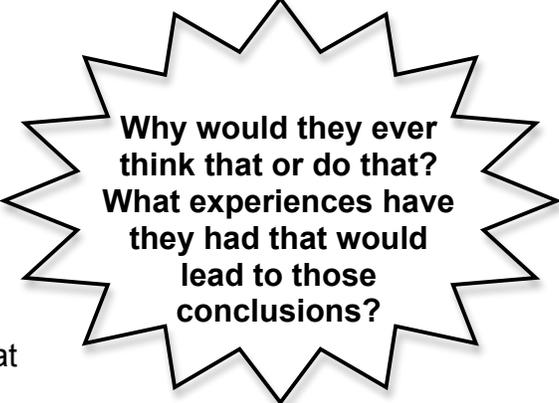
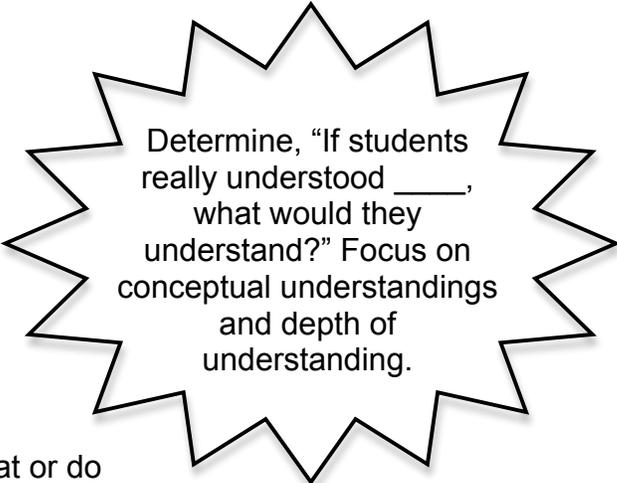


# Protocol for determining appropriate interventions

1. Based on class, grade level, district, or state assessments determine areas of concern. (Broad categories)
2. Pinpoint disconnect. Identify specific problem types and infer errors made. (Narrow the focus)
3. Infer causes, "Why would they ever think that or do that?" (What could have caused the misconception?)
4. If a change in instructional practice could prevent the misconception, modify practices. Develop an interview assessment that can be given whole class, small group, or individually. Note: Do not instruct. (Take a closer look)
5. Based on results design or choose activities that will plug conceptual holes using multiple representations: concrete, pictorial, verbal, and symbolic.
6. Consider ways to throw a wrench in the students' thinking. Design or choose activities that will cause students to rethink an idea OR build the conceptual base (including conceptual language) for the targeted mathematics, connect mathematical ideas.
6. Make sure students are doing the thinking. Do not think for them.
7. Do not use tricks and be careful of "stories." (e.g., Gallon man does not build a concept of the size of units)
8. Be patient!



# Protocol for conducting whole class or small group interviews

1. To have an artifact of the interview, have students record their answers on their own paper.
2. Walk around the room and look at students' answers throughout the entire interview. This will allow for additional follow-up questions or a change in direction if needed. It will also provide for quick identification of struggling students and students with quite sophisticated understandings.
3. Begin with an open-ended question. It is important to determine what students have internalized without any prompts.
4. Ask questions that will provide insights into conceptual understandings and depth of understanding. The concept maps can assist in identifying launch points.
5. Periodically ask students to write how they know, how they would convince someone else they are correct, or how they would explain the idea to a younger student.

## Guiding lens for conducting interviews

1. Use initial questions as launching points.
2. Pursue a curiosity.
3. Try to determine how and why they think \_\_\_\_\_ about a given concept.
4. Focus on conceptual understandings.
5. Seek to answer...What do they understand?
6. Do not panic if there is a misconception...pursue it.
7. Do not teach or correct. That is for another time. But you may try to throw a wrench in their thinking. We typically learn even more about their understandings or misunderstandings.
8. Do not cue with your face. Use your face to show that you are really curious in what they are thinking and you want to understand. You can look puzzled or confused but don't indicate if an answer is correct or incorrect.
9. The same is true with words. Be careful with praise. If needed, praise persistence, thinking, and work ethic but not correct answers.