# MATHS Year 7 Curriculum End Points and Key Vocabulary

| | Autumn Term 1 | Autumn Term 2 | Spring Term 1 | Spring Term 2 | Summer Term 1 | Summer Term 2 |
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| **Ethos Links** | **Milton Keynes-** Considering what is like to run a business in Milton Keynes. **Sustainability** – Consideration of what it is like to run a sustainable company | **STEM-** Use of algebra in many different areas of business and applications of equations | **STEM** – Use of area and scale factors within scale drawings **Milton Keynes** – Scale drawings and plans of Milton Keynes | **STEM, Sustainability and Milton Keynes** – Application to all 3 in calculations of average and spread | **STEM** – Use of probability and how likely events are to happen **Milton Keynes** – Use of probability and how likely events are to happen | **STEM and Sustainability** – Both apply to charts and graphs in context |
| **Learning End Points** | **Percentages** <ul><li>Define percentage as 'number of parts per hundred'</li><li>Interpret percentages as operators</li><li>Calculate percentage increase and decrease</li><li>Calculate percentages of amounts using both calculator and non-</li></ul> | **Directed Numbers** By the end of this unit students will know and understand: <ul><li>Order positive and negative integers</li><li>Add and subtract with both positive and negative integers</li></ul> **Perimeter** By the end of this unit students will know and understand: <ul><li>How to calculate perimeter of</li></ul> | **Properties of Number** By the end of this unit students will know and understand: <ul><li>prime numbers, factors, multiples and be able to identify them</li><li>How to calculate highest common factor and lowest common multiple of 2 numbers</li><li>Products of prime factors</li></ul> | **Averages** By the end of this unit students will know and understand: <ul><li>How to calculate appropriate measures of central tendency (mean, mode, median) and spread (range)</li><li>How to make comparisons between</li></ul> | **Calculations with fractions** By the end of this unit students will know and understand: <ul><li>Fractions as parts of a whole and a position on a number line</li><li>How to convert between improper fractions and mixed numbers</li><li>How to add and subtract fractions</li></ul> **Use of Ratio Notation** By the end of this unit students will | **Properties of shape** By the end of this unit students will know and understand: <ul><li>How to identify properties of 2d shapes</li><li>How to identify named triangles and quadrilaterals</li></ul> **Angles** By the end of this unit students will know and understand: <ul><li>How to calculate missing angles using</li></ul> |

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| calculator methods

**Scale drawings and measures**
- Convert units of length by multiplying by 10, 100 and 1000 in context
- Calculate scale
- Apply scale to calculate missing lengths
- Draw a scale drawing | 2D shapes using addition
- Perpendicular height and when to use it

**Place Value**
By the end of this unit students will know and understand:
- Place value of both whole and decimal numbers
- How to use and apply place value for decimals, measures, and integers of any size

**Introduction to algebraic notation**
By the end of this unit students will know and understand:
- How to use and interpret algebraic notation
- Collecting like terms | How to use conventional notation for the priority of operations (BIDMAS)
- Square numbers and identify them up to 15 squared
- Cube numbers and identify them up to 5 cubed

**Calculations using 4 operations**
By the end of this unit students will know and understand:
- How to use four operations, including formal written methods for calculations
- The relationships between inverse operations

**Measures and Scale factors** | different averages

**Sequences**
By the end of this unit students will know and understand:
- How to generate terms of a sequence
- How to find term-to-term and position-to-term rule

**Coordinates and graphs**
By the end of this unit students will know and understand:
- How to plot coordinates in all four quadrants
- horizontal and vertical lines and how to recognise them | know and understand:
- ratio notation
- how to simplify a ratio
- different representations of ratio

**Introduction to probability**
By the end of this unit students will know and understand:
- The probability scale
- The language of probability
- How to carry out and make conclusions from a probability experiment
- That the probabilities of all possible outcomes sum to 1 | the properties of angles at a point, angles at a point on a straight line, vertically opposite angles
- How to calculate and apply the sum of angles in a triangle
- How to calculate and apply the sum of angles in a quadrilateral

**Charts and Graphs**
By the end of this unit students will know and understand:
- How to construct and interpret appropriate tables, charts and diagrams, including frequency |

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| | | ➢ Substitution of positive values into expressions<br><br>**Solving simple equations**<br>By the end of this unit students will know and understand:<br><br>  • How to use algebraic methods to solve linear equations in one variable<br>  • The inverse and how to apply it to solving equations<br><br>➢ | By the end of this unit students will know and understand:<br>  ➢ How to change freely between related standards units (time, length)<br>  ➢ How to tell the time in 12-hour and 24-hour clock<br>  ➢ How to read and use timetables<br>  ➢ Convert between metric measures by multiplying and dividing by 10, 100 and 1000<br><br><br>**Area**<br>By the end of this unit students will know and understand:<br>  ➢ How to calculate the area of triangles, parallelograms | **Fractions, decimals and percentages**<br>By the end of this unit students will know and understand:<br>  ➢ How to convert between fractions, decimals and percentages | | tables, bar charts and pictograms |

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| | | | and trapeziums<br>➢ How to calculate and solve problems involving composite shapes<br>➢ How to solve area problems | | | |
| **Key Vocabulary** | Percent<br>Increase<br>Decrease<br>Multiplier<br>Profit<br>Loss<br>Unit<br>Metre | Positive<br>Negative<br>Unit<br>Decimal<br>Tenths<br>Hundredths<br>Thousandths<br>Perimeter<br>Variable<br>Expression<br>Like<br>Expand<br>Inverse<br>Unknown | Prime number<br>Factor<br>Multiple<br>Square number<br>Cube number<br>Area | Mean<br>Mode<br>Median<br>Range<br>Spread<br>Average<br>Term<br>Quadrant<br>Axis | Numerator<br>Denominator<br>Mixed number<br>Improper fraction<br>Likely<br>Unlikely<br>Certain<br>Impossible<br>Share | Frequency<br>Axis<br>Parallel<br>Acute<br>Obtuse<br>Reflex<br>Right-angle |