



THIS SCHOOL ROCKS

Lesson 5

Density: A Hands-on Experiment

Density is the relative amount of “heaviness” an object with a constant volume has. You can think of it as how “packed” or “crowded” the material is. For example, a rock is denser than a crumpled piece of a paper, and a ceramic cup is denser than a Styrofoam one.

Here is a fun way to learn about density, and how natural gas and oil relate to each other when trapped in rock.

What you’ll need:

- Clear vase
- Colored sand (recommended for added visibility)
- Vegetable oil
- Any clear, carbonated beverage

Instructions:

- 1.** Pour a layer of sand into the vase, at least 2-3 inches deep.
- 2.** Add a layer of vegetable oil to the sand surface. The vegetable oil represents crude oil.
- 3.** Prepare to pour the carbonated beverage as the third layer. The carbonation will represent natural gas. Guess which one will be more dense and which one will be less dense. Then, pour the carbonated beverage.
- 4.** After pouring the carbonated beverage, watch the gas bubbles rise. Notice each layer’s density.
- 5.** Place a piece of paper over the vase. See how the sand acts as a reservoir rock, while the paper acts as a cap rock, trapping the natural gas.



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