Mathematics Level 2

Practical tasks

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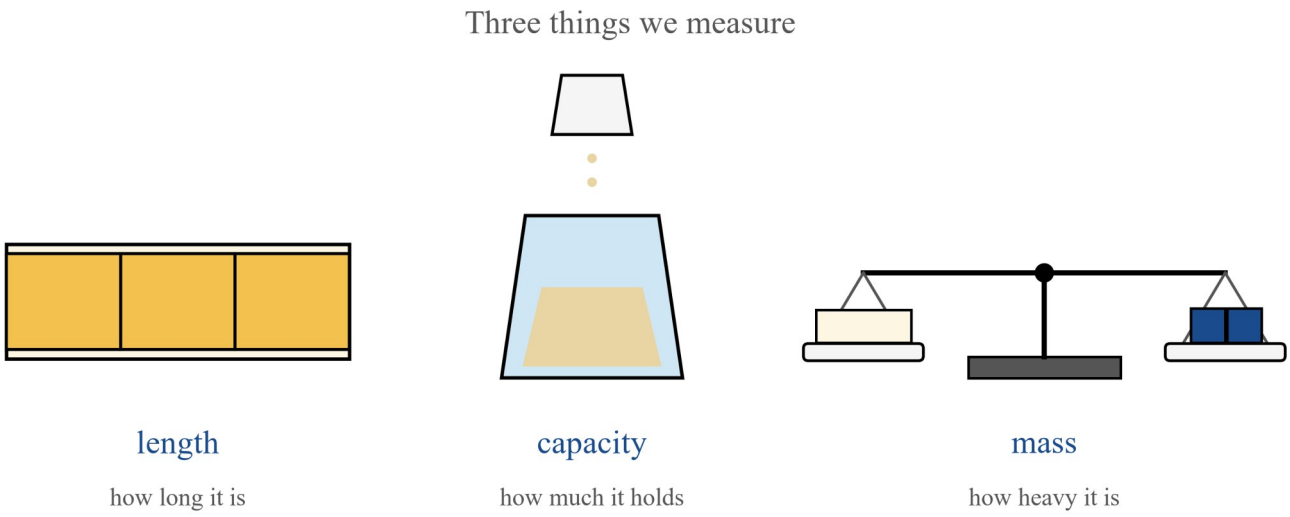
Contents

Section	Page
Task P1 — Measuring with uniform informal units	2
Task P2 — Turn and pathway	8
Task P3 — Class data investigation	13

Task P1 — Measuring with uniform informal units

measure and compare objects based on length, capacity and mass using appropriate uniform informal units and smaller units for accuracy when necessary — VC2M2M01

In this task, you measure real things at four stations. You choose a smaller unit when you need to get very close.



Three ways to measure. Blocks along a mat show length. A cup fills a bucket with sand to show capacity. A balance shows mass.

This task is worth 10 marks. It is not a test. Take your time. Your teacher may read any part to you.

For the teacher — how this task runs

- This is a classroom task, not an exam. It is untimed. It can run in one lesson, or one station at a time.
- All materials are supplied — the list is below.
- No calculators (D27).
- Any item may be read aloud.
- Mark with the marking guide at the end of this file.

Words we use

- **Length** is how long something is.
- **Capacity** is how much a container can hold.
- **Mass** is how heavy something is. We use balance scales to find mass.
- A **unit** is one thing we use to measure with. One cube is a unit. One spoon of sand is a unit.
- **Uniform** means the same each time. Uniform units are all the same size.

Things you need (teacher)

- **Station A — length:** connecting cubes, all the same size (about 20); a Sherrin football, or any football of the same size.
- **Station B — capacity:** dry sand on a tray; one spoon, or a set of spoons that are all the same size; a cup; a bottle; a tub. The bottle and the tub are not the same size.
- **Station C — mass:** balance scales; same-size cubes or counters (about 20); a book; a pencil case.
- **Station D — a smaller unit:** a book; big blocks (4 or 5); connecting cubes.
- Paper and pencils for recording.

Safety

For students:

- Sand stays on the tray. Do not throw sand, and do not put sand near your face.
- Tell your teacher if sand spills. Spilt sand is slippery.
- Carry the scales with two hands. Put things on the pans gently. Do not drop them.
- Walk, do not run, between stations.
- Wash your hands after the sand station.

For the teacher:

- Use dry sand only. Sweep up spills at once — spilt sand is slippery underfoot.
- Check that the scales sit flat and steady before use, and supervise carrying.

Part A — Length (3 marks)

A Sherrin is a football. It is the ball used in Australian rules football.

Source: Wikipedia, “Sherrin”, retrieved 2026-08-23.

a. Measure the football with connecting cubes. (1 mark)

Put the cubes in a line along the football. Start at one end. The cubes must touch, with no gaps.

b. Count the cubes. (1 mark)

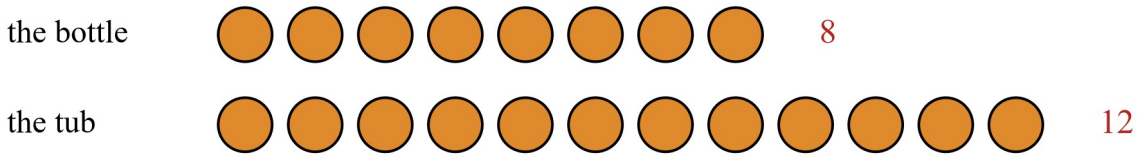
The football is ▢ cubes long.

c. Why must all the cubes be the same size? (1 mark)

▢

Part B — Capacity (3 marks)

Which holds more, the bottle or the tub? Use sand and one spoon.



Two rows of counters. The bottle holds 8 spoons of sand. The tub holds 12 spoons of sand.

a. Fill each container with sand. Use the same spoon each time. Count the spoons for each container. (1 mark)

The bottle holds ▢ spoons of sand.

The tub holds ▢ spoons of sand.

b. Which holds more? How much more? Write the number sentence. (1 mark)

The ▢ holds more. It holds ▢ spoons more.

▢ − ▢ = ▢

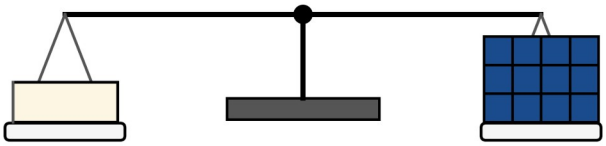
c. Why do you use the same spoon each time? (1 mark)

▢

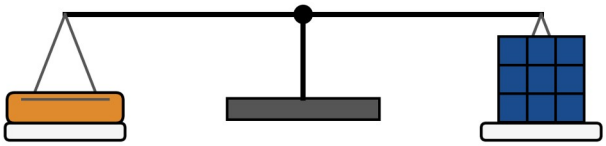
Part C — Mass (2 marks)

Which has more mass, the book or the pencil case? Use the balance scales and same-size cubes.

The two sides are level.



The mass of the book is 12 cubes.



The mass of the pencil case is 9 cubes.

Two balance scales, both level. The book has the same mass as 12 cubes. The pencil case has the same mass as 9 cubes.

a. Put the book on one side of the scales. Add cubes to the other side until the two sides are level. Count the cubes. Do the same with the pencil case. (1 mark)

The book has the same mass as ▢ cubes.

The pencil case has the same mass as ▢ cubes.

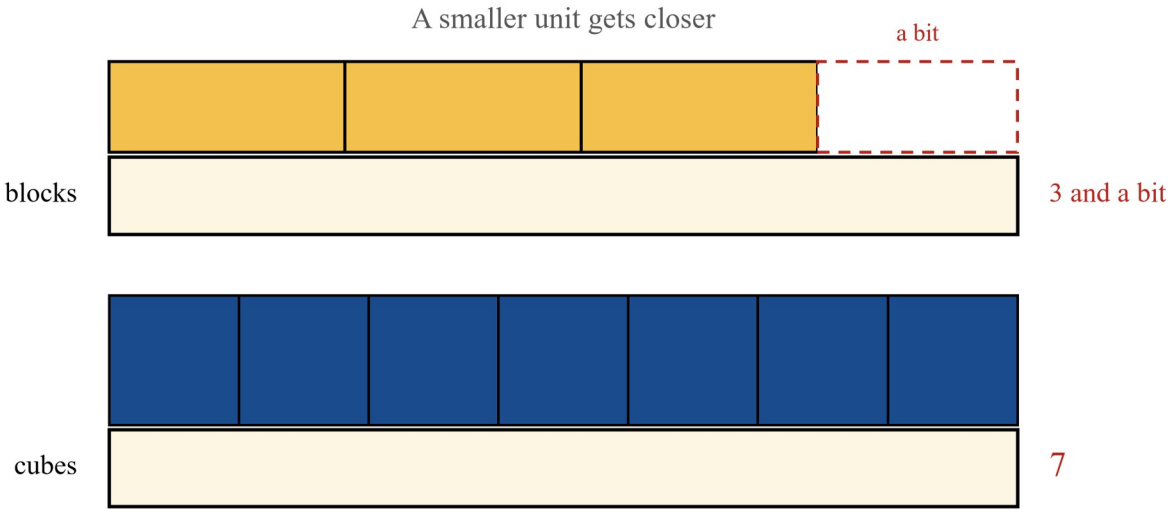
b. Which has more mass? How much more? Write the number sentence. (1 mark)

The ▢ has more mass. It is ▢ cubes heavier.

▢ − ▢ = ▢

Part D — Choosing a smaller unit (2 marks)

First, measure the book with big blocks. Then measure it with cubes.



The same book two ways: 3 blocks and a bit, and 7 cubes.

a. Measure the book two ways. (1 mark)

The book is ▢ blocks and a bit long.

The blocks are too big to show the little bit. Now use cubes.

The book is ▢ cubes long.

b. Why do the cubes give a better count than the blocks? (1 mark)

▢

Total for this task: ▢ out of 10 marks

Marking guide

For the teacher. This guide is written as things you can see the student do. A spoken answer counts the same as a written one. Counts will not be the same for every student: mark the action, not the number — but the answers about which is more, and the number sentences, must match that student's own counts. Any item may be read aloud.

Part A — Length (3 marks)

Mark	What you can see the student do	Accept
a (1)	Puts the cubes in a line along the football, starting at one end. All the cubes are the same size. The cubes touch, with no gaps and no overlaps.	If there are gaps or overlaps, ask the student to check the line. Give the mark when there are no gaps.
b (1)	Counts the cubes in the line and writes the count. The written count matches the line.	If the count is out, ask the student to count again. Give the mark when the written number matches the line.
c (1)	Says or writes why all the cubes must be the same size.	"Different size cubes would give different counts." "It is not fair if the cubes are different." Any answer showing the count works only when the units are the same.

Part B — Capacity (3 marks)

Mark	What you can see the student do	Accept
a (1)	Fills the bottle and the tub with sand, using the same spoon each time. Counts the spoons for each container and writes both counts.	The same spoon must be used for both containers. If a different spoon is picked up, ask the student to check; give the mark when the same spoon is used for both counts.
b (1)	Says which container holds more, and how many spoons more. Writes a subtraction number sentence that matches the two counts.	For example, 12 − 8 = 4. The numbers in the sentence must be the student's own two counts.
c (1)	Says or writes why the same spoon is used each time.	"A bigger spoon would give a smaller count." "The spoon must be the same each time, so the count is fair." Any answer showing the unit must stay the same for a fair count.

Part C — Mass (2 marks)

Mark	What you can see the student do	Accept
a (1)	Puts each object on one side of the scales and adds same-size cubes to the other side until the two sides are level. Counts the cubes for each object and writes both counts.	Wait for the scales to sit level before counting. All the cubes must be the same size.
b (1)	Says which object has more mass, and how many cubes heavier it is. Writes a subtraction number sentence that matches the two counts.	For example, 12 − 9 = 3. "Heavier" is accepted for "has more mass".

Part D — Choosing a smaller unit (2 marks)

Mark	What you can see the student do	Accept
a (1)	Measures the book with the blocks first and records “blocks and a bit”. Then chooses the cubes, the smaller unit, and measures again. Writes the cube count.	The cube count is a whole count, with no bit left over (or a much smaller bit than before).
b (1)	Says or writes why the cubes give a better count than the blocks.	“The cubes are smaller, so they fit the little bit.” “More cubes fit, so the count is closer.” Any answer that links the smaller unit to a closer count, or says a smaller unit means more units fit.

How the marks map to the curriculum

These marks use the words that VCAA carries on VC2M2M01: *“Students use uniform informal units to measure and compare shapes and objects.”* The accuracy marks use the content description’s own words: *“smaller units for accuracy when necessary”*.

Curriculum words	Marks
Uses uniform informal units	A a, A c, B a, B c, C a
Measures	A b, B a, C a, D a
Compares	B b, C b
Chooses smaller units for accuracy when necessary (VC2M2M01)	D a, D b
Explains and gives reasons — scores the thinking, not just the answer (VC2M2M01.E02, VC2M2M01.E04)	A c, B c, D b

Record the total: ▢ out of 10

Task P2 — Turn and pathway

identify, describe and demonstrate quarter, half, three-quarter and full measures of turn in everyday situations — VC2M2M05

locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways — VC2M2SP02

Show the turns with your body. Then walk the mat, and talk your partner across it.

Task	P2 — Turn and pathway
Assesses	`VC2M2M05` (subtopic 3E) and `VC2M2SP02` (subtopic 4B)
Marks	**10** — Part A 5, Part B 5 (Marking guide below)
Timing	This is a classroom task, not an exam. It is untimed. Guidance duration for planning: about 5 minutes per student — about 2 minutes for Part A and about 3 minutes for Part B — run one student at a time while the class works quietly. It may be split across more than one session.
Equipment	Supplied by the teacher — see the list below.
Calculators	None. No calculators are used anywhere in this book (D27).
Read aloud	Any instruction on this task may be read aloud by the teacher.

Equipment

- A floor grid mat: a mat of 4 × 4 big squares, each square big enough for one student to stand in — the same mat as subtopic 4B.
- A green card or marker: the start square, at the bottom left corner.
- A star card or marker: the target square, on the top row, one square in from the left. The target square is the square to get to.
- A floor spot or tape mark for Part A, with a mark on the wall or floor to face — the front mark.
- Paper plate, paper arrow and pin (optional): to show a turn again if a student needs to see it first.
- Paper and pencil for the teacher, to record marks with the Marking guide.

Safety — at point of use

- Put the mat on flat, dry floor. Keep the space around the mat clear of bags, chairs and other equipment.
- One student on the mat at a time. Other students wait at a marked spot and watch.
- Turns are slow. Arms stay down by the body. No spinning, jumping or swinging arms.
- Students walk from square to square. They do not run.
- Check footwear before the task: firm shoes, or socks with grip. Socks on a smooth mat can slip.
- The teacher stands next to the mat while a student is turning.
- Everyone stops at once when the teacher says stop.

Part A — Show your turns

Clockwise is the way the hands of a clock go. Anticlockwise is the other way.

Stand on the spot. Face the front mark. Your teacher says each instruction. Show each turn with your body. You may do a turn once more if you need to.

A1. Face the front. Show a quarter turn.

A2. Face the front again. Show a half turn.

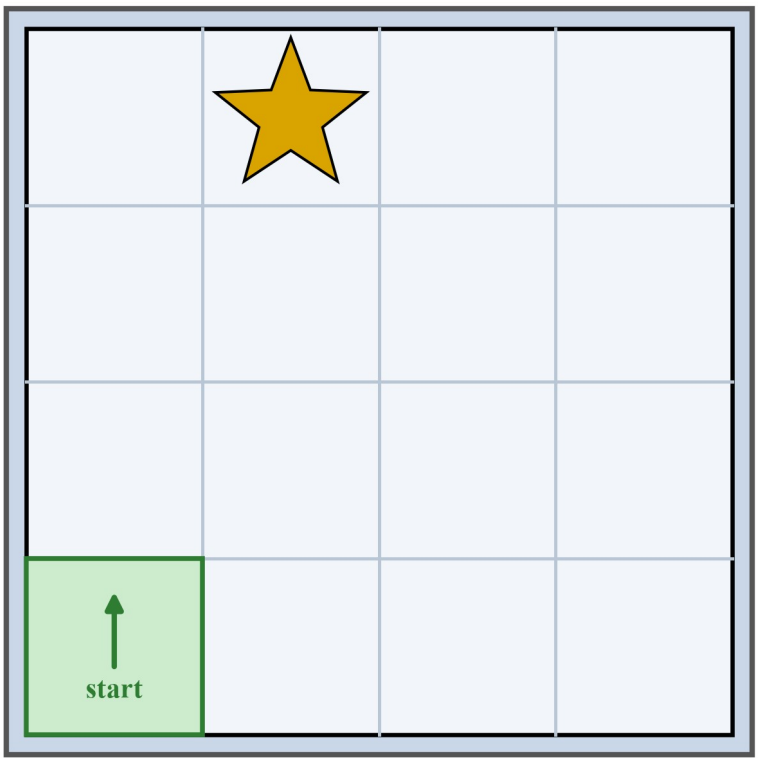
A3. Show a three-quarter turn.

A4. Show a full turn. Which way are you facing now?

A5. Face the front. Make a quarter turn clockwise. Then tell your teacher: how much of a turn did you make, and which way?

Part B — The mat walk

The floor grid mat is a mat of big squares. A route is the way to go from one place to another. On the mat, each step is one square. On this mat, left and right are your own left and right as you stand on the mat facing the top of the mat.



the star

A 4 by 4 floor mat. The start square is the bottom left corner square, green, with a small arrow facing the top of the page. A gold star is on the top row, on the square one in from the left.

The green square is the start. The star square is Fed Square — the place to get to.

This mat walk is like a real walk in Melbourne. You come out of Flinders Street Station, cross Flinders Street, and go to Federation Square (Fed Square). The real walk is not made of squares, so it is made simple here: one square is one step.

Source: Metro Trains Melbourne, “Flinders Street Station”, metrotrains.com.au, retrieved 2026-08-20.

Source: Wikipedia, “Flinders Street railway station”, retrieved 2026-08-20.

Source: Federation Square, Getting here, fedsquare.com, retrieved 2026-08-20.

Source: Wikipedia, Federation Square, retrieved 2026-08-20.

B1 — Follow. Stand on the green square, facing the top of the mat. Follow: *1 forward, quarter turn to the right, 1 forward, quarter turn to the left, 2 forward.*

B2 — Give. Now you give the instructions. Your partner stands on the green square, facing the top of the mat. Give instructions to take your partner to the star square. You can use step words — forward, to the right, to the left,

backwards — and quarter turns. Your partner moves as you speak. If your partner does not get to the star square, change an instruction and try again.

B3 — Say where. Say where the star square is, starting from the green square.

Marking guide

Task P2 — Turn and pathway. Total: 10 marks.

This guide is written in the language of the achievement-standard extracts carried on the two assessed CDs (authority file, `maths_2.json`):

- `VC2M2M05`: "Students use quarter, half, three-quarter and full measures of turn in everyday situations."
- `VC2M2SP02`: "They locate and identify positions of features in two-dimensional representations and move position by following directions and pathways."

Award each mark once, for an action you can see. Each row is 1 or 0 — no half marks. Record while the student works. Any instruction may be read aloud, and a student may do a turn once more before you record it.

Part A — turn (VC2M2M05) — 5 marks

Mark	Observable student action
A1 (1)	From facing the front, the student turns one quarter of the way around and stops facing a side of the room — not the front and not the back.
A2 (1)	From facing the front, the student turns half of the way around and stops facing the back of the room — the other way from the start.
A3 (1)	The student turns three quarters of the way around — not halfway and not all the way — and stops facing a side of the room. Clockwise and anticlockwise both count.
A4 (1)	The student turns all the way around and stops facing the front again, and says they face the same way as the start.
A5 (1)	For the turn made in A5, the student names both the size of the turn — a quarter turn — and the way: clockwise, or "to the right".

Notes for Part A:

- Award A1–A4 on the amount of turn and the way the student faces at the end. A small extra step while settling does not lose the mark.
- Accept "to the right" for clockwise and "to the left" for anticlockwise: 4B teaches that these are the same turns.
- A three-quarter turn anticlockwise from the front ends facing the same way as a quarter turn clockwise. That is still a three-quarter turn: award A3 on the amount of turn you see, then the facing.

Part B — pathway (VC2M2SP02) — 5 marks

Mark	Observable student action
B1 (1)	The student follows the instructions in the order given: one square per step, turning on the spot at each quarter turn.
B2 (1)	After the last instruction, the student stands on the star square.
B3 (1)	The student gives instructions for a route from the green square to the star square: each instruction is a step — forward, to the right, to the left, backwards — or a quarter turn, and the instructions are given one after another, in order.

Mark	Observable student action
B4 (1)	The partner reaches the star square by following the student's instructions. Award the mark too if the partner first goes wrong, the student changes an instruction, and the partner then reaches the star square.
B5 (1)	The student says where the star square is from the green square — for example, "3 squares forward and 1 to the right" or "on the top row" — or points to it and counts the squares from the green square.

Notes for Part B:

- Routes that reach the star square include: *3 forward, quarter turn to the right, 1 forward*; *1 to the right, 3 forward*; and *1 forward, quarter turn to the right, 1 forward, quarter turn to the left, 2 forward*. Any other route also counts, so long as every instruction lands on a square of the mat and the last one lands on the star square.
- If an instruction takes the partner off the mat, the student may fix it — that fixing is the adjusting skill scored in B4. Do not award B4 until the partner stands on the star square.
- Squares are never named by letters, numbers or ordered pairs in this task (D16). Accept only position and movement words.

Score

Part	Marks
Part A — turn (VC2M2M05)	5
Part B — pathway (VC2M2SP02)	5
Task P2 total	**10**

A student who shows all four turns and names one of them is using "quarter, half, three-quarter and full measures of turn in everyday situations" (VC2M2M05). A student who follows a route, gives a route and says where the target square is is one who locates and identifies "positions of features in two-dimensional representations" and moves "position by following directions and pathways" (VC2M2SP02).

Task P3 — Class data investigation

acquire data for categorical variables through surveys, observation, experiment and using digital tools; sort data into relevant categories and display data using lists and tables — VC2M2ST01

create different graphical representations of data using software where appropriate; compare the different representations, and identify and describe common and distinctive features in response to questions — VC2M2ST02

Ask a question. Survey your class. Sort the answers. Make two displays. Say what each one shows.

Marks	**15**
Time	Untimed — there is no time limit. Guidance: two short lessons (about 30 minutes each). The task may be split across lessons.
Things you need	Provided — see the list below.
Calculators	No calculators are used in this task.
Reading	The teacher may read any part of this task aloud.

Things you need: sticky notes, counters, pencils, a big sheet of paper, squared paper, coloured pencils or crayons, a ruler, one copy of this task for each student, a computer with Microsoft Excel set up by the teacher, and a printer, if the school has one, to print the software graph.

Source: Microsoft, Microsoft Excel, microsoft.com/en-au/microsoft-365/excel, retrieved 2026-08-20.

Words you know

These words were taught in Chapter 5. They are used in this task.

- An **investigation** is when we ask a question and find out the answer.
- **Data** is what we find out.
- A **survey** is asking. We ask people the same question, and each person answers one time.
- A **category** is a group with a name. **Categorical data** is data we can sort into categories. The answers are words, not counts.
- A **table** shows sorted data in rows. A **tally** is marks that count the answers. Four marks and a slant make five.
- A **display** is a way to show data. A **picture graph** uses one picture for each answer. A **column graph** uses one column for each group. Each column goes up to the number of answers.
- **Software** is the programs on a computer. The **title** is the name of a graph.

Safety

- Students walk when they move around the room to do the survey.
- The teacher sets up the computer. If you carry the computer, use two hands. Food and drink stay away from the computer.
- The survey asks about favourite things only. It does not ask for your name or where you live. Student names are not typed into the software — only the category names and the counts.
- No food is brought to school or eaten for this task. If the class picks the fruit question, the survey uses words only.
- If scissors are used to cut out pictures, they are used sitting down and passed handles first.

What you will do

Five boxes in a row with arrows between them: Ask a question, Collect the data, Sort into categories, Make a table, Answer the question.

You will work through the five parts below. They are worth 15 marks altogether.

Part 1 — Pose a question (2 marks)

Pick a question to ask your class. Choose one of these real questions, or pose your own question with up to four answer choices.

1. *What is your favourite Victorian football club?* Choices: Carlton, Collingwood, Geelong, Richmond.

Source: AFL, AFL.com.au, afl.com.au, retrieved 2026-08-23.

2. *What is your favourite fruit at the Queen Victoria Market?* The Queen Victoria Market is a real market in Melbourne with a big fruit and vegetable hall. Choices: apple, banana, orange, pear.

Source: Queen Victoria Market, Queen Victoria Market, qvm.com.au, retrieved 2026-08-20.

3. *Which animal would you most like to see on the bus tour at Werribee Open Range Zoo?* Werribee Open Range Zoo is a real zoo in Victoria. Choices: giraffe, zebra, ostrich, camel.

Source: Zoos Victoria, Werribee Open Range Zoo, zoo.org.au/werribee, retrieved 2026-08-20.

Your answer choices must be categories — words like *apple* or *Carlton*, not counts. Each student must be able to pick one choice.

My question is:

_____

Part 2 — Survey the class (3 marks)

- Ask every student in the class the same question.
- Each student answers one time. Check that nobody is missed and nobody answers twice.
- Record each answer as it comes. Put one tally mark in the right category.

Part 3 — Sort into a table (3 marks)

Sort the answers into your table. Use one row for each category. If nobody picked a category, its count is 0.

My question:

_____

__	Tally	Count
		▢
		▢
		▢
		▢
Total		▢

Check your work. Add your counts. The total must be the same as the number of students you surveyed.

▢ students answered the survey.

This is what a finished table looks like, from 5A:

Favourite fruit of 20 children

Favourite fruit	Tally	Count
Apples	𝍸 III	8
Bananas	𝍸 II	7
Oranges	𝍸	5
Total		20

A table with the words Favourite fruit of 20 children at the top. The rows are Apples, Bananas and Oranges, with tally marks and counts of 8, 7 and 5. The Total row shows 20.

Part 4 — Build two displays (4 marks)

Display 1 — by hand

Make a picture graph of your data. Use squared paper or the big sheet of paper. Use one picture for each answer. Give the graph a title, and name each category.

My picture graph

Display 2 — using software

With your teacher, open Microsoft Excel. Type your categories and your counts into Excel. Excel draws a column graph for you. Give the graph a title. The numbers go up the side in 1s. Print the graph, or copy it in the box.

My software graph

Part 5 — Say what each display shows (3 marks)

a. Which category has the most answers? ▢

Which category has the least answers? ▢

How many more students chose the most than the least? Write the number sentence: ▢

b. Say one thing that each display shows.

Display 1 shows: ▢

Display 2 shows: ▢

c. Say one thing that is the **same** in both displays: ▢

Say one thing that is **different**: ▢

d. Now answer the question you posed in Part 1.

Marking guide

Task P3 — Class data investigation · 15 marks · VC2M2ST01 and VC2M2ST02 (subtopics 5A and 5B)

This guide is for the teacher. It is not student-facing. Judgements are written in the language of the achievement-standard extract carried on both `VC2M2ST01` and `VC2M2ST02` in the authority file: *"Students use a range of methods to collect, record, represent and interpret categorical data in response to questions."*

Administration

- This is a classroom task, not an exam. It is untimed (guidance: two short lessons of about 30 minutes each, may be split). No calculators. The teacher may read any part aloud.
- Award 1 mark for each observable action listed below. Marks are whole marks.
- Student data will differ. Score the action, not any particular numbers.
- Parts 2 and 4 include actions that are only visible while students work (running the survey, using the software). Note what you observe on this sheet. Keep the student's table and both displays with this sheet as evidence.
- The teacher may open the software and help with printing. The student must type the categories and counts themselves. The teacher may not correct the student's data, table or displays; where the teacher does correct an error, award the mark only for what the student did unaided.

Collect — pose the question (2 marks; VC2M2ST01)

1. [1 mark] The student chooses or writes a question to ask the class, with a fixed list of answer choices (up to four).
2. [1 mark] The answer choices are categories (words or names, not counts), and each student can pick exactly one choice.

Collect — survey the class (3 marks; VC2M2ST01)

3. [1 mark] The student asks every student in the class the same question.
4. [1 mark] Each student answers one time: the student checks that nobody is missed and nobody answers twice.
5. [1 mark] The student records each response as it comes in, with one tally mark (or one sticky note) in the correct category.

Record — sort into a table (3 marks; VC2M2ST01)

6. [1 mark] The table has one named row for each category, with a tally and a count.
7. [1 mark] The tally and the count for each category match the responses given. A category with no responses shows 0.
8. [1 mark] The student adds the counts, states the total, and checks that it equals the number of students surveyed.

Represent — build two displays (4 marks; VC2M2ST02)

9. [1 mark] Display 1 (the picture graph made by hand) is one-to-one: one picture or mark for each answer.
10. [1 mark] Display 1 has a title, and each category is named.
11. [1 mark] Display 2 is made using software: the student is observed typing the categories and counts into Microsoft Excel, and Excel draws the column graph.
12. [1 mark] Display 2 (the column graph) matches the table — each column is as tall as its count — and it has a title.

Interpret — say what each display shows (3 marks; VC2M2ST02)

13. [1 mark] The student names the most popular category and the least popular category, and works out how many more chose the most than the least, with a correct number sentence (for example, for counts of 8 and 3: $8 - 3 = 5$). If categories tie, accept the student naming all tied categories.
14. [1 mark] The student says one thing that each display shows. Accept any correct statement about the student's own displays, for example: *the picture graph shows each answer; the column graph shows how many are in each group.*

15. [1 mark] The student says one thing that is the same in both displays (for example: both show the same data; both show the same most and least) and one thing that is different (for example: the picture graph shows each answer one by one; the column graph makes it fast to find the biggest group).

Mark: ▢ / **15**

Coverage: marks 1–8 evidence `VC2M2ST01` (5A); marks 9–15 evidence `VC2M2ST02` (5B). Both CDs are also assessed in written form in check C5 (TOC section 7).