**Identification Detectives**

Scientists often encounter problems they cannot “see” the answer to. When this occurs, they must often make creative leaps of imagination to infer internal composition based on indirect observations and measurements, logical arguments, and **questioning other scientists who have experienced similar situations**.

During this activity, you will be exploring the composition of your container and *comparing* it to others in the room. Only you are allowed to touch your container. If you touch someone else’s container, or you examine your container in another person’s presence until allowed by the teacher (who is holding the detonator), they may explode.

Round 1: Brainstorming. During this time, you are to generate as many questions as possible that you could ask another person about their container. (Then the teacher will hand out the containers.) [2-4 minutes]

Next: Examine your container. Be careful not to get too close to anyone as your container may detonate. Refine your list after you have examined the container. Limit yourself to 3 questions that you could ask. [2-4 minutes]

Round 2: Secure your container. Take your notebooks and ask your three questions to 2 other people (not at your table). You will then have 2 minutes to modify your questions. [4 minutes- 12 total]

Round 3: Ask your newly modified questions to as many people as possible. [8 minutes- 20 total]

Round 4: The proximity detonator is now turned off and you may examine your container in the presence of anyone. Everyone who believes they have the same contents should stand together near a piece of chart paper. [4 minutes]

On chart paper, write the 3 questions most useful in helping determine the container’s contents. Be prepared to explain how your questions changed from Rounds 1 to 4. [6 minutes- 30 total]

Source: Brain-Powered Science-Teaching and Learning with Discrepant Events by Thomas O’Brien. NSTA Press. 2010.