

MATHEMATICS AND NUMERACY

KEY STAGE 2

The minimum content for Mathematics and Numeracy is set out below.

Teachers should enable pupils to develop knowledge, understanding and skills in:

PROCESSES IN MATHEMATICS

Making and Monitoring Decisions

Pupils should be enabled to:

- take increasing responsibility for selecting and using the materials and the mathematics required for their work;
- identify and obtain the information required for a task, suggesting appropriate sources to find the information;
- plan and organise their work, learning to work systematically;
- develop a range of strategies for problem solving, looking for ways to overcome difficulties.

Communicating Mathematically

Pupils should be enabled to:

- understand mathematical language and use it to discuss their work and explain their thinking;
- compare their ideas and methods of working with others;
- interpret situations mathematically using appropriate symbols or diagrams;
- present information and results clearly.

Mathematical Reasoning

Pupils should be enabled to:

- recognise general patterns and relationships and make predictions about them;
- ask and respond to open-ended questions and explain their thinking;
- understand and make general statements;
- check results and consider whether they are reasonable.

NUMBER

Understanding Number and Number Notation

Pupils should be enabled to:

- count, read, write and order whole numbers;
- develop an understanding of place value up to two decimal places; use this to multiply and divide numbers by 10 and 100;
- estimate and approximate to gain an indication of the size of a solution to a calculation or problem;
- understand and use vulgar fractions, decimal fractions and percentages and explore the relationships between them;

- understand and use negative numbers in context.

Patterns, Relationships and Sequences in Number

Pupils should be enabled to:

- explore and predict patterns and sequences of whole numbers; follow and devise rules for generating sequences;
- understand and use multiples and factors and the terms prime, square and cube; appreciate inverse operations;
- interpret, generalise and use simple relationships expressed in numerical, spatial and practical situations; understand and use simple function machines;
- understand that a letter can stand for an unknown number.

Operations and their Applications

Pupils should be enabled to:

- develop strategies to add and subtract mentally;
- know the multiplication facts up to 10×10 ;
- engage in a range of activities to develop understanding of the four operations of number; appreciate the use of brackets; add and subtract with up to two decimal places; multiply and divide decimals by whole numbers; use these operations to solve problems.

Money

Pupils should be enabled to:

- use the four operations to solve problems involving money;
- discuss the value of money, how to keep money safe, ways in which goods can be paid for and the need for budgeting;
- be able to plan and think ahead in terms of saving and spending money; prioritise spending with a limited supply of money; understand how to access best buys;
- discuss foreign currency including the Euro.

MEASURES

Pupils should be enabled to:

- develop skills in estimation of length, 'weight', volume/capacity, time, area and temperature;
- appreciate important ideas about measurement, including the continuous nature of measurement and the need for appropriate accuracy;
- understand the relationship between units and convert one metric unit to another; use the four operations to solve problems;
- calculate perimeter and the areas and volumes of simple shapes;
- understand and use scale in the context of simple maps and drawings;
- recognise times on the analogue and digital clocks and understand the relationship between the 12 and 24-hour clocks; use timetables.

SHAPE AND SPACE

Exploration of Shape

Pupils should be enabled to:

- construct a range of regular and irregular 2-D shapes; classify these through examination of angles and sides; recognise line and rotational symmetry; reflect shapes in a line; explore tessellations; name and describe common 2-D shapes; begin to understand congruence in 2-D shapes;
- construct 3-D shapes; investigate the number of faces, edges and vertices on these shapes; name and describe common 3-D shapes; explore the relationship between 2-D and 3-D shapes.

Position, Movement and Direction

Pupils should be enabled to:

- understand the notion of angle in the context of turning; recognise right angles; understand clockwise and anti-clockwise; know the eight points of the compass; use logo to understand movement and turning; be introduced to a programming language and use it to create pictures and patterns and to generate shapes;
- develop language associated with line and angle; recognise properties of acute, obtuse and reflex angles; investigate angles in triangles and quadrilaterals; measure and draw angles up to 360° ;
- use co-ordinates to plot and draw shapes in the first quadrant.

HANDLING DATA

Collecting, Representing and Interpreting Data

Pupils should be enabled to:

- collect, classify, record and present data drawn from a range of meaningful situations, using graphs, tables, diagrams and ICT software;
- explain their work orally and/or through writing and draw conclusions;
- interpret a wide range of tables, lists, graphs and diagrams; create and interpret frequency tables, including those for grouped data;
- design and use a data collection sheet; interpret the results; enter information in a database or spreadsheet and interrogate and interpret the results;
- understand, calculate and use the mean and range of a set of discrete data.

Introduction to Probability

Pupils should be enabled to:

- become familiar with and use the language of probability;
- understand possible outcomes of simple random events; understand that there is a degree of uncertainty about the outcome of some events, while others are certain or impossible;
- place events in order of 'likelihood'; understand and use the idea of 'evens' and know whether events are more or less likely than this.