LESSON MAKER PRO

Sample Snapshots

Use a sample to estimate a whole group.

GRADE 7 · 7.SP.A

CCSS.Math.Content.7.SP.A "Use random sampling to draw inferences about a population."

NAME _____ DATE _____

ESTIMATE FROM A SAMPLE

Use a random sample to estimate a population because each member has a fair chance to be chosen. Find the sample proportion, then multiply it by the population total.

WORKED EXAMPLE

A random sample of 25 library books has 8 mystery books. The library has 150 books. Estimate the number of mystery books.

1. Write the sample fraction: 8/25.
2. Set 8/25 = x/150.
3. x = (8 x 150)/25 = 48.

Answer: About 48 mystery books

PRACTICE 5 problems

1 1. A random sample of 20 students has 7 students who walk to school. There are 140 students. Estimate how many walk to school.

ANSWER _____

2 2. In a random sample of 15 students, 9 choose pizza. A cafeteria serves 90 students. Estimate how many choose pizza.

ANSWER _____

3 3. A random sample of 30 phones has 9 with cracked screens. A repair shop checked 200 phones. Estimate how many have cracked screens.

ANSWER _____

4 4. A random sample of 12 players has 5 who play soccer. There are 72 players. Estimate how many play soccer.

ANSWER _____

5 5. A random sample of 18 students has 6 who bring lunch. There are 108 students. Estimate how many bring lunch.

ANSWER _____

APPLY IT Show your work

1 A game club randomly surveys 40 students. Fourteen say they play strategy games. The school has 320 students. Estimate how many students play strategy games.

WORK SPACE

ANSWER _____

2 A music app randomly asks 50 users about headphones. Thirty-five users use headphones every day. The app has 240 users. Estimate how many use headphones every day.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Two random samples are used to estimate how many of 400 students like graphic novels. Sample A has 9 of 20 students. Sample B has 28 of 80 students. Find both estimates. Which sample should you use, and why?

_____

_____

ANSWER KEY

Sample Snapshots

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	1. A random sample of 20 students has 7 students who walk to school. There are 140 students. Estimate how many walk to school.	**49 students**
2	2. In a random sample of 15 students, 9 choose pizza. A cafeteria serves 90 students. Estimate how many choose pizza.	**54 students**
3	3. A random sample of 30 phones has 9 with cracked screens. A repair shop checked 200 phones. Estimate how many have cracked screens.	**60 phones**
4	4. A random sample of 12 players has 5 who play soccer. There are 72 players. Estimate how many play soccer.	**30 players**
5	5. A random sample of 18 students has 6 who bring lunch. There are 108 students. Estimate how many bring lunch.	**36 students**

PART 2 · APPLY IT

1. **112 students** The sample proportion is 14/40. Multiply 14/40 by 320 to get 112.
2. **168 users** The sample proportion is 35/50. Multiply 35/50 by 240 to get 168.

CHALLENGE

Sample A estimates 180 students. Sample B estimates 140 students. Use Sample B because its larger random sample is generally more representative of the population.

Accept equivalent proportion work and estimates written with appropriate units. For the challenge, accept the larger-sample reasoning if both estimates are correct.