

Graph Choice Detectives

Compare the same data across real displays

GRADE 6 • 6.PS.1.f

6.PS.1.f "Compare data represented in a circle graph with the same data represented in other graphs, including but not limited to bar graphs, pictographs, and line plots (dot plots)..."

NAME _____

DATE _____

BUILD UNDERSTANDING

Choose a graph for a specific question. A circle emphasizes parts of one whole; bars and picture keys make category counts direct. A dot plot places individual numerical values on a scale. Compare the displayed values and totals before judging which graph communicates the question most clearly.

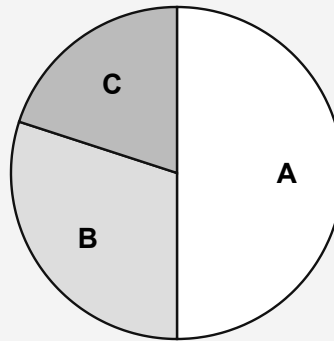
WORKED EXAMPLE

These 20 club choices form one whole.
What share chose Art, and how many students is that?

1. Use the sector to identify the share of the whole.
2. Multiply the share by the total to find the count; compare with the bars in Practice 1.

Answer: Art is half the circle: 50% of 20 = 10 responses.

Club choices: circle

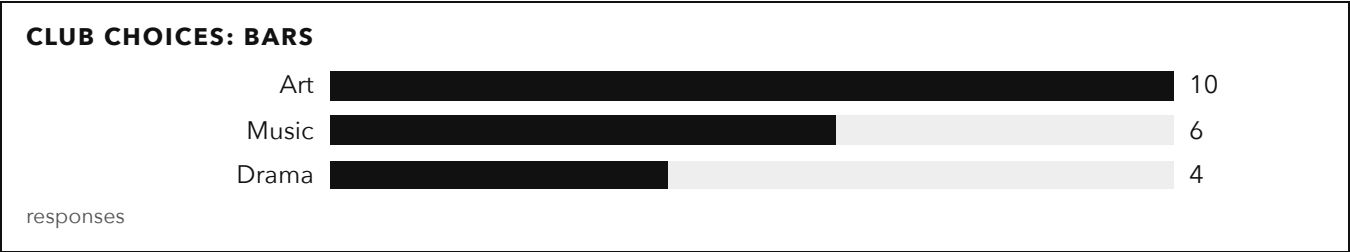


A. Art: 50%
B. Music: 30%
C. Drama: 20%

Total: 20 responses

PRACTICE 4 problems

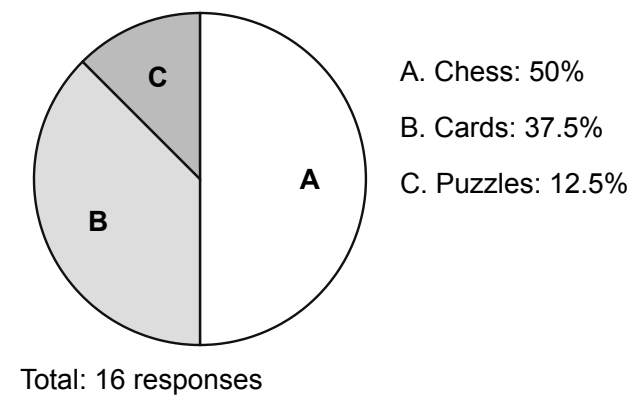
- 1** Compare these bars with the worked circle: both show 20 club choices. How many more chose Art than Drama? Explain which display makes that count difference more direct.



ANSWER _____

- 2** This circle graph shows 16 game choices. Give the fraction choosing Chess and the number choosing Puzzles. Explain how you use the whole.

Game choices: circle



ANSWER _____

- 3** Compare this pictograph with Practice 2. How does each display show eight Chess choices? Explain which makes the count more direct.

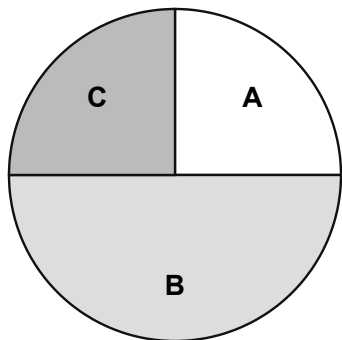
Game choices: pictures

Chess	★ ★ ★ ★
Cards	★ ★ ★
Puzzles	★

Key: ★ = 2 responses

ANSWER _____

- 4** These sectors group 12 students by pet count. What percent has one pet? Explain whether the whole counts students or pets.

Pets per student: circle

A. 0 pets: 25%

B. 1 pet: 50%

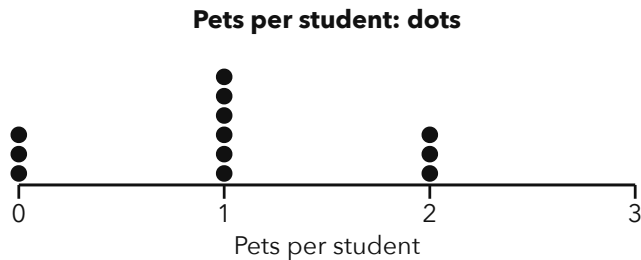
C. 2 pets: 25%

Total: 12 responses

ANSWER _____

APPLY IT Show your work

- 1** Compare this dot plot with Practice 4. State the mode and range. Explain which display better shows the spread of pet counts.



ANSWER _____

- 2** For a club poster showing Art as half the whole, choose the worked circle or Practice 1 bars. For a supply order comparing Art with Drama, choose again. Justify both choices with data.

ANSWER _____

CHALLENGE One step up

A new circle graph shows Art at 50% of 30 responses. Can it represent the same data as Practice 1? Calculate the Art count and compare the totals.

PRACTICE 1

Compare these bars with the worked circle: both show 20 club choices. How many more chose Art than Drama? Explain which display makes that count difference more direct.

10 - 4 = 6 more. The labeled bar lengths show both counts directly; the circle emphasizes their shares of the whole.

PRACTICE 2

This circle graph shows 16 game choices. Give the fraction choosing Chess and the number choosing Puzzles. Explain how you use the whole.

Chess is $\frac{1}{2}$. Puzzles is $12.5\% = \frac{1}{8}$ of 16, so 2 responses.

PRACTICE 3

Compare this pictograph with Practice 2. How does each display show eight Chess choices? Explain which makes the count more direct.

The circle shows Chess as 50% of 16. The pictograph shows four symbols with 2 responses each: 8. Its count key makes the count direct.

PRACTICE 4

These sectors group 12 students by pet count. What percent has one pet? Explain whether the whole counts students or pets.

One pet is 50%. Each sector counts students with that number of pets, not the total number of pets.

APPLY IT 1

The most common count is 1 pet; range $2 - 0 = 2$ pets. The dot plot displays each student on a numerical scale, making the spread direct. The six dots above 1 match the 50% sector. The smallest observed value is 0 and the largest 2; no student has 3 pets.

APPLY IT 2

Circle for the share: Art is 50%. Bars for the count difference: $10 - 4 = 6$ more responses. Both graphs represent the same 20 choices. Choose by the question: share of a whole versus difference in counts.

CHALLENGE

No. Half of 30 is 15 Art responses, but Practice 1 has 10 Art responses out of 20. Equal percentages do not guarantee equal counts or totals.

All data are simulated. The worked example and Practice 1, Practice 2-3, and Practice 4 and Apply It 1 are paired displays of identical data. Accept another display preference with accurate evidence and a reason tied to the question. The challenge intentionally changes the total; equal shares do not imply equal counts.