



Numeracy Test Specification

Audience

This specification is written to inform staff involved in the production and maintenance of the professional skills tests in numeracy. This may include Teaching Agency staff, appointed subcontractors and staff in organisations delivering teacher training. It is not explicitly intended for candidates of the test who are recommended to review the support material available on the Department for Education website. See www.education.gov.uk/teachskillstests.

Introduction

This document specifies the format and content of the numeracy test. The skills tests are required for entry into Initial Teacher Training (ITT); information about this can be found on the Teaching Agency pages of the Department for Education website: www.education.gov.uk/teachskillstests. The tests are a pass/fail minimum competence test, based on a range of practical skills deemed important for a teacher's general professional practice.

The Teaching Agency maintains a bank of parallel test forms in each subject. A candidate is assigned a test form at random (excluding previously taken forms) when entered for a test. A variety of modified forms are available as special arrangements to ensure the assessment is accessible to all candidates. The test bank is maintained with a proportion of tests being replaced each year. All new tests are piloted prior to use to ensure that they are comparable in demand to the existing tests in the test bank. The assessments are taken in a secure test centre, on computer, unless special arrangements have been granted for an alternative format.

In addition to this specification a bank of practice tests and support information regarding the test format is made available on the Teaching Agency pages of the Department for Education website. See www.education.gov.uk/teachskillstests.

The content of the numeracy test draws upon a range of contexts and situations that are relevant to teachers. The contexts and situations come from a wide range of sources including documents issued by government agencies and schools. All questions should present positive rather than negative contexts and pay regard to issues of equality and diversity in the choice of names, scenarios and so on.

Structure and format of the tests

The total number of marks available for each test is 28. The tests must have coverage mapped against this specification to demonstrate both coverage in each particular test and also even coverage of the specification over time given that each test does not cover all specification areas.

The test covers three areas:

Subject area	Number of marks available	Explanation
Mental arithmetic	12	The ability to calculate mentally in everyday and educational contexts is considered to be an important aspect of a teacher's professional duties.
Interpreting and using written data	7	Teachers need to be able to interpret and analyse graphs, charts and tables which present information or, for example, show trends over time.
Solving written arithmetic problems	9	Teachers need to be able to calculate and manipulate numbers in order to justify decisions, present information etc.

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The mental arithmetic questions are all delivered at the start of the test with each question being subject to a time limit. The questions on interpreting and using written data, and solving written arithmetic problems are presented following the completion of the mental arithmetic section. The section of sixteen 'on-screen' questions is timed as a whole and candidates may return to any of the 16 questions to review and change responses. The two topic areas are mixed between the 16 questions to provide topic variation from question to question. In the on-screen section items may be written as 'linked items' where the stimulus material (e.g. a chart or graph) may be used for more than one item. The overall balance of question types and use of linked items will be considered to ensure fair 'value for time' is accorded for the questions set.

Mental Arithmetic

Purpose: *the ability to work out answers to straightforward questions which are heard rather than read is an important attribute for teachers to possess. Simple mistakes or a lack of speed in mental calculation will often be detected by colleagues, pupils and parents.*

The mental arithmetic test comprises 12 questions. Each question carries one mark. The candidate will hear each question twice and each question must be answered within a fixed time limit of 18 seconds. The answers will be entered into an answer box on the screen. The use of calculators will not be permitted.

Questions may be set from any of the following content areas:

- Time (1a);
- Amounts of money (1b);
- Proportions involving fractions (1c), percentages (1d) or decimals (1e);
- Fractions (1f);
- Decimals (1g);
- Percentages (1h);
- Measurement involving distance (1i), area (1j) or other measures (1k) e.g. volume;
- Conversions
 - from one currency to another (1l)
 - from fractions to decimals (1m)
 - from decimals to fractions (1n)
 - from percentages to fractions (1o)
 - from fractions to percentages (1p)
 - other (1q).

At least one question must involve a combination of the following processes: addition, subtraction, multiplication and division (1r).

Interpreting and using written data

Purpose: *teachers are expected to be able to interpret charts and tables correctly; identify trends from charts, tables and graphs; and make comparisons between sets of data and draw conclusions.*

This section is part of the on-screen test. There will be seven questions in this section. Each question will carry one mark. The use of the on-screen calculator is permitted. There is no time limit for each question other than that imposed by the overall time limit for the section. Questions will appear on the screen with all the necessary information displayed and may involve single or multiple tables, charts or graphs.

Answers to questions will be given in one of the following forms:

- Multiple choice - the single correct response is chosen from a fixed number of given alternative answers;
- Multiple response - single or multiple correct statements are chosen from a fixed number of given statements;
- Single response - insert free text answer;
- Select and place - the correct answer is chosen from a number of alternative answers by selecting it and placing it within the answer box provided;
- Point and click - an answer is selected by pointing and clicking on the correct point in a table, chart or graph.

Questions will be set in order to assess the ability to:

- Identify trends over time (2a);
- Make comparisons in order to draw conclusions (2b);
- Interpret and use information (2c).

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Solving written arithmetic problems

Purpose: *teachers are expected to be able to find answers to problems set in a variety of situations and contexts.*

This section is also part of the on-screen test. There will be nine questions in this section. Each question will carry one mark. The use of the on-screen calculator is permitted. There is no time limit for each question other than that imposed by the overall time limit for the section. Questions will appear on the screen with all the necessary information displayed and may involve reading and extracting information from tables, charts and graphs.

Answers to questions will be given in one of the following forms:

- Multiple choice - the single correct response is chosen from a fixed number of given alternative answers;
- Multiple response - one or more correct statements are chosen from a fixed number of given statements;
- Single response - insert free text answer;
- Select and place - the correct answer is chosen from a number of alternative answers by selecting it and placing it within the answer box provided;
- Point and click - an answer is selected by pointing and clicking on the correct point in a table, chart or graph.

Questions may be set from any of the following content areas:

- Time (3a);
- Amounts of money (3b);
- Proportions involving fractions (3c), percentages (3d) or decimals (3e);
- Ratios (3f);
- Fractions (3h);
- Decimals (3i);
- Percentages in various contexts (3g);
- Measurement involving distance (3j) or area (3k);
- Conversions from one currency to another (3l), between fractions and decimals (3m) and other conversions (e.g. between measures of volume) (3m);
- Averages: mean (3o), median (3p) and mode (3q);
- Range (3r);
- Combinations of measures of average (3s);
- Using simple formulae (3t).