Class 4J Spring 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 Spring 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 10 000.
Add/subtract in 10s, 100s from any two-/three-digit number.
Recall addition and subtraction facts for each number to 20.
Round and 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 multiples of 10 to 500, corresponding halves.
Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.
Derive multiplication facts in 8 times table and begin to recall them.
Multiply and divide whole numbers by 10.
Write subtraction fact corresponding to given addition fact.

Main Maths Content

Unit	Days	Pages	Topic	Objectives: children will be taught to
1	5	2–15 94–95	Place value, ordering, rounding Reading numbers from scales	Multiply and divide an integer up to 1000 by 10; understand the effect. Read and write the vocabulary of comparing and ordering numbers. Use symbols = < > correctly. Give a number lying between tow others. Use vocabulary of approximation. Round any positive number less than 1000 to nearest 10. Recognise negative numbers in context: number line, thermometer.
2–3	15	34–37 40–47 48–51 82–85 72–75	Understanding + and – Mental calculation strategies (+ –) Pencil and paper procedures (+ –) Money and 'real life' problems Making decisions, checking results	Understand principle (not name) of commutative law for + not -. Add several small numbers by finding pairs that total 10 or 9 or 11. Partition into tens and units, adding tens first. Add three two-digit multiples of 10. Develop/refine written methods for addition/subtraction, including money. Choose appropriate number operations and calculation methods to solve money and 'real life' word problems with one or more steps. Explain working. Check with an equivalent calculation.
5	5	86–101	Measures, and time, including problems	Estimate and check times using seconds, minutes, hours. Measure and compare using kilograms, and grams, and know and use the relationship between them. Know ¼, ½, ¾ and 1/10 of 1kg in grams. Suggest suitable units and equipment to estimate or measure mass. Read scales. Record measurements to suitable degree of accuracy, using mixed units, or the nearest whole/half/quarter unit (e.g. 3.25kg).
7	5		Assess, review and respond	

N.B. The intention is to teach Unit 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. The last week before half term is also school Arts Week.

Class 4J Spring 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 10 000.
- Count on or back in equal steps including below zero.
- Derive doubles of multiples of 10 to 500, corresponding halves.
- Round and 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 up to 20.
- Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.
- Derive multiplication facts in x 6 table and begin to recall them.
- Multiply and divide whole numbers by 10.
- Derive addition pairs that total 100, multiples of 50 that total 1000

Main Maths Content

6	5	102–111 76–81	Shape and space Reasoning about shapes	Measure and calculate area of rectangles and simple shapes, using counting methods and standard units (square centimetres). Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps. Explain working. Make shapes and discuss properties. Visualise solid shapes from 2-D drawings. Identify simple nets. Recognise clockwise, anticlockwise. Start to draw, measure and order angles. Use eight compass points. Recognise horizontal and vertical lines. Solve shape problems or puzzles. Explain reasoning and methods.
8	5	16–21 76–81	Properties of numbers And number sequences Reasoning about numbers	Recognise, extend number sequences formed by counting from any number in steps of constant size, extend beyond zero if counting back. Investigate general statements about familiar numbers. Explain methods and reasoning.
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	Understand commutative and associative laws of multiplication. Divide a whole number of £ by 2, 4, 5 or 10 to give £/p. Use closely related facts, e.g. derive x9 or x11 from x100, or derive x6 from x4 plus x2. Partition and multiply. Develop and refine written methods for TU x U. Choose appropriate number operations and calculation methods to solve money and 'real life' word problems with one or more steps. Explain working. Check with inverse operation
11	5	22–31	Fractions and decimals	Recognise equivalence of simple fractions. Identify two fractions with total of 1. Compare a fraction with one half, and say whether it is greater or less. Use decimal notation for tenths, hundredths (money, metres and centimetres) and use in context. Round to the nearest £ or metre. Convert £ to p, or metres to centimetres, and vice versa. Order decimals with two places.
12	5	114–117	Handling data	Solve a given problem by collecting, classifying, representing and interpreting data in bar charts; intervals labelled in 2s, 5s, 10s, 20s. Include use of computer.
13	2		Assess, review and respond	
Total	55			