LESSON MAKER PRO

Polls Under the Lens

Check who was asked before trusting a result.

GRADE 7 · 7A.DSP.A.26.e

7A.DSP.A.26.e "Informally explain situations in which statistical bias may exist."

NAME _____ DATE _____

SPOT POSSIBLE BIAS

A poll may be biased when the people surveyed do not reflect the larger group. Compare each group's share of the poll with its share of the larger group, and check whether the question pushes people toward an answer.

WORKED EXAMPLE

Students are polled about bus service. Could the poll be biased?

Group	School	Poll
Bus riders	80	10
Walkers	20	10

1. Bus riders are 80/100 of the school.
2. Bus riders are 10/20 of the poll.
3. Their share of the poll is smaller than their share of the school.

Answer: Yes. Bus riders are underrepresented, so the poll may misstate school-wide views.

PRACTICE 4 problems

1 A club has 30 artists and 30 singers. A poll asks 12 from each group. Is either group overrepresented? Explain.

ANSWER _____

2 Of 48 students, 24 are gamers. A poll asks 9 gamers and 3 non-gamers. Which group is overrepresented? Explain.

ANSWER _____

3 At a school, 27 students take art and 9 take band. A poll asks 3 from each group. Which group is overrepresented? Explain.

ANSWER _____

4 A poll asks, "Don't you agree the new schedule is better?" How might this question bias the answers?

ANSWER _____

APPLY IT Show your work

1 Student council polls students about adding phone chargers. Could the poll misstate school-wide opinion? Use the table to explain.

Group	School	Poll
Bring phones	42	7
Do not bring phones	14	7

ANSWER _____

2 An esports club asks 16 players at its tournament if the school should buy gaming gear. All say yes. Can the club claim all students want the gear? Explain.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A poll about a school app invites 36 students from each of two grades. In one grade, 30 reply and 24 say yes. In the other, 6 reply and 1 says yes. A student claims, "25 of 36 replies say yes, so most invited students want the app." Give two reasons the claim may be biased.

WORK SPACE AND ANSWER

ANSWER KEY

Polls Under the Lens

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A club has 30 artists and 30 singers. A poll asks 12 from each group. Is either group overrepresented? Explain.	**No. Each group makes up half the club and half the poll.**
2	Of 48 students, 24 are gamers. A poll asks 9 gamers and 3 non-gamers. Which group is overrepresented? Explain.	**Gamers. They are 24/48 of the students but 9/12 of the poll.**
3	At a school, 27 students take art and 9 take band. A poll asks 3 from each group. Which group is overrepresented? Explain.	**Band students. They are 9/36 of the students but 3/6 of the poll.**
4	A poll asks, "Don't you agree the new schedule is better?" How might this question bias the answers?	**The wording suggests that students should agree, which may push more students to answer yes.**

PART 2 · APPLY IT

1. **Yes. Students who bring phones are 42/56, or 75%, of the school but only 7/14, or 50%, of the poll. They are underrepresented.** Compare the share of students who bring phones in the school with their share of the poll. The unequal shares mean the poll could misstate school-wide opinion.
2. **No. The poll only asked tournament players, who may be more interested in gaming gear than other students.** Identify who was left out of the poll. The 16 yes votes describe the players asked, not every student.

CHALLENGE

The grades had equal numbers invited, but one grade supplied 30 of the 36 replies, so it is overrepresented. Also, 36 invited students did not reply, so 25 yes votes do not show what most of the 72 invited students want.

Accept equivalent fraction or percentage comparisons. For the challenge, accept either unequal reply rates or the missing replies as a reason only if the explanation connects it to the claim.