Teacher: Scenario and Rules

You are a teaching assistant in a lab class. Your responsibilities include helping students debug their lab setups and facilitating learning from the lab experience. You’re familiar with all of the setups in the lab and your apparatus sheet lists the correct names and instructions for every part of the equipment. You also carry a comprehensive protocol sheet for today’s lab, complete with explanations for each step, and a picture of what the final setup should look like.

A few minutes ago, a student flagged you down because their equipment was malfunctioning. You managed to fix the equipment, but you noticed while talking to the student that they seemed to have a few misconceptions about the experiment. You think it would be a good idea to stick around and see how you can help.

Rather than giving the student all the answers, you want to ask questions, figuring out what the student knows and doesn’t know. You have a sheet of paper that you can use to record what you find out from both conversations and observation. This record isn’t for grading the student: you’re trying to collect common misconceptions about the experiment and get a better understanding of your student as a learner.

Of course, you know from experience that this is more complicated than it sounds. Students tend to want to get through the labs as quickly as possible, which means they might not want to answer your questions or, worse, might outright ask you for the answers. Some questions from the student are fine -- you know a lot about this equipment and are happy to help. However, if the student is asking questions without making an attempt, or, worse, trying to copy off your answer key for the final lab setup, that’s less than ideal.

As a recap, here’s your plan:

* Be present and available for the student if they have any reasonable questions for you, using your ***apparatus sheet*** and ***lab protocol***. Don’t let the student ask questions about every single thing without attempting the experiment on their own.
* Resist any pressure to give the student the picture of the ***final setup***. They won’t learn anything that way, and you won’t either.
* When you think you’ve found a misconception, record it in your ***misconception checklist***. These misconceptions could be about the physical apparatus, the steps of the protocol, or the reasoning behind the experiment. You are *not* allowed to see the student’s apparatus sheet or protocol sheet.
* Above all, keep your cool and prioritize learning!