

Circle Graph Quest

Design questions that produce one complete set of responses

GRADE 6 • 6.PS.1.a

6.PS.1.a "Formulate questions that require the collection or acquisition of data with a focus on circle graphs."

NAME _____

DATE _____

BUILD UNDERSTANDING

A statistical question expects responses that may vary. Name the people or records being studied, the time or situation, and the data to collect. For one circle graph, use nonoverlapping categories that cover the whole; one response belongs to one category.

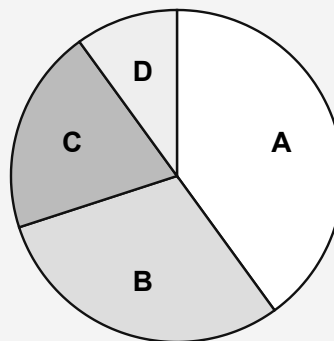
WORKED EXAMPLE

A class wants one outdoor activity. Write a question that could produce this sample circle graph.

1. Ask every class member the same question. Responses may differ.
2. One choice per person makes the counts nonoverlapping parts of the class.

Answer: Which one activity would you choose for our next class break: walking, ball games, quiet reading or something else? Choose one.

Sample break choices



- A. Walking: 40%
- B. Ball games: 30%
- C. Quiet reading: 20%
- D. Other: 10%

Total: 20 responses

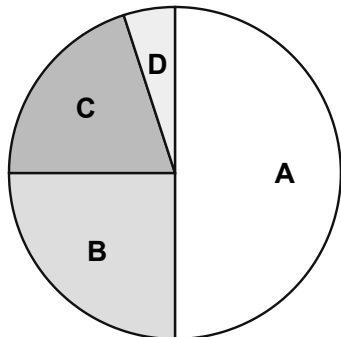
PRACTICE 4 problems

- 1** A grade wants to choose a club fair theme. Write a question for all grade-six students, with three named choices plus Other or no preference. Require one response each.

ANSWER _____

- 2** A sample graph records how students arrived at school today. Write the exact survey question, name who should answer, and explain why one circle can represent the responses.

Sample travel today



A. Bus: 50%
 B. Car: 25%
 C. Walk: 20%
 D. Other: 5%

Total: 20 responses

ANSWER _____

- 3** Repair this question for one circle graph: Which activities do you enjoy: art, games or music? State one question and complete answer choices.

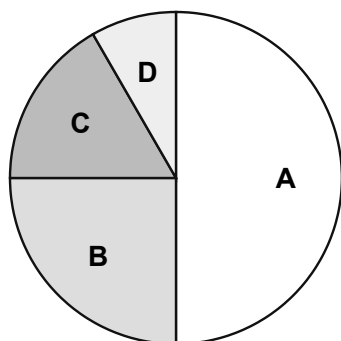
ANSWER _____

- 4** The principal asks: How should one circle summarize lunch preferences? Write a question that produces varying responses, identify the students to ask, and specify the data to record.

ANSWER _____

APPLY IT Show your work

- 1** Each library loan this week has one recorded shelf category: Fiction, Nonfiction, Comics or Other. Formulate a question using those records. Define the whole and categories; do not ask about preferences.

Sample loan categories

A. Fiction: 50%
B. Nonfiction: 25%
C. Comics: 16.67%
D. Other: 8.33%

Total: 24 responses

ANSWER _____

- 2** Plan a class survey for one circle graph about a field-trip choice. Write the question, all choices, who answers, and how you will record responses. Explain what differences you expect.

ANSWER _____

CHALLENGE One step up

A survey lets students select every snack they like; 20 students give 31 selections. Write a revised one-choice question and explain what one sector would represent.

WORK SPACE AND ANSWER

PRACTICE 1

A grade wants to choose a club fair theme. Write a question for all grade-six students, with three named choices plus Other or no preference. Require one response each.

Example: Which one fair theme do you prefer: Space, Animals, Sports, or Other/no preference? Choose one. The population is all grade-six students.

PRACTICE 2

A sample graph records how students arrived at school today. Write the exact survey question, name who should answer, and explain why one circle can represent the responses.

Example: How did you travel the greatest distance to school today: bus, car, walk or other? Choose one. Ask all students in the class; each contributes exactly one response.

PRACTICE 3

Repair this question for one circle graph: Which activities do you enjoy: art, games or music? State one question and complete answer choices.

Which one activity would you choose for our next class session: art, games, music, or other/no preference? Choose one. This prevents multiple counted responses.

PRACTICE 4

The principal asks: How should one circle summarize lunch preferences? Write a question that produces varying responses, identify the students to ask, and specify the data to record.

Example: Which one lunch option would you choose next Friday: soup, pasta, sandwich, or other/no preference? Ask each student in the grade. Record one category per student and each category count.

APPLY IT 1

Example: What share of this week's loans was fiction, nonfiction, comics or other? The whole is all loans recorded this week; classify each loan once.

Acquire this week's records. Count loans, not unique students; use each loan's one recorded shelf category so categories do not overlap.

APPLY IT 2

Example: Which one trip would you choose: museum, park, farm, or other/no preference? Ask every class member once. Record one choice per person and tally each category.

Students may prefer different trips, so responses vary. Including other/no preference lets every student answer while the one-choice rule avoids overlap.

CHALLENGE

Which one snack would you choose for class: fruit, crackers, yogurt, or other/no snack?

Choose one. A sector shows the share of students giving that one response, not the share of overlapping selections.

Sample graphs use invented data. Accept other clear statistical questions with a defined whole, one response per unit, complete categories and a workable collection or acquisition plan. Distinguish recorded behavior from preferences. No new survey results are claimed.