Primary Stage 3 Mathematics for Year 3

Number

Numbers and the number system

➢ Recite numbers 100 to 200 and beyond.
➢ Read and write numbers to at least 1000.
➢ Count on and back in ones, tens and hundreds from two- and three-digit numbers.
➢ Count on and back in steps of 2, 3, 4 and 5 to at least 50.
➢ Understand what each digit represents in three-digit numbers and partition into hundreds, tens and units.
➢ Find 1, 10, 100 more/less than two- and three-digit numbers.
➢ Multiply two-digit numbers by 10 and understand the effect.
➢ Round two-digit numbers to the nearest 10 and round three-digit numbers to the nearest 100.
➢ Place a three-digit number on a number line marked off in multiples of 100.
➢ Place a three-digit number on a number line marked off in multiples of 10.
➢ Compare three-digit numbers, use < and > signs, and find a number in between.
➢ Order two- and three-digit numbers.
➢ Give a sensible estimate of a number as a range (e.g. 30 to 50) by grouping in tens.
➢ Find half of odd and even numbers to 40, using notation such as 13½.
➢ Understand and use fraction notation recognising that fractions are several parts of one whole, e.g. ¾ is three quarters and $^2/_3$ is two thirds.
➢ Recognise equivalence between 1/2, 2/4, 4/8, and 5/10 using diagrams.
➢ Recognise simple mixed fractions, e.g. 1½ and 2¼.
➢ Order simple or mixed fractions on a number line, e.g. using the knowledge that ½ comes half way between ¼ and ¾ , and that 1½ comes half way between 1 and 2.
➢ Begin to relate finding fractions to division.
➢ Find halves, thirds, quarters and tenths of shapes and numbers (whole number answers).

Calculation

Mental strategies

➢ Know addition and subtraction facts for all numbers to 20.
➢ Know the following addition and subtraction facts:
    multiples of 100 with a total of 1000
    multiples of 5 with a total of 100.
➢ Know multiplication/division facts for 2x, 3x, 5x, and 10x tables.
➢ Begin to know 4x table.
➢ Recognise two- and three-digit multiples of 2, 5 and 10.
➢ Work out quickly the doubles of numbers 1 to 20 and derive the related halves.
➢ Work out quickly the doubles of multiples of 5 (< 100) and derive the related halves.
➢ Work out quickly the doubles of multiples of 50 to 500.

Addition and subtraction

➢ Add and subtract 10 and multiples of 10 to and from two- and three-digit numbers.
➢ Add 100 and multiples of 100 to three-digit numbers.
➢ Use the = sign to represent equality, e.g. 75 + 25 = 95 + 5.
➢ Add several small numbers.
➢ Find complements to 100, solving number equations such as 78 + ▢ = 100.
➢ Add and subtract pairs of two-digit numbers.
➢ Add three-digit and two-digit numbers using notes to support.
➢ Re-order an addition to help with the calculation, e.g. 41 + 54, by adding 40 to 54, then 1.

- Add/subtract single-digit numbers to/from three-digit numbers.
- Find 20, 30, … 90, 100, 200, 300 more/less than three-digit numbers.

Multiplication and division

- Understand the relationship between halving and doubling.
- Understand the effect of multiplying two-digit numbers by 10.
- Multiply single-digit numbers and divide two-digit numbers by 2, 3, 4, 5, 6, 9 and 10.
- Multiply teens numbers by 3 and 5.
- Begin to divide two-digit numbers just beyond 10x tables, e.g. 60 ÷ 5, 33 ÷ 3.
- Understand that division can leave a remainder (initially as 'some left over').
- Understand and apply the idea that multiplication is commutative.
- Understand the relationship between multiplication and division and write connected facts.

Geometry

Shapes and geometric reasoning

- Identify, describe and draw regular and irregular 2D shapes including pentagons, hexagons, octagons and semi-circles.
- Classify 2D shapes according to the number of sides, vertices and right angles.
- Identify, describe and make 3D shapes including pyramids and prisms; investigate which nets will make a cube.
- Classify 3D shapes according to the number and shape of faces, number of vertices and edges.
- Draw and complete 2D shapes with reflective symmetry and draw reflections of shapes (mirror line along one side).
- Relate 2D shapes and 3D solids to drawings of them.
- Identify 2D and 3D shapes, lines of symmetry and right angles in the environment.
- Identify right angles in 2D shapes.

Position and movement

- Use the language of position, direction and movement, including clockwise and anti-clockwise.
- Find and describe the position of a square on a grid of squares where the rows and columns are labelled.
- Use a set square to draw right angles.
- Compare angles with a right angle and recognise that a straight line is equivalent to two right angles.

Measure

Money

- Consolidate using money notation.
- Use addition and subtraction facts with a total of 100 to find change.

Length, mass and capacity

- Choose and use appropriate units and equipment to estimate, measure and record measurements.
- Know the relationship between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres.
- Read to the nearest division or half division, use scales that are numbered or partially numbered.
- Use a ruler to draw and measure lines to the nearest centimetre.
- Solve word problems involving measures.

Time

- Suggest and use suitable units to measure time and know the relationships between them (second, minute, hour, day, week, month, year).

- Read the time on analogue and digital clocks, to the nearest 5 minutes on an analogue clock and to the nearest minute on a digital clock.
- Begin to calculate simple time intervals in hours and minutes.
- Read a calendar and calculate time intervals in weeks or days.

Handling data
Organising, categorising and representing data
- Answer a real-life question by collecting, organising and interpreting data, e.g. investigating the population of mini-beasts in different environments.
- Use tally charts, frequency tables, pictograms (symbol representing one or two units) and bar charts (intervals labelled in ones or twos).
- Use Venn or Carroll diagrams to sort data and objects using two criteria.

Problem solving
Using techniques and skills in solving mathematical problems
- Choose appropriate mental strategies to carry out calculations.
- Begin to understand everyday systems of measurement in length, weight, capacity and time and use these to make measurements as appropriate.
- Make sense of and solve word problems, single (all four operations) and two-step (addition and subtraction), and begin to represent them, e.g. with drawings or on a number line.
- Check the results of adding two numbers using subtraction, and several numbers by adding in a different order.
- Check subtraction by adding the answer to the smaller number in the original calculation.
- Check multiplication by reversing the order, e.g. checking that 6 x 4 = 24 by doing 4 x 6.
- Check a division using multiplication, e.g. check 12 ÷ 4 = 3 by doing 4 x 3.
- Recognise the relationships between different 2D shapes.
- Identify the differences and similarities between different 3D shapes.
- Estimate and approximate when calculating, and check working.
- Make a sensible estimate for the answer to a calculation, e.g. using rounding.
- Consider whether an answer is reasonable.

Using understanding and strategies in solving problems
- Make up a number story to go with a calculation, including in the context of money.
- Explain a choice of calculation strategy and show how the answer was worked out.
- Explore and solve number problems and puzzles, e.g. logic problems.
- Use ordered lists and tables to help to solve problems systematically.
- Describe and continue patterns which count on or back in steps of 2, 3, 4, 5, 10, or 100.
- Identify simple relationships between numbers, e.g. each number is three more than the number before it.
- Identify simple relationships between shapes, e.g. these shapes all have the same number of lines of symmetry.
- Investigate a simple general statement by finding examples which do or do not satisfy it, e.g. when adding 10 to a number, the first digit remains the same.
- Explain methods and reasoning orally, including initial thoughts about possible answers to a problem.