

WA5MPSS2

Statistics

Core + Challenge

NAPLAN-style

Collecting and Displaying Data

I can ask a good survey question, collect and organise data, and choose a display that suits it.

Name: _____ Date: _____ Score: _____ / 58

Key idea

An investigation has steps: **pose** a question, **collect** data, **organise** it, **display** it and **interpret** it.

Categorical data are words or groups (favourite fruit). **Numerical** data are **counted** numbers (number of pets).

Categories: use a **column graph** or a **pictograph**. Counted numbers: use a **dot plot** or a column graph. A good question is **clear** and gives **choices** for every answer.

Example: “How many books did you read in the holidays?” gives **numerical** data (a counted number), so show the results in a dot plot.



A

Warm up *sort, count and read*

/ 16 marks

Is the data **categorical** (C) or **numerical** (N)? Write C or N. 1 mark each.

1 Favourite colour

2 Number of brothers and sisters

3 How you travel to school

4 Goals scored in a netball game

Twenty students chose their favourite fruit: A = apple, B = banana, O = orange, M = mango. 1 mark each.

M O M O B O A O B B A A A A M B A B B B

5 How many chose **apple**?

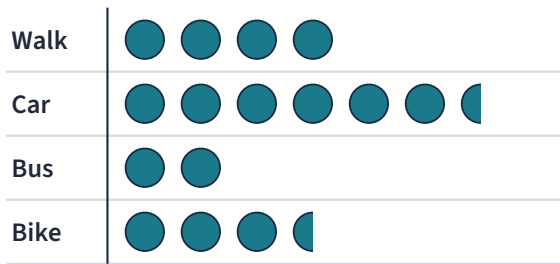
6 Which fruit was the **most** popular?

7 How many **fewer** chose mango than banana?

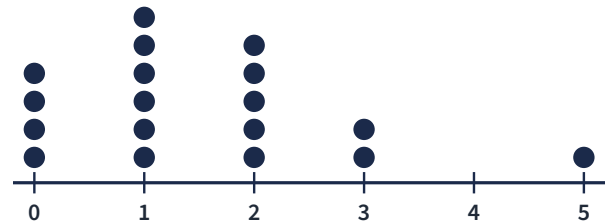
8 How many chose orange **or** mango?

Collecting and Displaying Data · WA5MPSS2

The pictograph shows how students travel to school (questions 9 to 12). The dot plot shows how many pets each student has (questions 13 to 16). 1 mark each.



 = 2 students



Number of pets

- 9** How many travel by **car**?

10 How many ride a **bike**?

11 How many **more** go by car than walk?

12 How many icons would show **9** students?

13 How many students were asked?

14 What is the most common number of pets?

15 How many students have **more than 2** pets?

16 How many students have **no** pets?

B

Practise *use the skill*

/ 23 marks

- 1** Ava wants to find the most popular sport at her school. Which survey question is **best**? Circle it. Then explain what is wrong with question A. **A** Do you like sport? **B** What is your favourite sport: AFL, netball, soccer, basketball or other? **C** Is AFL the best sport? **D** How much sport do you play? [2 marks]
- _____
- _____
- Answer: _____
- 2** Jack wants to find out what Year 5 students do after school. He asks, “What do you do after school?” **a)** Why will his answers be hard to organise? **b)** Rewrite his question to make it better. [2 marks]
- _____
- _____

Collecting and Displaying Data · WA5MPSS2

- 3 Students wrote how they travel to school (W walk, C car, B bus, S scooter, K bike). **a)** Complete the tally table. **b)** What is the most common way to travel? **c)** How many students did **not** come by car? [3 marks]

C W W C S K W W B B C W W B C K B W B C S K C W

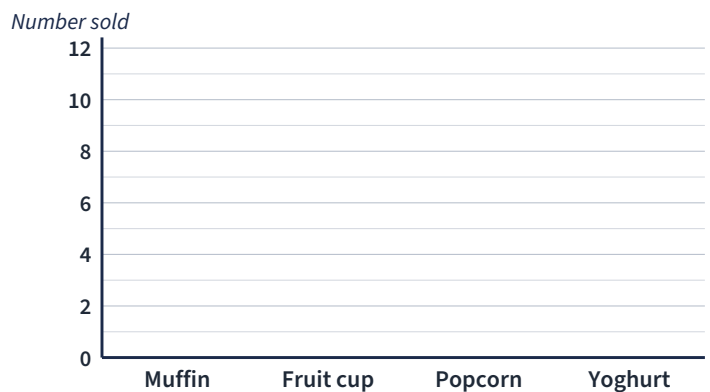
Travel	Tally	Frequency
Walk (W)		
Car (C)		
Bus (B)		
Scooter (S)		
Bike (K)		

b) _____

c) _____

- 4 The table shows the snacks sold at the canteen on Monday. **a)** Draw a column graph of the data. **b)** How many more popcorn than yoghurt were sold? [3 marks]

Snack	Number sold
Muffin	9
Fruit cup	6
Popcorn	11
Yoghurt	4



b) _____

- 5 A netball team's goals are shown in the table. Mia's row is done. **a)** Complete the pictograph. **b)** How many goals did the four players score altogether? [3 marks]

Player	Goals
Mia	12
Jade	9
Tia	5
Rosa	8

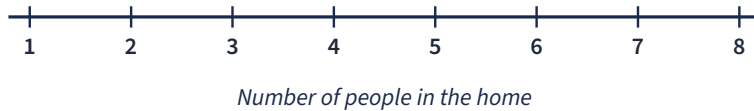
Mia	● ● ● ● ● ●
Jade	
Tia	
Rosa	

● = 2 goals

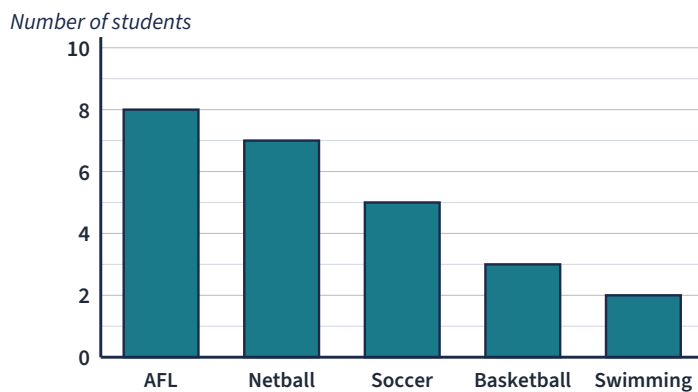
b) _____

Collecting and Displaying Data · WA5MPSS2

- 6 Eighteen students wrote how many people live in their home: 2, 4, 3, 5, 4, 4, 3, 6, 2, 4, 5, 3, 4, 7, 3, 4, 5, 4. **a)** Draw a dot plot. **b)** What is the most common number of people? **c)** How many students live with **more than 4** people? [3 marks]



- 7 Class 5A answered, “What is your favourite sport?” **a)** How many students answered? **b)** What fraction chose netball? **c)** Kai says, “AFL must be the favourite sport of the whole school.” Explain why he cannot be sure. [3 marks]



Answer: _____

- 8 Draw a line to match each set of data to the **best** display. [2 marks]

Favourite ice-cream flavour of 30 students •

The temperature every hour on Tuesday •

The number of goals scored in each game •

• Line graph

• Pictograph

• Dot plot

Collecting and Displaying Data · WA5MPSS2

- 9 Ella and Tom counted the cars that drove past the school from 8:30 am to 8:45 am on the same day. Ella counted **47** cars and Tom counted **52**. **a)** Give **two** reasons why their counts could be different. **b)** How could they make their count more accurate? [2 marks]

C**Think it through** *explain your thinking*

/ 10 marks

- 1 Noah asked his 5 best friends, “What is your favourite sport?” All five said soccer. Noah says, “Soccer is the favourite sport at our school.” Do you agree? Explain. [2 marks]

- 2 **True or false?** “In a pictograph where ● = 4 students, half a ● shows 1 student.” Explain. [2 marks]

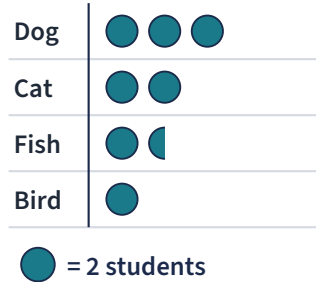
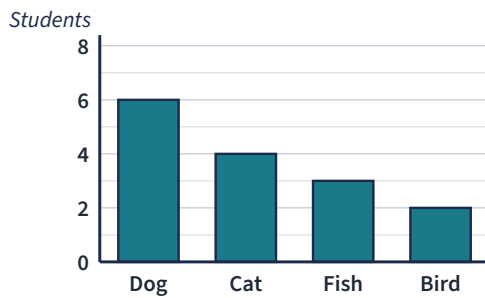
- 3 **Always, sometimes or never true?** “If you ask a different class the same survey question, you will get the same results.” Explain. [2 marks]

Circle one: **Always** / **Sometimes** / **Never**

- 4 Which survey question is the **odd one out**? Explain. **A** How many pets do you have? **B** What is your favourite colour? **C** How do you get to school? **D** In which month were you born? [2 marks]

Collecting and Displaying Data · WA5MPSS2

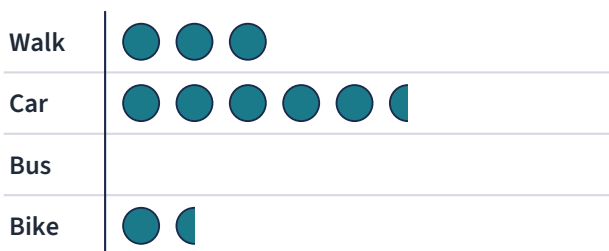
- 5 Both displays show the same data about pets. What is the **same** and what is **different** about them? [2 marks]



D Challenge *stretch yourself*

/ 9 marks

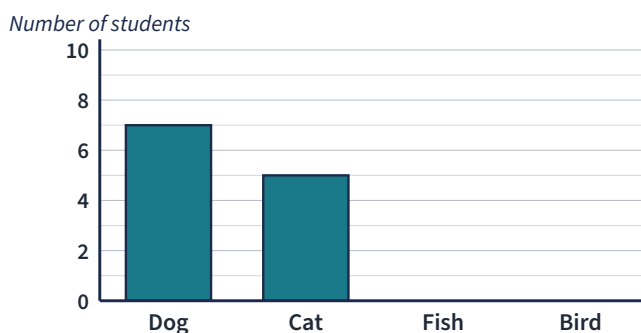
- 1 In a survey of **50** students, each ● stands for **4** students. The **Bus** row is missing. [3 marks]
a) How many students chose bus? **b)** Draw the Bus row. **c)** How many more students chose car than bike?



● = 4 students

Answer: _____

- 2 **20** students chose their favourite pet. The columns for **Fish** and **Bird** are missing. [3 marks]
 Every pet was chosen by at least one student. Dog was chosen by **more** students than any other pet, and Fish by **more** students than Bird. **a)** Find **all** the possible numbers for Fish and Bird. **b)** Draw the columns for one of your answers.



Answer: _____

Collecting and Displaying Data · WA5MPSS2

- 3 Plan an investigation to answer: “How do Year 5 students at our school get to school?” **a)** Write a clear survey question with choices. **b)** Explain who you would ask and how you would record the answers. **c)** Name the best display for your data and explain why. [3 marks]

How did I go?

Warm up ____ / 16 Practise ____ / 23 Think it through ____ / 10 Challenge ____ / 9 **Total ____ / 58**

Want help with Year 5 maths? Our tutors make it click. **Book a free trial class at [edulift.com.au](https://www.edulift.com.au)**