

Safety: Wear safety glasses or goggles and be sure to follow all safety instructions given by your teacher. Wash your hands after completing the activity.

ACTIVITY

Question to investigate:

Does changing the amount of material in an object change the object's density?

Materials

- Clear plastic container of water
- Clay ball (about the size of a marble)

Procedure

1. Place the ball of clay in the water to see if it floats or sinks.
2. Break off $\frac{1}{2}$ the original clay ball, form it into a ball, and place it in the water. Does it float or sink?
3. Break off another $\frac{1}{2}$ of the smaller piece and see if it floats or sinks in the cup of water.
4. Repeat this process two more times to make even smaller balls of clay. Test to see if the smaller balls of clay float or sink in water.

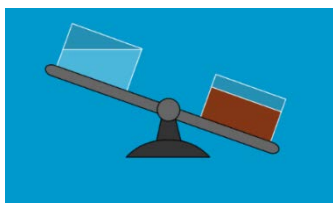


WHAT DID YOU OBSERVE?

1. What happened when you put smaller and smaller pieces of clay in the water? Did they sink or float?
2. Is clay more dense or less dense than water?

EXPLAIN IT WITH ATOMS & MOLECULES

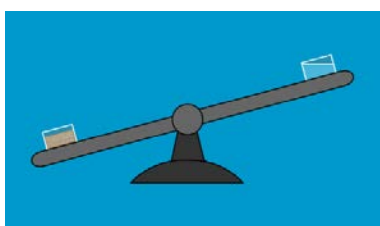
3. You saw an animation in which equal sizes or volumes of clay and water were weighed. No matter how small the amount of clay got, it was always heavier than the same amount of water. Why?



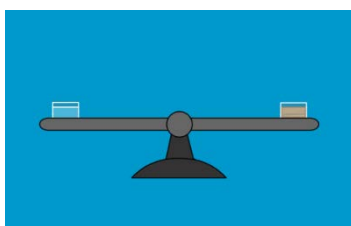
4. You saw a demonstration where your teacher put popsicle sticks in water. Since the popsicle sticks floated, is the wood more dense, less dense, or the same density as water? Explain.



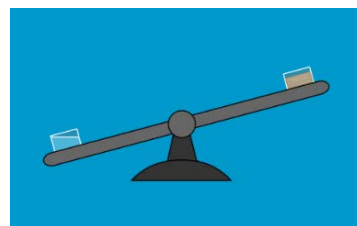
5. Since wood floats, which picture best shows what you would expect to see if you placed an equal amount or volume of wood and water on a balance?



A



B



C

TAKE IT FURTHER

6. If you weighed a volume of water equal to the volume of a giant piece of wood, do you think the wood would weigh more, less, or the same as the water? Why?
7. If you weighed a volume of water equal to the volume of a tiny pebble, do you think the pebble would weigh more, less, or the same as the water? Why?