Merit Tutoring

WORKSHEET 45

Year 5 Mathematics — Australian Curriculum v9.0

Data & Chance: Categories of Data and Tallying

Curriculum Code: AC9M5ST01

Name: _____ *Date:* _____

Section 1: Fluency — Categorical vs Numerical Data

Identify whether data is categorical or numerical.

1. Is 'eye colour' a categorical or numerical type of data?

Answer: _____

2. If you count the number of cars in the car park, what type of data are you collecting?

Answer: _____

3. Is 'favourite sport' categorical or numerical data?

Answer: _____

4. Is 'number of siblings' categorical or numerical data?

Answer: _____

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5. You ask students: "What type of pet do you have?" What type of data is this?

Answer: _____

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6. You ask students: "How many books did you read last month?" What type of data is this?

Answer: _____

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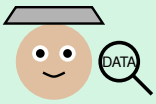
7. Which of these is numerical data: Hair colour or Height in centimetres?

Answer: _____



Data Detective!

You're excellent at identifying types of data!

Joke: Why was the computer so good at collecting data? Because it had a great memory!

Section 2: Reasoning — Recording with Tally Marks

Use tally marks to organize data into frequency tables.

8. Here is a list of favourite colours from a survey:

Blue, Red, Blue, Green, Red, Blue, Yellow, Blue, Red, Green, Blue, Red

Complete this frequency table using tally marks:

Colour	Tally	Frequency
Blue		
Red		
Green		
Yellow		

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9. Draw tally marks to represent the number 7.

Answer: _____

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10. Draw tally marks to represent the number 12.

Answer: _____

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11. How many tally marks are shown below?

Answer: _____

---

12. Students voted for their favourite fruit. Here are the results:
Apple, Banana, Apple, Orange, Banana, Apple, Apple, Banana, Orange, Apple

Create a frequency table with tallies:

Fruit	Tally	Frequency
Apple		
Banana		
Orange		

---

13. Why do we group tally marks in sets of 5?

Answer: _____

_____

14. A frequency table shows that Soccer has a frequency of 8. Draw the tally marks for this.

Answer: _____

_____

Tally-Mark Tiger!

You're a master at organizing data with tally marks!

Joke: Why did the tally mark go to school? To learn how to count on its friends!

Section 3: Challenge — Survey Questions and Data Collection

Plan survey questions and understand data collection methods.

15. You want to find out the most popular sport in Year 5. Write a survey question you could ask your classmates.

Answer: _____

_____

16. You want to know how many pets students have. Write a survey question

for this.

Answer: _____

_____

17. Which is a better survey question?
A) ”What is your favourite colour?”
B) ”Do you like blue or do you like red?”

Answer: _____

Reason: _____

_____

18. Name two ways you could collect data about students’ favourite lunch food.

1. _____

2. _____

_____

19. Why is it important to ask clear questions in a survey?

Answer: _____

---

20. You want to find out which day of the week students prefer for sport. Is this categorical or numerical data?

Answer: _____

---

21. Plan a survey: What question would you ask to find out students' favourite subject at school?

Answer: _____

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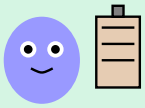
22. If you survey only 3 students, will your data represent the whole class? Why or why not?

Answer: _____



Information Investigator!

Fantastic! You can plan surveys and collect data like a real researcher!

Joke: What did the survey say to the data? Let's stick together and make sense of things!

End of Worksheet 45

Well done! Check your answers on the next page.

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WORKSHEET 45 — ANSWER KEY

Year 5 Mathematics — Data & Chance

AC9M5ST01: Categories of Data and Tallying

Section 1: Fluency — Categorical vs Numerical Data

1. Categorical

2. Numerical

3. Categorical

4. Numerical

5. Categorical

6. Numerical

7. Height in centimetres

Section 2: Reasoning — Recording with Tally Marks

8.

Colour	Tally	Frequency
Blue	||||		5
Red	||||	4
Green	||	2
Yellow			1

9. |||| ||(5 + 2)

10. |||| |||(5 + 5 + 2)

11. 9

12.

Fruit	Tally	Frequency
Apple	||||		5
Banana	|||	3
Orange	||	2

13. To make them easier to count quickly

14. |||| |||(5 + 3)

Section 3: Challenge — Survey Questions and Data Collection

15. Example: "What is your favourite sport?" (Accept similar clear questions)

16. Example: "How many pets do you have?"

17. A; It allows more options and doesn't limit choices

18. Example answers: 1) Survey/questionnaire; 2) Observation during lunch

19. So everyone understands the question and gives accurate answers

20. Categorical

21. Example: "What is your favourite school subject?"

22. No; 3 students is too small a sample to represent the whole class

Great work on Worksheet 45!

WORKSHEET 46

Year 5 Mathematics — Australian Curriculum v9.0

Data & Chance: Planning and Discrete Numerical Data

Curriculum Code: AC9M5ST01

Name: _____ *Date:* _____

Section 1: Fluency — Discrete Numerical Data

Identify and work with discrete numerical data.

1. Which of these is discrete numerical data: The height of a plant or the number of brothers you have?

Answer: _____

_____

2. Is ”the number of students in your class” discrete or continuous data?

Answer: _____

_____

3. Is ”the weight of your backpack” discrete or continuous data?

Answer: _____

_____

4. You count the number of cars passing your school. Is this discrete numerical data?

Answer: _____

_____

5. Which is discrete numerical data: Temperature in degrees or number of goals scored?

Answer: _____

_____

6. You record how many books each student reads in a month. What type of data is this?

Answer: _____

_____

7. Can the number of students be 24.5? Why or why not?

Answer: _____

_____

Number Ninja!

You're amazing at identifying discrete numerical data!

Joke: Why do discrete numbers never get lonely? Because they always stick to whole friends!

Section 2: Reasoning — Validating Data

Check data for accuracy and identify errors.

8. Look at this frequency table. Find and fix the mistake.

Sport	Tally	Frequency
Soccer	𝍸 I	5
Basketball	III	3

What is wrong? _____

Corrected frequency for Soccer: _____

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9. A student recorded data but forgot to count one tally mark. The tally shows 7 marks but frequency says 6. What should the frequency be?

Answer: _____

10. Look at this data: 5 students chose Red, 3 chose Blue, 2 chose Green. What is the total number of students surveyed?

Answer: _____

---

11. In a frequency table, if all the frequencies add up to 20, how many people were surveyed?

Answer: _____

---

12. Why is it important to check your data for mistakes?

Answer: _____

---

13. A frequency table shows these tallies for ”Apple”: |||| ||. What number should be in the frequency column?

Answer: _____

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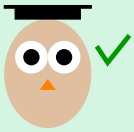
14. If the frequency for ”Swimming” is 9, draw the correct tally marks.

Answer: _____

_____



Accuracy Ace!

You're brilliant at checking data for errors!

Joke: Why did the data go to the doctor? Because it had a bad case of errors!

Section 3: Challenge — Investigation Design

Plan statistical investigations and understand survey principles.

15. Plan a small investigation: How would you collect data on which lunch order is the most popular on Fridays?

Step 1: _____

Step 2: _____

Step 3: _____

_____

16. Why is it important to ask the same question to everyone in a survey?

Answer: _____

_____

17. You want to find out how students travel to school. Write a survey question.

Answer: _____

_____

18. Should you survey 5 students or 25 students to get better data about the whole school? Why?

Answer: _____

_____

19. Name one digital tool you could use to collect survey data.

Answer: _____

_____

20. What is the difference between an observation and a survey?

Answer: _____

_____

21. You notice that more students buy hot lunch on Wednesdays. Is this observation categorical or numerical data?

Answer: _____

_____

22. Design a survey question to find out students' favourite type of book (e.g., fiction, non-fiction, graphic novels).

Answer: _____

_____

Research Rockstar!

Amazing! You can design investigations like a real statistician!

Joke: Why did the survey cross the road? To collect data on the other side!

End of Worksheet 46

Excellent work! Check your answers on the next page.

WORKSHEET 46 — ANSWER KEY

Year 5 Mathematics — Data & Chance

AC9M5ST01: Planning and Discrete Numerical Data

Section 1: Fluency — Discrete Numerical Data

1. The number of brothers you have

2. Discrete

3. Continuous

4. Yes

5. Number of goals scored

6. Discrete numerical data

7. No; you can't have half a student (discrete data must be whole numbers)

Section 2: Reasoning — Validating Data

8. The tally shows 6 marks but frequency says 5; Corrected frequency: 6

9. 7

10. 10 students (5 + 3 + 2 = 10)

11. 20 people

12. To ensure data is accurate and reliable

13. 7

14. |||| ||||(5 + 4)

Section 3: Challenge — Investigation Design

15. Example steps: 1) Ask students ”What lunch order did you choose?”; 2) Record responses with tally marks; 3) Count frequencies and identify most popular

16. To ensure fair and consistent data collection

17. Example: ”How do you travel to school?” (with options: walk, car, bus, bike, other)

18. 25 students; A larger sample gives more reliable data

19. Examples: Google Forms, tablets, computers, online survey tools

20. A survey asks people questions; observation is watching and recording what happens

21. This could be categorical (day of week) but if counting students it’s numerical

22. Example: ”What type of book do you prefer to read?”

Congratulations on completing Worksheet 46!

You’ve mastered data collection and investigation planning!