Challenge: Density Layers

Objective: Students use the principles of evaporation and condensation to move water from the bottom of a beaker into a small cup

Materials:

- Large glass beaker (1 per workstation)
- Water
- Corn Syrup
- Vegetable oil
- Tape
- plastic bottle cap
- grape
- metal nut
- piece of sponge

Challenge Set Up:

- Place an empty beaker at each table along with the nut, grape, bottle cap, and sponge.
- Place all other liquids, as well as any decoy supplies on a designated materials table

Challenge Procedure:

- State the goal of the challenge:

Fill the beaker with liquid and then place the objects in the beaker so that they float one on top of the other in a column.

- Explain any addition rules (no talking, only one person can move, ect)
- Provide ten minutes of work time
- At the end of ten minutes, have a successful group demonstrate their solution,
  - if no group is successful, demonstrate the correct solution

Challenge Solution

- Place a layer of corn syrup at the bottom of the beaker
- Pour a layer of water on top of that
- Top with a layer of vegetable oil
- Gently drop the objects into the beaker and observe which layer they stop at.
  - Nut sinks to bottom, grape rests on top of corn syrup, bottle cap on top of water and sponge on top of oil.