
APPENDIX A

List of Objectives

Mathematics from 5 to 16 Curriculum Matters 3 (HMSO, 1985)

Facts

- 1 Remembering terms
- 2 Remembering notation
- 3 Remembering conventions
- 4 Remembering results

Skills

- 5 Performing basic operations
- 6 Sensible use of a calculator
- 7 Simple practical skills in mathematics
- 8 Ability to communicate mathematics
- 9 The use of microcomputers in mathematical activities

Conceptual structure

- 10 Understanding basic concepts
- 11 The relationship between concepts
- 12 Selecting appropriate data
- 13 Using mathematics in context
- 14 Interpreting results

General Strategies

- 15 Ability to estimate
- 16 Ability to approximate
- 17 Trial and error methods
- 18 Simplifying difficult tasks
- 19 Looking at pattern
- 20 Reasoning
- 21 Making and testing hypotheses
- 22 Proving and disproving

Personal qualities

- 23 Good work habits
- 24 A positive attitude to mathematics

APPENDIX B

GCSE The National Criteria: Mathematics (DES, 1985)

3. Assessment objectives

The objectives which follow set out essential mathematical processes in which candidates' attainment will be assessed. They form a minimum list of qualities, abilities and skills.

The weight attached to each of these objectives may vary for different levels of assessment within a differentiated system.

Any scheme of assessment will test the ability of candidates to:

- 3.1 recall, apply and interpret mathematical knowledge in the context of everyday situations;
- 3.2 set out mathematical work, including the solution of problems, in a logical and clear form using appropriate symbols and terminology;
- 3.3 organise, interpret and present information accurately in written, tabular, graphical and diagrammatic forms;
- 3.4 perform calculations by suitable methods;
- 3.5 use an electronic calculator;
- 3.6 understand systems of measurement in everyday use and make use of them in the solution of problems;
- 3.7 estimate, approximate and work to degrees of accuracy appropriate to the context;
- 3.8 use mathematical and other instruments to measure and to draw to an acceptable degree of accuracy;
- 3.9 recognise patterns and structures in a variety of situations, and form generalisations;
- 3.10 interpret, transform and make appropriate use of mathematical statements expressed in words or symbols;
- 3.11 recognise and use spatial relationships in two and three dimensions, particularly in solving problems;
- 3.12 analyse a problem, select a suitable strategy and apply an appropriate technique to obtain its solution;
- 3.13 apply combinations of mathematical skills and techniques in problem-solving;
- 3.14 make logical deductions from given mathematical data;
- 3.15 respond to a problem relating to a relatively unstructured situation by translating it into an appropriately structured form.

Two further assessment objectives can be fully realised only by assessing work carried out by candidates in addition to time-limited written examinations. From 1988 to 1990 all Examining Groups must provide at least one scheme which includes some elements of these two objectives. From 1991 these objectives must be realised fully in all schemes.

- 3.16 respond orally to questions about mathematics, discuss mathematical ideas and carry out mental calculations;

- 3.17 carry out practical and investigational work, and undertake extended pieces of work.