Lesson Maker Pro

Compare Sample Evidence

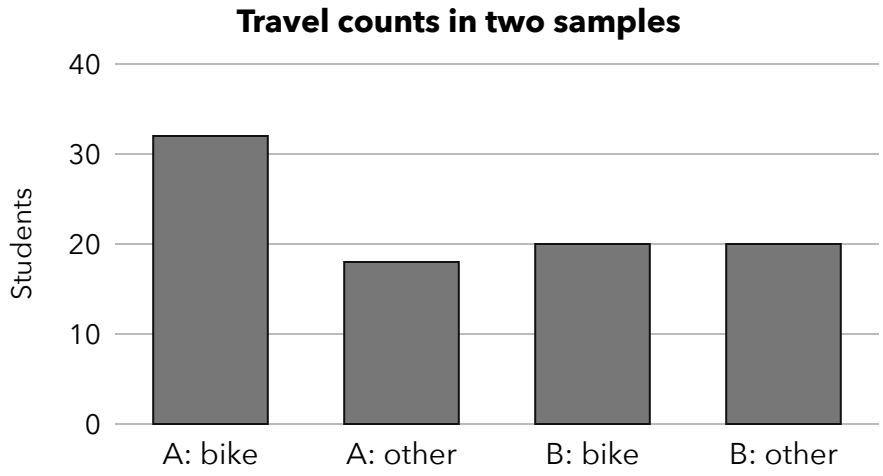
Use proportions and numerical distributions to make qualified comparisons.

7.PR.6.6 Use appropriate graphical displays and numerical summaries from data distributions with categorical or quantitative (numerical) variables as probability models to draw informal inferences about two samples or populations.

NAME _____ **DATE** _____

Categorical samples

These classroom data are simulated random samples, not real school findings. School A:32 of 50 students bike to school; School B:20 of 40 bike. Each student reports one travel category.



1. Identify the variable and its type. Calculate the biking proportion in each sample. Why should you compare proportions rather than just counts?

2. Write a cautious comparison about these two schools. Explain why another random sample could give different proportions.

Numerical samples

Independent simulated samples of five students per school report travel times in minutes. These samples are too small for a confident schoolwide claim.

School A	School B
10	20
15	25
15	25
20	30
40	35

3. Draw aligned dot plots on separate graph paper. Identify the variable type; calculate the median, mean and range for each sample.

4. Compare typical travel time and variability using your plots and calculations. Explain why A's mean and median differ. What additional sampling evidence would strengthen a general claim?

Teacher Key

Categorical variable: travel mode/bike versus other. A 32/50=.64=64%; B 20/40=.50=50%; difference 14 percentage points. Counts alone obscure different sample sizes. The A sample has a larger biking proportion, suggesting a possible population difference, but sampling variability prevents certainty.

Numerical variable: travel minutes. A sorted 10,15,15,20,40; median 15, mean 20, range 30. B 20,25,25,30,35; median 25,mean 27,range 15. A has a lower typical time by both summaries and greater range; its 40-minute value pulls its mean above its median. Dot plots must show the repeated 15 and 25 as stacked points on aligned scales. Larger independently selected random samples or repeated comparable sampling would strengthen inference; do not generalize from these invented samples as factual school data.