

## **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*



# Year 5 Autumn Term 2004

## 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 to at least 100 000.
- Count on/back in equal steps (e.g. 25, 100, 0.1).
- Round any three or four-digit number to nearest 10 or 100.
- Recall addition and subtraction facts for each number up to 20.
- Add/subtract any pair of two-digit numbers, including crossing 100
- Double any whole number to 100 and multiples of 10 to 1000.
- Recall facts in x2, x3, x4, x5, x6, x10 tables and derive division facts.
- Begin to recall multiplication facts in x7, x8, x9 tables, squares to 10 x 10.
- Multiply or divide whole numbers up to 10 000 by 10 or 100.
- Convert metres to centimetres and £ to pence, and vice versa.

### Main Maths Content

8-10	15	102-111 76-81	Shape and space Reasoning about shapes	Identify and recognise properties of rectangles. Classify triangles: isosceles, equilateral, scalene, lines of symmetry. Recognise positions, read and plot co-ordinates in first quadrant. Solve shape puzzles. Explain methods and reasoning orally and in writing. Understand, measure and calculate perimeter of rectangles, regular polygons. Measure and draw lines to nearest mm. Use, read and write standard metric units of length, abbreviations and relationships. Convert larger to smaller units of length. Know mile. Read the time on 24-hour digital clock, e.g. 19:53. Suggest suitable units/equipment to estimate or measure length. Record estimates/measurements from scales to suitable degree of accuracy. Use all four operations to solve measurement word problems, including time. Choose appropriate operations/calculation methods. Explain workings.
		86-101	Measures, including problems	
11	5	40-47 48-51 82-85 70-75	Mental calculation strategies (+ -)  Pencil and paper procedures (+ -)  Money and 'real life' problems Making decisions, checking results, including using a calculator	Find difference by counting up through next multiple of 10, 100, 1000. Partition into HTU and add most significant digits first. Use informal pencil and paper methods. Extend written methods +/- of two integers less than 10 000. Use all four operations to solve money or 'real life' word problems. Choose appropriate operations/calculation methods. Explain working. Check calculations using operation, including with calculator.
12	5	16-21  76-81	Properties of numbers and number sequences  Reasoning about numbers	Recognise and extend number sequences formed by counting from any number in steps of constant size, extend beyond zero when counting back. Know squares to at least 10 x 10. Identify factors of two-digit numbers. Solve mathematical problems or puzzles. Recognise patterns, generalise.
13	5		Revise Assess and review	
and, from the Year 5 Spring Term Weekly plans: Unit 6				
6	8	112-117  70-71	Handling data  Using a calculator	Solve a problem by representing and interpreting data in bar line charts: axis in 2s, 5s, 10s, 20s, 100s. Discuss cases where intermediate points have no meaning and cases where points may be joined to show trend. Find the mode and calculate the range of a set of data. Use a computer to compare different presentations of the same data.