

## Core learning in mathematics: links to the National Curriculum 2000

Underlined text in red indicates new objectives that add detail to the relevant National Curriculum Programme of Study.

### Year 3

#### Using and applying mathematics

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li>Solve one- and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations</li> </ul>	<ul style="list-style-type: none"> <li>Choose, use and combine any of the four number operations to solve word problems involving numbers in 'real life', money or measures of length, mass, capacity or time, then perimeter and area</li> <li>Choose suitable number operations to solve a given problem, and recognise similar problems to which they apply</li> <li>Choose and use an appropriate way to calculate</li> </ul>	<p>N4a N3a N4b</p>
<ul style="list-style-type: none"> <li>Represent the information in a puzzle or problem using numbers, images or diagrams; use these to find a solution and present it in context, where appropriate using £.p notation or units of measure</li> </ul>	<ul style="list-style-type: none"> <li>Use notation diagrams and symbols correctly within a given problem</li> <li>Check results and ensure that solutions are reasonable in the context of the problem</li> </ul>	<p>N1g D1e/N4c /S1d</p>
<ul style="list-style-type: none"> <li>Follow a line of enquiry by deciding what information is important; make and use lists, tables and graphs to organise and interpret the information</li> </ul>	<ul style="list-style-type: none"> <li>Select and use handling data skills when solving problems</li> <li>Identify the information needed to carry out the tasks/solve a problem</li> <li>Decide how best to organise and present findings</li> <li>Present and interpret solutions</li> </ul>	<p>D1a N1b/D1c D1f S1g</p>
<ul style="list-style-type: none"> <li>Identify patterns and relationships involving numbers or shapes, and use these to solve problems</li> </ul>	<ul style="list-style-type: none"> <li>Recognise, represent and interpret simple number relationships</li> <li>Search for pattern in their results; develop logical thinking</li> <li>Recognise and describe number patterns, using these to make predictions</li> </ul>	<p>N4d N1k N2b</p>
<ul style="list-style-type: none"> <li>Describe and explain methods, choices and solutions to puzzles and problems, orally and in writing, using pictures and diagrams</li> </ul>	<ul style="list-style-type: none"> <li>Communicate mathematically, including the use of precise mathematical language</li> <li>Use notation diagrams and symbols correctly within a given problem</li> <li>Explain and justify their methods and reasoning</li> </ul>	<p>N1i/D1g N1g/S1f N4b/D1h</p>

## Counting and understanding number

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li>Read, write and order whole numbers to at least 1000 and position them on a number line; count on from and back to zero in single-digit steps or multiples of 10</li> </ul>	<ul style="list-style-type: none"> <li>Read, write and order whole numbers, recognising that the position of a digit gives its value</li> <li>Locate on a number line, and order, a set of numbers</li> </ul>	N2c N2i
<ul style="list-style-type: none"> <li><u>Partition three-digit numbers into multiples of one hundred, ten and one in different ways</u></li> </ul>		
<ul style="list-style-type: none"> <li>Round two- or three-digit numbers to the nearest 10 or 100 and give estimates for their sums and differences</li> </ul>	<ul style="list-style-type: none"> <li>Round integers to the nearest 10 or 100</li> <li>Estimate answers by approximating</li> </ul>	N2c N4c
<ul style="list-style-type: none"> <li>Read and write proper fractions, e.g. <math>\frac{3}{7}</math>, <math>\frac{9}{10}</math>, interpreting the denominator as the parts of a whole and the numerator as the number of parts; identify and estimate fractions of shapes; use diagrams to compare fractions and establish equivalents</li> </ul>	<ul style="list-style-type: none"> <li>Understand unit fractions [e.g. one-third or one-eighth], then fractions that are several parts of one whole [e.g. two-thirds or five-eighths], locate them on a number line; find fractions of shapes</li> <li>Understand simple equivalent fractions</li> </ul>	N2d N2e

## Knowing and using number facts

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li>Derive and recall all addition and subtraction facts for each number to 20, <u>sums and differences of multiples of 10</u> and number pairs that total 100</li> </ul>	<ul style="list-style-type: none"> <li>Recall all addition and subtraction facts for each number to 20</li> <li>Work out what they need to add to any two-digit number to make 100</li> </ul>	N3d N3e
<ul style="list-style-type: none"> <li>Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000</li> </ul>	<ul style="list-style-type: none"> <li>Recall multiplication facts to <math>10 \times 10</math> and use them to derive quickly the corresponding division facts</li> <li>Recognise two- and three-digit multiples of 2, 5 or 10</li> </ul>	N3f N2b
<ul style="list-style-type: none"> <li>Use knowledge of number operations and corresponding inverses, including doubling and halving, to estimate and check calculations</li> </ul>	<ul style="list-style-type: none"> <li>Develop further their understanding of the four number operations and the relationships between them including inverses; use the related vocabulary</li> <li>Make mental estimates of the answers to calculations; check results</li> <li>Estimate answers by approximating and checking that their results are reasonable by thinking about the context of the problem, and where necessary checking accuracy [e.g. by using the inverse operation, by repeating the calculation in a different order]</li> </ul>	N3a N1e N4c

## Calculating

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li><u>Add or subtract mentally combinations of one-digit and two-digit numbers</u></li> </ul>		
<ul style="list-style-type: none"> <li>Develop and use written methods to record, support or explain addition and subtraction of two- and three-digit numbers</li> </ul>	<ul style="list-style-type: none"> <li>Use written methods to add and subtract positive integers less than 1000</li> </ul>	N3i

## Framework review

<ul style="list-style-type: none"> <li>Multiply one- and two-digit numbers by 10 or 100, and describe the effect</li> </ul>	<ul style="list-style-type: none"> <li>Multiply any integer by 10 or 100</li> </ul>	N2c
<ul style="list-style-type: none"> <li>Use practical and informal written methods to support multiplication and division of two-digit numbers (e.g. <math>13 \times 3</math>, <math>30 \div 4</math>); round remainders up or down, depending on the context</li> </ul>	<ul style="list-style-type: none"> <li>Use written methods for multiplication and division by a single-digit integer of two-digit integer</li> <li>Find remainders after division; round up or down after division, depending on the context</li> </ul>	N3j N3b
<ul style="list-style-type: none"> <li>Understand that division reverses multiplication and vice versa and use to derive and record related multiplication and division number sentences</li> </ul>	<ul style="list-style-type: none"> <li>Develop further their understanding of the four number operations and the relationships between them, including inverses</li> </ul>	N3a
<ul style="list-style-type: none"> <li>Find unit fractions of numbers and quantities, e.g. <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math> and <math>\frac{1}{6}</math> of 12 litres</li> </ul>	<ul style="list-style-type: none"> <li>Use [unit fractions] to find fractions of quantities</li> </ul>	N2d

## Understanding shape

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li>Relate 2-D shapes and 3-D solids to drawings of them; describe, visualise, classify, draw and make the shapes</li> </ul>	<ul style="list-style-type: none"> <li>Visualise 3-D shapes from 2-D drawings</li> <li>Describe 2-D and 3-D shapes</li> <li>Make and draw 2-D and 3-D shapes; recognise their geometrical features and properties including faces and symmetry, and use these to classify shapes</li> </ul>	S2d S2b S2c
<ul style="list-style-type: none"> <li>Draw and complete shapes with reflective symmetry and draw the reflection of a shape in a mirror line along one side</li> </ul>	<ul style="list-style-type: none"> <li>Transform objects in practical situations; visualise and predict the position of a shape following a reflection</li> </ul>	S3b
<ul style="list-style-type: none"> <li>Read and record the vocabulary of <a href="#">position, direction</a> and movement, using the four compass directions to describe movement about a grid</li> </ul>	<ul style="list-style-type: none"> <li>Visualise and describe movements using appropriate language</li> </ul>	S3a
<ul style="list-style-type: none"> <li>Use a set-square to draw right angles and to identify right angles in 2-D shapes; compare angles with a right angle; <a href="#">recognise that a straight line is equivalent to two right angles</a></li> </ul>	<ul style="list-style-type: none"> <li>Recognise angles as greater or less than a right angle or half-turn; measure and draw right angles</li> <li>Recognise right angles</li> </ul>	S4c S2a

## Measuring

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li>Know the relationships between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres; choose and use appropriate units to estimate, measure and record measurements</li> </ul>	<ul style="list-style-type: none"> <li>Recognise the need for standard units of length, mass and capacity, choose which ones are suitable for a task, and use them to make sensible estimates in everyday situation</li> <li>Select and use appropriate measuring instruments for a task</li> </ul>	S1a/S4a S4b
<ul style="list-style-type: none"> <li>Read, to the nearest division and half-division, scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy</li> </ul>	<ul style="list-style-type: none"> <li>Interpret numbers and read scales with increasing accuracy</li> </ul>	S4b

## Framework review

<ul style="list-style-type: none"> <li>• Read the time on a 12-hour digital clock and to the nearest five minutes on an analogue clock; calculate time intervals and find start or end times for a given time interval</li> </ul>	<ul style="list-style-type: none"> <li>• Read the time from analogue and digital 12-hour clocks; use units of time (minutes and hours) and know the relationship between them</li> <li>• Solve word problems involving time</li> </ul>	<p>S4d N4a</p>
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## Handling data

2006 objectives	National Curriculum 2000 KS2 programme of study	
<ul style="list-style-type: none"> <li>• Answer a question by collecting, organising and interpreting data; use tally charts, frequency tables, pictograms and bar charts to represent results and illustrate observations; use ICT to create a simple bar chart</li> <li>• Use Venn diagrams or Carroll diagrams to sort data and objects using more than one criterion</li> </ul>	<ul style="list-style-type: none"> <li>• Solve problems involving data</li> <li>• Interpret tables, lists and charts used in everyday life; construct and interpret frequency tables</li> <li>• Represent and interpret discrete data using graphs and diagrams, including pictograms and bar charts, using ICT where appropriate</li> <li>• Draw conclusions from graphs.</li> </ul>	<p>D2a D2b D2c D2f</p>

