

STEC Guidance
Test of Basic Arithmetic & Numeracy Skills
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Author:	Brigstocke, S; Moll, K; Hulme, C.
Publisher:	Oxford University Press
Date Published:	2016
Age Range:	7:05-11:05
Access Level:	Open
Cost	Manual (£120 although discontinued) No additional costs for record forms.

Test Content: what tests does it include and what do they measure/evaluate?

What is its purpose or design?

To assess efficiency, fluency and accuracy of children's basic number skills, to see where they lie in relation to children of similar age and to deepen a teacher's understanding of each child's progress. It is designed to identify children who are struggling with the early stages of learning number and arithmetic skills and to measure progress. A key component is that it is timed.

How is it organised?

- Arithmetic Fluency Subtests – Five timed one-minute tests to measure fluency of basic calculation skills:
 - Addition (*within ten*)
 - Addition with carry
 - Subtraction (*within ten*)
 - Subtraction with carry

 - Multiplication (*core single digit multiplication facts*)
- Basic Number Processing tests – Three timed 30-second tests :
 - Dot Comparison (basic number sense – magnitude comparison)
 - Digit Comparison (basic number sense)
 - Count the Dots (enumeration)
- Whole battery takes around 15-20 minutes including practice questions.

Parallel forms?

No

What types of score does it offer?

- Standard scores for all subtests.
- Composite standardised score for Arithmetic Fluency, but *not* for Number Sense tests.

Strengths

Relevance to a diagnostic assessment – what useful information does each test provide and where would this be used within the report format

- A quick test which nonetheless gives a range of useful diagnostic information, particularly on arithmetic fluency. Can give reliable standardised scores for comparison and qualitative information on arithmetic fluency and subitising, within one test and administration.
- It is designed for, and standardised on, UK schools and the UK mathematics curriculum.
- Can be administered to groups as a screener, and then followed up by additional, directed in depth assessment.
- Includes separate sub-tests for addition and subtraction within and above ten.
- Offers comparison of fluency when bridging ten. Unlike similar arithmetic fluency tests, the “with carry” tests that bridge ten can show when pupils have got “stuck” and although secure with calculating smaller numbers are finding it more challenging bridging ten.

Rigour of standardisation

- Generally acceptable levels of standardisation. Good sample size for 7:05 to 11:05

Ease of administration and usefulness of scores

- Very easy and quick to administer.
- The test sheets are photocopiable.
- Children often enjoy it as they do not find it long or threatening.
- The arithmetic fluency sub-tests have high reliability
- Scoring tables are sub-test by sub-test rather than by age. Downloadable spreadsheet makes it easy to add students to save as a cohort as well as individually. Can also be used to track progress over a number of retests.
- An online tracker is available as well as a downloadable spreadsheet to calculate scores.
- Scoring tables are sub-test by sub-test rather than by age. Downloadable spreadsheet makes it easy to add students to save as a cohort as well as individually. Can also be used to track progress over a number of retests.
- Sub-tests are voided if students cherry-pick questions.

Clarity of instructions

- Very clear and easy to follow, both for the assessor and the child. Each test includes practice questions.

Suitability of items for the age group

- Highly suitable to the age group, but the age group only goes up to 11.05. In older students, it could offer useful qualitative comparisons on the difference in performance when bridging ten. It starts at age 7.05 because the authors found it to be less useful with younger children.

Qualitative Information

- Strategies when calculating. Comparison of fluency when bridging ten
- Pattern spotting in “Count dots” section.

Issues to consider

Relevance to a diagnostic assessment

- No longer in print
- No division subtest due to age range.

Rigour of standardisation (overall or for specific tests)

- The dot comparison (non-symbolic comparison) sub-test seems to yield a disproportionate number of <70 scores and students often seem to guess. Like similar comparison tests, the 50/50 choice may impact on its reliability.

Difficulties with administering the tests

- It can be successfully delivered in a group of up to four, but is difficult to observe and record behaviours above this.
- Students have to turn pages, and their motor skills could therefore impact on their scores.
- The number of pages can be intimidating (and there are many pages to photocopy) but students rarely go above one page for each fluency subtest.
- As it is out of print, there would be an issue with getting permission from the publisher/author to administer it remotely. If such permission were obtained, it would be necessary to print the pages and post them to the student.

Manual

- The manual is very slim and offers limited analysis of each subtest, or what impact low arithmetic fluency would have upon a student.