Mathematics Enhancement Programme
TEACHING SUPPORT: Year 6

LEARNING OBJECTIVES

At the end of Year 6 we expect students to

- *use numbers up to 10 000 in calculations (addition, subtraction, multiplication and division) with confidence*

- *have instant recall of multiplication tables up to 10 × 10 and number bonds up to 10*

- *understand equivalent fractions and be able to add and subtract fractions in context and find fractions of quantities*

- *understand multiplication of fractions by integers*

- *understand the decimal equivalent of fractions with tenths, hundredths and thousandths and be able to convert simple fractions to/from decimals and percentages*

- *add, subtract and multiply decimal numbers, using the column notation and divide decimal numbers by natural numbers*

- *understand factors and multiples and be able to express natural numbers in terms of their prime factors*

- *round numbers to the nearest 10, 100, 1000*

- *use Venn diagrams to classify a set of numbers*

- *understand SI and Imperial units of measurement and convert length, mass and capacity between the units*

- *convert temperatures between °F and °C*

- *use 12 and 24 hour clocks for time and understand the concept of speed*

- *understand and use negative numbers on a number line and in context, e.g. thermometer, sea level*

- *order a set of numbers, including negative numbers*

- *use negative numbers in simple calculations (addition, subtraction, multiplication and division)*

- *understand and solve simple equations*

- *understand and use circle definitions including radius, diameter, arc, chord and tangent*

- *find the perimeter and area of 2D shapes with lengths given as natural numbers, fractions or decimals and surface area and volume of simple 3D shapes*

- *understand the concepts of symmetry and congruence of simple 2D shapes*

- *recognise and understand convex and concave shapes*

- *understand and use reflection, rotation (including centre of rotation), translation and enlargement (including scale factor) of 2D shapes*

- *use and construct nets for 3D shapes*

- *use 2D coordinates to define shapes*

- *construct and measure angles up to* $360°$

- *understand and use angle measures about a point, including acute, obtuse and reflex angles*

- *know that angles in a triangle sum to* $180°$

- *know the angle properties relating to parallel and perpendicular lines*

- *understand compass direction, including SE, SW, etc. and SSW, etc.*

- *use tally charts, pie charts, bar charts and pictograms to illustrate data*

- *understand and calculate the mode, median, mean and range of a set of numbers*

- *understand that probabilities must satisfy* $0 \leq p \leq 1$ *and the concepts of 'possible', 'unlikely', 'equally likely', 'unlikely' and 'certain' as shown on a probability line*

- *find simple probabilities as fractions or percentages using the terms 'event' and 'outcome' in calculations.*