

Sharpen your edge.

Practice for ICAS Paper F · International schools, Singapore & Malaysia

Name

School

Year

Sitting date

What this booklet is for.

A short, focused warm-up for ICAS Paper F. Fifteen verbatim past-paper items lifted from the 2018 paper — four English, six Maths, five Science. Work through them at your own pace, mark yourself with the answer key at the back, and notice where you're strong and where you need another look.

Why ICAS matters at your year level.

- ▶ ICAS results sit on your academic record. Strong certificates at Paper F level signal academic ambition to future schools, scholarship committees, and university admissions.
- ▶ Year 8 is the year the questions stop testing recall and start testing reasoning. The students who do well are the ones who slow down and read carefully — not the ones who know more content.
- ▶ Paper F overlaps with what you're learning in Maths and Science right now, plus a layer of harder reasoning. Treat this booklet as a chance to stress-test your reading.

Strategy first, content second.

At Paper F level, the difference between a Credit and a Distinction is rarely about what you know — it's about how you read and how you eliminate. The strategies in this booklet matter more than any single content area you can revise.

You'll sit ICAS online.

ICAS is delivered online on a school device or BYOD. As well as standard 4- and 5-option multiple choice, you may see: **Textspot** (click words in a sentence), **Graphic Hotspot** (click a point on an image), **Drag & Drop, Matching** (sort, tick, or draw lines), **Sequencing** (order items), and **Keyword** (type a number or word into a box — this is how the integer-response items are collected online). Read the instruction line on every question — some ask you to select more than one answer.

Self-assessment.

Before you start the practice, take a minute and rate your confidence with each skill below. After you finish, come back and rate yourself again. The gap between the two ratings tells you where the booklet helped — and where you need more work outside it.

Skill	Shaky	OK	Good	Strong
Reading unfamiliar passages and inferring meaning from context	☐	☐	☐	☐
Vocabulary in context — guessing word meaning from surrounding text	☐	☐	☐	☐
Fractions, ratios and percentages — multi-step word problems	☐	☐	☐	☐
Algebraic substitution and pattern-recognition	☐	☐	☐	☐
Interpreting scientific tables and small data sets	☐	☐	☐	☐
Distinguishing observation from inference in science	☐	☐	☐	☐

How to use this honestly.

There's no point lying to yourself on a self-assessment. Mark "Shaky" if a topic genuinely worries you — that's where extra time will pay off. Confidence isn't the goal; accurate self-awareness is.

ENGLISH · PAPER F

Read closely.

Read the passage. Then on the next page answer the four questions.

The Museum of Water.

A museum of water? This is the improbable concept that featured in the 2017 Perth International Arts Festival. The brainchild of British artist Amy Sharrocks, the Museum of Water traced the manifold ways that people relate to water.

People were invited to bring water that is significant to them in a container and donate it to the museum. The water was then 'archived': the details of the donor and the provenance of the water were recorded, and the donor was interviewed about the particular significance of the water they had donated.

Although the project began in the UK, its passage to Australia introduces a rather different set of relationships to water than those that prevail in northern Europe. The fact that Australia is, by and large, a dry continent has done much to condition life here. Human societies in Australia have had to contend in many cases with the lack of water and adapt to its scarcity. In Western Australia, the problem of water is particularly acute as no major rivers flow in the south-west where the majority of the population is concentrated.

All of this added a particular piquancy to the Museum of Water. These thoughts were in my mind when I went to donate my sample to the museum. I had collected the water when I visited the granite outcrop known as Wave Rock, a popular destination for day-trippers in the south-eastern wheat belt of Western Australia.

At the conclusion of the festival, the water collected became part of the Western Australian Museum's permanent collection and will be stored for posterity. In a place where water is so precious, there was a quiet solemnity to the Museum of Water that seemed to perfectly capture the way that water is both an everyday banality and a sacred element.

ENGLISH QUESTIONS · PAPER F

English — four questions.

Refer back to the passage as often as you need. The right answer is always supported by something specific in the text.

Q1 · Paper F · Q1 · Text comprehension

The aim of the Museum of Water is to document how

- (A) water is shared within a small community.
- (B) water is seen as a valuable resource.
- (C) water usage has changed throughout history.
- (D) water forms a part of a meaningful experience.

Q2 · Paper F · Q2 · Writer's craft – Purpose

What is the writer's purpose in comparing Australia with northern Europe?

- (A) to emphasise how serious the problem of water is in Australia
- (B) to explain that water has come to the attention of people around the world
- (C) to show that environmental conditions affect the way people perceive water
- (D) to provide justification for the international scale of the museum project

Q3 · Paper F · Q3 · Vocabulary in context

Which word could best replace 'piquancy' and retain the same meaning in the text?

- (A) controversy
- (B) fascination
- (C) explanation
- (D) urgency

Q4 · Paper F · Q6 · Writer's craft – Literary devices

'water is both an everyday banality and a sacred element'. What literary device is used in this quotation?

- (A) hyperbole
- (B) juxtaposition
- (C) foreshadowing
- (D) personification

MATHEMATICS · PAPER F

Maths — first set.

Three questions from the front and middle of the paper. Work in the margins.

Q5 · Paper F · Q1 · Chance & Data

Cindy wants to order either a medium or a large pizza with one topping. The toppings on the menu are: chicken, vegetarian, seafood, supreme. How many different combinations can she choose?

- (A) 8
- (B) 6
- (C) 4
- (D) 2

Q6 · Paper F · Q11 · Number & Arithmetic

Fin is playing a game with a dice that has two red, two green and two yellow faces. The colour showing on top gives a score: Green = 1, Yellow = 0, Red = -2. After 3 rolls, Fin scores a total of zero. His first roll was a red. What could have been the result of roll 2 and roll 3?

- (A) Green, Green
- (B) Yellow, Green
- (C) Green, Red
- (D) Yellow, Yellow

Q7 · Paper F · Q15 · Number & Arithmetic – Factors

Vinh is making bunches of flowers using roses and lilies. She has 36 roses and 60 lilies. All of the flowers must be used to make identical bunches. What is the largest number of bunches she can make?

- (A) 6
- (B) 12
- (C) 18
- (D) 36

MATHEMATICS — CHALLENGE · PAPER F

Maths — back half.

Harder items. These reward careful working — not flair.

Q8 · Paper F · Q18 · Algebra & Patterns

The Martians use the symbol $\bowtie$ to perform martition. If x and y are two numbers, they are martitioned as follows: $x \bowtie y = x + xy + y$. What is the value of $(2 \bowtie 3) \bowtie 4$?

- (A) 28
- (B) 30
- (C) 48
- (D) 59

Q9 · Paper F · Q22 · Number & Arithmetic — Reasoning

The houses on one side of Acacia Street have consecutive odd numbers. Jim lives in house number 83 and Marni lives in house number 15. Clive lives in the house with the number exactly halfway between 15 and 83. How many houses along from Marni is Clive's house?

- (A) 17
- (B) 25
- (C) 34
- (D) 49

Q10 · Paper F · Q27 · Number & Arithmetic — Percentage

Tara wants to buy a dress and a hat marked at \$37 and \$15 respectively. She can choose either a \$10 discount or a 25% discount on one item. Tara chooses the better deal and uses her store card for a further 5% off the discounted price. How much does Tara save altogether?

- (A) \$15.60
- (B) \$14.95
- (C) \$12.10
- (D) \$10.50

SCIENCE · PAPER F

Science — first set.

ICAS Science is not a content test. Read the scenarios carefully.

Q11 · Paper F · Q5 · Interpreting – Life Science

An adaptation is a genetic change in a species over a long period of time. It makes the organisms within the species better suited to survive in their environment. Adaptations can be structural or behavioural. Which of these is an example of a behavioural adaptation?

- (A) Succulent plants grow thick leaves.
- (B) Some desert flowers open at night time.
- (C) Birds have bones that are hollow and lightweight.
- (D) Polar bears have a thick layer of fat under their skin.

Q12 · Paper F · Q6 · Predicting & Concluding – Earth Science

When sandy sediment washes from rivers down to the sea it sinks to the ocean floor. Over millions of years the sediments form sandstone. Sometimes, the strata are bent and twisted. What is the most likely reason that these sandstone strata are not horizontal?

- (A) The surface of Earth has moved over time.
- (B) The layers were disturbed by the activity of humans.
- (C) The rock layers were formed during wild and stormy weather.
- (D) The layers were disturbed by dinosaurs and whales.

Q13 · Paper F · Q17 · Predicting & Concluding – Data

A botanist recorded the time of flowering, the colour of the petals and the average mass of seeds produced for four wildflowers.

Wildflower 1: flowers in spring, white petals, 0.4 g seeds.

Wildflower 2: flowers in summer, pink petals, 0.6 g seeds.

Wildflower 3: flowers in autumn, yellow petals, 0.5 g seeds.

Wildflower 4: flowers in spring, yellow petals, 0.3 g seeds.

Based only on the table, which statement is true?

- (A) Yellow petals always produce lighter seeds.
- (B) Wildflowers flowering in spring produce lighter seeds than those flowering in summer.
- (C) Petal colour determines the time of flowering.
- (D) The heaviest seeds come from the largest flowers.

SCIENCE — CHALLENGE · PAPER F

Science — reasoning.

The harder Science items reward careful interpretation of data. Slow down on the table-reading.

Q14 · Paper F · Q24 · Investigating – Variables

In an experiment to compare how quickly different liquids cool, a student measures the temperature of each liquid every minute. What is the dependent variable in this investigation?

- (A) the type of liquid
- (B) the time interval between measurements
- (C) the starting temperature
- (D) the temperature of each liquid

Q15 · Paper F · Q25 · Investigating – Methods

Sally has a mixture of sand, salt and iron filings. She wants to separate these three substances. Which sequence of methods will allow her to separate all three?

- (A) Use a magnet, then add water and filter, then evaporate.
- (B) Add water, evaporate, then use a magnet.
- (C) Filter, then use a magnet, then add water.
- (D) Add water only and let everything settle.

What earns marks on the day.

Six pieces of test-craft. Read them the night before sitting.

1. Read every question stem twice — once for the gist, once for the qualifier. Words like "most likely", "least", "best", "not" carry the trap.
2. In English, never pick an answer that isn't supported by something specific in the passage. If you can't point to evidence, you're guessing.
3. In Maths, show working in the margin. Most Paper F questions are 2–3 steps; eyeballing them is how you lose marks you should have earned.
4. When two options look almost identical, find the difference between them. That difference is what the question is testing.
5. Mark and move. If a question takes more than 2 minutes, circle it and continue. Complete a full pass before going back.
6. Always pick an answer. No penalty for guessing — a guess has a 25% chance; a blank has 0%.

What this could earn you.

Strong ICAS results at Paper F level become part of your academic record. Students who earn High Distinctions are recognised across the participating schools in Singapore and Malaysia — and the practice transfers directly to the IGCSE, IB and SPM that you'll sit in the next few years.

Answers — part 1.

Check your answers and read the reasoning. Go back to the self-assessment on page 3 and rate yourself a second time. The gap is the value this booklet delivered.

Q	Subject	Answer	Reasoning
1	English	(D)	The passage emphasises that the museum captures the SIGNIFICANCE of water to donors — meaningful experiences, not just resource value or history.
2	English	(C)	The writer uses Australia's dry climate as a contrast to show how environmental conditions shape how people perceive water — a thematic point, not a complaint or persuasion.
3	English	(B) fascination	"Piquancy" means a sharp, stimulating interest — closest to fascination. Not controversy (no dispute), explanation (not explanatory) or urgency.
4	English	(B) juxtaposition	Placing "banality" (the ordinary) next to "sacred element" (the elevated) is classic juxtaposition — two opposite ideas side by side for effect.
5	Maths	(A) 8	2 sizes × 4 toppings = 8 different pizzas.
6	Maths	(A) Green, Green	First roll is Red = -2. To total zero after 3 rolls, the other two must sum to +2. Two greens = +2. ✓
7	Maths	(B) 12	Identical bunches = highest common factor of 36 and 60. HCF(36, 60) = 12. Each bunch has 3 roses and 5 lilies.
8	Maths	(D) 59	$2 \times 3 = 2 + (2 \times 3) + 3 = 11$. Then $11 \times 4 = 11 + (11 \times 4) + 4 = 59$.

Answers — part 2.

Q	Subject	Answer	Reasoning
9	Maths	(A) 17	Halfway between 15 and 83 is 49. From house 15, count odd numbers: 15, 17, 19, ..., 49. That's 17 houses along.
10	Maths	(C) \$12.10	\$10 off > 25% of \$37 (\$9.25), so Tara picks the \$10 off. Subtotal \$52 – \$10 = \$42. Card 5% off = \$2.10. Total saved = \$10 + \$2.10 = \$12.10.
11	Science	(B)	Behavioural = how organisms ACT. Opening at night is a behaviour. The others (thick leaves, hollow bones, fat layer) are physical/structural.
12	Science	(A)	Tectonic movement is the only process at the right scale (millions of years, kilometres deep) to bend sedimentary rock layers.
13	Science	(B)	Spring flowers in the table: 0.4 g and 0.3 g. Summer flower: 0.6 g. Direct comparison supports (B). The others overgeneralise.
14	Science	(D)	The dependent variable is what you MEASURE in response to changes — here, the temperature of each liquid. The type of liquid is the independent variable.
15	Science	(A)	Iron filings → magnet. Salt + sand → add water (salt dissolves, sand doesn't). Filter to remove sand. Evaporate the saltwater to recover salt.

On the day:

Read twice. Underline the qualifier. Eliminate two wrong answers before you commit.

Never leave a question blank.