

Questions That Elicit Professional Reasoning in CTE



Mary DeSimone, Mountaintop Education Consulting

Moving from checking for completion to making student thinking visible

Technical performance tells us what students can do. Purposeful questioning can help make the reasoning behind that performance visible.

Use these prompts during demonstrations, labs, shop work, performance tasks, troubleshooting, reflection, or work-based learning preparation. You do not need to use them all. **Choose the question that matches the kind of thinking you want students to communicate.**

EXPLAIN YOUR THINKING

Help students make their process and reasoning visible.

- Walk me through your thinking.
- What did you notice first?
- What led you to take that next step?
- How did you decide what to do?
- What information helped you make that decision?
- How would you explain your process from beginning to end?

Listen for: sequence, reasoning, connections between actions and decisions

USE EVIDENCE

Move students from stating a conclusion to supporting it.

- What evidence led you to that conclusion?
- What did you observe, measure, test, or notice?
- Which information was most important?
- What evidence supports your decision?
- How do you know your solution worked?
- What would you look for to confirm your conclusion?

Listen for: observations, measurements, test results, criteria, technical evidence

JUSTIFY A DECISION

Help students explain why a particular choice made sense.

- Why did you choose that approach?
- What made this the best option?
- What alternatives did you consider?
- What made you rule out another possibility?
- What factors influenced your decision?
- What might make you choose differently in another situation?

Listen for: justification, comparison, criteria, cause and effect

TROUBLESHOOT

Make problem-solving visible while it is happening.

- What do you know so far?
- What are you still trying to figure out?
- What do you think might be causing the problem?
- What will you check next? Why?
- What changed after you tried that?
- If that doesn't work, where will you go next?

Listen for: hypotheses, testing, revision, cause and effect, decision-making

ADAPT FOR YOUR AUDIENCE

Help students practice communicating technical knowledge in professional contexts.

- How would you explain this to someone with less technical knowledge?
- What would a customer, patient, client, or guest need to understand?
- How would your explanation change for a supervisor or experienced colleague?
- What questions might they ask you?

Listen for: audience awareness, word choice, level of detail, clarity, professional tone

REFLECT AND REFINE

Use reflection to strengthen future performance.

- What worked well in your approach?
- Where did you have to adjust your thinking?
- If you did this again, what would you do differently?
- What might be difficult for someone doing this for the first time?

Listen for: reflection, transfer, self-evaluation, application