CEM Assessments
Summary
Years 1-6

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About CEM

CEM - THE CENTRE FOR EVALUATION AND MONITORING AT DURHAM UNIVERSITY

Accurately measuring a child's potential and progress is an invaluable tool in understanding and responding to their individual educational needs.

Used by education professionals for over 30 years in over 70 countries, CEM is one of the largest and longest established research groups providing learning assessment for children of all ages. CEM’s methods are research-based, evidence driven and market-tested, built on a foundation of non-commercial academic practice with the School of Education at Durham University.

You can find further information about CEM at http://www.cem.org/

InCAS Overview

InCAS (Interactive Computerised Assessment System) is a diagnostic, computer-delivered, computer adaptive assessment tool for schools that can be administered at any time for personalised learning.

InCAS provides a wealth of information at pupil, class and school level. It highlights pupils’ strengths and weaknesses so that teachers can determine what pupils know and can do, which can inform teacher planning and target setting. It provides age-equivalent scores and diagnostic information to facilitate personalised learning.

The InCAS software is designed to assist teachers by generating a diagnostic profile of children’s reading, spelling, maths and mental arithmetic together with other information to help plan the next stage towards full literacy and numeracy acquisition. It assesses a series of key features relating to reading and spelling and for each one it provides an adaptive assessment. This means that each individual child sees a different assessment from other children and in order for this to be possible, the databanks within the program hold a considerable amount of information.

InCAS is not intended to be used to provide a diagnosis of specific learning difficulties e.g. dyslexia.

The Individual Scores Table (IST)

InCAS delves deeper into the scores of the subsections of modules to give a more diagnostic approach to reporting the assessment feedback. The breakdown of reading and spelling scores enables a teacher to see which pupils have good word recognition and decoding skills but perhaps poor understanding of a passage of text. Other children will be able to read reasonably well but have problems with spelling,
and so on. Analysis of the mental arithmetic and general mathematics sections enable teachers to identify areas of strength and weakness.

The added dimension of the Developed Ability module (consisting of the Picture Vocabulary and NonVerbal ability subsections of the assessment) enables teachers to see if pupils’ reading is in line with their ability to learn. This is particularly useful for children for whom English is an additional language. Developed ability is something that they have developed over their lifetime and they will continue to develop. It is measured by using a combination of their vocabulary acquisition and non-verbal ability.

The pupils’ responses for vocabulary, non-verbal ability, reading, spelling, mental arithmetic and general mathematics are converted to age equivalent scores that can be compared to their actual age. Age equivalent scores present the scores as ages in years and months at which a pupil is performing. If a pupil is performing as expected for their age, the age equivalent score is the same as their chronological age.

Attitudes are reported on a scale of negative through to positive.

The results are compiled into a ‘Individual Scores Table’ (IST) which teachers and parents can use to gain a global view of the pupil’s potential and provide an invaluable tool to plan their learning journey.

**Scores**

InCAS scores are presented as Age Equivalent Scores in years and months, e.g. 10:3 represents a score of 10 years and 3 months. If a pupil is performing as expected for his/her age, their age equivalent score is the same as his/her chronological age.

Attitudes scores are presented on a scale of 1 – 5, 1 being the most negative attitude and 5 being the most positive.

**Symbols**

Please note the following symbols used in the feedback tables:

* Pupil has not completed a particular module or unit (see notes in each section below which explain why this may be the case).

# The confidence interval of a module exceeds plus or minus three years.

**What do the sections of the InCAS test measure?**

**Reading Score**

The Reading score is a composite score calculated based on the pupil's scores from the Word Recognition, Word Decoding and Comprehension modules.
Module descriptions:

**Word Recognition:** The pupil hears a high or medium frequency word, which includes a sentence to put it in context. They must then select the target word from a choice of five words on the screen.

**Word Decoding:** The pupil hears a nonsense or unfamiliar word. They must then select the target word from a choice of five words on the screen.

**Comprehension:** The pupil reads through a passage and, when given a choice of three words, must select the word that fits into the sentence most appropriately.

Note - A pupil will only be presented with the Comprehension section if they have scored highly enough in the Word Recognition and Word Decoding sections. Those pupils who do not achieve sufficiently high Word Recognition and Word Decoding scores to access the Comprehension module during the assessment are credited with the minimum Comprehension score in the calculation of the composite Reading score.

**Spelling Score**

The pupils sit this module as a separate module to the Reading module. The pupil hears a word, which includes a sentence to put it in context. They then use the on-screen keyboard to select the correct letters for the target word.

**General Maths Score**

The General Maths score is based on the pupil's scores from the Number 1, Number 2, Measures Shape and Space and Data modules.

Module descriptions:

**Number 1:** The pupil hears a question from one of the topics: counting, informal arithmetic, partitioning and place value, fractions and decimals. The pupil must then select the appropriate answer from a choice of four possible answers on the screen.

**Number 2:** The pupil hears a question from one of the topics: sorting, patterns, formal arithmetic, problem solving and algebra. The pupil must then select the appropriate answer from a choice of four possible answers on the screen.

**Measures, Shape and Space**

**Data Handling**
Mental Arithmetic Score

The Mental Arithmetic score is based on the pupil's scores from the Addition, Subtraction, Multiplication and Division modules. This section assesses the pupil's ability to process numerical operations quickly and accurately.

Module descriptions: Four possible answers are displayed on the screen before the question is presented. The sections appear in the order Addition, Subtraction, Multiplication and Division.

Note - A pupil will only be presented with the Subtraction section if they have scored an Addition score greater than 5 years. They will only be presented with the Multiplication section if they have scored a Subtraction score greater than 7 years. Finally, a pupil will only be presented with the Division section if they have scored a Multiplication score greater than 8 years.

Developed Ability

The Developed Ability score is based on the pupil's scores from the Picture Vocabulary and NonVerbal Ability modules. Developed Ability is described for the purpose of CEM assessments as the ability of children to learn. It is something that they have developed over their lifetime and they will continue to develop.

Module descriptions:

- **Picture Vocabulary:** The pupil hears a word and selects the picture that best represents that word from a choice of five pictures on the screen.

- **Non-Verbal ability:** A pattern appears on the left hand side of the screen and the pupil must then find the corresponding pattern within a larger pattern on the right hand side of the screen. The pattern may have been translated in position but will not have been rotated or reflected.

The aim is that pupils complete as many of the puzzles as possible in the time available. This provides a reliable measure of the pupil's ability to work speedily through problems that they have never seen before.

Attitudes Score

The pupil's attitudes towards Reading, Maths and School are assessed using a sliding scale. Questions take the form of “I do well in Maths” and “I like Reading”.