

Student Data Questions Ladder: How to Think Critically About Any Dataset

Good data analysis starts with good questions. Move up the ladder as your understanding deepens.

Level 6: What's Missing or Needed Next? (Advanced)

- What additional data would strengthen this analysis?
- What questions remain unanswered?
- How could this data be misused or misunderstood?
- What limitations should be acknowledged?

Level 5: What Conclusions Are Reasonable? (Proficient – Upper High School)

- What conclusions are supported by the data?
- What conclusions go too far?
- Are comparisons fair and meaningful?
- Is correlation being mistaken for causation?

Level 4: How Certain Are the Results? (Developing)

- Is there natural variation in the data?
- How large is the sample compared to the population?
- Could different samples produce different results?
- Are the results presented as exact or estimated?

Level 3: How Was the Data Collected? (Developing – Early High School)

- How was this data gathered? (survey, experiment, observation, etc.)
- Were the questions or measurements clear?
- Could the method influence the results?
- Was the data self-reported or measured?

Level 2: Who Is Represented? (Foundational)

- Who was included in this data?
- How many people or samples were involved?
- Who might be missing?
- Does this group represent everyone it claims to?

Level 1: What Am I Looking At? (Foundational – Middle School)

- What does this graph, table, or chart show?
- What is being measured or counted?
- What do the numbers represent?
- Over what time period was the data collected?
- Who created or shared this data?



Use Levels 1–3 for middle school

Use Levels 2–5 for most high school classes

Level 6 works well for essays, labs, and research projects

Applicable in science, math, social studies, ELA, and electives