

Interactive Notes- Conserving Land, Water, & Air

Materials per group of 4 students:

- Demo 1 1-3 oz. plastic cup with holes punched in the bottom
 1-small beaker (100 mL)
 1-sandwich bag with a handful of aquarium gravel
 1-6" x 6" square of cloth (or paper towel)
 1-container with 25-mL or so of "dirty" water (with glitter)
 4-note sheets
- Demo 2 1-large beaker (or bowl) with 50-mL vinegar
 1-baggie with baking soda, and spoon
 Bubble solution and wand
- Demo 3 1-beaker with ~100 mL of 10% bleach water
 1-dropper with food coloring in it; place in sandwich bag to contain the mess
- Demo 4 1-standard weight (100g, 200g, etc.), or equivalent, like a metal cubes from the [density block kits](#)
 Rocks in a sandwich bag that weigh 10 grams more than the weight or cube

Teachers- Have your own set of materials to demonstrate how to do these. And do yourself a HUGE favor by labeling & number-coding everything that you can so it's clear what it is and which demo it's for.

Procedure:

Demo 1- Ask student #1 (of the 4) to assemble the water filter as shown on slide #1 of the PowerPoint. First, line the inside of the cup with a piece of cloth or paper towel, then add the gravel. Don't forget to set it on top of a "catch" beaker so all the water coming out of the bottom is contained. After the filter is assembled, have student #1 pour their "dirty" water (full of glitter) into it, noticing the glitter is removed.

Demo 2- Have student #2 slowly sprinkle one spoonful of baking soda into the beaker with 50-mL of vinegar. As it mixes, have them get their bubble solution and wand and play "bubble basketball"- get as many bubbles as possible inside the large beaker. One they start falling in, they'll be shocked to see the bubbles appear to levitate in mid-air!

Demo 3- After reminding everyone what bleach and food coloring do to clothes, have student #3 put a drop of food coloring (which we'll call "pollution") into the beaker with the 10% bleach water. After a few minutes it will fade and finally disappear.

Demo 4- Tell student #4 you have a riddle for them- hold the weight/metal cube in one hand and all the rocks in the other and decide which is heavier. Tell them that you carefully weighed the rocks so that one of the two weighs more than the other. Which is it? (*the rocks*)

Spend the last few minutes having students clean up and get materials ready for the next class. Refills: note sheets, food coloring, glitter water, and vinegar.

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