📚 ICAS-STYLE PREPARATION SERIES

Paper B. Standard 4 / Primary 3 / Year 4 Student Workbook

Original ICAS-style practice questions with full worked answers, written for students sitting ICAS Paper B. The test is taken by Standard 4 (Malaysia), Primary 3 (Singapore), and Year 4 (Australia) students.

- English · 22 Q
- Writing · 2 practice tasks
- Science · 10 Q
- Mathematics · 12 Q
- Digital Tech · 10 Q

STUDENT NAME _____ SCHOOL _____ DATE _____

TOTAL QUESTIONS
64 original ICAS-style questions + 2 writing tasks

ANSWERS
Full worked explanations at back

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BEFORE YOU BEGIN

How to Use This Workbook

Every question in this workbook is an original ICAS-style practice question carefully written to match the format, text types, difficulty, and question style of real ICAS Paper B assessments for Standard 4 students.

⭐ **MOST IMPORTANT RULE**

Do each subject with a timer running. Resist checking answers mid-way. When time is up, go to the answers — and read every explanation carefully, including for questions you got right.

Your Test at a Glance — Paper B / Standard 4 / Primary 3 / Year 4 (Official ICAS Format)

SUBJECT	QUESTIONS	TIME	PACE	25% CHECKPOINT	FORMAT
📖 English	45	45 min	~60 sec / Q ~11 min per passage (4 texts)	Q11 by ~11 min	Passage-based MCQ
✍️ Writing	1 task (this workbook: 2 practice tasks)	35 min	5–25–5 rule	Planning done by 5 min	Extended Response
🔬 Science	30	45 min	under 90 sec / Q	Q8 by ~11 min	MCQ with diagrams
📐 Mathematics	40	45 min	under 70 sec / Q	Q10 by ~11 min	MCQ · No Calculator
💻 Digital Technologies	30	30 min	~60 sec / Q	Q8 by ~8 min	MCQ

🎯 **THE 3-PASS STRATEGY**

Pass 1: Answer every question you are confident about. Flag anything uncertain.
Pass 2: Return to flagged questions. Eliminate at least 2 options, then choose.
Pass 3: If time allows, check quick guesses. No penalty for wrong answers — always answer every question.

English

Paper B · 45 questions · 45 minutes · All questions are based on a passage

35 QUESTIONS **50** MINUTES

In the real ICAS English paper, every question is based on a passage. You will read several different text types — a fiction extract, an informational article, a review, and a cloze passage. Read each passage carefully before answering its questions.

ENGLISH STRATEGY FOR PAPER B

Questions move from straightforward (finding and sequencing information) to more challenging (inferring character feelings, explaining why a writer used a technique, analysing a reviewer's argument). For character questions, look at what characters say AND what they do — both reveal personality. For writer's craft questions, always ask: *what effect does this choice have on the reader?*

TEXT 1 OF 4 — FICTION EXTRACT

The Blue Ribbon

Original text for ICAS preparation purposes

Zara had spent three months training Biscuit for the Junior Dog Show. Three months of sit-stay commands, patient repetition, and carefully chosen treats. She had watched tutorials online, read three books about dog behaviour, and had even — at her mother's suggestion — played classical music in the evenings because someone on the internet had claimed it calmed nervous dogs.

None of this explained what Biscuit was doing now.

The judge, a neat woman in a green blazer, had asked each competitor to walk their dog around the ring once. Every other dog trotted obediently beside its owner. Biscuit sat down. Then he lay flat. Then he appeared to go to sleep.

'He's just tired,' Zara told the judge, smiling in what she hoped was a confident way.

'Dogs that are tired are typically at home,' said the judge.

Across the ring, Zara could see her rival, a girl named Petra, trying not to smirk. Petra's dog — a sleek, groomed creature named Champion's Golden Echo III — had already completed a perfect figure of eight. Biscuit, meanwhile, had not moved.

Then Zara remembered the treat in her pocket. She held it up. Biscuit's ears swivelled like radar dishes. He opened one eye. He stood, stretched, shook himself like a wet towel, and walked beside Zara as perfectly as any dog she had ever seen — all the way around the ring, and twice more for good measure.

The judge wrote something in her notebook. She did not smile, but she did not frown.

That, Zara decided, was probably the best she could hope for today.

Questions 1–7 are about *The Blue Ribbon*

1 TEXT COMPREHENSION — SEQUENCE OF EVENTS

Which lists these events in the correct order?
(i) Zara holds up a treat (ii) Zara plays classical music at home (iii) Biscuit lies flat on the ground (iv) The judge writes in her notebook

- A (ii) → (iii) → (i) → (iv)
- B (i) → (ii) → (iv) → (iii)
- C (ii) → (i) → (iii) → (iv)
- D (iii) → (ii) → (i) → (iv)

2 TEXT COMPREHENSION — INFER CHARACTER'S FEELINGS

When Zara says 'He's just tired,' what does this tell us about her?

- A She is angry with Biscuit for embarrassing her in front of the judge.
- B She genuinely believes Biscuit is too tired to walk around the ring.
- C She is trying to appear calm and in control despite feeling embarrassed.
- D She wants the judge to give Biscuit an extra chance to perform later.

3 WRITER'S CRAFT — PURPOSE OF A DETAIL

Why does the writer include the detail about Zara playing classical music for Biscuit at home?

- A To explain why Biscuit was so relaxed and calm when the competition began.
- B To show that Zara followed unusual advice without questioning whether it would work.
- C To suggest that Zara's mother had more experience with dogs than Zara did.
- D To prove that music is a reliable method for calming dogs before competitions.

4 WRITER'S CRAFT — IDENTIFY THE DEVICE

In the phrase 'Biscuit's ears swivelled like radar dishes,' the writer uses

- A personification
- B alliteration
- C a simile
- D a metaphor

5

TEXT COMPREHENSION — CONTRAST CHARACTERS

How does the writer contrast Zara and Petra in this passage?

A Zara has trained more carefully than Petra, but Petra's dog is more experienced.

B Zara's dog refuses to perform at first; Petra's dog completes its routine without difficulty.

C Zara remains calm throughout; Petra appears visibly nervous about her performance.

D Zara is a first-time competitor; Petra has won the competition in previous years.

6

VOCABULARY — WORD MEANING IN CONTEXT

The word typically in the judge's reply most likely means

A never

B unfortunately

C usually

D probably

7

TEXT COMPREHENSION — DRAW A CONCLUSION FROM THE ENDING

At the end, Zara thinks the judge's neutral reaction was 'probably the best she could hope for today.' What does this suggest about Zara?

A She knows she has won the competition and is quietly pleased.

B She is disappointed and has given up any hope of doing well.

C She believes the judge has decided she cannot win but is still being polite.

D She accepts an uncertain outcome as reasonably positive, given how badly things started.

TEXT 2 OF 4 — INFORMATIONAL ARTICLE

The Wandering Albatross

Original text for ICAS preparation purposes

A BIRD UNLIKE ANY OTHER

Have you ever wondered what it would feel like to spend years at sea without ever touching land? For the wandering albatross, this is not a strange question — it is simply life. These remarkable seabirds spend most of their existence gliding over the Southern Ocean, returning to land only to breed. The wandering albatross holds one record that sets it apart from every other living bird: it has the largest wingspan in the world, stretching up to 3.5 metres from wingtip to wingtip.

This extraordinary wingspan allows the albatross to use a flying technique called dynamic soaring — the bird rides differences in wind speed at different heights to glide for enormous distances without flapping its wings. An adult albatross can travel up to 120,000 kilometres in a single year, which is roughly three times the distance around Earth's equator.

COMPARING LONG-DISTANCE FLIERS

BIRD	WINGSPAN	MAXIMUM ANNUAL DISTANCE
Wandering Albatross	3.5 m	120,000 km
Royal Albatross	3.1 m	100,000 km
Laysan Albatross	2.0 m	60,000 km
Common Pigeon	0.7 m	1,000 km

FINDING THE WAY HOME

After months or even years at sea, the wandering albatross can navigate its way back to the exact island — often the exact nesting site — where it was hatched. Scientists believe the birds use a combination of the Earth's magnetic field, the position of the stars, and their memory of specific ocean smells to find their way. Despite being one of the most studied seabirds in the world, much about the albatross remains a mystery. What is certain, however, is that the ocean is their true home, and the sky their road.

Questions 8–14 are about *The Wandering Albatross*

8 TEXT COMPREHENSION — FIND INFORMATION IN A TABLE

According to the table, which birds have a wingspan greater than 3 metres?

- A The wandering albatross and the royal albatross
- B Only the wandering albatross
- C All three albatross species listed in the table
- D All four birds listed in the table

9 TEXT COMPREHENSION — IDENTIFY CAUSE AND EFFECT

According to the passage, what is the main reason the large wingspan of the wandering albatross is useful?

- A It enables the bird to travel vast distances by gliding without flapping its wings.
- B It allows the bird to scare away predators in the Southern Ocean.
- C It helps the bird detect the Earth's magnetic field more accurately.
- D It makes the bird more visible to scientists tracking it from boats.

10

WRITER'S CRAFT — IDENTIFY THE DEVICE

In the final sentence 'the ocean is their true home, and the sky their road,' the writer uses

A alliteration

B a simile

C personification

D a metaphor

11

WRITER'S CRAFT — PURPOSE OF AN OPENING QUESTION

The writer begins with 'Have you ever wondered what it would feel like to spend years at sea without ever touching land?' What is the main purpose of this question?

A To test the reader's existing knowledge about life at sea

B To introduce a debate about whether birds should live near the coast

C To suggest that it is actually possible for humans to live at sea like albatrosses

D To engage the reader by inviting them to imagine an unusual experience

12

TEXT COMPREHENSION — SUMMARISE THE MAIN IDEA

Which of the following best summarises the main idea of the entire article?

A The wandering albatross uses a technique called dynamic soaring to fly without flapping.

B Scientists are still unable to fully explain many things about the wandering albatross.

C The wandering albatross is a remarkable seabird that spends most of its life flying over the ocean.

D All large seabirds are able to fly great distances without stopping to rest on land.

13

VOCABULARY — TECHNICAL WORD IN CONTEXT

The word navigate as used in the third subheading most likely means

A communicate with other members of the same species

B find a specific location while travelling a long distance

C memorise the exact path taken on a previous journey

D use body heat to detect the Earth's magnetic field

14

TEXT COMPREHENSION — WHAT THE WRITER ASSUMES ABOUT THE READER

The writer describes the albatross's abilities as 'remarkable,' 'extraordinary,' and 'perhaps most remarkably.' What does this tell us about what the writer assumes about the reader?

A The reader already knows everything about the albatross and needs to be re-engaged.

B The reader is likely to find the albatross's abilities surprising and impressive.

C The reader does not believe that birds are capable of long-distance flight.

D The reader is a scientist who will require technical evidence before accepting any claim.

A Wild Ride: A Review of *Storm Chasers: The Junior Edition*

Original text for ICAS preparation purposes. A review of a fictional novel.

Storm Chasers: The Junior Edition has arrived as one of the most breathlessly paced adventure novels of the year for younger readers, and for the most part, it earns that reputation. Set during a record-breaking storm season in a fictional American town, the story follows three twelve-year-olds — Maya, Josh, and Priya — accidentally swept into a professional storm-chasing operation. The plot is relentlessly exciting, and there is no shortage of heart-pounding moments involving tornadoes and flash floods.

Is there anything else you really need in an adventure story?

Well, yes. As it turns out.

The science in *Storm Chasers: The Junior Edition* has been described, generously, as 'flexible.' Tornadoes behave in ways that would surprise actual meteorologists. At one point, the characters measure a tornado's strength using an instrument that does not exist. For readers who care about accuracy, these moments break the spell. For a book aimed at children who may be learning about weather in school, such errors feel like a missed opportunity.

The characters themselves are appealing. Maya is resourceful, Josh is funny, and Priya is easily the most interesting of the three — her growing fascination with storm patterns is the closest the book comes to real scientific thinking. If the author had pushed this further, *Storm Chasers* might have been extraordinary rather than merely entertaining.

Despite its flaws, *Storm Chasers: The Junior Edition* is the kind of book that gets reluctant readers off the sofa. Just don't use it to revise for your meteorology exam.

★★★☆☆ — *Reviewed by Lee Evan*

Questions 15–20 are about *Storm Chasers: The Junior Edition*

15 WRITER'S CRAFT — IDENTIFY THE TEXT TYPE

'A Wild Ride' belongs to which text type?

- A Biography
- B Narrative
- C Review
- D Procedure

16 VOCABULARY — WORD MEANING IN CONTEXT

The word relentlessly in the first paragraph most closely means

- A occasionally
- B gently
- C unexpectedly
- D without stopping

17

WRITER'S CRAFT — PURPOSE OF A RHETORICAL QUESTION

The reviewer asks: 'Is there anything else you really need in an adventure story?' What is the main purpose of this question?

A To suggest that plot and excitement are all that a good adventure story requires

B To invite the reader to think about whether other elements are needed, before the reviewer reveals a weakness

C To prove that the book is already a perfectly complete adventure story

D To challenge the author to add more scientific content to the second edition

18

TEXT COMPREHENSION — IDENTIFY THE MAIN WEAKNESS

According to the reviewer, what is the main weakness of *Storm Chasers: The Junior Edition*?

A The characters are too boring and difficult to care about

B The story is too short to develop its ideas properly

C Some of the scientific information in the book is inaccurate

D The plot is predictable and lacks any surprises for the reader

19

TEXT COMPREHENSION — CONTRAST THE REVIEWER'S JUDGEMENTS

The reviewer praises the book for one thing and criticises it for another. Which option correctly identifies both?

A Praised for: accurate science. Criticised for: poor character development.

B Praised for: exciting plot and pace. Criticised for: inaccurate science.

C Praised for: original ideas. Criticised for: slow pace in the second half.

D Praised for: good science content. Criticised for: characters being too similar.

20

WRITER'S CRAFT — EFFECT OF THE ENDING

The reviewer ends with: 'Just don't use it to revise for your meteorology exam.' What is the main effect of this ending?

A It formally warns teachers not to recommend this book in science lessons.

B It uses humour to summarise the book's main weakness in a memorable way.

C It suggests that meteorology is a more important subject than most people realise.

D It criticises the author for writing a book that is too difficult for young readers.

TEXT 4 OF 4 — CLOZE PASSAGE

Night Travellers and Deep Sleepers

Original cloze passage for ICAS preparation purposes

When winter arrives, many animals face the same challenge: how to survive when food becomes scarce and temperatures drop. Some species solve this problem through migration — travelling to a warmer place where food is plentiful — **(21)** others use a completely different strategy called hibernation. During hibernation, an animal's heart rate and body temperature drop dramatically, allowing it to survive for months without eating.

Both strategies are effective at helping animals make it through the colder months. **(22)**, they depend on quite different preparations. Migratory animals must build up enough fat reserves for a long journey, while hibernating animals need enough fat to last an entire winter without moving at all.

21

SYNTAX — SELECT THE CORRECT CONNECTIVE

Choose the word that best fills blank (21).

A because

B unless

C although

D while

22

SYNTAX — SELECT THE CORRECT CONNECTIVE

Choose the word that best fills blank (22).

A As a result

B However

C Therefore

D In addition

✍️ Writing

Paper B · 2 practice tasks · 35 minutes each · Narrative and Persuasive

2 TASKS **35** MINUTES

ICAS Writing gives you one task — either Narrative or Persuasive. You are marked on: Genre (structure and language choices), Textual Grammar (tense, pronouns, sentence variety), and Syntax/Punctuation (correctness and accuracy).

✍️ THE 5–25–5 RULE — EVERY TIME

5 min Plan: Purpose, key points, opening hook, conclusion strategy.
25 min Write: Follow your plan. Vary sentence length. Use specific, vivid vocabulary.
5 min Edit: Read back and fix punctuation, tense, agreement, and spelling.

Task W1 — Narrative Writing

YOUR TASK

Write a story that begins with this line:
"When Maya opened the old wooden box she found buried in the garden, she had no idea what would happen next."
Your story should have a clear setting, at least one complication, and a satisfying ending.

⏱ 35 minutes total — plan for 5 minutes first.

5 MIN PLAN

What is in the box? _____ **Setting:** _____

Complication (the problem):

How the story ends:

YOUR RESPONSE (25 MINUTES)

Task W2 — Persuasive Writing

YOUR TASK

Write a persuasive letter to your school principal arguing that students should be allowed to have a longer lunch break. Clearly state your opinion and give at least two specific reasons supported by examples or evidence. End with a strong conclusion that calls for action.

⏱ 35 minutes total — plan for 5 minutes first.

5 MIN PLAN

My opinion (one clear sentence):

Reason 1 + example or evidence:

Reason 2 + example or evidence:

Conclusion / call to action:

YOUR RESPONSE (25 MINUTES)

Science

Paper B · 30 questions · 45 minutes · Every question uses a diagram, graph, table, or image

30 QUESTIONS

40 MINUTES

In the real ICAS Science paper, every question uses a visual — a photograph, diagram, graph, table, or apparatus drawing. The science information is given to you in the question. Your job is to read it carefully and reason with it — interpreting data, identifying variables, drawing conclusions.

🔬 **KEY SCIENCE STRATEGY FOR PAPER B**

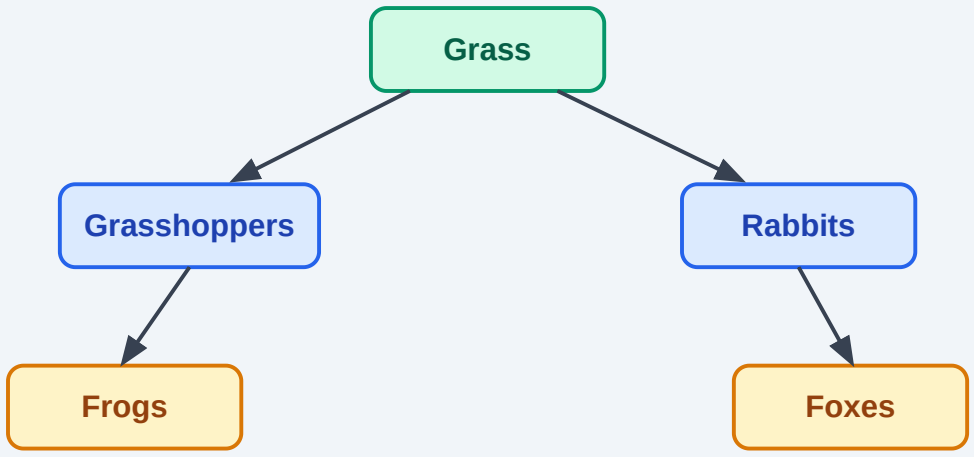
For **food web questions**: trace arrows carefully — they show who eats whom. If one organism is removed, who immediately loses a predator (and will grow) and who loses prey (and will decrease)? For **fair test questions**: identify what was changed (independent variable), what was kept the same (controlled variables), and what was measured (dependent variable). These are always three different things.

1

LIFE & LIVING — REASONING (FOOD WEB)

The diagram shows a food web in a grassland habitat. Arrows show the direction of energy flow — from the organism being eaten to the one that eats it.

GRASSLAND FOOD WEB



Arrow direction shows energy flow: grass → grasshoppers means grasshoppers eat grass.

Scientists removed all the foxes from this habitat. Which change would MOST LIKELY happen first?

A The number of frogs would increase because foxes also eat frogs.

B The amount of grass would decrease immediately because more animals eat it.

C Grasshoppers would begin eating rabbits instead of grass.

D The rabbit population would grow larger because rabbits no longer have a predator.

2

NATURAL & PROCESSED MATERIALS — INTERPRETING (TABLE)

The table shows the properties of five materials.

MATERIAL	NATURAL OR SYNTHETIC	WATERPROOF?	FLEXIBLE?	HARDNESS
Cotton	Natural	No	Yes	Soft
Nylon	Synthetic	Yes	Yes	Firm
Wool	Natural	No	Yes	Soft
Glass	Natural (processed)	Yes	No	Hard
Rubber	Synthetic	Yes	Yes	Firm

A designer wants to make a waterproof bag that can bend to fit into tight spaces. Which material from the table is MOST suitable?

A Cotton

B Wool

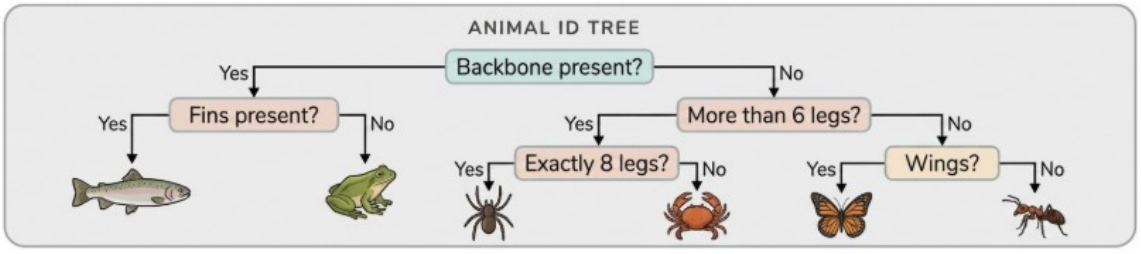
C Glass

D Rubber

3

LIFE & LIVING — INTERPRETING (DICHOTOMOUS KEY)

The key below is used to identify five types of small animals.



An animal has no backbone, 8 legs, and no wings. According to the key, what is it?

A Ant

B Butterfly

C Spider

D Crab

4

ENERGY & CHANGE — INVESTIGATING (FAIR TEST)

Li wanted to find out whether the length of a guitar string affects the pitch of the sound it produces. She used the same guitar and kept the tension of every string identical. She plucked strings of lengths 20 cm, 30 cm, 40 cm, and 50 cm and recorded whether each produced a high or low pitch.

LI'S RESULTS

STRING LENGTH (CM)	PITCH PRODUCED
20	Very high
30	High
40	Low
50	Very low

Which variable did Li deliberately change in this experiment?

A The length of the strings

B The tension of the strings

C The pitch of the sound produced

D The material the guitar strings were made from

5

ENERGY & CHANGE — PREDICTING (PATTERN IN DATA)

A student hung different numbers of identical weights from a spring and measured the total length of the spring each time.

NUMBER OF WEIGHTS	LENGTH OF SPRING (CM)
0	10
1	12
2	14
3	16
4	18

If the pattern continues, what would be the length of the spring with 6 weights attached?

A 20 cm

B 26 cm

C 24 cm

D 22 cm

6

NATURAL & PROCESSED MATERIALS — INTERPRETING (BAR GRAPH)

The bar graph shows how much of each material (in kilograms) a school recycled in one week.

SCHOOL RECYCLING — ONE WEEK

Material	Amount recycled	kg
Paper		40
Plastic		25
Glass		15
Metal		20
Cardboard		30

The school plans to set up two dedicated bins for the two materials they recycle the least. Which two materials should these bins be for?

A Paper and Cardboard

B Plastic and Cardboard

C Glass and Metal

D Glass and Plastic

7

LIFE & LIVING — PREDICTING & CONCLUDING (SENSES EXPERIMENT)

Three blindfolded students were asked to identify three containers without using their eyes. Container 1 held vinegar, Container 2 held rose water, and Container 3 held plain water. The table shows the results.

STUDENT	CONTAINER 1 (VINEGAR)	CONTAINER 2 (ROSE WATER)	CONTAINER 3 (PLAIN WATER)
Adam	Correct ✓	Correct ✓	Incorrect ✗
Bella	Correct ✓	Correct ✓	Incorrect ✗
Carlos	Correct ✓	Correct ✓	Incorrect ✗

Which conclusion is best supported by these results?

A Blindfolded people can correctly identify all liquids using smell alone.

B Plain water has an odour that humans are unable to detect under any conditions.

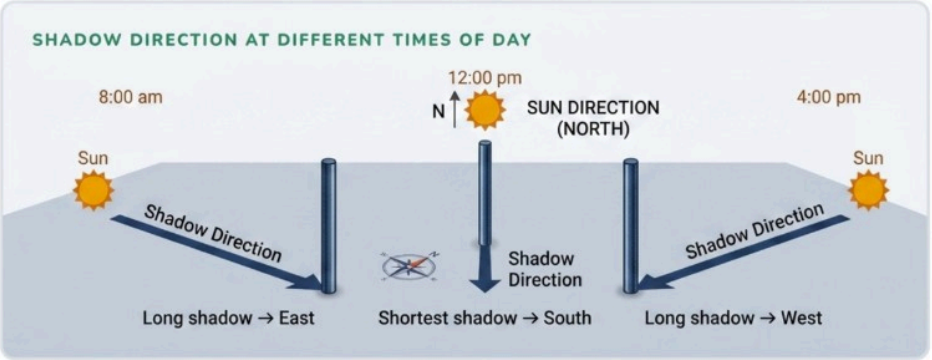
C Touch is a more reliable sense than smell for identifying liquids.

D People can identify liquids with a strong smell, but not liquids with little or no odour.

8

EARTH & BEYOND — REASONING (SHADOW DIRECTION)

The diagram shows the shadow of a vertical pole at three different times of day. North is at the top of the diagram.



Based on the diagram, which conclusion about shadow direction is correct?

A Shadows always point in the same direction as the Sun.

B Shadows point in the opposite direction from the Sun.

C Shadows are longest when the Sun is directly overhead at midday.

D The direction of a shadow depends only on the height of the object, not on the Sun's position.

9

ENERGY & CHANGE — OBSERVING (STATES OF MATTER)

The pictures show three situations. In each one, a material changes as it gains heat.

Situation 1

Ice cube in a warm room

Situation 2

Butter melting in a warm pan

Situation 3

Chocolate melting in warm hands

All three situations show the same type of change. Which statement best describes this change?

A A liquid changing into a solid as it loses heat

B A gas changing into a liquid as it cools

C A solid changing into a liquid as it gains heat

D A substance being permanently changed into a completely new material

10

ENERGY & CHANGE — REASONING (DIRECTION OF GEARS)

The diagram shows four gears connected in a chain. Gear 1 is turned anticlockwise by a motor. When two gears touch, they always turn in opposite directions.

In which direction does Gear 4 turn?

A Anticlockwise, because it turns the same way as Gear 1 at the start of the chain

B Clockwise, because there is an even number of gears in the chain

C Anticlockwise, because Gear 4 is smaller than Gear 3

D Clockwise, because large gears always drive small gears in the opposite direction

Mathematics

Paper B · 40 questions · 45 minutes · No Calculator · Real-world contexts

35 QUESTIONS

40 MINUTES

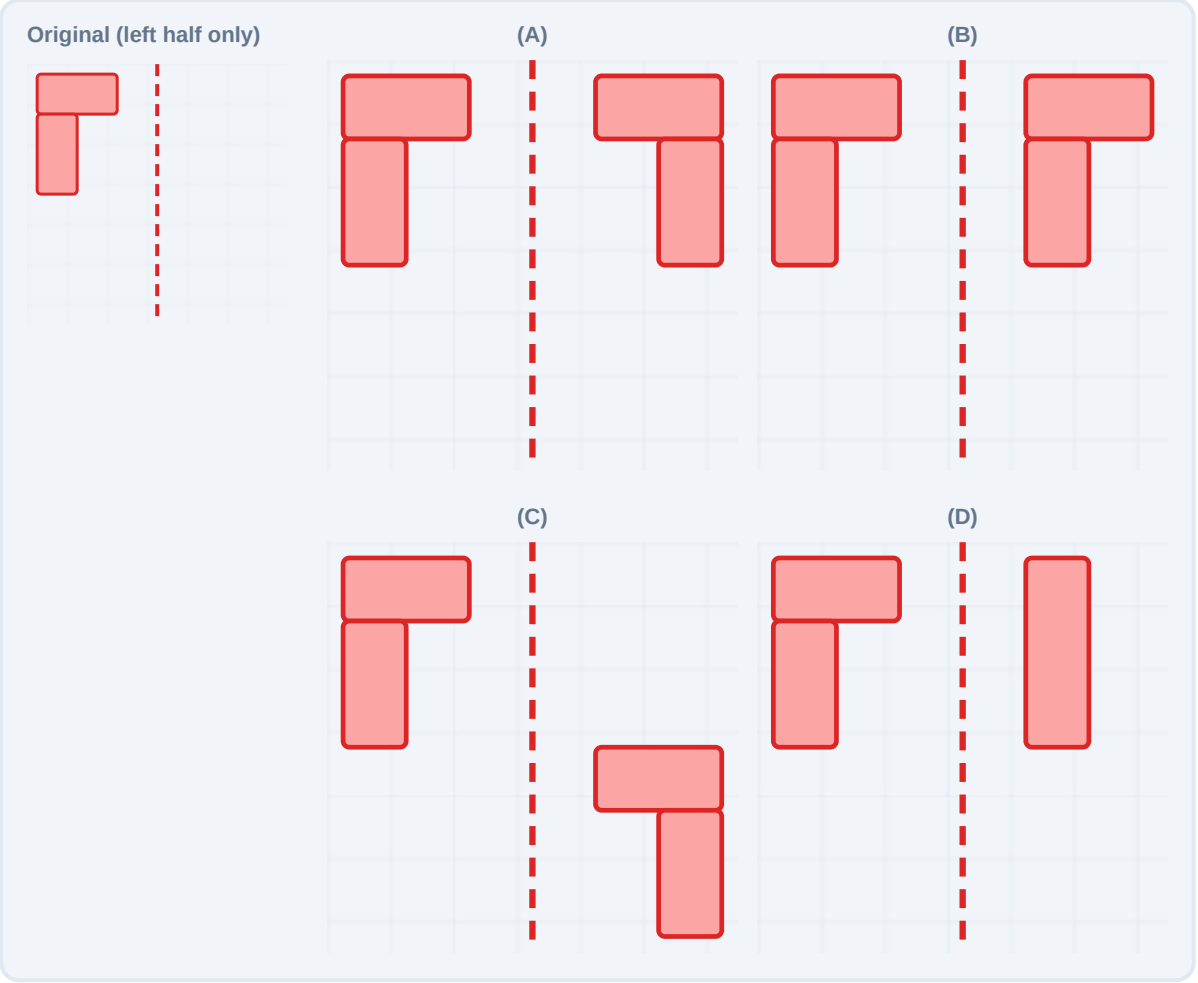
In the real ICAS Maths paper, almost every question has a visual — a diagram, graph, scale, or image. Questions use real-world contexts. Topics include numbers to 10,000, fractions, metric units, symmetry, nets of 3D shapes, bar charts, two-way tables, clocks, angles as turns, and perimeters.

📐 **MATHS STRATEGY FOR PAPER B**

Estimate first: What ballpark should the answer be in? Eliminate clearly wrong options. **Draw it:** For symmetry and geometry questions, sketch what the answer should look like before checking the options. **Write every step:** For multi-step problems, write each calculation — don't try to hold it all in your head.

1 SPACE & GEOMETRY — COMPLETE A SYMMETRICAL PATTERN

The diagram shows half of a symmetrical shape on a grid. The dashed line is the line of symmetry. Which option shows the completed symmetrical shape?



2

NUMBER — FRACTIONS WORD PROBLEM

In a class of 30 students, 2/5 of them walk to school. The rest travel by bus. How many students travel by bus?

A 6

B 12

C 24

D 18

3

CHANCE & DATA — TWO-WAY TABLE

The table shows how 40 students travel to school each day.

	WALK	BUS	CAR	TOTAL
Boys	8	6	6	20
Girls	5	9	6	20
Total	13	15	12	40

Which statement about the table is TRUE?

A More girls walk to school than boys.

B The same number of boys and girls travel by car.

C More boys travel by bus than girls.

D The total number of walkers is greater than the total number of bus travellers.

4

MEASURES & UNITS — MULTI-STEP TIME PROBLEM

A movie starts at 7:15 pm and runs for 2 hours and 40 minutes. At what time does the movie end?

A 9:45 pm

B 9:50 pm

C 9:55 pm

D 10:05 pm

5

NUMBER — MULTI-STEP MULTIPLY AND DIVIDE

A fruit stall sells oranges in bags of 6. A customer buys 4 bags. She shares them equally among herself and 7 friends. How many oranges does each person receive?

A 3

B 2

C 4

D 6

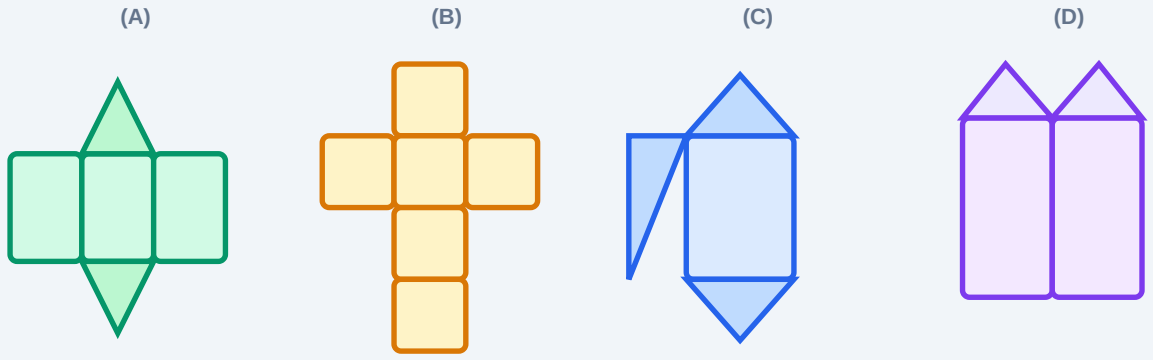
6 ALGEBRA & PATTERNS — CONTINUE A GROWING PATTERN

Tiles are arranged in a growing pattern. Row 1 has 1 tile, Row 2 has 3 tiles, Row 3 has 5 tiles, Row 4 has 7 tiles. How many tiles will be in Row 8?

- A 13
- B 17
- C 16
- D 15

7 SPACE & GEOMETRY — NETS OF 3D SHAPES

A triangular prism has two triangular faces and three rectangular faces. Which of these nets can be folded to make a triangular prism?



8 MEASURES & UNITS — METRIC CONVERSION WORD PROBLEM

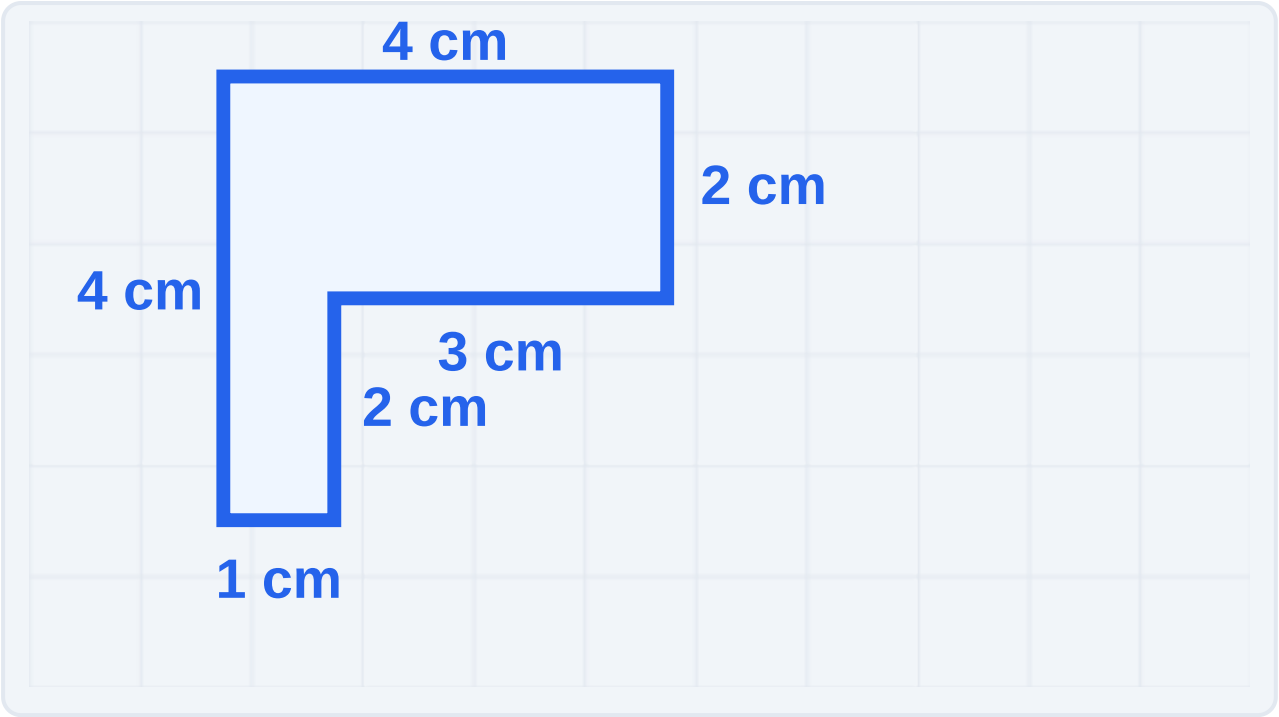
A running track is 400 metres long. A student runs around the track 5 times. How far did she run, in kilometres?

- A 2 km
- B 0.2 km
- C 20 km
- D 200 km

9

MEASUREMENT — PERIMETER OF COMPOSITE SHAPE

The diagram shows an L-shaped figure on a centimetre grid. Each small square = 1 cm × 1 cm. What is the perimeter of the shape?



A 14 cm

B 16 cm

C 18 cm

D 20 cm

10

SPACE & GEOMETRY — ANGLE AS A TURN

A compass needle is pointing East. It then makes a 3/4 turn anticlockwise. Which direction is it now pointing?

A North

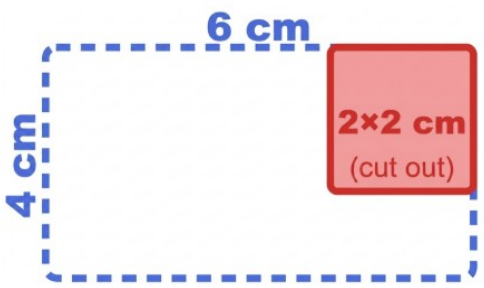
B South

C West

D East (unchanged)

11 MEASUREMENT — AREA OF COMPOSITE SHAPE

A rectangular piece of card is 6 cm wide and 4 cm tall. A square with sides of 2 cm is cut from one corner. What is the area of the remaining shape?



- A 16 cm²
- B 18 cm²
- C 22 cm²
- D 20 cm²

12 NUMBER — MULTI-CLUE LOGICAL REASONING (HARDER)

Five friends each have a different number of stickers. The pictograph shows some of their amounts (each ★ = 6 stickers).

• Aiden: ★★★ • Carlos: ★★ • Ella: ★★★★

• The total for all five friends is 90 stickers.

• Bella has 6 more stickers than Dani.

How many stickers does Bella have?

- A 15
- B 18
- C 21
- D 24

Digital Technologies

Practice · 10 questions · 13 minutes · Every question uses a diagram or screenshot

10 QUESTIONS **13** MINUTES

In the real ICAS Digital Technologies paper, every question uses a visual — a screenshot of a program, a diagram, an icon or a table of data. You are not tested on memory alone — the information you need is always shown in the question. Your job is to read the visual carefully and apply what you know about how computers and programs work.

KEY DIGITAL TECHNOLOGIES STRATEGY

Read every part of the diagram before choosing an answer. For **spreadsheet questions**: look for the highlighted (coloured) cell — that is the active cell. For **email questions**: bold text = unread. For **programming questions**: trace each instruction in order, one step at a time.

1 DIGITAL SYSTEMS — HARDWARE VS SOFTWARE

The pictures show four items that can be used with a computer.

Which of these is an example of software?

- A Keyboard
- B Printer
- C Word Processor
- D Headphones

2 WORD PROCESSING — IDENTIFY THE FILENAME

Maya is writing a report about the ocean. This picture shows her document on screen.

What is the name of Maya's file?

A Ocean Report.doc

B The Ocean

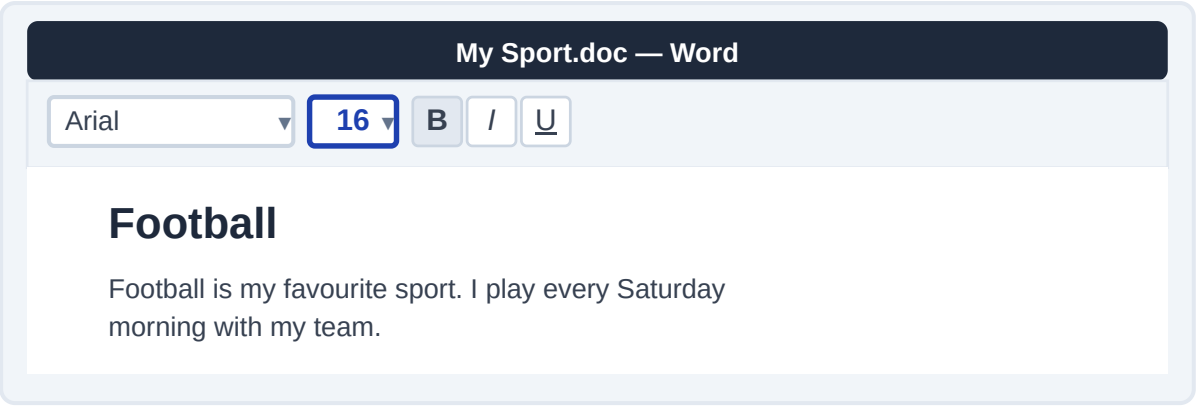
C Word

D .doc

3

WORD PROCESSING — READ FONT INFORMATION FROM TOOLBAR

Tom is writing about his favourite sport. This picture shows part of his document.



What font size is Tom using?

A Arial

B 12

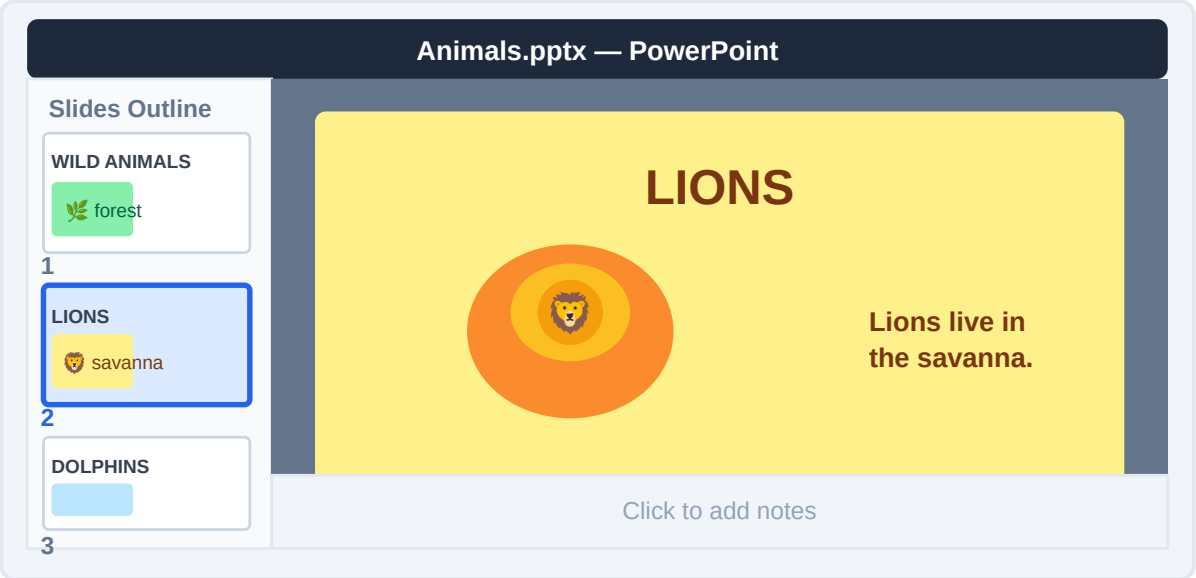
C 16

D Bold

4

GRAPHICS & MULTIMEDIA — SLIDESHOW PRESENTATIONS

Kim is using a presentation program to make a slideshow about animals.



Which slide is Kim editing?

A 1

B 2

C 3

D 4

5

INTERNET & EMAIL — READ AN EMAIL INBOX

Lily is checking her email inbox. This picture shows her inbox.

Delete | Reply | Forward | New | Show All

From	Subject	Received	Size
Mum	**Dinner tonight**	Today 5:12 PM	2KB
Tom	Football practice	Today 3:45 PM	1KB
Ms Chen	**Science homework due**	Today 2:30 PM	4KB
Dad	Weekend plans	Yesterday	1KB
Jess	**Come to my party!**	Yesterday	3KB

A closed envelope icon means the email has **NOT** been read.

How many emails in Lily's inbox have NOT been read?

A 2

B 3

C 4

D 1

6

INTERNET & EMAIL — WEB BROWSER COMPONENTS

Noah is looking at a website about space. This picture shows his web browser.

Space Facts

◀ (A) ▶ (B) ↻ (C) http://www.spacefacts.com/planets/index.html ★ (D)

Space Facts

Our solar system has eight planets orbiting the Sun.
The largest planet is Jupiter.

When Noah clicks button (A), he will

A return to the previous page he visited.

B reload the current webpage.

C move forward to the next page.

D save the page to his bookmarks.

7

SPREADSHEETS & DATABASES — IDENTIFY THE ACTIVE CELL

Emma is using a spreadsheet to record her class's reading results.

C3 fx Sarah

	A	B	C	D
1	Name	Books Read	Favourite Book	
2	Amir	8	Charlotte's Web	
3	Beth	12	Sarah	
4	Carlos	6	Matilda	

Class 3A Class 3B

Which cell is currently active?

A A3

B B3

C C3

D C1

8

SPREADSHEETS & DATABASES — CHOOSE THE CORRECT FORMULA

Raj used a spreadsheet to plan a school fundraiser. He wants to find the total amount of money raised in cell B7.

B7 fx

	A	B
1	Fundraiser Activity	Money Raised ($)
2	Cake stall	45
3	Sponge throw	32
4	Book sale	28
5	Raffle	60
6	Art auction	75
7	TOTAL	*formula here*

Which formula should Raj type in cell B7 to find the total?

A =SUM(A2:A6)

B =SUM(B1:B6)

C =SUM(B2:B6)

D =SUM(B2:B7)

9

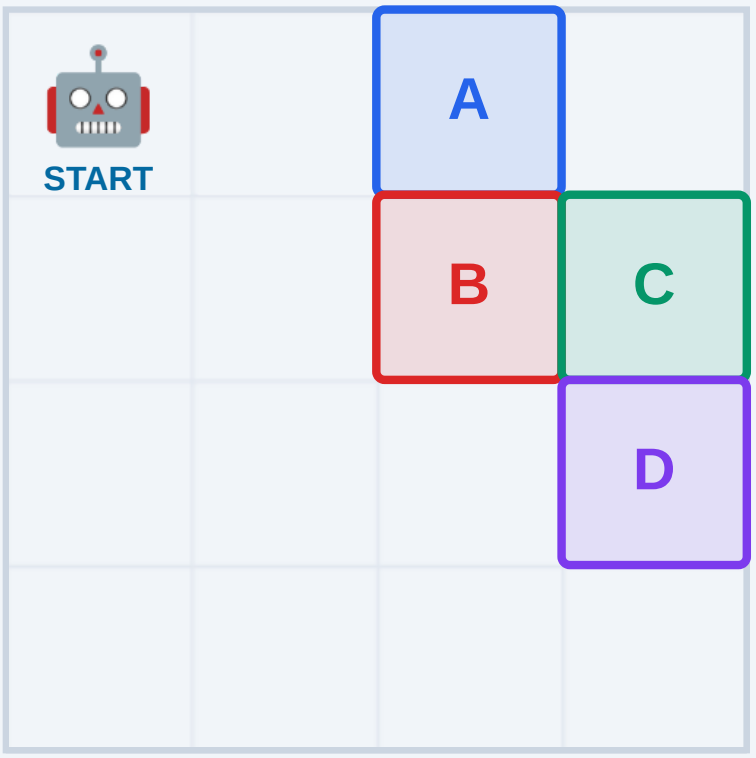
PROGRAMMING — FOLLOW A SEQUENCE OF INSTRUCTIONS

Zara used these commands to move a robot on a grid. The robot always starts facing right (→). Each command moves the robot exactly one square.

ZARA'S COMMANDS:

- ➡ Move right
- ➡ Move right
- ⬇ Move down
- ➡ Move right

4 × 4 GRID:



After following all four commands, which square does the robot land on?

A Square A

B Square B

C Square C

D Square D

10

DIGITAL SYSTEMS — IDENTIFY FILE TYPES

This picture shows part of Maya's desktop. She wants to open a file to listen to music.

Which file should Maya open to listen to music?

A Photo.jpg

B Song.mp3

C Report.doc

D Game.exe

📋 Answers & Worked Explanations

Read every explanation — even for questions you got right. Understanding why each wrong answer is wrong is where the real learning happens.

📖 English — Answers

1 **Correct order of events in 'The Blue Ribbon'**

✓ Correct Answer: A — (ii) → (iii) → (i) → (iv)

Work through the story chronologically. (ii) Playing classical music at home happens before the competition — it is preparation. At the show: (iii) Biscuit lies flat on the ground after the judge asks competitors to walk their dogs. Then (i) Zara holds up a treat, which motivates Biscuit to finally walk. Finally (iv) the judge writes in her notebook — the last action described. For sequence questions, go back to the text and find the exact moment each event occurs rather than guessing from memory.

2 **What does 'He's just tired' reveal about Zara?**

✓ Correct Answer: C — She is trying to appear calm and in control despite feeling embarrassed.

Zara is clearly in a difficult situation — her dog is asleep in the ring during a competition. The excuse 'He's just tired' is immediately challenged by the judge, which shows even Zara doesn't fully believe it. She is saving face. She is not genuinely angry (A) — the tone is one of awkward cover-up, not anger. B is wrong because the judge's response reveals the excuse is unconvincing. D goes beyond what the text supports — she doesn't mention wanting another chance.

3 **Why does the writer include the classical music detail?**

✓ Correct Answer: B — To show that Zara followed unusual advice without questioning whether it would work.

The writer flags this detail with 'someone on the internet had claimed it calmed nervous dogs' — a hint that the source is unverified. Zara does it anyway. This builds a picture of a well-meaning but perhaps uncritical preparer. A is disproved by events — the music clearly did not calm Biscuit. C and D are not supported anywhere in the text. The detail is there to characterise Zara's approach, not to explain Biscuit's behaviour.

4 'Ears swivelled like radar dishes' — device used

✓ Correct Answer: C — A simile

A simile makes a comparison using 'like' or 'as.' This phrase compares Biscuit's ears to radar dishes using 'like.' A metaphor would say the ears ARE radar dishes (no 'like'). Personification gives human qualities to non-humans — Biscuit's ears moving is animal behaviour, not human behaviour applied to an object. Alliteration repeats initial consonant sounds. The test: does it use 'like' or 'as' to compare two unlike things? Yes — it is a simile.

5 How Zara and Petra are contrasted

✓ Correct Answer: B — Zara's dog refuses to perform at first; Petra's dog completes its routine without difficulty.

The writer directly places Petra's dog's perfect performance immediately after Biscuit's refusal — this is the contrast being drawn. A is speculation (Petra's training is not described). C is wrong — Zara is making excuses, which is the opposite of calm. D is unsupported. The contrast is specifically between the two dogs' performances, which reflects on their owners.

6 What does 'typically' mean?

✓ Correct Answer: C — usually

'Typically' means 'as is normally the case' or 'usually.' The judge is saying: 'Tired dogs are usually kept at home — not brought to competitions.' This is a polite but pointed challenge to Zara's excuse. 'Never' (A) is too absolute. 'Unfortunately' (B) is an emotional word — 'typically' is factual and neutral. 'Probably' (D) introduces uncertainty, but 'typically' states what is normal, not what is merely likely.

7 What does 'best she could hope for' suggest?

✓ Correct Answer: D — She accepts an uncertain outcome as reasonably positive, given how badly things started.

Zara doesn't know the result (so A is wrong — she cannot know she won). She is not giving up (B is wrong) — she is actually reading the neutral reaction as not-terrible given the circumstances. The key word is 'probably' — she is uncertain but cautiously positive. C overstates what can be inferred from a neutral expression. D captures the nuance of Zara making the best of an ambiguous situation after a rocky start.

8 Which birds have a wingspan greater than 3 metres?

✓ Correct Answer: A — The wandering albatross and the royal albatross

Read the table carefully. Wandering albatross = 3.5 m (greater than 3 ✓). Royal albatross = 3.1 m (greater than 3 ✓). Laysan albatross = 2.0 m (not greater than 3 ✗). Common pigeon = 0.7 m (not greater than 3 ✗). Always re-read the exact question — it asks for greater than 3 m, not greater than or equal to. Both 3.5 and 3.1 qualify; 2.0 does not.

9 Main reason the large wingspan is useful

✓ Correct Answer: A — It enables the bird to travel vast distances by gliding without flapping its wings.

The passage says directly: 'This extraordinary wingspan allows the albatross to use a flying technique called dynamic soaring... to glide for enormous distances without flapping its wings.' B, C, and D are not mentioned in the passage — they are invented distractors. In ICAS, the answer to 'According to the passage' questions is always directly stated in the text.

10 'The ocean is their true home, and the sky their road' — device

✓ Correct Answer: D — A metaphor

A metaphor states that one thing IS another thing, without using 'like' or 'as.' Here: 'the sky' IS 'their road.' There is no comparison word — it is a direct identification. A simile would say 'the sky is like their road.' Personification gives human qualities to non-humans (the sky is not human). Alliteration repeats sounds. The diagnostic question: does it use 'like' or 'as'? No → metaphor.

11 Purpose of the opening question

✓ Correct Answer: D — To engage the reader by inviting them to imagine an unusual experience

When a writer opens with 'Have you ever wondered...', they are drawing the reader in by making the topic personal and imaginative. A is wrong — the question is not a test of knowledge. C and B are not supported — the question does not suggest humans can live at sea or introduce a debate. This technique (a direct question to the reader) is called a 'rhetorical question' and its purpose is always to engage.

12 Main idea of the entire article

✓ Correct Answer: C — The wandering albatross is a remarkable seabird that spends most of its life flying over the ocean.

A main idea must cover ALL sections of the article, not just one. A (dynamic soaring) is only one detail from one section. B (scientists can't explain) is mentioned briefly in the conclusion but is not the main focus. D is too broad — the article is about the albatross specifically. C encompasses the whole article: the bird's remarkable nature, its life at sea, its navigation — all support this summary.

13 What does 'navigate' mean?

✓ Correct Answer: B — Find a specific location while travelling a long distance

Context: '...the wandering albatross can navigate its way back to the exact island... where it was hatched.' Navigate here means finding its way to a specific place after travelling a long distance. A (communicate) does not fit — the bird is finding a place, not communicating. C (memorise the exact path) is close, but navigate refers to the act of finding one's way, not just memorising a route. D is invented.

14 What does 'remarkable/extraordinary' reveal about the assumed reader?

✓ Correct Answer: B — The reader is likely to find the albatross's abilities surprising and impressive.

When a writer describes things as 'remarkable' and 'extraordinary,' they are flagging that these things are unusual or unexpected. This only makes sense if the writer assumes the reader does NOT already know about albatrosses — otherwise, it wouldn't be surprising. A is the opposite of what the repeated 'remarkable' language suggests. C and D are not supported by the text. The writer's choice of evaluative language signals what they think will impress their reader.

15 Text type of 'A Wild Ride'

✓ Correct Answer: C — Review

A review evaluates a creative work (book, film, show) giving the reviewer's opinion on its strengths and weaknesses, and typically ends with a recommendation. The features present here: named work being reviewed, the reviewer's opinion stated, strengths identified (exciting plot), weakness identified (inaccurate science), star rating, reviewer's name. A biography is about a person's life. A narrative tells a story. A procedure gives step-by-step instructions.

16 What does 'relentlessly' mean?

✓ Correct Answer: D — without stopping

Relentless means without letting up, without stopping or slowing. 'The plot is relentlessly exciting' means it does not pause or slow — it keeps the excitement going throughout. Occasionally (A) means sometimes — the opposite. Unexpectedly (C) relates to surprise, not pace. Gently (B) is almost the opposite of relentless. When you cannot recall a word's meaning precisely, use the context: the reviewer is clearly praising the pace of the story.

17 Purpose of 'Is there anything else you really need in an adventure story?'

✓ Correct Answer: B — To invite the reader to think about whether other elements are needed, before the reviewer reveals a weakness

The question appears to agree that plot and pace are enough — but it is immediately followed by 'Well, yes. As it turns out.' This structure shows the question is ironic: it sets up the expectation that the book is fine, then pulls the rug out. The reviewer is using the question to build suspense before revealing the criticism. A is wrong — the question is not the reviewer's final position. B correctly captures the function of this rhetorical setup.

18 Main weakness of the book

✓ Correct Answer: C — Some of the scientific information in the book is inaccurate

The entire third paragraph is dedicated to this point: tornadoes behave incorrectly, an instrument that does not exist is used, and the reviewer calls it a 'missed opportunity' for a book aimed at children who may be learning about weather. A is wrong — the reviewer describes the characters as 'appealing.' B is not mentioned. D is also wrong — the reviewer praises the pace. C is the directly stated and most developed criticism.

19 Correct identification of praise and criticism

✓ **Correct Answer: B — Praised for: exciting plot and pace. Criticised for: inaccurate science.**

The reviewer explicitly praises the plot ('breathlessly paced,' 'heart-pounding moments,' 'relentlessly exciting') and explicitly criticises the science ('flexible,' 'Tornadoes behave in ways that would surprise actual meteorologists'). A reverses these. C (originality) and D (good science) are both unsupported — neither is praised in the text. This is a direct 'contrast the reviewer's judgements' question — one of the key Paper B skills.

20 Effect of 'Just don't use it to revise for your meteorology exam'

✓ **Correct Answer: B — It uses humour to summarise the book's main weakness in a memorable way.**

The ending is clearly intended to be funny — no child reads a junior adventure novel to revise for exams. By using this humorous exaggeration, the reviewer lands the central criticism (inaccurate science) in a way that is light, memorable, and not harsh. A is too formal — the reviewer is not issuing a warning to teachers. C and D are not supported. In ICAS, questions about the effect of a concluding sentence nearly always relate to tone, summary, or the reviewer's overall stance.

21 Cloze — blank (21)

✓ **Correct Answer: D — while**

The sentence contrasts two strategies: 'Some species solve this problem through migration... _____ others use... hibernation.' The blank introduces the second option in a contrast. 'While' is the correct connective for showing two simultaneous or contrasting things happening at the same level. 'Because' (A) would make hibernation the cause of migration — which is wrong. 'Unless' (B) implies a condition. 'Although' (C) would work grammatically but suggests the second option is unexpected or in conflict with the first, which is stronger than needed here.

22 Cloze — blank (22)

✓ **Correct Answer: B — However**

The second paragraph opens by saying both strategies are effective (similarity), then introduces a contrast: they depend on different preparations. 'However' is the correct connective for introducing a contrast after a concession. 'As a result' (A) and 'Therefore' (C) signal consequence — but the different preparations are not a consequence of being effective. 'In addition' (D) signals adding more of the same — but the sentence introduces a contrast, not an addition.

✍️ Writing — Marking Rubric (Both Tasks)

W

Tasks W1 & W2 — How to use this rubric

ICAS Writing is marked across three independent domains. Each domain is assessed on a 4-band scale. Use this rubric to self-mark or ask a teacher to mark your work. Be honest — the goal is to find the next skill to practise, not to award yourself the highest band. The descriptors below are calibrated for Paper B / Standard 4 level.

TASK W1 — NARRATIVE (THE WOODEN BOX)

GENRE

- → **STRONG** — Clear orientation (who/where/when), a genuine complication, and a satisfying resolution. Atmosphere is built through specific chosen detail, not told directly. The opening does not simply repeat the given line.
- → **SOUND** — All three narrative stages present. Beginning, middle and end are recognisable. Some descriptive vocabulary. Complication is clear.
- → **EMERGING** — Narrative stages attempted but one may be underdeveloped. Story may rush to an ending or leave the complication unresolved.
- → **BASIC** — Structure unclear. Events listed without a sense of building. Reader unsure what the complication or resolution is.

TEXTUAL GRAMMAR

- → **STRONG** — Consistent past tense throughout. Sentence lengths deliberately varied — short sentences used for impact after longer ones. Paragraphs signal new actions or time shifts. Connectives (however, suddenly, as soon as) used accurately.
- → **SOUND** — Tense mostly consistent with minor slips. Some variation in sentence length. Paragraphs present. Connectives used.
- → **EMERGING** — Tense slips more than once. Most sentences follow the same pattern. Paragraphing inconsistent or absent.
- → **BASIC** — Tense shifts frequently without reason. Sentences all the same shape. No paragraphing. Ideas not connected.

SYNTAX & PUNCTUATION

- → **STRONG** — Every sentence complete (subject + verb). Capital letters and full stops always correct. Commas used in lists and after connectives. Speech marks used correctly if dialogue is included. Vocabulary precise and specific.
- → **SOUND** — Sentences mostly complete. Punctuation mostly correct with occasional slips. Some vocabulary choices beyond the everyday.
- → **EMERGING** — Some sentence fragments or run-ons. Punctuation errors present but basic structure mostly maintained. Vocabulary limited.
- → **BASIC** — Frequent sentence errors. Punctuation mostly missing or incorrect. Vocabulary very restricted.

TASK W2 — PERSUASIVE (LONGER LUNCH BREAK)

GENRE

- → **STRONG** — Opinion stated clearly in the opening. At least two distinct reasons, each supported by a specific example or evidence. Letter format used correctly (greeting + sign-off). Conclusion calls for action, not just restates the opinion.
- → **SOUND** — Opinion clear. Two reasons given. Letter format mostly followed. Conclusion present.
- → **EMERGING** — Opinion present but reasons are vague or only one reason is developed. Letter format partially attempted. Conclusion weak or missing.
- → **BASIC** — Argument unclear. Reasons not explained. Little sense of persuasive purpose or letter genre.

TEXTUAL GRAMMAR

- → **STRONG** — Paragraphs each handle one argument point. Persuasive language used (should, importantly, clearly, it is essential that). Sentence lengths varied for emphasis. Tone is formal throughout.
- → **SOUND** — Paragraphs present and mostly purposeful. Some persuasive language used. Tone mostly formal. Some sentence variety.
- → **EMERGING** — Ideas grouped but paragraphing inconsistent. Persuasive language limited. Tone slips between formal and informal.
- → **BASIC** — No paragraphing. No persuasive language. Tone informal throughout. Ideas listed without development.

SYNTAX & PUNCTUATION

- → **STRONG** — All sentences complete. Commas used correctly after introductory phrases and in lists. Capital letters for proper nouns and sentence starts always correct. Vocabulary choices show range (beneficial, opportunity, essential).
- → **SOUND** — Sentences mostly complete. Punctuation mostly correct. Some range in vocabulary.
- → **EMERGING** — Some fragments or run-ons. Punctuation errors present. Vocabulary limited to everyday words.
- → **BASIC** — Frequent errors in sentence structure and punctuation. Very restricted vocabulary.

🔬 Science — Answers

1 Food web — foxes removed

✓ Correct Answer: D — The rabbit population would grow larger because rabbits no longer have a predator.

Foxes eat rabbits. With foxes removed, rabbits have no predator in this web, so their numbers will increase. A is tempting but wrong — foxes do NOT eat frogs in this diagram (frogs eat grasshoppers; foxes eat rabbits). C is biologically impossible — grasshoppers are herbivores. B might happen eventually (more rabbits eating more grass) but is not the FIRST or MOST LIKELY immediate change. Always trace arrows carefully before answering food web questions.

WHY THE OTHER OPTIONS ARE WRONG

- **A** Foxes are not connected to frogs in this food web — frogs eat grasshoppers, foxes eat rabbits. Removing foxes has no direct effect on frogs.
- **C** Grasshoppers are herbivores — they eat grass, not other animals. Their diet does not change when foxes are removed.
- **B** This might happen later (more rabbits → more grass eaten) but it is not the FIRST change. The direct first-step effect is the rabbit population growing.

2 Waterproof and flexible bag material

✓ Correct Answer: D — Rubber

The designer needs TWO properties: waterproof AND flexible. Read the table carefully for materials that satisfy both: Cotton — not waterproof ✗. Wool — not waterproof ✗. Glass — waterproof ✓, but NOT flexible ✗. Rubber — waterproof ✓ AND flexible ✓. Rubber is the only material in the table that satisfies both requirements. For multi-criteria questions, rule out options that fail any one criterion, then choose the one that satisfies all of them.

3 Dichotomous key — no backbone, 8 legs, no wings

✓ Correct Answer: C — Spider

Trace through the key step by step: Step 1: Does it have a backbone? No → go to Step 3. Step 3: Does it have more than 6 legs? Yes (8 > 6) → go to Step 4. Step 4: Does it have exactly 8 legs? Yes → it is a spider. The most common error is going to Step 5 instead of Step 4 — but Step 5 is only reached if the animal has 6 or fewer legs. With 8 legs you go to Step 4, not Step 5.

4 Li's guitar string experiment — variable changed

✓ Correct Answer: A — The length of the strings

The independent variable (what was deliberately changed) is string length — she used 20 cm, 30 cm, 40 cm, and 50 cm strings. The controlled variables (kept the same) were: the same guitar and the same tension. The dependent variable (what was measured as a result) was pitch — but pitch is what was measured, not what was changed. B (tension) was kept the same. C (pitch) is the result, not the cause. D (material) was kept the same — same guitar strings.

5 Spring length with 6 weights

✓ Correct Answer: D — 22 cm

The pattern: each additional weight adds exactly 2 cm to the spring's length (0 weights = 10, 1 = 12, 2 = 14, 3 = 16, 4 = 18). To get to 6 weights, continue: 5 weights = 20 cm, 6 weights = 22 cm. The trap is A (20 cm) — this is the answer for 5 weights, not 6. Always extend the pattern the exact number of steps needed.

6 Two materials recycled least

✓ Correct Answer: C — Glass and Metal

Read the graph values: Paper = 40 kg, Plastic = 25 kg, Glass = 15 kg, Metal = 20 kg, Cardboard = 30 kg. Ranking from least to most: Glass (15) < Metal (20) < Plastic (25) < Cardboard (30) < Paper (40). The two least recycled are Glass (15 kg) and Metal (20 kg). A and B both include Paper or Cardboard, which are among the most recycled. D includes Plastic (25 kg) instead of Metal (20 kg) — Plastic is the third least, not second.

7 Senses experiment — best conclusion

✓ Correct Answer: D — People can identify liquids with a strong smell, but not liquids with little or no odour.

All three students correctly identified vinegar (strong smell) and rose water (distinctive smell) but failed to identify plain water (which has virtually no odour). The conclusion must match the pattern exactly: success for strong-smelling liquids, failure for odourless ones. A overstates the evidence (not all liquids can be identified this way). C is not tested by this experiment (touch was not used). B goes beyond the data — we can only say plain water was not identified by these students, not that it has absolutely no odour detectable under any conditions.

8 Shadow direction conclusion

✓ Correct Answer: B — Shadows point in the opposite direction from the Sun.

The diagram shows: 8 am (sun in the east) → shadow points west. 12 pm (sun overhead/south) → short shadow points north. 4 pm (sun in the west) → shadow points east. The consistent pattern is that shadows always point away from the Sun. A is the opposite of the correct answer — the shadow is always on the side away from the Sun. C is wrong — shadows are shortest (not longest) when the Sun is overhead. D is wrong — the direction clearly changes with the Sun's position.

9 State change — ice, butter, chocolate all melting

✓ Correct Answer: C — A solid changing into a liquid as it gains heat

In all three situations: ice (solid → liquid water), butter (solid → liquid), chocolate (solid → liquid). All start as solids and become liquids by gaining heat from their surroundings. This process is called melting. A describes the reverse (liquid → solid = freezing/solidifying). B describes condensation (gas → liquid). D describes a chemical change — melting is a physical change because the substance remains the same material (e.g. water is still water, whether ice or liquid).

10 Gears — direction of Gear 4 when Gear 1 = anticlockwise

✓ Correct Answer: B — Clockwise, because there is an even number of gears in the chain

Track direction through each gear: G1 = anticlockwise (ACW). G2 touches G1 → opposite → clockwise (CW). G3 touches G2 → opposite → anticlockwise (ACW). G4 touches G3 → opposite → clockwise (CW). With 4 gears (even number), the last gear always turns OPPOSITE to the first gear. Rule: odd number of gears → last = same direction as first. Even number of gears → last = opposite direction to first. Gear size never affects direction, only speed.

WHY THE OTHER OPTIONS ARE WRONG

A This would be true for an odd-numbered chain (1, 3, 5 gears). With 4 gears (even), the last gear is opposite to the first.

C Gear size never affects direction. A smaller gear does not automatically turn the same or opposite — only the number of mesh points determines direction.

D Gear size affects speed, not direction. The rule about opposite directions applies equally to large-to-small and small-to-large meshes.

📐 Mathematics — Answers

1 Symmetry — correct reflection of L-shape

✓ Correct Answer: A

For a reflection in a vertical mirror line, each point on the left side is moved to the same distance on the right side. The top bar (wide part) reflects to the far right of the mirror line. The vertical bar (narrow part) reflects to the far-right of the reflected shape. In option A, the vertical bar sits at the right edge of the reflected shape — this is the true mirror image. Option B places the vertical bar at the left edge of the right half — this is a copy, not a reflection. Options C and D place shapes in wrong positions entirely.

2 Fractions — how many travel by bus?

✓ Correct Answer: D — 18

Step 1: Find how many walk. 2/5 of 30 = (30 ÷ 5) × 2 = 6 × 2 = 12. Step 2: The rest travel by bus. 30 − 12 = 18. Common error: A (6) comes from finding only 1/5 of 30. B (12) is the number who walk — not the number who take the bus. C (24) would be 4/5 of 30. Always re-read what the question asks for after calculating.

3 Two-way table — which statement is true?

✓ Correct Answer: B — The same number of boys and girls travel by car.

Check each option against the table: A — Girls walk = 5, Boys walk = 8. More boys walk, so A is FALSE. B — Boys car = 6, Girls car = 6. Equal. B is TRUE ✓. C — Boys bus = 6, Girls bus = 9. More girls take the bus, so C is FALSE. D — Total walkers = 13, Total bus = 15. Bus travellers are more, so D is FALSE. Only B is true.

4 Movie time — 7:15 pm + 2h 40 min

✓ Correct Answer: C — 9:55 pm

Step 1: Add hours. 7:15 pm + 2 hours = 9:15 pm. Step 2: Add minutes. 9:15 pm + 40 minutes. 9:15 + 40: from 9:15 to 10:00 = 45 minutes. We only need 40 minutes, so we haven't reached 10:00 yet. 9:15 + 40 = 9:55 pm. Common trap: A (9:45) comes from adding only 30 minutes instead of 40. D (10:05) comes from adding 50 minutes instead of 40. Always add hours and minutes as separate steps.

5 Oranges — 4 bags of 6, shared among 8 people

✓ Correct Answer: A — 3

Step 1: Total oranges = 4 bags × 6 per bag = 24 oranges. Step 2: Total people = herself + 7 friends = 8 people. Step 3: 24 ÷ 8 = 3 oranges each. Common error: Using 7 people (forgetting 'herself') → 24 ÷ 7 ≈ 3.4 (not a whole number, which signals a mistake). In sharing problems, always count ALL people including the person doing the sharing.

6 Growing pattern — Row 8

✓ Correct Answer: D — 15

The pattern adds 2 tiles each row: 1, 3, 5, 7, 9, 11, 13, 15. Row 8 = 15 tiles. Formula: Row n = (2 × n) − 1. Row 8 = (2 × 8) − 1 = 16 − 1 = 15. The trap is A (13), which is Row 7, not Row 8. Always count carefully which row you are calculating.

7 Net of a triangular prism

✓ Correct Answer: A

A triangular prism needs: 2 triangular faces + 3 rectangular faces = 5 faces total. Option A shows exactly this: 3 rectangles in a row with 1 triangle above and 1 triangle below the middle rectangle — this folds correctly into a triangular prism. Option B has 6 squares — this makes a cube. Option C and D are missing one rectangular face each — they would not close into a complete solid.

8 Running track — 5 laps in km

✓ Correct Answer: A — 2 km

Step 1: Total metres = 400 m × 5 = 2,000 m. Step 2: Convert to km. 1 km = 1,000 m. 2,000 m ÷ 1,000 = 2 km. Common errors: A (0.2 km) comes from dividing 200 by 1,000. C (20 km) comes from multiplying by 10 instead of dividing by 1,000. D (200 km) is an order-of-magnitude error.

9 Perimeter of L-shape

✓ Correct Answer: B — 16 cm

Trace all 6 sides of the L-shape: top = 4 cm, right side = 2 cm, horizontal step (going left) = 3 cm, step down = 2 cm, bottom of stem = 1 cm, left side = 4 cm. Total: 4 + 2 + 3 + 2 + 1 + 4 = 16 cm. Common error: A (14 cm) comes from forgetting one of the inner step sides. Always trace every side in order around the shape, keeping count carefully. The step inward has both a horizontal and a vertical component — students often count only one.

10 Compass — starting East, 3/4 turn anticlockwise

✓ Correct Answer: B — South

Trace each quarter-turn anticlockwise (ACW) from East: East → (1/4 ACW) → North → (1/4 ACW) → West → (1/4 ACW) → South. After three quarter-turns anticlockwise from East, the needle points South. Anticlockwise on a compass goes: E → N → W → S → E. A (North) would be only 1/4 turn. C (West) would be 2/4 (half) turn. Always trace the turns step by step rather than trying to calculate in one go.

11 Area after cutting 2×2 cm from 6×4 cm rectangle

✓ Correct Answer: D — 20 cm²

Step 1: Area of full rectangle = 6 × 4 = 24 cm². Step 2: Area of square cut out = 2 × 2 = 4 cm². Step 3: Remaining area = 24 − 4 = 20 cm². A (16) comes from subtracting 8 (a 2×4 strip) instead of 4. B (18) comes from subtracting 6 (the width) instead of 4. __TEMP__TWENTY_TWO__.

12 Stickers — find Bella's total (each ★ = 6)

✓ Correct Answer: C — 21

Step 1 — find known totals: Aiden = ★★★ = 18. Carlos = ★★ = 12. Ella = ★★★★ = 24. Step 2 — find known total: 18 + 12 + 24 = 54. Step 3 — find Bella + Dani: 90 − 54 = 36. Step 4 — use Bella = Dani + 6: Bella + Dani = 36, so (Dani + 6) + Dani = 36 → 2 × Dani = 30 → Dani = 15. Bella = 15 + 6 = 21. Check: 18 + 12 + 24 + 21 + 15 = 90 ✓. All five values are different ✓.

WHY OTHER OPTIONS ARE WRONG

- **A** 15 is Dani's total — a common error from finding Dani's amount but not adding 6 to get Bella's.
- **B** 18 is Aiden's total — a distractor that matches one of the given amounts.
- **C** 24 is Ella's total — another distractor matching a given amount.

💻 Digital Technologies — Answers

1 Which of the four items is software?

✓ Correct Answer: C — Word Processor

Software is a program or application that runs on a computer — you cannot touch or hold it. A word processor is a program (like Microsoft Word) that exists only as code running on the computer. Hardware refers to physical parts you can touch. A keyboard (A), printer (B) and headphones (D) are all hardware — physical devices you can hold and feel.

WHY THE OTHER OPTIONS ARE WRONG

- **A** A keyboard is hardware — it is a physical input device you can touch and hold.
- **B** A printer is hardware — it is a physical output device that produces paper copies.
- **C** Headphones are hardware — they are physical audio output devices.

2 What is the name of Maya's file?

✓ Correct Answer: A — Ocean Report.doc

The filename is always shown in the title bar at the very top of the window. The title bar shows "Ocean Report.doc — Word." The file is named Ocean Report.doc — this is the complete filename including the file extension (.doc tells you what type of file it is). B ('The Ocean') is the title inside the document. C ('Word') is the name of the program being used, not the file. D ('.doc') is only the file extension, not the full name.

3 What font size is Tom using?

✓ Correct Answer: C — 16

In a word processor toolbar, the font size is the number shown in the small box next to the font name. The size box — outlined in blue — shows '16'. A common mistake is choosing 'Arial' (the font name) or 'Bold' (a formatting style) — neither of these is a font size. Font sizes are always numbers.

WHY THE OTHER OPTIONS ARE WRONG

- **A** Arial is the font name — the typeface being used. It is not a font size.
- **B** 12 is not shown anywhere in this toolbar — a common distractor since 12 is a very common default size.
- **D** Bold is a formatting style (how the text looks) — it is not a font size.

4 Which slide is Kim editing?

✓ Correct Answer: B — Slide 2

In a presentation program, the slide currently being edited appears in the large main area on the right. The highlighted (blue-outlined) thumbnail in the slide panel shows slide 2 — and the main editing area displays the content of slide 2 (the Lions slide). The number next to the highlighted thumbnail in the panel also confirms it is slide 2.

5 How many emails have NOT been read?

✓ Correct Answer: B — 3

In an email inbox, unread emails are shown with a closed envelope icon (sealed) and bold text. Read emails have an open envelope icon and lighter text. Counting the closed envelopes: Row 1 (Mum) = unread. Row 2 (Tom) = read. Row 3 (Ms Chen) = unread. Row 4 (Dad) = read. Row 5 (Jess) = unread. Total unread = 3.

WHY THE OTHER OPTIONS ARE WRONG

- **A** 2 — this is the number of READ emails (Tom and Dad), not unread.
- **C** 4 — this would mean only one email was read, which is not correct.
- **D** 1 — a student who spotted only one unread indicator and stopped counting.

6 When Noah clicks button (A), he will...

✓ **Correct Answer: A — return to the previous page he visited**

Button (A) shows the back arrow (◄) — this is the Back button in every web browser. Clicking it takes you back to the page you visited before the current one. Button (B) is the forward arrow. Button (C) is the refresh symbol (↻), which reloads the current page. Button (D) is the bookmark star, which saves the page to your favourites.

WHY THE OTHER OPTIONS ARE WRONG

- **B** Reloading the current page is what button (C) ↻ does — the refresh button.
- **C** Moving forward is what button (B) ► does — the forward button.
- **D** Saving to bookmarks is what button (D) ★ does — the bookmarks/favourites button.

7 Which cell is currently active?

✓ **Correct Answer: C — C3**

The active cell is shown with a coloured border (orange) and its reference appears in the Name Box at the top left of the screen. The Name Box clearly shows 'C3', and the cell in column C, row 3 has the distinctive orange border. The formula bar also shows the contents of the active cell ('Sarah'). Column C is highlighted in dark blue in the column headers.

8 Which SUM formula should Raj type in cell B7?

✓ **Correct Answer: C — =SUM(B2:B6)**

Raj wants to add the values in cells B2 through B6 — the five activity rows (45 + 32 + 28 + 60 + 75 = 240). He types the formula IN cell B7, so B7 itself cannot be part of the range. Option A uses column A (wrong column). Option B starts at B1 which is a heading row (text, not a number). Option D includes B7 itself in the range, creating a circular reference error.

WHY THE OTHER OPTIONS ARE WRONG

- **A** =SUM(A2:A6) adds column A (activity names) — text cannot be summed, and this is the wrong column.
- **B** =SUM(B1:B6) starts at B1 which contains the heading text, not a number. Headings should not be included in a SUM range.
- **D** =SUM(B2:B7) includes B7 itself — the cell where the formula is entered. This creates a circular reference error.

9 **After four commands, which square does the robot land on?**

✓ **Correct Answer: C — Square C**

Trace each command one step at a time. Start: row 1, col 1. Command 1 — Move right: row 1, col 2. Command 2 — Move right: row 1, col 3. Command 3 — Move down: row 2, col 3. Command 4 — Move right: row 2, col 4 = Square C.

WHY THE OTHER OPTIONS ARE WRONG

- **A** Square A (row 1, col 3) — the position after only the first two commands. Commands 3 and 4 were not followed.
- **B** Square B (row 2, col 3) — the position after three commands. The final 'move right' was not followed.
- **D** Square D (row 3, col 4) — requires an extra 'move down' command that is not in the list.

10 **Which file should Maya open to listen to music?**

✓ **Correct Answer: B — Song.mp3**

File extensions tell you what type of file it is. .mp3 is an audio file format that stores music or sound recordings. .jpg (A) is an image/photo file. .doc (C) is a word processing document. .exe (D) is an executable program file. Always look at the part after the dot (the extension) to identify the file type.

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