

# Paper-based Test

## Manchester Metropolitan University

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### Abstract

Two weeks are spent doing revision prior to three diagnostic tests. These are designed to assess students' strengths and weaknesses after they have spent some time working in a mathematical context. The tests are all paper-based multi-choice questions (MCQs). They are hand-marked, but owing to the small number of students there is little time delay between assessment and distribution of the results.

### The Execution

The three paper-based diagnostic tests are multi-choice, length 45/50/45 minutes. Two are from the same course, but split due to time constraints. They take place in three different rooms. The short nature of the first test means it can be marked and returned to students as they leave their last test. Most students probably don't need a total of 90 minutes for the first and last tests.

### The Results

Years	2000	2001	2002
Test 1	59.9	57.2	53.1
Test 2	–	–	62.0
Test 3	78.5	78.5	67.5

**Table 1:** Average Test Results in % (2000-2002)

The results in Table 1 support the impression that standards have declined in certain areas, with the last result possibly pointing to Curriculum 2000 as a source of concern. Deficiencies are not consistently related to student background. Weak students are directed to further backup material, relevant to their deficiencies. They are also encouraged to sit at the front of lectures (not quite so intimidating where the classes are relatively small) and attend weekly, rather than fortnightly, tutorials. Some staff provide a drop-in centre.

### The Barriers

The lack of hard/software resources means a paper-based test is the only route for this kind of assessment. The problem of long assessments is overcome by the forced breaking down of a test into smaller less intimidating chunks.

### The Enablers

Providing directed study before arrival, followed by some initial teaching prior to testing, can make it clear what is required and expected, as well as enabling students to give a better account of their capabilities.

### How Can Other Academics Reproduce This?

By providing more specific directed study prior to arrival students may get up to the pace required more quickly. Early addressing of known areas where problems are common, prior to testing, can build confidence and a sense of momentum in learning.

### Quality Assurance

Manchester Metropolitan University looked to the QAA benchmark for Mathematics, Statistics and Operational Research for its newly designed curricula starting September 2003.

### Other Recommendations

Taking time to prepare students for some initial assessment prevents poor results due to 'the long summer break' effect. It means that a truer picture of students' strengths and weaknesses emerge, allowing more appropriately focused remediation.

Looking at the QAA benchmark for Mathematics, Statistics and Operational Research should lead to greater confidence in standards achieved.

