



Emanuel School

11+ (Year 7 entrance) Maths Emanuel School entrance exam topic list

Candidates will need to be familiar with the skills and knowledge from Key Stage 2 Mathematics. Problem solving questions will require the willingness to think and persevere with a problem.

The list below covers some of the topics which may be tested. Please note that this is a guide and not an exhaustive list.

Number skills

- Rounding to the nearest 10, 100 or 1000
- Continuing a sequence with a common difference
- Understand the use of brackets in calculations
- Know prime numbers to 20 and square numbers to 10
- Construct and use simple formulae in contexts, e.g. $c = 15n$.

Fractions and ratios

- Find factors and multiples of numbers
- Find fractions of shapes and quantities, cancel fractions using equivalent fractions and order fractions by converting to a common denominator
- Know the standard conversions between decimals and fractions for half, quarters, tenths and hundredths
- Understand that percentage mean 'parts per 100' and find simple percentages of whole numbers.
- Solve simple problems involving ratio and direct proportion.

Decimals

- Use decimals in context, e.g. money, lengths
- Order decimals, rounding a decimal to the nearest integer or tenth, add, subtract decimals, multiply and divide decimals by a single digit

Shapes

- Measure and draw acute, obtuse and right angles to the nearest degree
- Know the geometric facts about angles at a point, angles on a straight line and angles in a triangle
- Recognise the shapes: square, rectangle, parallelogram, rhombus and trapezium
- Solve problems involving line and rotational symmetry
- Calculate the position of a shape following a rotation, reflection or translation
- Find the perimeter of simple shapes
- Find areas of rectangles and of simple right angled triangles by halving a rectangle
- Solve problems involving co-ordinates in all four quadrants
- Recognise right angles, perpendicular and parallel lines

Units

- Use units of money, length, mass, capacity, time, perimeter or area in context
- Solve simple problems involving speed, distance or time
- Convert between metres, centimetres, millimetres and kilometres, or grams and kilograms
- Read scales, including analogue and digital 12 or 24 hour clocks
- Units seconds, minutes, hours, days, weeks in miscellaneous problems

Data

- Interpret tables, lists and charts used in everyday life, including pie charts
- Calculate the mean, mode or range of a simple list of data
- Use words such as 'equally likely', 'fair', 'unfair', 'certain'