# Curriculum Knowledge Map 2023-24

| Year 7 | AUTUMN | | | | |
|---|---|---|---|---|---|
| **Topic** | **Sequences** | **Algebraic Thinking** | **Equality and Equivalence** | **Place Value** | **Fraction, decimal and Percentage Equivalence** |
| **Declarative**<br>*What should they know? What key facts/concepts/knowledge do we want all students to know?* | • Describe and continue sequences in diagram and number forms.<br>• Explore linear and non-linear sequences. | • Use a variety of representations to explore algebraic notation. | • Understand the idea of equivalence.<br>• Understand 'like terms.' | • Understand the number system and place value to include decimals.<br>• Interpret the median and the range in a given context.<br>• Interpret numbers in standard form. | • Move freely between different numerical representations of fractions, decimals and percentages.<br>• Express one quantity as a fraction of another.<br>• Compare two quantities using percentages.<br>• Use knowledge of fractions to interpret pie charts. |
| **Procedural**<br>*What should they be able to do?*<br>*What things should all students be able to do?* | • Work out next terms in a linear and non-linear sequences<br>• Substitute into function machines<br>• Generate sequences from a rule. | • Substitute into function machines<br>• Form and substitute into expressions<br>• Collect like terms.<br>• Generate sequences. | • Solve one-step and two-step equations.<br>• Form and solve equations.<br>• Simplify expressions. | • Order positive and negative integers, fractions and decimals, using representations such as number lines.<br>• Use the symbols =, ≠, ≤, ≥, < and ><br>• Round numbers to an appropriate degree of accuracy.<br>• Compare numbers in standard form.<br>• Range<br>• Median | • Wok with fractions, decimal and percentage equivalence<br>• Interpret pie- charts |
| **Disciplinary Literacy**<br>*(Tier 3 Vocab)* | Linear, non-linear, arithmetic, geometric, Fibonacci. | Expressions, functions, input, output, solve, simplify, substitute, 'like' terms. | Equation, identity | Integers, decimals, difference, terminating decimals, recurring decimals significant figures, approximate, rounding. | Equivalent, percentage, range, median, index, improper, convert. |
| **Assessment** | 1 x Sequences Assessment | 1 x Algebraic Notation Assessment | 1 x Equality and equivalence Assessment | 1 x Place Value assessment | 1 x Autumn Progress Test | 1 x Sequences Assessment |

# Curriculum Knowledge Map 2023-24

| Year 7 | SPRING | | |
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| **Topic** | Application of number | Directed Numbers | Fractional Thinking |
| **Declarative**<br>*What should they know? What key facts/concepts/knowledge do we want all students to know?* | • Work out the perimeter of shapes.<br>• Interpret and use frequency trees.<br>• Understand factors and multiples.<br>• Work out areas of triangles, rectangles and parallelograms.<br>• Use order of operations.<br>• Construct and interpret tables, charts and diagrams.<br>• Describe and interpret the mean. | • Use the four operations, extending this to negative numbers.<br>• Use square and square roots, applying this to negative numbers.<br>• Substitute numerical values into formulae and expressions including scientific formulae. | • Add and subtract fractions with common and different denominators.<br>• Manipulate mixed numbers and improper fractions. |
| **Procedural**<br>*What should they be able to do?*<br>*What things should all students be able to do?* | • Multiply by powers of ten<br>• Use formal written methods applied to positive integers and decimals (4 operations)<br>• Derive and apply formulae for perimeter and area.<br>• Calculate and solve problems involving perimeter and area of triangles, parallelograms and trapezia.<br>• Recognise and use inverse operations. | • Order negative numbers.<br>• Understand what a negative number is.<br>• Recognise square numbers.<br>• Use function machines. | • Add and subtract simple algebraic fractions.<br>• Move between numerical, graphical and diagrammatical representations (e.g. For fractions, decimals and percentages).<br>• Order positive and negative integers, decimals and fractions.<br>• Convert between mixed and improper fractions.<br>• Express a quantity as a fraction of another, where the fraction is less than or greater than one.<br>• Factors and multiples. |
| **Disciplinary Literacy**<br>*(Tier 3 Vocab)* | Integers, commutative, associative, partition, divisor, dividend, perimeter, area, product, perpendicular, factors, multiples, highest common factor, lowest common multiple, parallelogram, profit, loss, balance, credit. | Sea-level, positive, negative, zero. | Highest common factor, lowest common multiple. |
| **Assessment** | 1 x Multiplication and Division Assessment<br>1 x Fractions of an Amount Assessment | 1 x Negative Number Assessment | 1 x Fractions of an Amount Assessment<br>1 x Adding & Subtracting Fractions Assessment |

# Curriculum Knowledge Map 2023-24

| Year 7 | SUMMER | | | |
|---|---|---|---|---|
| Topic | Lines and Angles | Geometric Reasoning | Developing number sense | Sets and Probability |
| **Declarative**<br>*What should they know? What key facts/concepts/knowledge do we want all students to know?* | • Measure and draw lines and angles.<br>• Know the properties of triangles, quadrilaterals and other polygons.<br>• Draw angles, given certain criteria (SSS, SAS, ASA).<br>• Draw and interpret pie charts. | • Calculate angles at a point, on a straight line and vertically opposite angles.<br>• Calculate missing angles in triangles and quadrilaterals.<br>• Angles in polygons. | • Use of mental methods for four operations for integers, decimals and fractions.<br>• Use factors to simplify calculations.<br>• Use estimation as a method for checking calculations. | • Identify and represent sets and Venn diagrams.<br>• Create and use sample spaces.<br>• Calculate the probability of a single event. |
| **Procedural**<br>*What should they be able to do?*<br>*What things should all students be able to do?* | • Draw and measure lines and angles using a protractor.<br>• Understand standard conventions for labelling lines and angles.<br>• Use language and properties precisely to analyse or classify 2D shapes. | • Describe, sketch and draw 2D shapes with standard conventions.<br>• Understand and use angles facts and properties of triangles and other polygons | • Use mental and formal written methods of calculations.<br>• Round to different degrees of accuracy | • Use appropriate language and the 0-1 probability scale.<br>• Understand that all probabilities add to 1.<br>• Work with fractions and decimals.<br>• Use tables, grids and Venn diagrams to categorise data in a systematic way. |
| **Disciplinary Literacy**<br>*(Tier 3 Vocab)* | Acute, obtuse, reflex, adjacent, vertically opposite, isosceles, quadrilateral, polygon, regular. | Alternate, corresponding, co-interior, supplementary, parallel, perpendicular. | Squared, cubed, triangular numbers, prime, prime factor decomposition | Union/intersection, conjecture, systematic, counter-example. |
| **Assessment** | 1 x Angles Assessment | 1 x Geometric Reasoning Assessment | 1 x Number sense Assessment | 1 x Probability Assessment<br>Summer Progress Test |