Class 4J Autumn Term 2002 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 Autumn Term 2002 Mathematics
First Half Term

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 1, 10, 100 to any whole number.
Count on or back in 10s, 100s from any 2- or 3-digit number.
Round any three-digit number to the nearest 10 or 100.
Recall addition and subtraction facts for each number up to 20.
Add/subtract a pair of two-digit numbers (not crossing 10 or 100 boundary)
Derive doubles of whole numbers to 50, corresponding halves.
Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.
Multiply a two-digit number by 10.

Main Maths Content

Unit	Days	Pages	Topic	Objectives; children will be taught to:
0	3		Assess, review and revise	Written and mental calculations: approaches to finding answers.
1	5	2–15	Place value, ordering, rounding	Read and write whole numbers to 10000 in figures and words. Know what each digit represents and partition into Th H T U. Read and write the vocabulary of estimation. Estimate up to 250 objects. Estimate a proportion (fraction).
		94–95	Reading numbers from scales	Read scales to a suitable degree of accuracy.
2–3	10	34–37	Understanding + and -	Consolidate understanding of relationship between addition/subtraction. Understand commutative law of addition.
		40–47	Mental calculation strategies (+ -)	Count on or back in repeated steps of 1, 10, 100, 1000. Identify near doubles. Count up through next multiple of 10, 100, 1000.
		48–51	Pencil and paper procedures (+ -)	Use informal pencil and paper methods to support, record or explain addition and subtraction.
		82–85	Money and 'real life' problems	Convert £ to p. Choose appropriate number operations and calculation methods to solve money or 'real life' word problems with one/two steps.
		72–75	Making decisions, checking results	Explain and record methods. Check with addition in a different order.
4–6	13	86–101	Measures, including problems	Use, read, write *km, m, cm, mm* and *mile*. Know and use relationships between units. Know $^1/_2$, $^1/_4$, $^3/_4$, $^1/_{10}$ of 1 *kilometre* in *m*, 1 *metre* in *cm* or *mm*. Suggest suitable units and equipment to estimate or measure length Record metres and centimetres using decimals, and other measurements using mixed units. Convert up to 1000 cm to metres and vice versa. Measure/calculate perimeter of rectangles and simple shapes (*cm*). Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps. Explain and record methods.
		102–111	Shape and space	Describe and visualise 3-D and 2-D shapes, inc. tetrahedron, heptagon. Recognise equilateral and isosceles triangles. Classify shapes (right angles, regularity, symmetry). Recognise position on square grids with numbered lines.
		76–81	Reasoning about shapes	Investigate general statements about shapes.
7	5		Assess and review	

Class 4J Autumn Term 2002 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 10s, 100s from any two-/three-digit number.
Recall addition and subtraction facts for each number to 20.
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).
Derive doubles of whole numbers to 50, corresponding halves.
Recall addition and subtraction facts for each number up to 20.
Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.
Multiply and divide whole numbers by 10.

Main Maths Content

8	5	16–21 76–81	Properties of numbers Reasoning about numbers	Recognise, extend number sequences formed by counting from any number in steps of constant size, e.g. 25 to 500. Recognise odd and even numbers up to 1000 and some of their properties, e.g. sums, differences of pairs of odd/even numbers. Solve number puzzles, recognise patterns, generalise and predict.
9–10	10	52–57 60–65 66–69 82–85 72–75	Understanding x and ÷ Mental calculation strategies (x ÷) Pencil and paper procedures (x ÷) Money and 'real life' problems Making decisions, checking results	Extend understanding of x and ÷ and their relationship to each other and to + and –. Use doubling and halving of two-digit numbers, e.g. x4 = double double, x5 = x10 halve, x20 = x10 double, x8 = x4 double, $^1/_4$ = half of one $^1/_2$. Approximating first, use informal pencil and paper methods to multiply and divide. Choose appropriate number operations and calculation methods to solve money and 'real life' word problems with one or more steps. Explain and record methods. Check with equivalent calculation.
11	5	22–31	Fractions and decimals	Use fraction notation. Recognise fractions that are several parts of a whole, and mixed numbers. Find fractions of shapes. Relate fractions to division and find simple fractions of quantities.
12	5	34–37 40–47 48–51 98–101	Understanding + and - Mental calculation strategies, (+ -) Pencil, paper procedures (+ -) Time, including problems	Consolidate understanding of subtraction as the inverse of addition. Find a small difference by counting up. Use relationship between + and –. Develop written methods for + and – of whole numbers less than 1000. Use, read, write vocabulary of time. Read time to 1 min. on analogue/12-hour digital clock. Use 9:53, a.m. and p.m. Solve time word problems.
13	5	114–117	Handling data	Solve a given problem by collecting, classifying, representing and interpreting data in tally charts, frequency tables, pictograms (symbol) representing 2, 5, 10 units). Include use of computer.
14	5		Assess and review	