SATs core skills

Number, ratio and algebra

Pupils working at the expected standard are able to:

1. Use place value in whole numbers up to 1,000,000 to compare and order numbers and are beginning to become confident with numbers up to 10,000,000.
2. Round any whole number to the nearest power of ten.
3. Use negative numbers in practical contexts such as temperature and calculate intervals across zero.
4. Count forwards or backwards in steps of any whole number with one significant figure, e.g. 9, 20, 3000 to generate, describe and complete linear number sequences.
5. Recognise and use multiples, factors, prime numbers less than 20 and square numbers up to 144.
6. Add and subtract whole numbers with up to two significant figures (e.g. 95 + 36, 5700 – 2900).
7. Add and subtract whole numbers with more than four digits, using formal written methods where appropriate.
8. Use their understanding of place value to multiply and divide whole numbers and decimals with up to two decimal places by 10 or 100 (e.g. 1532 ÷ 100 = , ÷ 100 = 6.3).
9. Multiply and divide whole numbers mentally drawing upon multiplication facts up to 12 × 12 and place value (e.g. 60 × 70) and begin to use these facts to work with larger numbers.
10. Multiply numbers with up to two digits by a two digit number using the formal long multiplication method and becoming more confident with multiplication with larger numbers; multiply and divide numbers with up to four digits by a single digit number using the formal short division method and become more confident with division using larger numbers including the long division method.
11. Recognise and use equivalent fractions (e.g. $\frac{300}{900} = \frac{1}{3}$; $\frac{4}{5} = \frac{8}{10} = \frac{80}{100}$)
12. Recognise and use the equivalences between simple fractions, decimals and percentages (e.g. 0.3 = $\frac{3}{10}$ = 30%) and becoming more confident with calculating other decimal fraction equivalents.
13. Find simple fractions and percentages of whole numbers and quantities (e.g. $\frac{2}{3}$ of 90; 20 × $\frac{1}{5}$; 30% of £60).
14. Add and subtract fractions with the same denominator, using mixed numbers where appropriate for the context (e.g. $1\frac{1}{5} - \frac{2}{5} = \frac{6}{5} - \frac{2}{5} = \frac{4}{5}$)
15. Add and subtract fractions with the same denominator and denominators that are multiples of the same number (e.g.$\frac{1}{4} + \frac{5}{8} = \frac{7}{8}$) and becoming more confident with more complex fraction calculations.
16. Add and subtract decimal numbers that have the same number of decimal places (e.g. 157.31 – 29.16).
17. Multiply a one digit decimal number by a single digit number (e.g. 0.6 × 8).
18. Use simple ratio to compare quantities (e.g. every pupil is given 3 pencils and a pen. 36 pencils were given out. How many pens were needed?)and estimate the distance from a map using a simple scale (e.g. where 1 cm represents 100 m).
19. Use simple formulae expressed in words (e.g. time needed to cook a chicken: allow 20 minutes plus 40 minutes per kilogram).
20. Find possible values in missing number problems involving one or two unknowns (algebra) (e.g. Ben thinks of two numbers: the sum of the two numbers is 10: multiplied together they make 24: what are Ben's numbers? > (a + b=10, ab=24)

Measurement

21. Read, write and convert time between analogue (including clock faces using Roman numerals) and digital 12 and 24– hour clocks, using a.m. and p.m. where necessary.
22. Calculate the duration of an event using appropriate units of time (e.g. a film starts at 6:45p.m. and finishes at 8:05p.m. How long did it last?)
23. Convert between 'adjacent' metric units of measure for length, capacity and mass (e.g. 1.2 kg = 1200 g; how many 200 ml cups can be filled from a 2 litre bottle?; write 605 cm in metres).
24. Find the perimeter of compound shapes when all side lengths are known or can be easily determined (e.g. a simple shape made from two identical rectangles joined together to make an L-shape with given dimensions of the rectangle).
25. Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes by counting squares.

Geometry

26. Compare and classify 3–D and 2–D shapes based on their properties (e.g. for 2–D shapes: parallel sides, length of sides, type and size of angles, reflective symmetry, regular / irregular polygons; for 3–D shapes: faces, vertices and edges).
27. Recognise and describe simple 3–D shapes, including using nets and other 2–D representations.
28. Complete simple shapes using given lengths, such as 7.5cm, (accurate to +/−2 mm) and acute angles that are multiples of 5° (accurate to +/– 2°).
29. Know and use the facts that angles at a point sum to 360°, angles at a point on a straight line sum to 180° and angles in a triangle sum to 180° (e.g. calculate the base angles of an isosceles triangle where the other angle is 110°) and identify other multiples of 90°.
30. Identify, describe; and represent the position of a shape following a reflection or translation.
31. Describe positions on a 2–D co-ordinate grid using axes with equal scales in the first quadrant (in the context of number or geometry) and use co-ordinates to complete a given rectangle; become more confident in plotting points in all four quadrants.

Statistics

32. Complete, read and interpret information presented in tables and bar charts (e.g. find the difference between two bars showing temperatures, where one is 20°C and the other is 13°C, on a scale labelled in multiples of 5).
33. Interpret line graphs (e.g. begin to find the difference between two temperatures on a line graph, where one is 20°C and the other is 13°C, on a scale labelled in multiples of 5) and simple pie charts (e.g. a pie chart cut into eight pieces for favourite fruit using whole numbers for each section).
34. Calculate the mean as an average for simple sets of discrete data (e.g. find the mean mass of three parcels weighing 5 kg, 3 kg and 10 kg).