LESSON MAKER PRO

Sample or Stumble?

Use samples to make careful estimates.

GRADE 7 · 7A.DSP.A.26.c

7A.DSP.A.26.c "Determine whether conclusions and generalizations can be made about a population based on a sample."

NAME _____ DATE _____

THE BIG IDEA

A random sample from the whole population can help you estimate a population result. A sample taken from only one group may be biased, so its results may not describe everyone.

WORKED EXAMPLE

A random sample gives these results. About how many of the school's 200 students want a game room?

SCHOOL SURVEY

Random sample	Count
Students asked	25
Want a game room	10

1. The sample fraction is 10/25.
2. 10/25 of 200 is 80.
3. Because the sample was random, 80 is a reasonable estimate.

Answer: About 80 students.

PRACTICE 4 problems

1 In a random sample of 30 students, 18 favor later lunch. About how many of the school's 150 students favor later lunch?

ANSWER _____

2 A coach asks only soccer players whether the school should buy more soccer balls. Can the coach use their answers to describe what all students think? Why?

ANSWER _____

3 In a random sample of 16 library books, 12 are fiction. About how many of the library's 64 books are fiction?

ANSWER _____

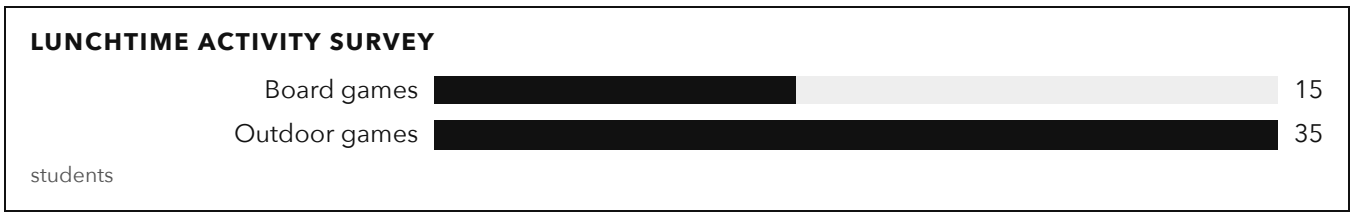
4 A student randomly selects 24 names from a complete seventh-grade roster. Can the results help estimate what all seventh graders think? Why?

ANSWER _____

_____

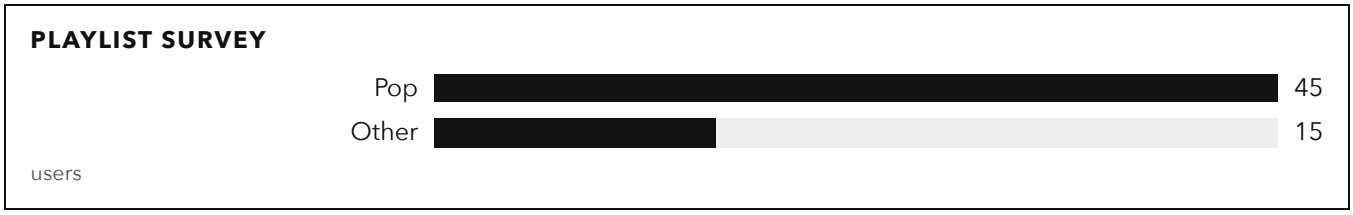
APPLY IT Show your work

1 A school randomly asks 50 of its 400 students which lunchtime activity they prefer. Use the graph to estimate how many students prefer board games. Can this estimate describe the school?



ANSWER _____

2 A music app asks 60 users who clicked a pop-music link which playlist they want next. Use the graph to find the fraction who chose pop. Can the app use that fraction to estimate what all 600 users want?



ANSWER _____

CHALLENGE One step up

Each grade has its own random sample. Estimate how many students in both grades favor a dance. Explain why using 13/24 for all students would give a different estimate.

DANCE SURVEY

Grade	Students	Asked	Favor dance
7	240	12	9
8	360	12	4

WORK SPACE AND ANSWER

Sample or Stumble?

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	In a random sample of 30 students, 18 favor later lunch. About how many of the school's 150 students favor later lunch?	**About 90 students.**
2	A coach asks only soccer players whether the school should buy more soccer balls. Can the coach use their answers to describe what all students think? Why?	**No. Asking only soccer players may leave out different opinions from other students.**
3	In a random sample of 16 library books, 12 are fiction. About how many of the library's 64 books are fiction?	**About 48 books.**
4	A student randomly selects 24 names from a complete seventh-grade roster. Can the results help estimate what all seventh graders think? Why?	**Yes. Every seventh grader had a chance to be selected.**

PART 2 · APPLY IT

1. **About 120 students. Yes, the random sample can support an estimate for the school.** 15/50 of 400 is 120. The students were chosen at random from the school.
2. **3/4 chose pop. No, users who clicked a pop-music link may not represent all users.** 45/60 simplifies to 3/4. The survey left out users who did not click the link.

CHALLENGE

About 300 students: 9/12 of 240 is 180, and 4/12 of 360 is 120. Using 13/24 gives equal weight to the two grades, but grade 8 has more students.

Accept equivalent fractions and estimates labeled with “about.” For the challenge, accept any explanation that the two equal-sized samples represent grades of different sizes.