

Questioning Strategies

How can we use questions to encourage or discourage exploration & discussion?





Examples of Questions

Example Prompt 1:

What do you notice about what that animal is doing?

Example Prompt 2:

Describe what you notice about what that animal is doing.

Session Goals

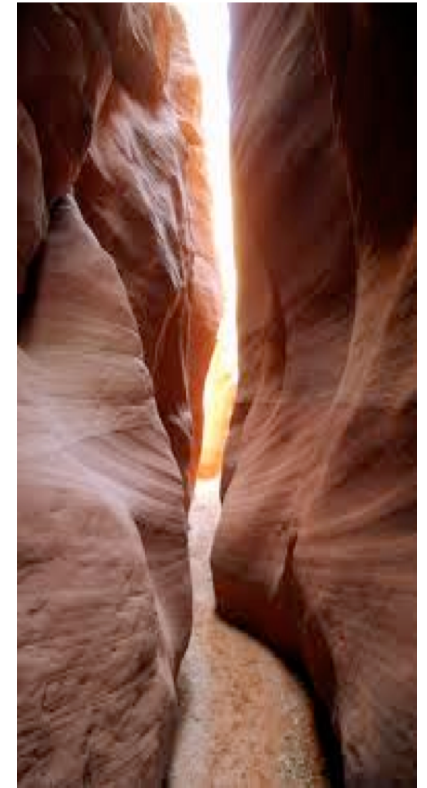
- Experience and reflect on different types of questions
- Understand how the role of the instructor influences questioning strategies
- Practice matching instructional goals with specific questions



Types of Questions

B r o a d

Narrow



Comparing Broad and Narrow Questions

B r o a d



- have no specific answer
- answer requires higher-level thinking, exploration, observation, or an opinion
- Promote discussion and divergent thinking

Narrow



- have a specific answer
- answer requires recall of information
- Promote group response and convergent thinking

Read the handouts, then discuss

- What are some situations or goals for which narrow questions might be appropriate?
- What are some situations or goals for which broad questions might be appropriate?
- Any questions that come up for you from reading the handout.



Use of Broad Questions

- Broad questions tend to be under-utilized by classroom teachers and field instructors.
- Field instructors often use broad questions about feelings and values, but not about science.
- NGSS and Common Core encourage more use of broad questions to help students develop reasoning and critical thinking skills.



BFF Questions

- What do you notice?
- What do you wonder?
- What does that remind you of?
- How might you explain that?
- How is this similar/different from...?
- What do you think about that idea?
- Do you agree with...?
- Tell me more about that.
- Can you explain/show me your evidence for that?
- How can you be more sure?
- What surprised you?

And any questions **you** don't already know the answer to!



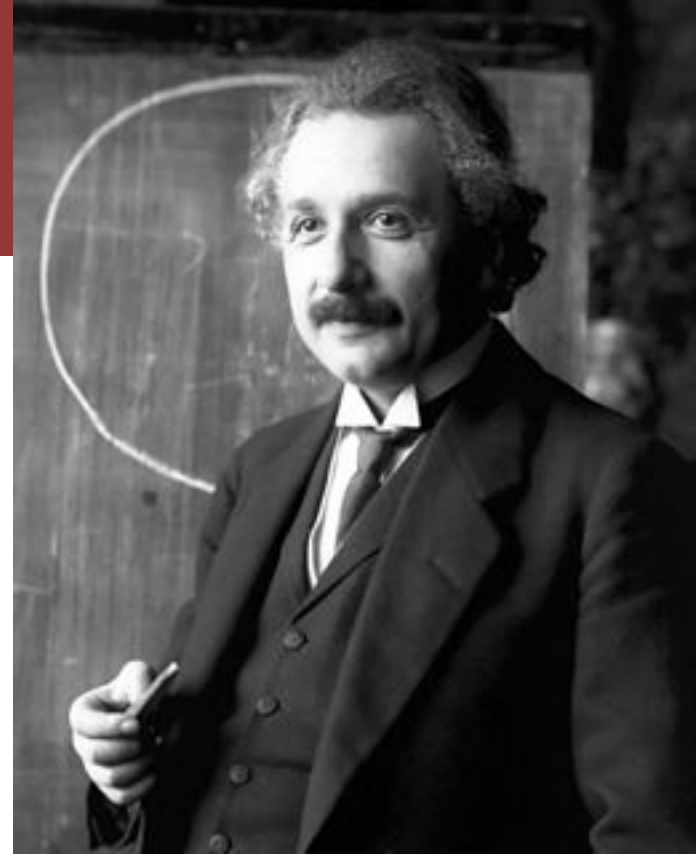
“True dialogue occurs when teachers ask questions to which they do not presume to already know the correct answer.”

(Jay Lemke, education researcher, 1990)



Skit #1: The Sage on Stage

- ❖ Learning happens when the instructor gives information, and students receive it.
- ❖ Instructor is the recognized authority and the repository of information.
- ❖ Education is the transmission of information from one source to another.



Skit #2: The Guide on the Side

- ❖ Learning is through shared inquiry and collaborating in investigations.
- ❖ Focuses on the thinking, or cognition, of the student.
- ❖ Students express their ideas, expose any conflicts, and are *guided* to either reinforce, build upon, or replace their ideas.



Skit #3: The Entertainer

- ❖ Learning should be fun!
- ❖ Focus is on the instructor's engaging performance and delivery of information.
- ❖ Students may be actively entertained, but probably not intellectually engaged.



Quotes from Field Instructors:

“I used to eat fake scat on the trail with kids, until I realized *that* was the main thing they remembered afterwards.”

- Field instructor

“Because children are genuine and authentic, I should be too. I found that my teaching really opened up once I let go of the idea that I had to have a certain *persona* around students.”

- Field instructor



Exploration Goals

- Goal 1: **Help students make better observations**
- Goal 2: **Help students ask questions**
- Goal 3: **Help students connect past ideas and new experiences**
- Goal 4: **Help students make explanations based on evidence**
- Goal 5: **Help students think with others**
- Goal 6: **Help students develop scientific argumentation skills**



Activity Lab

Goal: Plan questions for a common instructional situation in your program.


Overview: Work with a partner to identify goals for the activity, look for opportunities to insert broad questions, and determine a sequence of broad questions, narrow questions, and content delivery that matches your goals.



Why is planning questions important?

- Helps ask productive questions, even in stressful situations
- Causes instructors to think about potential student responses ahead of time
- Planning does not take the place of improvising—they work in tandem!



A young boy with dark skin and curly hair, wearing a grey camouflage jacket and a brown backpack, is crouching in a forest. He is holding a magnifying glass over a small object held by a hand reaching from the right. He also holds a clipboard with a white sheet of paper. The background is a blurred forest scene with trees and foliage.

“An expert is a man who has made all the mistakes which can be made, in a narrow field.”

-Niels Bohr, 1990



Reflection

- What would you like to remember about how to use questions to encourage student exploration & discussion?
- What other situations in your instruction could use more question planning?
- How will you incorporate these ideas into your practice?



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