.</li><li>Add and subtract fractions with any denominators.</li><li>Add and subtract simple algebraic fractions.</li></ul>			
Summer 1 – ‘Health & Leisure’				Summer 2 – ‘Crime & Punishment’			
Subject Area Topic - Lines and Angles				Subject Area Topic - Reasoning with Number			
1.  2. <b>Drawing, Measuring and Notation</b> <ul style="list-style-type: none"><li>Drawing and measuring lines and angles using ruler and protractor.</li><li>Understanding and using notation for lines and angles.</li><li>Understand parallel and perpendicular.</li><li>Recognise types of triangle, quadrilateral and other polygons.</li><li>Drawing triangles given SSS, SAS, ASA.</li><li>Drawing and interpreting pie charts.</li></ul>	4.  5. <b>Geometric Reasoning</b> <ul style="list-style-type: none"><li>Calculating using angles at a point, angles on a straight line and vertically opposite angles.</li><li>Calculate missing angles in triangles and quadrilaterals</li><li>Mid-term assessments</li></ul>	6.	1.  2. <b>Number Sense</b> <ul style="list-style-type: none"><li>Mental arithmetic strategies.</li><li>Using known facts to derive other facts, including algebraic expressions.</li></ul>	3.  4. <b>Sets and Probability</b> <ul style="list-style-type: none"><li>Understanding and using set notation.</li><li>Venn diagrams.</li><li>Probability of a single event.</li></ul>	5.  6. <b>Prime Numbers and Proof</b> <ul style="list-style-type: none"><li>Types of number, including prime factorisation.</li><li>Powers and roots.</li><li>Using counter example</li></ul>	7.  End of Term Assessments	
<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Perimeter problems to revisit equations and simplifying.</li><li>Forming and solving equations in geometric settings (including simplifying).</li></ul> Revisiting formal methods of addition and subtraction, including with decimals.	<b>Additional Higher Content</b> <ul style="list-style-type: none"><li>Addition in standard form.</li><li>Parallel line rules.</li><li>Angles in a polygon.</li><li>Proof of angles rules e.g. angles in a triangle.</li></ul>		<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Revisiting FDP.</li><li>Revisiting expressions e.g. given <math>7n = 150</math> what is the value of <math>21n</math>?</li></ul>		<b>Additional Higher Content</b> <ul style="list-style-type: none"><li>Venn diagrams for HCF and LCM.</li></ul>		