Student activity sheet
Activity 7.7

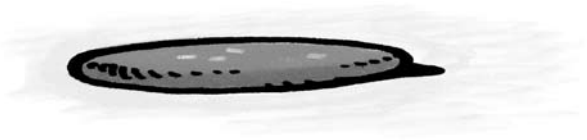
Name: _____

Changing the density of an object—Changing shape

Can changing the shape of an object affect whether it sinks or floats?

Procedure

1. Flatten one ball of clay into a large thin pancake shape about 10 cm or more in diameter.



2. Bend the edges up on the clay pancake to make a large shallow open box.

3. Add water to a plastic bowl until it is about ¾ full.

4. Slowly and carefully place your clay box on the surface of the water. It should float. If it does not float, remove the clay box from the water and try increasing its volume again.

5. Once your box floats, remove it from the water and use a ruler to measure its length, width, and height in centimeters. Find the value for the volume (l × w × h). Your answer should be in cubic centimeters.

Length _____ cm

Width _____ cm

Height _____ cm

Volume _____ cm^3

1. How does the volume of your clay box compare to the volume of the box your teacher made in the demonstration?

_____

2. Use "volume" and "density" to explain why your clay box floats and your teacher's clay box sinks?

_____

_____

_____

Name: _____

Changing the density of an object—Changing shape (*continued*)

3. In earlier experiments, you have seen substances that are more dense than water—like corn syrup, cold water, and a carrot slice—sink. A solid piece of aluminum is also more dense than water. However, aluminum is often used to build canoes. Based on what you now know, explain why a canoe made out of aluminum can float.

_____

_____

_____

_____

_____

4. You learned that cold water sinks, but did you ever notice that *ice floats in water*? When water freezes, the ice that forms takes up more space than it did when it was liquid water. You can see this for yourself if you place a small plastic container full of water with a lid in the freezer. The ice that forms will expand and push the lid up. Knowing this unusual property of water, explain why ice floats in water. Use the terms *weight*, *volume*, and *density* in your explanation.

_____

_____

_____

_____

_____