LESSON MAKER PRO

Data Detectives

Read percentages and check the sample.

HIGH SCHOOL · MA.912.DP.5.11

MA.912.DP.5.11 "Evaluate reports based on data from diverse media, print and digital resources by interpreting graphs and tables; evaluating data-based arguments; determining whether a valid sampling method was used; or interpreting provided statistics."

NAME _____ DATE _____

TRUST THE DATA

Find a percent by dividing the part by the total. A report is more trustworthy when its sample is chosen from the whole group, not from one special group.

WORKED EXAMPLE

In a survey, 18 of 48 students prefer a later start time. What percent prefer it?

1. Write 18/48.
2. Simplify: 3/8.
3. Convert: 3/8 = 37.5%.

Answer: 37.5%

PRACTICE 5 problems

1 Table: Bike, 21; Total surveyed, 60. What percent bike to school?

ANSWER _____

2 A report says 45% of 200 attendees bought tickets early. How many attendees is that?

ANSWER _____

3 Which sample is more likely representative: 50 students randomly selected from the full roster, or 50 students leaving one club meeting?

ANSWER _____

4 A lunch survey asks only students on the basketball team. Is this a valid sample of the school?

ANSWER _____

5 Podcast A: 36 of 120 listeners recommend it. Podcast B: 28 of 70 listeners recommend it. Which has the higher percent?

ANSWER _____

APPLY IT Show your work

1 The student newspaper surveys 180 students through a QR code at a basketball game. Of those surveyed, 54 want longer lunch periods. The paper claims that most students want longer lunches. Is the claim supported?

WORK SPACE

ANSWER _____

2 School leaders randomly select 150 students from a school of 600. In the sample, 72 choose coding, 51 choose graphic design, and 27 choose music production. Which elective is most popular in the sample, and is the sampling method reasonable?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Report A randomly surveys 40 students and finds that 14 want longer library hours. Report B gets online responses from 200 followers of the library account and finds that 90 want longer hours. Which report gives stronger evidence about the whole school? Explain.

_____

_____

ANSWER KEY

Data Detectives

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Table: Bike, 21; Total surveyed, 60. What percent bike to school?	**35%**
2	A report says 45% of 200 attendees bought tickets early. How many attendees is that?	**90 attendees**
3	Which sample is more likely representative: 50 students randomly selected from the full roster, or 50 students leaving one club meeting?	**The 50 students randomly selected from the full roster.**
4	A lunch survey asks only students on the basketball team. Is this a valid sample of the school?	**No. It is biased because it includes only basketball team members.**
5	Podcast A: 36 of 120 listeners recommend it. Podcast B: 28 of 70 listeners recommend it. Which has the higher percent?	**Podcast B, 40% compared with 30% for Podcast A.**

PART 2 · APPLY IT

1. **No. Only 30% wanted longer lunches, and the sample may be biased toward basketball fans.** Compute 54/180 = 30%. "Most" means more than 50%, and the survey was taken from a special group.
2. **Coding, and yes. Coding has 48% of the sample, and the random sample comes from the whole school.** Compute 72/150 = 48%, 51/150 = 34%, and 27/150 = 18%. A random sample from the full school is reasonable.

CHALLENGE

Report A gives stronger evidence because its sample is random. Report A shows 35%, while Report B shows 45%, but followers of the library account may not represent the whole school.

Accept equivalent fraction or percent work when correct. For sampling explanations, accept statements that identify random selection from the full population or bias from a special group.