

Science 3–4

End-of-band review

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End-of-band review — Science Levels 3 and 4

This review is a piece of class work from your workbook. It is a school instrument, not a VCAA exam — Science Levels 3 and 4 has no outside exam. There is no time to beat. Take as long as you need. If you want, your teacher will read any question out to you.

You do this review once, after Chapter 7. It looks back across everything you learned in Chapters 1 to 7. Your teacher uses your marks to report on what you have learned across the whole of Levels 3 and 4.

End-of-band review · Codes VC2S4I01–VC2S4I06, VC2S4U01–VC2S4U10, VC2S4H01–VC2S4H02

Total: 40 marks · Part A — Questions A1 to A15 · 15 marks · Part B — Questions B1 to B5 · 10 marks · Part C — Questions C1 to C9 · 15 marks

Each Part A question is worth 1 mark. Each Part B question is worth 2 marks. Part C marks are written with each question.

Every question in this review points to a part of the Levels 3 and 4 achievement standard. The review evidences all eighteen content descriptions of the band. The extracts, word for word:

Students pose questions to identify patterns and relationships, and make predictions based on observations. — VC2S4I01 (1A)

They plan investigations using planning scaffolds, identify key components of fair tests and describe how they conduct investigations safely. — VC2S4I02 (1B)

They use familiar classroom instruments and simple procedures to record observations and results, including formal measurements. — VC2S4I03 (1C)

They construct representations to organise data and information, and identify patterns and simple relationships. — VC2S4I04 (2A)

They compare their findings with those of others, assess the fairness of their investigations, propose further questions for investigation and draw conclusions. — VC2S4I05 (2B)

They communicate observations, findings and ideas for an identified purpose and audience, using scientific vocabulary and digital tools where appropriate. — VC2S4I06 (2C)

Students classify and compare the characteristics of living, once-living and non-living things. — VC2S4U01 (3A)

They compare the life cycles of different plants and animals, and describe similarities and differences between parents and offspring at different stages of growth. — VC2S4U02 (3B)

They identify the roles of organisms in a habitat, and construct food chains. — VC2S4U03 (3C)

They classify solids, liquids and gases based on observable properties, and describe how heating and cooling can cause a change of state. — VC2S4U04 (4A)

They relate the use and re-use of materials to the materials' properties. — VC2S4U05 (4B)

They explain how Earth's resources can be used in a variety of ways. — VC2S4U06 (5A)

They list sources of water on Earth, identify key processes in the water cycle, and describe how water can cycle through the environment. — VC2S4U07 (5B)

They distinguish between weather and climate and explain how human activity can impact climate, and how these impacts may be reduced. — VC2S4U08 (5C)

They identify different sources of heat energy and measure temperature changes that may occur when heat is transferred from one object to another. — VC2S4U09 (6A)

They identify forces acting on objects and describe the effects of these. — VC2S4U10 (6B)

Students explain the role of data in scientific inquiry. — VC2S4H01 (7A)

They provide examples to explain how needs have been met or problems have been solved through applying scientific knowledge, skills and data. — VC2S4H02 (7B)

The words in this review are words you learned in Chapters 1 to 7. If you need them, the word lists are at the end of every subtopic.

In this review you will:

- sort a pattern question and a relationship question (A1)
- say how many things change at once in a fair test (A2)
- choose the right unit to measure a classroom (A3)
- name the scale of a column graph (A4)
- name our science vocabulary (A5)
- name what good scientists write down next (A6)
- say which characteristic of living things a growing seed shows (A7)
- name the role of fungi (A8)
- use its properties to identify a gas (A9)
- name the building blocks of rocks (A10)
- name the water that flows across the land (A11)
- give one difference between weather and climate (A12)
- name the two things a force can change (A13)
- finish the sentence about explanations (A14)
- say what a tyre's tread does on a wet road (A15)
- name the animals that grow into frogs, and give one difference (B1)
- name the change of state of soft chocolate, and explain it (B2)
- choose a bag for wet towels, and name the property (B3)
- say which spoon gets hot first, and explain it (B4)
- name the force that moves a paper clip with no touch (B5)
- read the Hamilton table for the wettest and the driest month (C1)
- read July's rainfall from the table (C2)
- work out how much more rain the wettest month gets (C3)
- describe the pattern, and name the season (C4)
- judge Mia's conclusion, and give two reasons (C5)
- judge Noah's conclusion, and back it with the data (C6)
- explain the farmer's dam with the table (C7)
- say why Tom's sentence is a prediction (C8)
- write one further question about rain (C9)

Part A — 15 marks

Fifteen questions, each worth 1 mark. A question gets its mark, or no mark.

A1. (1 mark · VC2S4I01) Sort these two questions into *pattern question* and *relationship question*.

1. Which month brings the most rainy days to our school?
2. Does a ball roll further on tiles than on carpet?

A2. (1 mark · VC2S4I02) Finish the sentence: *In a fair test, we change only _____ thing at once.*

A3. (1 mark · VC2S4I03) Your class measures the length of the classroom. Which unit is the best one for the job: **cm**, **m**, **mL** or **°C**?

- A4.** (1 mark · VC2S4I04) On a column graph, the numbers along the side that let you read how tall each column is are called the graph's _____.
- A5.** (1 mark · VC2S4I06) Words like *data*, *fair* and *pattern* are science words. Each one has an exact meaning. All of these words together are called our science _____.
- A6.** (1 mark · VC2S4I05) An investigation is finished. Good scientists always think of one more thing to find out next. They write down a new _____.
- A7.** (1 mark · VC2S4U01) You plant a seed in a pot. Weeks later it has grown into a small plant. Name the characteristic of living things this shows.
- A8.** (1 mark · VC2S4U03) Fungi break down dead leaves and dead animals. Name their role: *producer*, *consumer* or *decomposer*.
- A9.** (1 mark · VC2S4U04) A substance spreads out to fill all of its container, and you cannot hold it in your hand. Is it a solid, a liquid or a gas?
- A10.** (1 mark · VC2S4U06) Rocks are made of tiny building blocks. Name what those building blocks are called.
- A11.** (1 mark · VC2S4U07) After rain, some water flows across the land into creeks and rivers. Name this moving water.
- A12.** (1 mark · VC2S4U08) Give **one** difference between *weather* and *climate*.
- A13.** (1 mark · VC2S4U10) A force can change an object's motion. Name the **two** things about motion that a force can change.
- A14.** (1 mark · VC2S4H01) Finish the sentence: *A good explanation must fit the* _____.
- A15.** (1 mark · VC2S4H02) A car tyre has a pattern of grooves called the **tread**. On a wet road, what do the grooves let the tyre do?

Part B — 10 marks

Five questions, each worth 2 marks. Each question is part-marked, and the marks for each part are written with the question. Write your answers in your own words.

- B1.** (2 marks · VC2S4U02) Kai looks into the school dam from the bank, with his teacher. (Never go into dam water — look from the edge, with an adult.) He sees small animals with tails and no legs, living in the water. Weeks later, he sees frogs in the same place.
- (a) Name the animals Kai saw first. (1 mark)
 - (b) The animals Kai saw first do not look like frogs at all. Give one difference between one of those animals and an adult frog. (1 mark)
- B2.** (2 marks · VC2S4U04) Zoe leaves a block of chocolate in her bag, beside the sunny window, on a hot day. When she opens the bag, the chocolate is soft and has lost its shape.
- (a) Name the change of state that has started to happen to the chocolate. (1 mark)
 - (b) Explain what the heat did to the chocolate. (1 mark)
- B3.** (2 marks · VC2S4U05) After swimming lessons, students need a bag to carry their wet towels home. The bag can be made of cloth or of plastic.
- (a) Which material is the better one for the bag? (1 mark)
 - (b) Say why, using a property of the material. (1 mark)
- B4.** (2 marks · VC2S4U09) A bowl of soup is too hot to eat. One spoon is metal, and one spoon is wood. Both spoons are left standing in the soup. (Take care around hot soup — it can splash.)

- (a) Which spoon's handle gets hot first — the metal one or the wooden one? (1 mark)
- (b) Explain why that spoon gets hot first. (1 mark)

B5. (2 marks · VC2S4U10) Priya puts a paper clip on top of her desk. She holds something under the desk, below the paper clip. The paper clip moves across the desk, and nothing is touching it.

- (a) Name the object Priya holds, and the force that does the work. (1 mark)
- (b) How does this force act — by direct contact, or at a distance? Say how you know. (1 mark)

Part C — 15 marks

Nine questions, all about one real set of data. The marks for each question are written with the question.

The data for Part C

Hamilton is a town in western Victoria. The table below holds real data. It shows Hamilton's **mean** rainfall in each month. Each number is worked out from many years of records at Hamilton Airport, from 1983 to 2022, and rounded to the nearest mm. *Mean* means the usual amount: some months are wetter and some are drier, and the mean is the in-between number worked out from all of those years.

Remember: in Victoria, winter is June, July and August, and summer is December, January and February.

Month	Mean rainfall (mm)
January	33
February	23
March	34
April	40
May	54
June	66
July	71
August	78
September	67
October	54
November	48
December	44

Source: Bureau of Meteorology climate averages for Hamilton Airport (monthly rainfall; records 1983–2022; rounded to the nearest mm), as shown in Wikipedia, “Hamilton, Victoria”, en.wikipedia.org — retrieved 2026-08-22.

Some questions ask whether a **conclusion** is **fair**. A conclusion is the answer you give from your findings. A conclusion is fair when it fits what the data really shows — and does not say more than the data can say.

C1. (1 mark · VC2S4I04) Look at the table. Name the wettest month and the driest month.

C2. (1 mark · VC2S4I04) How much mean rainfall does Hamilton get in July? Give the number **and** its unit.

C3. (2 marks · VC2S4I03) How much more mean rainfall does Hamilton get in its wettest month than in its driest month? Show your working, and give the answer with its unit.

C4. (2 marks · VC2S4I04)

- (a) Describe the pattern in the table: what does the rainfall do from February to August, and what does it do from August to December? (1 mark)
- (b) In which season does Hamilton get most of its rain? (1 mark)

C5. (3 marks · VC2S4I05) Mia reads the table and says:

“February is the driest month. Our school sports carnival is in February, so no rain at all will fall on that day.”

Is Mia’s conclusion fair? Give your verdict, and give **two** reasons for your verdict.

C6. (2 marks · VC2S4I05) Noah reads the table and says:

“Hamilton usually gets more rain in winter than in summer.”

(a) Is Noah’s conclusion fair? (1 mark)

(b) Back your answer with the data in the table. (1 mark)

C7. (2 marks · VC2S4H01) A farmer near Hamilton says her dam is fullest in spring, from September to November. Use the table to explain why.

C8. (1 mark · VC2S4I01) Tom looks at the table and says, “I predict Hamilton will get more rain in June than in January.” Why is Tom’s sentence a **prediction** and not a **guess**? Use the table in your answer.

C9. (1 mark · VC2S4I05) Write one further question about rain that you could investigate.

Mark record

Question	Code	Worth	Given
A1 — sort pattern and relationship questions	VC2S4I01	1	
A2 — how many things change in a fair test	VC2S4I02	1	
A3 — the unit for a classroom’s length	VC2S4I03	1	
A4 — name the graph’s scale	VC2S4I04	1	
A5 — name our science vocabulary	VC2S4I06	1	
A6 — the further question	VC2S4I05	1	
A7 — the characteristic a growing seed shows	VC2S4U01	1	
A8 — the role of fungi	VC2S4U03	1	
A9 — identify a gas by its properties	VC2S4U04	1	
A10 — the building blocks of rocks	VC2S4U06	1	
A11 — name the water that flows across the land	VC2S4U07	1	
A12 — one difference: weather and climate	VC2S4U08	1	

Question	Code	Worth	Given
A13 — the two things a force can change	VC2S4U10	1	
A14 — an explanation must fit the data	VC2S4H01	1	
A15 — what a tyre's tread does	VC2S4H02	1	
B1 — the animals that grow into frogs	VC2S4U02	2	
B2 — Zoe's chocolate, and what heat did	VC2S4U04	2	
B3 — the bag for wet towels	VC2S4U05	2	
B4 — two spoons in hot soup	VC2S4U09	2	
B5 — the paper clip that moves with no touch	VC2S4U10	2	
C1 — the wettest and the driest month	VC2S4I04	1	
C2 — read July from the table	VC2S4I04	1	
C3 — how much more rain in the wettest month	VC2S4I03	2	
C4 — the pattern, and the season	VC2S4I04	2	
C5 — Mia's conclusion: fair or not	VC2S4I05	3	
C6 — Noah's conclusion: fair or not	VC2S4I05	2	
C7 — the farmer's dam in spring	VC2S4H01	2	
C8 — a prediction, not a guess	VC2S4I01	1	
C9 — one further question about rain	VC2S4I05	1	
Total		40	

Marking guide

Teacher guidance — End-of-band review · 40 marks. This guide is written so a teacher without a science background can mark the review. Every acceptable answer is written out below, and every mark is allocated per response.

About this instrument

- The review is a **school instrument**, not a VCAA exam. Science Levels 3 and 4 has no external examination and no external assessment.
- Completion is **untimed** — a student may take as long as they need, and the review may be split across lessons.
- **Reading support** is permitted: the teacher may read any question aloud on request. Reading is not being assessed. Oral answers count the same as written answers.
- The review runs once, after Chapter 7. It is a **teaching instrument for reporting** against the Levels 3 and 4 achievement standard — not a mock examination, and it must not be retitled, reformatted or run under exam conditions as one (plan decision D9).
- A mark is a record that the evidence was seen. Marks are for reporting against the achievement standard, not for ranking students.

The extracts evidenced

Each question is tagged with the code it traces to. All eighteen extracts from the Levels 3 and 4 achievement standard, quoted at the head of the review:

- VC2S4I01 (1A): “Students pose questions to identify patterns and relationships, and make predictions based on observations.”
- VC2S4I02 (1B): “They plan investigations using planning scaffolds, identify key components of fair tests and describe how they conduct investigations safely.”
- VC2S4I03 (1C): “They use familiar classroom instruments and simple procedures to record observations and results, including formal measurements.”
- VC2S4I04 (2A): “They construct representations to organise data and information, and identify patterns and simple relationships.”
- VC2S4I05 (2B): “They compare their findings with those of others, assess the fairness of their investigations, propose further questions for investigation and draw conclusions.”
- VC2S4I06 (2C): “They communicate observations, findings and ideas for an identified purpose and audience, using scientific vocabulary and digital tools where appropriate.”
- VC2S4U01 (3A): “Students classify and compare the characteristics of living, once-living and non-living things.”
- VC2S4U02 (3B): “They compare the life cycles of different plants and animals, and describe similarities and differences between parents and offspring at different stages of growth.”
- VC2S4U03 (3C): “They identify the roles of organisms in a habitat, and construct food chains.”
- VC2S4U04 (4A): “They classify solids, liquids and gases based on observable properties, and describe how heating and cooling can cause a change of state.”
- VC2S4U05 (4B): “They relate the use and re-use of materials to the materials’ properties.”
- VC2S4U06 (5A): “They explain how Earth’s resources can be used in a variety of ways.”
- VC2S4U07 (5B): “They list sources of water on Earth, identify key processes in the water cycle, and describe how water can cycle through the environment.”
- VC2S4U08 (5C): “They distinguish between weather and climate and explain how human activity can impact climate, and how these impacts may be reduced.”
- VC2S4U09 (6A): “They identify different sources of heat energy and measure temperature changes that may occur when heat is transferred from one object to another.”
- VC2S4U10 (6B): “They identify forces acting on objects and describe the effects of these.”

- VC2S4H01 (7A): “Students explain the role of data in scientific inquiry.”
- VC2S4H02 (7B): “They provide examples to explain how needs have been met or problems have been solved through applying scientific knowledge, skills and data.”

Marks at a glance

Part	Questions	Code	Marks
Part A	A1	VC2S4I01	1
Part A	A2	VC2S4I02	1
Part A	A3	VC2S4I03	1
Part A	A4	VC2S4I04	1
Part A	A5	VC2S4I06	1
Part A	A6	VC2S4I05	1
Part A	A7	VC2S4U01	1
Part A	A8	VC2S4U03	1
Part A	A9	VC2S4U04	1
Part A	A10	VC2S4U06	1
Part A	A11	VC2S4U07	1
Part A	A12	VC2S4U08	1
Part A	A13	VC2S4U10	1
Part A	A14	VC2S4H01	1
Part A	A15	VC2S4H02	1
Part B	B1	VC2S4U02	2
Part B	B2	VC2S4U04	2
Part B	B3	VC2S4U05	2
Part B	B4	VC2S4U09	2
Part B	B5	VC2S4U10	2
Part C	C1, C2, C4	VC2S4I04	4
Part C	C3	VC2S4I03	2
Part C	C5, C6, C9	VC2S4I05	6
Part C	C7	VC2S4H01	2
Part C	C8	VC2S4I01	1
Total			40

General marking rules

- Accept answers in the student’s own words. The acceptable answers below are wide by design — if the response shows the understanding, give the mark.
- Spelling does not lose marks.
- Part A items are marked all-or-nothing: each gets its 1 mark, or 0.
- Part B and Part C items are part-marked exactly as shown with each question.
- If an answer is right but the reason is unclear, ask the student to say more — once. If the follow-up shows the understanding, give the mark. If it shows a guess with nothing behind it, record 0 and move on without comment.

Running the review

Give the review once, after Chapter 7. Parts A and B fit one lesson; Part C fits a second lesson, and the two lessons may come on different days. The Hamilton table may be printed large or projected, and students who find writing hard may answer orally. There is no time limit, and no conditions of an exam apply.

About the Hamilton data

The numbers in the Part C table are real: the Bureau of Meteorology's climate averages for Hamilton Airport, monthly rainfall, records 1983–2022, rounded to the nearest mm. The source line is printed with the table. Because the numbers are rounded, no annual total is stated — students work only with the monthly figures shown.

Part A — answers

A1 · VC2S4I01 · 1 mark

- **Accept:** question 1 in *pattern question*; question 2 in *relationship question*.
- **Marks:** 1 for both sorted correctly; 0 otherwise.
- **Evidences:** “pose questions to identify patterns and relationships” — the sort 1A teaches: a pattern question looks for how things go (which month brings the most rainy days); a relationship question asks whether one thing changes when another thing changes (the surface changes, and the distance the ball rolls changes with it).

A2 · VC2S4I02 · 1 mark

- **Accept:** **one**. Also accept *one thing*, *1*, *a single thing*.
- **Marks:** 1 for one; 0 for any other number.
- **Evidences:** “identify key components of fair tests” — the fair-test rule taught in 1B and 2B: one thing changes, everything else stays the same.

A3 · VC2S4I03 · 1 mark

- **Accept:** **m**. Also accept *metres* or *metre*.
- **Marks:** 1 for m/metres; 0 otherwise. (cm is a length unit but not the best one for a whole classroom; mL measures how much a container holds; °C measures temperature.)
- **Evidences:** “use familiar classroom instruments ... including formal measurements” — choosing the unit that suits the job, the 1C skill.

A4 · VC2S4I04 · 1 mark

- **Accept:** **scale**. Also accept *the scale* or *the graph's scale*.
- **Marks:** 1 for scale; 0 otherwise.
- **Evidences:** “construct representations to organise data” — 2A teaches that the numbers along the side of a column graph are its scale, and the scale is what lets you read the columns.

A5 · VC2S4I06 · 1 mark

- **Accept:** **vocabulary**. Also accept *science vocabulary* or *scientific vocabulary*.
- **Marks:** 1 for vocabulary; 0 otherwise.
- **Evidences:** “communicate observations, findings and ideas ... using scientific vocabulary” — the words with exact meanings that the book teaches are our science vocabulary.

A6 · VC2S4I05 · 1 mark

- **Accept:** **question**. Also accept *a new question*, *a further question*, *a question to investigate*.
- **Marks:** 1 for a new/further question; 0 otherwise.
- **Evidences:** “propose further questions for investigation” — when an investigation ends, the next step 2B teaches is a further question.

A7 · VC2S4U01 · 1 mark

- **Accept:** growing — accept *living things grow, growth, they grow and change*.
- **Marks:** 1 for growth; 0 otherwise.
- **Evidences:** “classify and compare the characteristics of living, once-living and non-living things” — growing is one of the characteristics of living things that 3A teaches; a seed growing into a plant shows it.

A8 · VC2S4U03 · 1 mark

- **Accept:** **decomposer**. Also accept *decomposers*.
- **Marks:** 1 for decomposer; 0 for producer or consumer.
- **Evidences:** “identify the roles of organisms in a habitat” — 3C teaches the three roles, and the role that breaks down dead things is the decomposer.

A9 · VC2S4U04 · 1 mark

- **Accept:** a gas.
- **Marks:** 1 for gas; 0 for solid or liquid.
- **Evidences:** “classify solids, liquids and gases based on observable properties” — a liquid takes the shape of the bottom of its container; a gas spreads out to fill all of the container, and cannot be held in the hand.

A10 · VC2S4U06 · 1 mark

- **Accept:** **minerals**. Also accept *mineral*.
- **Marks:** 1 for minerals; 0 otherwise.
- **Evidences:** “explain how Earth’s resources can be used in a variety of ways” — 5A teaches that rocks are made of minerals, the building blocks of rock.

A11 · VC2S4U07 · 1 mark

- **Accept:** **run-off**. Also accept *runoff* or *run off*.
- **Marks:** 1 for run-off; 0 otherwise.
- **Evidences:** “identify key processes in the water cycle” — 5B teaches the water cycle’s processes; the water that flows across the land into creeks and rivers is run-off.

A12 · VC2S4U08 · 1 mark

- **Accept:** any wording that carries both halves of the difference: **weather** is what the air is like on one day, or right now; **climate** is what the weather is usually like over a long time (about 30 years of records). Example: *weather is today; climate is the usual weather over about 30 years*.
- **Marks:** 1 for a difference that carries both halves; 0 for a response that defines only one of the words.
- **Evidences:** “distinguish between weather and climate” — the difference itself, the heart of 5C.

A13 · VC2S4U10 · 1 mark

- **Accept:** **speed** and **direction** — both. Accept *how fast it goes and which way it goes*.
- **Marks:** 1 for both; 0 for one only.
- **Evidences:** “identify forces acting on objects and describe the effects of these” — a force changes an object’s motion: its speed (faster or slower), its direction, or both.

A14 · VC2S4H01 · 1 mark

- **Accept:** **data**. Also accept *the data*.
- **Marks:** 1 for data; 0 otherwise.
- **Evidences:** “explain the role of data in scientific inquiry” — the rule 7A teaches and never stops using: an explanation must fit the data.

A15 · VC2S4H02 · 1 mark

- **Accept:** grip the road. Accept *grip, hold the road, keep touching the road, stop the car sliding (skating) on the water*. Accept any wording that says the grooves let the water escape so the tyre still grips.
- **Marks:** 1 for grip (with or without the water-escape reason); 0 otherwise.
- **Evidences:** “needs have been met or problems have been solved through applying scientific knowledge” — 7B’s Case 5: road safety is applied friction, and the tread’s grooves let the water escape so the rubber still touches the road.

Part B — answers

B1 · VC2S4U02 · 2 marks

- (a) — 1 mark. Accept: **tadpoles**. Also accept *tadpole*, or *frog tadpoles*.
- (b) — 1 mark. Accept any one true difference between a tadpole and an adult frog: *no legs* (the frog has legs); *has a tail* (the frog has no tail); *lives only in water* (the frog can live on land); *is much smaller*. The difference must be a real one between the young stage and the adult.
- **Evidences:** “compare the life cycles of different plants and animals, and describe similarities and differences between parents and offspring at different stages of growth” — the frog’s life cycle from 3B: the young (tadpoles) look nothing like the adult, and grow into frogs through stages.

B2 · VC2S4U04 · 2 marks

- (a) — 1 mark. Accept: **melting**. Also accept *it is melting* or *it has started to melt*.
- (b) — 1 mark. Accept any wording that carries both ideas: heat moved **into** the chocolate, and adding heat changes a solid into a liquid. Example: *the heat from the sunny window went into the chocolate, and adding heat melts a solid into a liquid*. “It got hot” with no heat-move idea gets
- **Evidences:** “classify solids, liquids and gases based on observable properties, and describe how heating and cooling can cause a change of state” — the change of state 4A teaches, applied to a new case: adding heat takes a solid to a liquid.

B3 · VC2S4U05 · 2 marks

- (a) — 1 mark. Accept: **plastic**.
- (b) — 1 mark. Accept any property of plastic that suits the job: *plastic is waterproof; plastic does not let water through; plastic does not soak up water*, so the wet towels can be carried without the bag going soggy and leaking. If the student chose cloth in (a), award (b) only for a property that would genuinely suit carrying wet towels — “cloth soaks up water” describes cloth but does not suit the job, so it gets 0.
- **Evidences:** “relate the use and re-use of materials to the materials’ properties” — 4B’s rule, applied to a new choice: the job picks the property, and the property picks the material.

B4 · VC2S4U09 · 2 marks

- (a) — 1 mark. Accept: **the metal spoon**.
- (b) — 1 mark. Accept any wording that says metal lets heat travel through it well, and wood does not. Example: *heat moves along the metal spoon quickly, but wood does not let heat through well*. Accept *metal is a conductor and wood is an insulator* if the student offers those words. The response must compare the two materials — “metal is hot” with no heat-through idea gets 0.
- **Evidences:** “identify different sources of heat energy and measure temperature changes that may occur when heat is transferred from one object to another” — heat transferred from the hot soup travels along the metal spoon to the handle; 6A’s rule is that heat moves from the warm thing to the cool thing, and some materials let it through well.

B5 · VC2S4U10 · 2 marks

- (a) — 1 mark. Accept: the object is **a magnet**, and the force is **magnetic force** (accept *magnetism*). If the student names only the magnet, ask once which force the magnet uses; if the answer is magnetic force, give the mark.

- **(b) — 1 mark.** Accept: **at a distance**, with the reason — nothing is touching the paper clip; there is a gap (the desk top) between the magnet and the paper clip, and the pull still works. “At a distance” with no reason gets 0.
- **Evidences:** “identify forces acting on objects and describe the effects of these” — magnetic force from 6B, acting at a distance: the one-question test is *are the two things touching when the force works?* Here they are not.

Part C — answers

C1 · VC2S4I04 · 1 mark

- **Accept:** the wettest month is **August**; the driest month is **February**. Both must be named.
- **Marks:** 1 for both; 0 for one only or neither.
- **Evidences:** “construct representations to organise data and information, and identify patterns and simple relationships” — reading the highest and lowest values straight from the table.

C2 · VC2S4I04 · 1 mark

- **Accept:** **71 mm**. The number and the unit together.
- **Marks:** 1 for 71 with its unit; 0 for 71 with no unit.
- **Evidences:** “construct representations to organise data and information” — reading one value from the table, and keeping the unit with the number, the 1C rule carried into 2A.

C3 · VC2S4I03 · 2 marks

- **Accept:** the working $78 - 23 = 55$ and the answer **55 mm**. The wettest month is August (78 mm) and the driest is February (23 mm).
- **Marks:** 1 mark for the number **55** (from subtracting 78 and 23); 1 mark for the unit **mm** written with the answer. If the working shows $78 - 23$ but the arithmetic slips (for example 54), the number mark is 0, and the unit mark still applies if mm is written.
- **Evidences:** “use familiar classroom instruments and simple procedures to record observations and results, including formal measurements” — the subtraction is worked out on whole numbers, and the answer keeps its unit.

C4 · VC2S4I04 · 2 marks

- **(a) — 1 mark.** Accept any wording that says the rainfall **rises from February to August, then falls from August to December**. Also accept *it goes up, then down, it is lowest at the start of the year, highest in the middle, and lower again at the end*. A response that names only one month without the rise-then-fall shape gets 0.
- **(b) — 1 mark.** Accept: **winter**. Accept *in winter*, or *June, July and August*.
- **Evidences:** “identify patterns and simple relationships” — the shape of the data across the year is the pattern, and the wettest months sit in Victoria’s winter.

C5 · VC2S4I05 · 3 marks

- **Verdict — 1 mark.** Accept: **not fair** (accept *no*, *her conclusion is not fair*).
- **Reason 1 — 1 mark.** Accept any wording that says the driest month still gets rain: *February still gets about 23 mm of rain; driest does not mean no rain at all*.
- **Reason 2 — 1 mark.** Accept any wording that says the table shows what **usually** happens over many years, and cannot say what will happen on one particular day: *the table is the mean over about 40 years — it tells the usual month, not one day; what happens on the carnival day is weather, and the table shows climate*.
- Award the two reason marks **only if the verdict is not fair**. A fair verdict with reasons gets 1 mark at most (the verdict mark is 0).

- **Evidences:** “compare their findings with those of others, assess the fairness of their investigations, propose further questions for investigation and draw conclusions” — assessing whether a conclusion says more than the data can say: driest does not mean dry, and means over many years do not predict one day.

C6 · VC2S4I05 · 2 marks

- **(a) — 1 mark.** Accept: **fair** (accept *yes, his conclusion is fair*).
- **(b) — 1 mark.** Accept any backing from the table: *all three winter months (66, 71 and 78 mm) are higher than all three summer months (44, 33 and 23 mm)*; or the winter total $66 + 71 + 78 = 215$ mm against the summer total $44 + 33 + 23 = 100$ mm. “Fair” with no backing from the data gets 0 for (b).
- **Evidences:** “assess the fairness of their investigations ... and draw conclusions” — a conclusion that stays inside the data is a fair one, and the backing is the data itself.

C7 · VC2S4H01 · 2 marks

- **The data — 1 mark.** Accept any reference to the wet winter months in the table: *June, July and August are the wettest months of the year; August is the wettest, at 78 mm; the rain is heaviest just before spring*.
- **The link — 1 mark.** Accept any wording that connects the winter rain to the dam filling: *the winter rain runs off the land and flows into the dam; after all that winter rain, the dam has filled up by spring*. Both ideas must appear for the two marks; the data with no filling link gets 1.
- **Evidences:** “explain the role of data in scientific inquiry” — the 7A move, observation → data → explanation, applied to a new case: the rainfall data explains why the dam is fullest in spring.

C8 · VC2S4I01 · 1 mark

- **Accept:** any wording that says Tom’s sentence stands on the data in the table: *the table shows June usually gets more rain (66 mm) than January (33 mm), so his prediction is based on the data; a prediction is based on something observed or recorded, and Tom can point to the table — a guess cannot*.
- **Marks:** 1 for standing on the table’s data; 0 for “because he thinks so” or any answer with no base in the data.
- **Evidences:** “make predictions based on observations” — the 1A rule, applied to the table: a prediction stands on earlier observations (here, the recorded data), and a guess does not.

C9 · VC2S4I05 · 1 mark

- **Accept:** any question about rain that could be investigated by observing or measuring. Acceptable examples include: *Does Hamilton get more rain in autumn than in spring?; Do we get more rainy days in June than in December?; Where does the rain go after it falls on our schoolyard?*
- **Marks:** 1 for an investigable question; 0 for a question that cannot be investigated (for example *Which month is the best?* or *Do you like rain?*).
- **Evidences:** “propose further questions for investigation” — the test from 1A: *can we find the answer out by observing or testing?*

Where each question traces in the curriculum

Every question traces to the achievement-standard extract of one of the eighteen content descriptions of Levels 3 and 4. The review evidences all eighteen; Part C is where the inquiry skills of Chapters 1 and 2, and the data move of Chapter 7, are assessed together on one real set of data. The extracts for each code are quoted word for word above, under “The extracts evidenced”.

Question	Marks	Subtopic	Owens
A1	1	1A	VC2S4I01
A2	1	1B	VC2S4I02
A3	1	1C	VC2S4I03
A4	1	2A	VC2S4I04
A5	1	2C	VC2S4I06
A6	1	2B	VC2S4I05

Question	Marks	Subtopic	Owens
A7	1	3A	VC2S4U01
A8	1	3C	VC2S4U03
A9	1	4A	VC2S4U04
A10	1	5A	VC2S4U06
A11	1	5B	VC2S4U07
A12	1	5C	VC2S4U08
A13	1	6B	VC2S4U10
A14	1	7A	VC2S4H01
A15	1	7B	VC2S4H02
B1	2	3B	VC2S4U02
B2	2	4A	VC2S4U04
B3	2	4B	VC2S4U05
B4	2	6A	VC2S4U09
B5	2	6B	VC2S4U10
C1	1	2A	VC2S4I04
C2	1	2A	VC2S4I04
C3	2	1C	VC2S4I03
C4	2	2A	VC2S4I04
C5	3	2B	VC2S4I05
C6	2	2B	VC2S4I05
C7	2	7A	VC2S4H01
C8	1	1A	VC2S4I01
C9	1	2B	VC2S4I05
Total	40		

Total

Part A: 15 marks (15×1). Part B: 10 marks (5×2). Part C: 15 marks ($1 + 1 + 2 + 2 + 3 + 2 + 2 + 1 + 1$). **Total: 40 marks.**