



# St Paul's Juniors

## St Paul's Juniors 11+ Entrance Examination Syllabus

Candidates for entry at 11+ will sit a qualifying examination, referred to as 'Part A'. In line with St Paul's we use the ISEB's Common on-line pre-test. Successful candidates will be asked to sit two further written examinations in English and Mathematics. A guide to the content and format for these examinations is given below. Candidates are expected to perform competently in all three aspects but above all we are looking for candidates who show the potential to benefit from an education at St Paul's School.

### **Part A: ISEB Common Pre-Test**

The Common Pre-Tests are taken when a pupil is in Year 6 and are a standardised measure of ability and attainment. They are commissioned from GL Assessment and are online and adaptive. The tests include Verbal Reasoning, Non-Verbal Reasoning, English and Mathematics. They are in a multiple-choice format and take about two-and-a-half hours to complete; the tests can be taken together or at separate times either in your son's own school or here at St Paul's Juniors and St Paul's.

### **Part B: Written Papers**

#### **English**

The main aim of the exam is to test the ability of the boys to think and to express their ideas in ambitious, accurate language.

#### **Comprehension and Analysis**

The paper (50 minutes) includes:

- a) An unseen passage of prose, drama or poetry;
- b) Straightforward factual questions about the text to test understanding of content and the meanings of words in their contexts. Boys may be asked for synonyms and alternative expressions to test breadth of vocabulary;
- c) Questions that require attention to the associations of words and to patterns of sound and meaning. Boys need to describe these, find examples and consider the effects they have on the reader;
- d) Possibly, more creative questions requiring candidates to use relevant material from the passage to write from the point of view of a character or in a similar style to the author.

## **Composition**

The paper (35 minutes) will offer an opportunity to write either from experience or imagination in one of a range of forms, such as story, description, speech, diary, letter or article. We would like to see interesting ideas, expressed using an ambitious and accurate range of vocabulary, punctuation and grammar.'

## **Mathematics**

One non-calculator paper (60 minutes). The paper is split into three sections with all sections of equal weight.

**Section A** is multiple choice; 15 questions testing their understanding of mainly number and the number system.

**Section B** is the calculations section, testing their knowledge of mainly core 'pen and paper' techniques; there will also be some wordier questions in this section.

**Section C** is designed to be more challenging with slightly longer and harder worded problems, and questions that require an ability to problem solve.

The paper is demanding and challenging but it is in line with the National Curriculum at Key Stage 2. Candidates should be working comfortably at National Curriculum Level 5 in number. The ability to handle data and tackle problems involving shape, space and measure will be tested at a standard somewhere between Levels 4 and 5.

In the lead up to the exams we hope a boy's programme of study will be enriched rather than accelerated. More than anything we are looking for boys who exhibit facility with number and who have the ability to analyse problems and apply familiar techniques in unfamiliar situations.

A detailed list of topics is given below and at the end of most sections you will find a list of topics that will not be tested.

### **NUMBER & THE NUMBER SYSTEM**

#### **Place value, ordering and rounding**

- Read and write whole numbers in figures and words, and know what each digit represents up to and including millions.
- Multiply and divide decimals to 1 decimal place mentally by 10 or 100, and divide integers by 1000.
- Round an integer to the nearest 10, 100 or 1000.
- Find the difference between a positive and negative integer, or two negative integers, in context such as temperature or the number line (for example find the difference between 7°C and -3°C)
- Order a set of positive and negative integers.
- The following will not be tested: multiplication and division of negative numbers and formal subtraction of negative numbers for example  $(-4) - (-5)$ .

## Properties of numbers and number sequences

- Recognise sequences formed by counting from any number in steps of constant size, extending beyond zero when counting back (for example count on in steps of 0.1, 0.2, 0.25, 0.5..., and then back).
- Make general statements about odd or even numbers, including outcomes of sums, differences and products.
- Recognise multiples up to  $10 \times 10$ .
- Know and apply simple tests of divisibility by 2, 3, 4, 5, 6, 8, 9, 10, 25 or 100.
- Know square numbers to at least  $10 \times 10$ .
- Recognise prime numbers to at least 100.
- Find all pairs of factors of any number to 100.
- The following will not be tested: recognising triangular numbers and factorising numbers to 100 into prime factors.

## Fractions, decimals, percentages, ratio and proportion

- Change a fraction such as  $\frac{33}{8}$  to the equivalent mixed number and vice versa.
- Recognise relationships between fractions (for example  $\frac{1}{10}$  is ten times  $\frac{1}{100}$ , and  $\frac{1}{16}$  is half of  $\frac{1}{8}$ ).
- Reduce a fraction to its simplest form by cancelling common factors in the numerator and denominator; this will test their rules of divisibility.
- Order fractions by converting them to fractions with a common denominator.
- Adding and subtracting fractions with different denominators; the numerators and denominators will be less than 10.
- Find a fraction of whole number quantities.
- Solve simple problems involving proportion (for example there are 5 toffees to every 2 chocolates in a box of 28 sweets. How many chocolates are there in the box?).
- Use decimal notation for tenths and hundredths in calculations, and tenths, hundredths and thousandths when recording measurements.
- Know what each digit represents in a number up to three decimal places.
- Give a decimal lying halfway between two others (for example between 3.4 and 3.5).
- Order a mixed set of numbers or measurements with up to three decimal places.
- Round a number with two decimal places to the nearest tenth or to the nearest whole number.
- Recognise the equivalence between the decimal and fraction forms of tenths, hundredths, thousandths, halves, quarters and fifths
- Understand percentage as the number of parts in every 100.
- Find percentages of whole number quantities (for example 1% to 10%, all multiples of 10% up to 100%, 25% and 75%). All calculations will be within their mental arithmetic range.

- Convert decimals (tenths and hundredths) to percentages and vice versa.
- Convert fractions (tenths, hundredths, halves, quarters and fifths) to percentages and vice versa.
- The following will not be tested: the word ratio and its notation, converting harder fractions like  $\frac{3}{7}$  to a decimal using the division method.

## CALCULATIONS

### Pencil and paper procedures (+ and –)

- Use informal pencil and paper methods to support, record or explain addition and subtraction.
- Written methods should be extended to:
  - column addition and subtraction of two integers less than a million.
  - addition of more than two integers less than a million.
  - column addition and subtraction of numbers involving decimals.
  - addition and subtraction of fractions with different denominators; the numerators and denominators will be less than 10.

### Pencil and paper procedures (× and ÷)

- Approximate first. Use informal pencil and paper methods to support, record or explain multiplications and divisions.
- Written methods should be extended to:
  - short multiplication of THU.
  - short multiplication of numbers involving decimals.
  - long multiplication of HTU by TU.
  - short division of HTU by U (with mixed number answer).
- The following will not be tested: multiplication and division of fraction by fraction, multiplication and division of decimal by decimal, and long division HTU by TU.

### Checking results of calculations

- Check the sum of several numbers by adding in the reverse order.
- Check with an equivalent calculation.
- Estimate by approximating (round to the nearest tenth, whole number, 10, 100 or 1000), then check the result.
- Use knowledge of the sums, differences and products of odd/even numbers.
- Check with inverse operations.
- Use tests of divisibility.

### Rapid recall of facts and mental strategies

- There will not be an aural test but a rapid recall of mental facts will clearly be advantageous.

- There will also be no formal mental strategies tested, but an ability to explain certain situations in the test will require good grounding in the workings of mental strategies.

### **SOLVING PROBLEMS**

- Choose and use appropriate number operations to solve problems.
- Solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict.
- Make and investigate a general statement about familiar numbers or shapes by finding examples that satisfy it.
- Identify and use appropriate operations (including combinations of operations) to solve word problems involving numbers and quantities. For example: money or measures (including time).
- Candidates must be able to explain methods and reasoning.
- The following will not be tested: formal algebra, so no simplifying of expressions, substitution into formulae or solving equations.

### **HANDLING DATA**

- Solve a problem by extracting data in tables, graphs, charts and diagrams.
- The following will not be tested: probability, measures of spread (range) and central tendency (mean, median and mode).

### **MEASURE, SHAPE & SPACE**

#### **Measure**

- Use read and write standard metric units (km, m, cm, mm, kg, g, l, ml, cl).
- Convert smaller to larger units and vice versa.
- Have knowledge of imperial units still in use (for example understand miles are used to measure length and pints are used to measure capacity)
- Calculate the perimeter and area of squares and rectangles.
- Calculate the perimeter and area of compound shapes that can be split into rectangles.
- The ability to work out durations of time, and counting on and back from time (for example if the time is 23:10, what was the time two and half hours ago?).

#### **Shape and space**

- Describe and visualise properties of solid shapes such as parallel or perpendicular faces or edges.
- Classify triangles (isosceles, equilateral, scalene), using criteria such as equal sides, equal angles, lines of symmetry.

- Classify quadrilaterals, using criteria such as parallel sides, equal angles, equal sides.
- Recognise and draw lines of symmetry.
- Visualise 3-D shapes from 2-D drawings and identify different nets for a cube.
- Recognise where a shape will be after reflection in a mirror line.
- Read and plot co-ordinates in all four quadrants.
- Recognise and estimate angles.
- The following will not be tested: use of a ruler, use of a protractor, bearings, calculating angles on a straight line or round a point, rotational symmetry, rotation and translation.