Mathematics

The lessons in this chapter address objectives from the Primary National Strategy's *Primary Framework for mathematics*. Many of the lessons can be repeated at different times, such as lessons where the number range can be increased. In order to ensure that the pace of the lesson is kept sharp, lesson notes do not suggest that children write on the whiteboard themselves. If, however, some children are capable of writing clearly, then consider whether to encourage them to write up number sentences for the others to see.

Lesson title	PNS objectives	NLS objectives	Expected prior knowledge	Cross-curricular links
Lesson 1: Know these numbers	**Counting and understanding number** • Read and write numerals from 0 to 20, then beyond.	• Know the number names and recite them in order to at least 20, from and back to zero.	• How to count to at least 10. • The number names to at least 10.	**Geography** QCA Unit 1 'Around our school – the local area'
Lesson 2: Read this!	**Counting and understanding number** • Read and write numerals from 0 to 20, then beyond.	• Read and write numerals from 0 to at least 20.	• How to write numerals to 9.	**Science** QCA Unit 1A 'Ourselves'
Lesson 3: One more or less	**Counting and understanding number** • Say the number that is one more or less than any given number.	• Within the range 0 to 30, say the number that is 1 or 10 more or less than any given number.	• One more or less than numbers to 9.	**ICT** QCA Unit 1D 'Labelling and classifying'
Lesson 4: Larger number first ⊙ 🄿	**Knowing and using number facts** • Count on or back in ones.	• Put the larger number first and count on in ones, including beyond 10 (eg 7 + 5).	• How to order numbers to 10 and count on from any small number to at least 10.	**Geography** QCA Unit 2 'How can we make our local area safer?'
Lesson 5: Solving problems 🄿	**Using and applying mathematics** • Solve problems involving adding. • Describe ways of solving puzzles and problems, explaining choices and decisions orally or using pictures.	• Solve simple mathematical problems or puzzles; recognise and predict from simple patterns and relationships. Suggest extensions by asking 'What if…?' or 'What could I try next?' • Explain methods and reasoning orally.	• Mental calculation strategies for numbers to 10.	**Science** QCA Unit 1C 'Sorting and using materials'
Lesson 6: Shopping 🄿	**Using and applying mathematics** • Solve problems involving counting, adding and subtracting, in the context of money, eg to 'pay' and 'give change'.	• Recognise coins of different values. • Find totals and change from up to 20p. • Work out how to pay an exact sum using smaller coins.	• How to recognise and name coins from 1p to 20p.	**Geography** QCA Unit 1 'Around our school – the local area'
Lesson 7: What can we find? ⊙	**Handling data** • Answer a question by recording information in lists and tables; present outcomes using practical resources, pictures and block graphs.	• Solve a given problem by sorting, classifying and organising information in simple ways, such as: using objects or pictures; in a list or simple table. • Discuss and explain results	• How to sort sets by one criterion.	**Science** QCA Unit 1C 'Sorting and using materials'
Lesson 8: Comparing lengths ⊙	**Measuring** • Estimate, measure and compare objects, choosing and using suitable uniform non-standard or standard units and measuring instruments (eg a metre stick).	• Compare two lengths by direct comparison; extend to more than two. • Measure using uniform non-standard units (eg straws, wooden cubes), or standard units (eg metre sticks).	• How to make direct comparisons of length, matching one end of each item to the other.	**Design and technology** QCA Unit 1B 'Playgrounds'
Lesson 9: Shapes ⊙	**Understanding shape** • Visualise and name common 2D shapes and 3D solids and describe their features.	• Use everyday language to describe features of familiar 3D and 2D shapes, including the cube, cuboid, sphere, cylinder, cone…, circle, triangle, square, rectangle…, referring to properties such as the shapes of flat faces, or the number of faces or corners… or the number and types of sides.	• The names of 2D and 3D shapes and beginning to know some of their properties.	**Art and design** QCA Unit 2C 'Can buildings speak?'