

Mathematics

Year 7

LEARNING BLOCK 1

<p>KNOWLEDGE</p>	<p>Sequences, Algebraic Thinking and Equality and Equivalence</p> <ul style="list-style-type: none"> •Linear and non-linear sequences •Function machines •Substitution •Generating sequences from a rule •Solving one-step and two-step equations •Collecting like terms <p>Place Value and Fraction, decimal and Percentage Equivalence</p> <ul style="list-style-type: none"> •Place value •Range •Median •Rounding •Fractions, decimal and percentage equivalence •Interpreting pie charts
<p>SKILLS</p>	<p><u>Exploring Sequences</u> Describe and continue sequences in diagram and number forms. Explore linear and non-linear sequences.</p> <p><u>Understanding and Using Algebraic Notation</u> Use a variety of representations to explore algebraic notation. Form and substitute into expressions, including generating sequences.</p> <p><u>Equality and Equivalence</u> Understand the idea of equivalence. Form and solve equations. Understand 'like terms' and be able to simplify expressions.</p> <p><u>Place Value</u> Understand the number system and place value to include decimals. Order positive and negative integers, fractions and decimals, using representations such as number lines. Use the symbols =, ≠, ≤, ≥, < and > Round numbers to an appropriate degree of accuracy. Interpret the median and the range in a given context. Interpret and compare numbers in standard form.</p> <p><u>Fraction, decimal and Percentage Equivalence</u> Move freely between different numerical representations of fractions, decimals and percentages. Express one quantity as a fraction of another. Compare two quantities using percentages. Use knowledge of fractions to interpret pie charts.</p>
<p>ASSESSMENT</p>	<p>1 x Sequences Assessment 1 x Algebraic Notation Assessment 1 x Equality and equivalence Assessment 1 x Place Value assessment</p> <p>Big Test 1 and whole class feedback</p>

LEARNING BLOCK 2

<p>KNOWLEDGE</p>	<p>Application of Number</p> <ul style="list-style-type: none"> • Addition and subtraction • Perimeter of shapes • Frequency trees • Multiplying by powers of ten • Factors and multiples • Areas of triangles, rectangles and parallelograms • Finding the mean • Fractions and percentages of amounts • Solving two-step equations • Order of operations <p>Directed Numbers and Fractional Thinking</p> <ul style="list-style-type: none"> • Negative numbers • Adding and subtracting fractions with common and different denominators • Manipulate mixed numbers and improper fractions • Adding and subtracting simple algebraic fractions
<p>SKILLS</p>	<p><u>Application of number</u> Use formal written methods applied to positive integers and decimals. Recognise and use inverse operations. Derive and apply formulae to calculate and solve problems involving perimeter and area of triangles, parallelograms and trapezia. Construct and interpret tables, charts and diagrams. Derive and apply formulae to calculate. Describe and interpret the mean.</p> <p><u>Directed Number</u> Use of the four operations, extending this to negative numbers. Use square and square roots, applying this to negative numbers. Substitute numerical values into formulae and expressions including scientific formulae. Equality and Equivalence</p> <p><u>Fractional Thinking</u> Move between numerical, graphical and diagrammatical representations (e.g. for fractions, decimals and percentages). Order positive and negative integers, decimals and fractions. Convert between mixed and improper fractions. Express a quantity as a fraction of another, where the fraction is less than or greater than one. Extend the use of four operations to include fractions. Work interchangeably between terminating decimals and fractions.</p>
<p>ASSESSMENT</p>	<p>1 x Multiplication and Division Assessment 1 x Negative Number Assessment 1 x Fractions Assessment</p> <p>Assessment 2 with whole class feedback</p>

LEARNING BLOCK 3

KNOWLEDGE	<p>Lines and Angles</p> <ul style="list-style-type: none">• Measuring and drawing lines and angles• Properties of triangles, quadrilaterals and other polygons• Drawing angles, given certain criteria (SSS, SAS, ASA)• Drawing and interpreting pie charts <p>Geometric Reasoning</p> <ul style="list-style-type: none">• Calculate angles at a point, on a straight line and vertically opposite angles.• Calculate missing angles in triangles and quadrilaterals• Angles in polygons
SKILLS	<p><u>Lines and Angles</u></p> <p>Draw and measure lines and angles using a protractor. Understand standard conventions for labelling lines and angles. Use language and properties precisely to analyse or classify 2D shapes.</p> <p><u>Geometric Reasoning</u></p> <p>Describe, sketch and draw 2D shapes with standard conventions; parallel lines, right angles, hatch marks to indicate equality. Understand and use angles facts and properties of triangles and other polygons to solve increasingly complex problems.</p> <p><u>Developing Number Sense</u></p> <p>Select and use appropriate calculation strategies, including mental and formal written methods.</p> <p><u>Sets and Probability</u></p> <p>Use appropriate language and the 0-1 probability scale. Understand that all probabilities add to 1. Use tables, grids and Venn diagrams to categorise data in a systematic way.</p> <p><u>Prime Numbers and Proof</u></p> <p>Use the concepts and vocabulary of prime numbers, factors and multiple. Use the unique factorisation property. Use integer powers (squares, cubes and higher) and their associated real roots. Recognise powers and 2,3,4, and 5.</p>
ASSESSMENT	<p>1 x Angles Assessment 1 x Number Assessment 1 x Probability Assessment 1 x Prime Numbers/Powers Assessment</p> <p>Big Test 3 and whole class feedback</p>