

Reinforcement

A Matter of Density

Complete this worksheet after you finish reading the section "Physical Properties."

Imagine that you work at a chemical plant. This morning, four different liquid chemicals accidentally spilled into the same tank. Luckily, none of the liquids reacted with one another! Also, you know the liquids do not dissolve in one another, so they must have settled in the tank in four separate layers. The sides of the tank are made of steel, so you can see only the surface of what's inside. But you need to remove the red chemical to use in a reaction later this afternoon.

How will you find and remove the red chemical? By finding the chemicals' different densities, of course!

The following liquids were spilled into the tank:

- a green liquid that has a volume of 48 L and a mass of 36 kg
- a blue liquid that has a volume of 144 L and a mass of 129.6 kg
- a red liquid that has a volume of 96 L and a mass of 115.2 kg
- a black liquid that has a volume of 120 L and a mass of 96 kg

1. Calculate the density of each liquid.

Green liquid: _____

Blue liquid: _____

Red liquid: _____

Black liquid: _____

2. Determine the order in which the liquids have settled in the tank.

First (bottom): _____

Second: _____

Third: _____

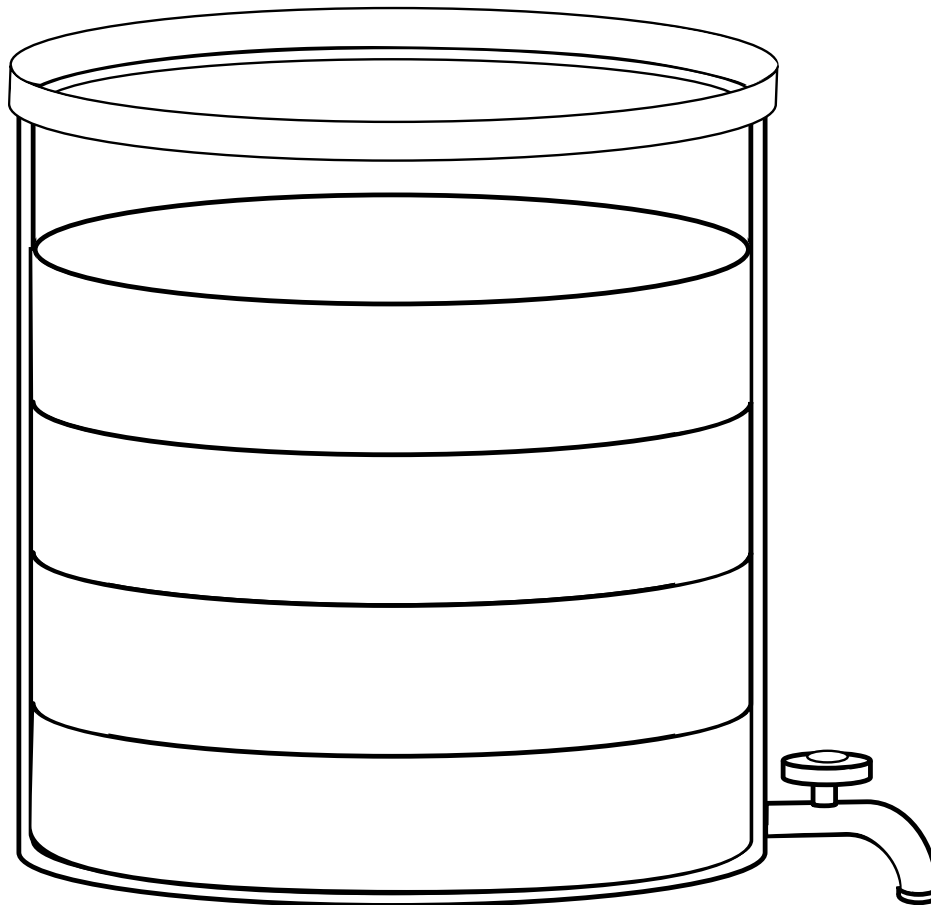
Fourth (top): _____

_____ 3. What kind of property did you use to distinguish among these four chemicals?

- a. a chemical property
- b. a physical property
- c. a liquid property
- d. a natural property

Reinforcement *continued*

4. Use colored pencils to sketch and label the position of the liquid layers in the tank on the diagram shown below.



5. Now that you know where the red chemical is inside the tank, how would you remove it?
