

Interactive Notes- States Of Matter

Materials per group of 4 students:

- Demo 1 1- zipper bag with 2 spoonfuls of sodium hydrogen carbonate (baking soda)
 25mL –[acetic acid \(vinegar\)](#)
 4-note sheets
- Demo 2 1-penny/coin
 1-dropper full of water
 1-narrow-neck bottle (the penny must cover the entire opening; glass is ideal)
 1-600mL (or larger) beaker or container
- Demo 3 1-250 mL beaker- half-filled with ice water
- Demo 4 1-dropper with food coloring, in a plastic bag so it won't leak

Teachers-have your own set of materials to demonstrate how to do these

Procedure:

Demo 1- Have student #1 (of the 4) pour vinegar into the bag of baking soda and quickly seal it shut, trapping the gas. Before pouring, the bag should already be halfway zipped..

Demo 2- Tell student #2 to put the bottle inside the 600mL beaker, and then put the penny on top, covering its mouth. Then have them fill the dropper with water from the ice water beaker and squirt water 2 droppers on top of the penny.

Teachers- take the flask of near-boiling water to each student #3 and slowly pour the water into the larger beaker that surrounds the bottle while they steady the bottle so it doesn't tip. *Caution: pour very carefully- boiling water will burn skin!* Tell students to keep the penny centered if it slides off the mouth and to keep water around the penny. Squirt more water if needed.

Demo 3- Have student #3 take an ice cube from the ice water and touch it to the outside of the baggie from demo #1. Wherever they move the ice cube, the bag will fog on the inside.

Demo 4- Have student #4 take the bottle from demo #2 out of the large beaker and then put the beaker with ice water next to it. Then have them put 4 drops of food coloring into each beaker then just observe what each does without touching either beaker.

Clean up- leave baggies, baking soda and spoon, vinegar, and note sheets out so students can reset materials

Caution on demo #3: NEVER leave a dry flask/beaker on a hot plate, and make sure you turn it off at the end of the day.

Click [here](#) for more about Interactive Notes, like getting ready, presenting, and materials management.