



GRADE 7 · STATISTICS & PROBABILITY · HOMEWORK

DRAWING INFERENCES FROM RANDOM SAMPLES

Today's goal: I can use data from a random sample to draw inferences about a population with an unknown characteristic, generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates, generate multiple samples of categorical data of the same size to gauge the variation in estimates, generate multiple samples (or simulated samples) of the same size of numerical data to gauge the variation in estimates and understand that sample statistics are estimates of population statistics but are not the same.



Pick your peppers!

Everyone does Mild & Medium. Then climb as high as you can.



Mild

Tan the Turtle



Medium

Digit the Fox



Spicy

Blaze the Dragon

WATCH MR DJ SOLVE

How far apart are the two estimates?

1 $220 - 200 = 20.$

Answer: 20 students



REMEMBER

Sample proportion $\times$ population size = estimate. Repeat the sample and the estimate moves; the spread measures how much to trust one. Pooling samples gives a steadier estimate, but never a certainty.



FAMILY CORNER

No need to remember this math yourself! Ask your student to teach you Mr DJ's example, then try the first Mild problem together.



MILD

Tan the Turtle: Slow and steady. Warm up!

1 A sample of 20 finds 11 students walk to school. What percentage is that?

Answer

- 2 Another sample of 20 finds 10. What percentage is that?

Answer



OOPS ALERT

Careful on #1! The slip Mr DJ sees most: Answered 11%.



MEDIUM

Digit the Fox: Stretch your brain.

- 3 Use the first sample to estimate the number of walkers in a school of 400.

Answer

- 4 Use the second sample to make the same estimate.

Answer

- 5 Pool the two samples: 21 walkers out of 40 students. What percentage is that, and what is the estimate for 400?

Answer



SPICY

Blaze the Dragon: Bring the heat!

- 6 Explain why the pooled estimate lies between the other two, and whether that will always happen.

Answer

- 7 A student reports “210 students walk to school.” Rewrite the sentence so it honestly describes what the data supports.

Answer



How did this sheet feel? ☐ Easy for me ☐ Just right ☐ Made me think

Stuck? Watch Mr DJ explain it

Step-by-step video lessons on YouTube: [youtube.com/@MathWithMrDJ](https://www.youtube.com/@MathWithMrDJ)

Brain break: daily puzzles

Three new math puzzles every day, free: puzzles.mathwithmrdj.com