

Mathematics Entrance Exam Syllabus for 10+ Entry to City of London School

There will be one paper, lasting $\frac{3}{4}$ hour. Candidates can write in either pencil, blue or black ink. They will need a ruler. Calculators are not allowed.

The exam will be based on the topics below.

Number

Whole numbers: reading, writing, ordering; adding and subtracting 3-digit numbers; multiplying and dividing 2-digit numbers by 1-digit numbers; multiplying by 10 or 100; solving problems involving such multiplication or division; place value; rounding numbers to the nearest whole number, or nearest 10, or 100; checking that results are reasonable by estimation, or by referring to their knowledge of the context.

Using decimal notation to 2 decimal places, especially in context of money and measurement, including addition and subtraction. Ordering decimals given to 3 decimal places. Understanding and using simple fractions and percentages in context.

Understanding and using the words 'square', 'cube', 'multiple', 'factor'. Candidates should know the square roots of the numbers 1, 4, 9, 16, 25, ..., 100. Recognising, describing, and continuing simple number patterns and sequences. Using simple formulae expressed in words. Using co-ordinates in the first quadrant.

Shape, space and measures

Estimating length, area, volume, time, mass (often called 'weight') in familiar units. Reading a scale, such as a thermometer or speedometer. Appreciating the relationship between units such as millilitres and litres. Finding perimeters of simple shapes; finding areas by counting squares, including approximating when necessary; finding volumes by counting cubes in isometric drawings. Sorting 2-D and 3-D shapes in various ways, giving reasons. Reflecting simple shapes in mirror lines. Constructing (with reasonable accuracy) simple 2-D shapes from given information. Understanding and using the phrase 'right angle' and the words 'triangle', 'square', 'pentagon', 'hexagon', 'rectangle', 'circle', 'cube', 'cuboid', 'cylinder', 'sphere'. Understanding and using the eight points of the compass. Following instructions to locate places on maps.

Handling data

Handling data: tally tables, bar charts, pictograms, frequency diagrams, decision trees, time tables and other tabulated information; finding and using the mode and range of a set of data; grouping data; the language associated with probability (certain, likely, unlikely, impossible, fair, unfair). Drawing and using simple line graphs (such as a conversion graph, or a graph showing a patient's temperature).