ST PAUL'S JUNIORS

Common Mathematics Syllabus
7+ Examination

NUMBER AND THE NUMBER SYSTEM

Counting, properties of numbers and number sequences

- Count reliably up to 100 objects by grouping them: for example, in tens, then fives or twos.
- Describe and extend simple number sequences: count on or back in steps of 1, 2, 3, 4, 5 or 10, starting from any two-digit number.
- Count in hundreds from and back to zero.
- Recognise odd and even numbers.
- Recognise two-digit multiples of 2, 5 or 10.

Place value and ordering

- Read and write any three-digit whole number in figures and words.
- Know what each digit in a two-digit number represents, including 0 as a place holder, and partition two-digit numbers into a multiple of ten and ones (TU).
- Use the vocabulary of comparing and ordering numbers, including ordinal numbers to 100.
- Use the = sign to represent equality.
- Compare two given two-digit numbers, say which is more or less, and give a number which lies between them.
- Order any two-digit whole number on a 100 square, and position up to any three-digit number on a number line.

Estimating and rounding

- Use the vocabulary of estimation and approximation.
- Round any two-digit number to the nearest 10.

Fractions

- Recognise and find one half and one quarter of shapes and small numbers of objects.
- Recognise that two halves or four quarters make one whole and that two quarters and one half are equivalent.

CALCULATIONS

Understanding addition and subtraction

- Understand the operations of addition and subtraction.
- Use the related vocabulary.
- Use the +, - and = signs to record mental additions and subtractions in a number sentence, and recognise the use of a symbol such as ﻓ or Δ to stand for an unknown number.
- Understand that subtraction is the inverse of addition (subtraction reverses addition).
- Recognise that addition can be done in any order, but not subtraction: for example, 3 + 21 = 21 + 3, but 21 – 3 ≠ 3 – 21.
- Add three single-digit numbers mentally (totals up to 27).
- Add two two-digit numbers (totals up to 100) with any appropriate method.

Rapid recall of addition and subtraction facts

- Know by heart:
  - all addition facts to a total of 20 (e.g. 13 + 7, 6 + 14) and the corresponding subtraction facts.
  - all pairs of multiples of 10 with a total of 100 (e.g. 30 + 70).
- Derive quickly:
  - TU + U up to a total of 50, and the corresponding subtractions.

Mental calculation strategies (+ and -)

- Use a variety of methods to demonstrate an understanding of addition and subtraction.
- State the subtraction corresponding to a given addition, and vice versa.

Understanding multiplication and division

- Understand the operation of multiplication as repeated addition and as describing an array.
- Understand division as grouping (repeated subtraction) or sharing.
- Use the related vocabulary.
- Use the ×, ÷ and = signs to record mental calculations in a number sentence, and recognise the use of a symbol such as ﻓ or Δ to stand for an unknown number.
- Know and use halving as the inverse of doubling.

Rapid recall of multiplication and division facts

- Know by heart:
  - multiplication facts for the 2, 5 and 10 times-tables.
  - doubles of all numbers to 10 and the corresponding halves.

- Derive quickly:
  - division facts corresponding to the 2, 5 and 10 times tables.
  - doubles of all numbers to 15 (e.g. 11 + 11 or 11 × 2).
  - doubles of multiples of 5 to 50 (e.g. 20 × 2 or 35 × 2).
  - halves of multiples of 10 to 100 (e.g. half of 70).

Mental calculation strategies (x and ÷)

- Use a variety of methods to demonstrate an understanding of multiplication and division.

Checking results of calculations

- Use appropriate checking strategies.

MONEY, MEASURES, SHAPE AND SPACE

Money and measures

- Recognise all coins and use £.p notation for money (for example, know that £4.65 indicates £4 and 65p).
- Find totals, give change, and work out which coins to pay.
- Use the vocabulary related to length.
- Estimate, measure and compare lengths, using standard units (m, cm).
- Read a simple scale to the nearest labelled division, including using a ruler to draw and measure lines to the nearest centimetre.
- Use and read the vocabulary related to time.
- Use units of time and know the relationships between them (minute, hour, day, week).
- Read the time to the hour, half hour or quarter hour on an analogue clock and a 12-hour digital clock, and understand the notation 7:30.

Shapes and space

- Use everyday language to describe features of familiar 2-D shapes, including circle, triangle, square and rectangle, referring to properties such as the number of sides.
- Sort shapes and describe some of their features, such as the number of sides and corners, symmetry (2-D shapes).
- Recognise line symmetry.
- Use mathematical vocabulary to describe position, direction and movement: for example, describe, place, tick, draw or visualise objects in given positions.
- Recognise whole, half and quarter turns, to the left or right, clockwise or anti-clockwise.
- Know that a right angle is a measure of a quarter turn, and recognise right angles in squares and rectangles.
- Give instructions for moving along a route in straight lines and round right-angled corners: for example, to pass through a simple maze.

SOLVING PROBLEMS

Problems involving money and measures

- Use mental addition and subtraction, simple multiplication and division, to solve simple word problems involving numbers in money and measures, using one or two steps.

Making decisions

- Choose and use appropriate operations and efficient calculation strategies (e.g. mental, mental with jottings) to solve problems.

Reasoning about numbers or shapes

- Solve mathematical problems or puzzles, recognise simple patterns and relationships, generalise and predict.
- Explain how a problem was solved.