

Core learning in mathematics: links to the 1999 Framework for teaching mathematics

A blue box on the right shows that there is no equivalent in the new objectives. A blue box on the left shows that there is no equivalent in the 1999 objectives.

A pink box shows that the equivalent objective was in a different year group in the 1999 Framework.

Year 4

Using and applying mathematics

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> Solve one- and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate Represent a puzzle or problem using number sentences, statements or diagrams; use these to solve the problem; present and interpret the solution in the context of the problem 	<ul style="list-style-type: none"> Use all four operations to solve word problems involving numbers in 'real life', money and measures (including time), using one or more steps, including converting pounds to pence and metres to centimetres and vice versa. Choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems. Round up or down after division, depending on the context. 	Year 4 82, 84, 86, 88, 100 74 56
	<ul style="list-style-type: none"> Choose appropriate ways of calculating: calculator. 	Year 5 75
<ul style="list-style-type: none"> Suggest a line of enquiry and the strategy needed to follow it; collect, organise and interpret selected information to find answers 	<ul style="list-style-type: none"> Solve a problem by collecting quickly, organising, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer. 	Year 4 114, 116
<ul style="list-style-type: none"> Identify and use patterns, relationships and properties of numbers or shapes; investigate a statement involving numbers and test it with examples 	<ul style="list-style-type: none"> Solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict. Suggest extensions by asking 'What if...?' Recognise and extend number sequences. Make and investigate a general statement about familiar numbers or shapes by finding examples that satisfy it. 	Year 4 78 16, 18 80
<ul style="list-style-type: none"> Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols 	<ul style="list-style-type: none"> Explain methods and reasoning about numbers orally and in writing. 	Year 4 76

Counting and understanding number

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> Recognise and continue number sequences formed by counting on or back in steps of constant size 	<ul style="list-style-type: none"> Recognise and extend number sequences formed by counting in steps of constant size, extending beyond zero when counting back. 	Year 4 16

Framework review

<ul style="list-style-type: none"> Partition, round and order four-digit whole numbers; use positive and negative numbers in context and position them on a number line; state inequalities using the symbols < and >, e.g. $-3 > -5$, $-1 < +1$ 	<ul style="list-style-type: none"> Recognise negative numbers in context (e.g. on a number line, on a temperature scale). Use symbols correctly, including less than (<), greater than (>), equals (=). 	Year 4 14 8
<ul style="list-style-type: none"> Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one- and two-place decimals on a number line 	<ul style="list-style-type: none"> Understand decimal notation and place value for tenths and hundredths, and use it in context, e.g. order amounts of money; convert a sum of money such as £13.25 to pence, or a length such as 125 cm to metres; round a sum of money to the nearest pound. 	Year 4 28
	<ul style="list-style-type: none"> Order a set of numbers or measurements with one or two decimal places. 	Year 5 29
<ul style="list-style-type: none"> Recognise the equivalence between decimal and fraction forms of one half, quarters, tenths and hundredths 	<ul style="list-style-type: none"> Recognise the equivalence between the decimal and fraction forms of tenths and hundredths (e.g. $\frac{7}{10} = 0.7$, $\frac{27}{100} = 0.27$). 	Year 5 31
<ul style="list-style-type: none"> Use diagrams to identify equivalent fractions, e.g. $\frac{6}{8}$ and $\frac{3}{4}$, or $\frac{70}{100}$ and $\frac{7}{10}$; interpret mixed numbers and position them on a number line, e.g. $3\frac{1}{2}$ 	<ul style="list-style-type: none"> Begin to relate fractions to division and find simple fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, ... of numbers. Find fractions such as $\frac{2}{3}$, $\frac{3}{4}$, $\frac{3}{5}$, $\frac{7}{10}$, ... of shapes. Recognise the equivalence of simple fractions Order a set of fractions such as 2, $2\frac{3}{4}$, $1\frac{3}{4}$, $2\frac{1}{2}$, $1\frac{1}{2}$, and position them on a number line. 	Year 4 22, 24
	<ul style="list-style-type: none"> Use the vocabulary of ratio and proportion to describe the relationship between two quantities, e.g. there are 2 red beads to every 3 blue beads, or 2 beads in every 5 beads are red; estimate a proportion, e.g. 'about one quarter of the apples in the box are green' 	<ul style="list-style-type: none"> Begin to use ideas of simple proportion: for example, 'one for every ...' and 'one in every ...'. Solve simple problems using ideas of ratio and proportion ('one for every...' and 'one in every...').

Knowing and using number facts

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000 	<ul style="list-style-type: none"> Derive quickly all pairs of multiples of 50 with a total of 1000 (e.g. $850 + 150$). Add three two-digit multiples of 10, such as $40 + 70 + 50$. Use known number facts and place value to add or subtract mentally. 	Year 4 38 42 44, 46
	<ul style="list-style-type: none"> Use known number facts and place value for mental addition and subtraction (e.g. $470 + 380$, $810 - 380$). 	Year 5 45, 47
<ul style="list-style-type: none"> Identify the doubles of two-digit numbers; use to calculate doubles of multiples of 10 and 100 and derive the corresponding halves 	<ul style="list-style-type: none"> Derive quickly doubles of all whole numbers to 50, multiples of 10 to 500 and multiples of 100 to 5000, and the corresponding halves. 	Year 4 58
<ul style="list-style-type: none"> Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple 	<ul style="list-style-type: none"> Know by heart all multiplication facts up to 10×10; derive quickly corresponding division facts. Recognise multiples of 6, 7, 8, 9, up to the 10th multiple. 	Year 5 59 19

Framework review

	<ul style="list-style-type: none"> Recognise multiples of 2, 3, 4, 5 and 10, up to the tenth multiple. 	Year 4 18
<ul style="list-style-type: none"> Use knowledge of rounding, number operations and inverses to estimate and check calculations 	<ul style="list-style-type: none"> Check results of calculations. 	Year 4 72
<ul style="list-style-type: none"> Identify pairs of fractions that total 1 	<ul style="list-style-type: none"> Identify two simple fractions with a total of 1 (e.g. $\frac{3}{10}$ and $\frac{7}{10}$). 	Year 4 22

Calculating

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> Add or subtract mentally pairs of two-digit whole numbers, e.g. $47 + 58$, $91 - 35$ 	<ul style="list-style-type: none"> Use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers. 	Year 4 40, 42, 44, 46
<ul style="list-style-type: none"> Refine and use efficient written methods to add and subtract two- and three-digit whole numbers and £.p 	Develop and refine written methods for: column addition and subtraction of two whole numbers less than 1000, and addition of more than two such numbers; money calculations (e.g. $£7.85 \pm £3.49$).	Year 4 48, 50
<ul style="list-style-type: none"> Multiply and divide numbers to 1000 by 10 and then 100 (whole number answers), understanding the effect; relate to scaling up or down 	<ul style="list-style-type: none"> Multiply or divide any integer up to 1000 by 10 (whole-number answers), and understand the effect; begin to multiply by 100. 	Year 4 6
<ul style="list-style-type: none"> Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders, e.g. 15×9, $98 \div 6$ 	<ul style="list-style-type: none"> Develop and refine written methods for $TU \times U$, $TU \div U$. Find remainders after division; divide a whole number of pounds by 2, 4, 5 or 10 to give £.p; round up or down after division, depending on the context. 	Year 4 66, 68 56
<ul style="list-style-type: none"> Find fractions of numbers, quantities or shapes, e.g. $\frac{1}{5}$ of 30 plums, $\frac{3}{8}$ of a 6 by 4 rectangle 	<ul style="list-style-type: none"> Begin to relate fractions to division and find simple fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, ... of numbers or quantities. Find fractions such as $\frac{2}{3}$, $\frac{3}{4}$, $\frac{3}{5}$, $\frac{7}{10}$, ... of shapes. 	Year 4 24
<ul style="list-style-type: none"> Use a calculator to carry out one- and two-step calculations involving all four operations; recognise negative numbers in the display, correct mistaken entries and interpret the display correctly in the context of money 	<ul style="list-style-type: none"> Develop calculator skills and use a calculator effectively. 	Year 5 71

Understanding shape

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> Draw polygons and classify them by identifying their properties, including their line symmetry 	<ul style="list-style-type: none"> Classify polygons using criteria such as number of right angles, whether or not they are regular, symmetry properties. Make shapes, e.g. construct polygons by paper folding or using pinboard, and discuss properties such as lines of symmetry. 	Year 4 102, 104
<ul style="list-style-type: none"> Visualise 3-D objects from 2-D drawings and make nets of common solids 	<ul style="list-style-type: none"> Visualise 3-D shapes from 2-D drawings and identify simple nets of solid shapes. 	Year 4 104

Framework review

<ul style="list-style-type: none"> Recognise horizontal and vertical lines; use the eight compass points to describe direction; describe and identify the position of a square on a grid of squares 	<ul style="list-style-type: none"> Recognise simple examples of horizontal and vertical lines. Use the eight compass directions N, S, E, W, NE, NW, SE, SW. Recognise positions and directions: for example, describe and find the position of a point on a grid of squares where the lines are numbered. 	Year 4 108
<ul style="list-style-type: none"> Know that angles are measured in degrees and that one whole turn is 360°; draw, compare and order angles less than 180° 	<ul style="list-style-type: none"> Begin to know that angles are measured in degrees and that one whole turn is 360° or 4 right angles; a quarter turn is 90° or one right angle; half a right angle is 45°; start to order a set of angles less than 180°. 	Year 4 110

Measuring

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of kilo, centi and milli and, where appropriate, use decimal notation to record measurements, e.g. 1.3 m or 0.6 kg 	<ul style="list-style-type: none"> Use, read and write standard metric units (km, m, cm, mm, kg, g, l, ml), including their abbreviations, and imperial units (mile, pint). Know and use the relationships between familiar units of length, mass and capacity. Know the equivalent of one half, one quarter, three quarters and one tenth of 1 km, 1 m, 1 kg, 1 litre in m, cm, g, ml. Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity. 	Year 4 90 92, 94
<ul style="list-style-type: none"> Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit 	<ul style="list-style-type: none"> Record estimates and readings from scales to a suitable degree of accuracy. 	Year 4 94
<ul style="list-style-type: none"> Draw rectangles and measure and calculate their perimeters, find the area of rectilinear shapes drawn on a square grid by counting squares 	<ul style="list-style-type: none"> Measure and calculate the perimeter and area of rectangles and other simple shapes, using counting methods and standard units (cm, cm^2). 	Year 4 96
<ul style="list-style-type: none"> Read time to the nearest minute; use am, pm and 12-hour clock notation; choose units of time to measure time intervals; calculate time intervals from clocks and timetables 	<ul style="list-style-type: none"> Use am and pm and the notation 9:53. Read simple timetables. Solve word problems involving time. 	Year 4 98, 100 88

Handling data

2006 objectives	1999 Framework and Supplement of examples	
<ul style="list-style-type: none"> • Answer a question by identifying what data to collect; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts, using ICT where appropriate • Compare the impact of representations where scales have intervals of differing step size 	<ul style="list-style-type: none"> • Solve a problem by collecting quickly, organising, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer, e.g. <ul style="list-style-type: none"> – tally charts and frequency tables; – pictograms – symbol representing 2, 5, 10 or 20 units; – bar charts – intervals labelled in 2s, 5s, 10s or 20s; – Venn and Carroll diagrams (two criteria). 	Year 4 114, 116