

Scientists Being Effective in the Classroom Best Practices

How do you get the students to understand the topic or concept in a way that they will remember?

1. Find out where the students are - Ask them questions

- a. Identify a way in which the topic or concept you will be talking about relates to everyday life (something within the students experience) or is in the news. We will call this the “issue.”
- b. Ask first if the students know about this “issue.”
 - i. If the students have heard about the “issue,” probe their understanding with more questions about what they know and understand.
 - ii. If the students have not, describe the “issue” in more detail and continue to ask questions until you get to the point where the students are responding to the questions...you have reached their level of understanding.
 - iii. Note that if you discover that the students have some misunderstandings or do not have the knowledge to follow what you had prepared, be willing to backtrack and proceed at a more basic level.
- c. Make sure you spread around who you call on – don’t let any one student or a few students dominate.
- d. Make eye contact with the students as you talk to them.

2. Describe the “issue” and how the topic or concept plays into it. Again, at each stage you can ask questions about what the students think.

- a. Why do you think this happens?
- b. What do you think will happen when/if.....?

3. Think of ways to help the students visualize the “issue” and topic or concept

- a. Get the students involved in the presentation.
 - i. Identifying places on a map.
 - ii. Handling demonstration materials.
- b. Modeling
 - i. Scaling to reflect distances, heights, depths, or time using unconventional units that are within the student’s experience or understanding.
 1. A student’s height
 2. The length of a football field
 3. The height of close by mountains
 4. When were the students born
 5. When was America discovered
 - ii. Comparisons
Again define unconventional units that the students can relate to.
 - iii. Visualization of a Process
Have students role play with some being components of the Earth system and some being forces within the Earth System.
 - iv. Graphs – graphs are difficult and most likely would only be used with older students. However, if kept simple with relative values on the axis they can be used even with 1st grade students.

4. The visit should end with your inviting questions from the students. They may have questions related to you, your work, and your workplace.

- a. What do you do? – Have a simple explanation. You might describe what the larger group you are a part of does if that is easier to convey.
- b. Where do you work?
- c. Do you do field work, computer work, or both?
- d. How did you get interested in this work?
- e. How long did you have to go to school?
- f. What did you major in in college?
- g. How much money do you make? Do not give your exact salary. Give a round number that is representative for someone in your field at your level. “People in my field make around \$xxxxxx.”