



ICAS MATHEMATICS ASSESSES THE ABILITY OF STUDENTS TO APPLY THEIR MATHEMATICAL SKILLS TO SOLVE PROBLEMS

SKILL AREAS

Students are assessed across five key skill areas:

- **Algebra and patterns:** Involves patterns of numbers, relationships between numbers and the use of symbols to stand for unknown or variable numbers
- **Chance and data:** Involves mathematical treatment of data and statistics
- **Measures and units:** Involves properties of the physical world that can be measured, the units used to measure them and the process of measurement
- **Number and arithmetic:** Involves types of numbers, their properties and number operations. The strand has strong links with measures and units, algebra and patterns and chance and data. It also has some links with space and geometry
- **Space and geometry:** Involves the properties of two-dimensional and three-dimensional space.

CONTENT

ICAS questions require students to make sense of mathematical concepts in everyday situations. Content differs across the papers to ensure they are appropriate for year levels.

Papers Introductory, A, B, C, D and E:

- Calculators are not permitted.
- Formal algebra is not tested. The emphasis is put on pattern, structure and puzzles.
- Formal geometry is not tested (except for a few items in Paper E). The emphasis is on spatial skills.

Papers F, G, H, I and J:

- Calculators are required.
- Formal algebra is tested. Students are expected to be familiar with some conventions of algebra.
- Formal geometry is tested. Students are expected to be familiar with some conventions of geometry.

ASSESSMENT STRUCTURE

CLASS	PAPER	QUESTION BREAKDOWN	DURATION
2	Introductory	30 multiple choice	35 minutes
3	A	40 multiple choice	45 minutes
4	B	40 multiple choice	45 minutes
5	C	40 multiple choice	45 minutes
6	D	35 multiple choice/ 5 free response	1 hour
7	E	35 multiple choice/ 5 free response	1 hour
8	F	35 multiple choice/ 5 free response	1 hour
9	G	35 multiple choice/ 5 free response	1 hour
10	H	35 multiple choice/ 5 free response	1 hour
11	I	35 multiple choice/ 5 free response	1 hour
12	J	35 multiple choice/ 5 free response	1 hour

LEARN MORE

1. Ask for an appointment at your school
2. Download the comprehensive ICAS Mathematics Assessment Framework
3. View sample assessments
4. Watch introductory videos

Visit www.reseller.com/icas

HOW IS ICAS DIFFERENT?

ICAS is developed annually by a team of highly experienced assessment developers and psychometricians, with rigorous reviews at each stage of construction. Subject matter experts develop new ICAS questions each year, drawing on their in-depth understanding of the way students learn. All ICAS assessments are reviewed by experienced teachers to ensure that they accurately assess students' skills and are relevant to what they are learning at school.

This ensures that ICAS is:

- Valid
- Consistent from one assessment cycle to the next
- Appropriately targeted for the students being assessed
- Objective and reliable
- Fair (effect of gender, language background, cultural background is minimised through sensitivity reviews and statistical analyses)
- Constructed using appropriate examples and authentic contexts
- Represented in a visually appealing way to capture student attention and interest
- Underpinned by methodologies from psychometric measurement theory.

“Other assessment products tend to focus on rote learning, and drill and practise, whereas ICAS focuses on problem-solving and deeper thinking. The aim is to find out what students know, and how they think. We try to keep the language nice and simple, so as not to distract from the problem itself.”

Liz Spielman

ICAS International Assessment Expert, Mathematics
UNSW Global

SKILLS ASSESSED



ENGLISH

- Reading for meaning in factual texts
- Reading for meaning in literary texts
- Syntax
- Textual devices
- Vocabulary



MATHEMATICS

- Algebra and patterns
- Chance and data
- Measures and units
- Number and arithmetic
- Space and geometry



SCIENCE

- Observing and measuring
- Interpreting data
- Applying data
- Investigating
- Reasoning and problem-solving



DIGITAL TECHNOLOGIES

- Common operating systems and hardware
- Graphics and multimedia
- Internet and email
- Programming and scripting
- Spreadsheets and databases
- Word processing