KEY SKILLS TO ACHIEVE LEVEL 4 IN MATHEMATICS

Securing mental skills

- total, product, multiple, share equally, factor, remainder
- build on what they know, for example, as 624 ÷ 6 = 600 ÷ 6 + 24 ÷ 6 = 100 + 4 = 104
- recognise cases where particular strategies will be effective, for example, using rounding to work out that £1.99 × 3 = £6.00 – 3p
- answer simple decimal calculations, using their relationship to number facts, for example, 0.7 × 3 = 2.1 as 7 tenths x 3 = 21 tenths or 2.1; 5.4 ÷ 9 = 0.6 as 9 × 6 = 54 and 9 × 0.6 = 5.4
- use number lines and other jottings to record working clearly
- build up speed with practice for calculations that can be done mentally
- answer questions mentally involving units, for example, find the ml in $\frac{1}{5}$ of a litre.

Understanding and using place value

- order a set of numbers by identifying significant digits
- position numbers on a number line
- round whole numbers to the nearest 10, 100 or 1000
- round decimal numbers to the nearest whole number
- use rounding to find an approximate answer before tackling tricky calculations
- multiply and divide whole numbers by 10, 100 or 1000
- use a known fact to answer linked decimal facts
- create and continue number sequences involving decimal numbers
- interpret decimal numbers in the context of measures such as money and length
- add and subtract numbers with up to two decimal places
- explain their steps in calculation methods referring to the value of digits.

Calculating with money and time

- locate required information in a timetable or a calendar
- convert between units of time, for example, recognise that 140 secs = 2 mins 20 secs
- add times and find time differences, converting between units of time as necessary
- draw time lines to support accurate calculation involving time
- break money problems into steps and identify each calculation required
- record working for each stage of multi-step problems involving money
- use calculators to solve money problems, recording each calculation that is done
- interpret calculator displays in the context of money, recognising, for example, that 4.2 in pounds
- represents £4.20 or that 10.6666667 would round up to £10.67.

Reading scales

recognise how the value of each interval changes when the start or end label changes

- identify points between two marks and estimate their value
- read values from scales that are horizontal, vertical or circular as on a clock face
- interpret scales on graphs and charts, annotating the scale to support accuracy
- use measuring equipment accurately in the context of length, weight and capacity
- use their readings to calculate differences and solve problems involving scales
- use the relationship between units of measure to convert units, where appropriate.

Interpreting tables and graphs

- use all of the relevant information, including titles, headings and labels, in order to understand what information a graph is presenting
- work out the value of each interval on the scale, annotating the axis for accuracy
- estimate the value of points between two marks on the scale of an axis
- locate the required information to answer a question
- draw lines onto line graphs to read required information accurately
- identify the calculation(s) that need to be carried out, using the data collected in order to answer
- questions and problems
- describe and record the steps involved in solving a problem using data.

Naming and transforming shapes.

- number of right angles, equal angles and number of lines of symmetry
- describe 3-D shapes using number and shape of faces, number of edges and vertices, equal edges
- recognise parallel and perpendicular lines, including in 2-D shapes
- classify a set of shapes using various criteria and record using diagrams including Venn diagrams,
- Carroll diagrams and tree diagrams
- draw 2-D shapes accurately using different grids or using rulers and protractors
- build 3-D shapes using construction kits or by drawing nets
- visualise the result of reflecting, rotating or translating a 2-D shape and test their ideas
- recognise that the length of each side and the size of each angle do not change when a shape is reflected, rotated or translated.