Class 4J Summer Term 2003 Mathematics

Aims

To encourage pupils to enjoy mathematics and develop a positive attitude towards studying mathematics.
To provide opportunities for pupils to develop their understanding of a range of mathematics concepts and processes.
To provide daily opportunities for pupils to practice a range of mental and oral in maths skills.
To provide opportunities for pupils to practice a range of practical skills in mathematics.
To provide opportunities for pupils to reflect upon the mathematics studied in school and relate it to everyday life.
To provide opportunities for pupils to practice computation and extend basic numeracy skills.
To develop a range of social skills by providing opportunities for pupils to work with others in groups of various sizes.

Elements of work in Mathematics

A. Oral work and mental calculation

There will be a time in each maths lesson (almost always at the beginning of the lesson) to practise and develop oral and mental skills (e.g. counting, mental strategies, rapid recall of +, –, x and + facts).
There will be some opportunities to discuss strategies and mental methods in this time but a high priority will be placed on the development of speed and fluency. In each half term there are key opportunities in the main maths teaching time to focus on discussing and exploring mental maths strategies and methods.
Children are expected to learn and practice their times-tables at home and there will be regular tests.

B. Main teaching

The content, range and objectives taught in the main teaching time are laid out in the Numeracy Strategy document. The units of work/objective will almost invariably be taken in the sequence they appear in the framework. However, units may be taken out of sequence if alteration is judged to provide a better sequence of mathematical ideas for the particular class.
Pupils are encouraged to use correct mathematical language.
Pupils are encouraged to explain their thinking in mathematics (e.g. to explain their choices and selections of maths processes and equipment, to explain step by step their thinking and approach when solving problems or tackling investigations, to explain pattern in numbers including data they have collected, to explain probability estimates, etc.)
Pupils are encouraged to reflect upon the mathematics they are learning and consider the situations in which it may be useful in everyday life.
Children will be given maths homework weekly. This will generally be intended to help consolidate the work done in school that week but may be concerned with collecting data or preparing in some other way for the following week's work.

Pupils are intended to view the skills and understandings learned in maths as providing them with a bank of knowledge, skills, strategies, etc. which they:

(a) need to remember!
(b) should be able to select from and apply appropriately in order to solve maths problems
(c) should be able to explain
(d) should be able to relate to everyday situations and work in other areas of the curriculum

Class 4J Summer Term 2003 First Half Term

Mathematics

Oral and Mental Maths

Daily practise/development of oral and mental skills (e.g. counting, mental strategies, rapid recall of + , –, x and + facts)
Read and write whole numbers up to 10000.
Add/subtract 10, 100 1000 from any two-/three-digit number.
Derive doubles of multiples of 100 to 5000, corresponding halves.
Round any three-digit number to the nearest 10 or 100.
Add/subtract a pair of two-digit numbers (crossing 10 but not 100 boundary)
Recall addition and subtraction facts for each number to 20.
Derive addition pairs that total 100, and multiples of 50 that total 1000.
Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.
Begin to recall facts in x6 and x8 tables.
Multiply or divide whole numbers by 10 or 100.
Multiply TU by U, e.g. 13 x 3.

Main Maths Content

Unit	Days	Pages	Topic	Objectives; children will be taught to:
1	3	2–15	Place value, ordering, rounding	Begin to multiply whole numbers by 100. Order a set of whole numbers up to 10000. Round any positive integer to the nearest 10 or 100.
		94–95	Reading numbers from scales	Read a variety of scales and dials to a suitable degree of accuracy.
2–3	10	34–37	Understanding + and -	Understand the principles of associative law for addition (not name).
		40–47	Mental calculation strategies (+ -)	Add or subtract the nearest multiple of 10 and adjust. Use number facts and place value to add/subtract mentally any pair of two-digit whole numbers.
		48–51	Pencil and paper procedures (+ -)	Develop, refine written methods for column addition/subtraction.
		82–85	Money and 'real life' problems	Add more than two whole numbers less than 1000, and money. Choose appropriate operations and calculation methods to solve money and 'real life' word problems with one or more steps.
		72–75	Making decisions, checking results	Explain working. Check using knowledge of sums of odd/even numbers.
4–6	13	86–101	Measures, including problems	Use, read, write *litre* (l), *millilitre* (ml), *pint*. Know $^1/_4$, $^1/_2$, $^3/_4$, $^1/_{10}$ of 1 litre in ml. Suggest suitable units and equipment to estimate or measure capacity. Read scales. Record measurements to suitable degree of accuracy, using mixed units, or the nearest whole/half/quarter unit (e.g. 3.25 litres). Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps. Explain working.
		102–111	Shape and space	Sketch reflection of simple shape in a mirror. Read and begin to write the vocabulary of movement.
		76–81	Reasoning about shapes	Make and describe patterns involving translation. Begin to measure angles in degrees. Know whole turn, 360°, 4 right angles; quarter turn, 90°, 1 right angle; half turn, 180°, 2 right angles. Recognise 45° as half a right angle.
7	2		Assess and review	

N.B. The intention is to teach Units 5 and 6 after half term (which is longer than the first half of the term). This will also allow time after the assessment to pick up on any difficulties evident. Optional SATs will also be taken during this half term.

Class 4J Summer Term 2003 Second Half Term

Mathematics

Oral and Mental Maths

Daily practise/development of oral and mental skills (e.g. counting, mental strategies, rapid recall of + , –, x and + facts)

Read and write whole numbers up to 10000.
Count on/back in equal steps including beyond zero.
Recall addition and subtraction facts for each number to 20.
Round any three-digit number to the nearest 10 or 100.
Add/subtract any pair of two-digit numbers (including crossing 10 and 100 boundary).
Derive doubles of multiples of 100 to 5000, corresponding halves.
Derive addition pairs that total 100, multiples of 50 that total 1000.
Recall multiplication facts in 2 times, 3 times, 4 times, 5 times, 10 times tables and derive division facts.
Begin to recall facts in 6 times and 8 times tables.
Derive facts in 9 times table, e.g. from 10 lots subtract 1 lot.
Multiply by partitioning, e.g. 23 x 4.

Main Maths Content

8	5	16–21	Properties of numbers	Recognise multiples of 2, 3, 4, 5, 10, up to 10th multiple. Solve number problems and puzzles.
		76–81	Reasoning about numbers	Explain methods and reasoning orally and in writing.
9–10	10	52–57	Understanding x and ÷	Understand distributive law.
		60–65	Mental calculation strategies (x ÷)	Round up or down after division. Use relation between x and ÷. Use known facts to multiply and divide.
		66–69	Pencil, paper procedures (x and ÷)	Develop and refine written methods for TU ÷ U.
		82–85	Money and 'real life' problems	Choose appropriate operations and calculation methods to solve money and 'real life' word problems with one or more steps.
		72–75	Making decisions, checking results	Explain working. Check results by approximating.
11	5	22–31	Fractions and decimals	Begin to use ideas of simple proportion. Recognise the equivalence of decimal, fraction forms of one half, one quarter and tenths.
12	5	34–37	Understanding + and -	Consolidate understanding of addition and subtraction.
		40–47	Mental calculation strategies (+ -)	Add/subtract mentally any pair of two-digit whole numbers.
		48–51	Pencil, paper procedures (+ and-)	Refine column addition and subtraction. Read timetables and use this year's calendar.
		98–101	Time, including problems	Solve problems involving time.
13	5	114–117	Handling data	Solve a given problem by collecting, classifying, representing and interpreting data in Venn and Carroll diagrams: two criteria. Use a computer and a branching tree program to sort shapes or numbers.
14	2		Assess and review	
Total	60			