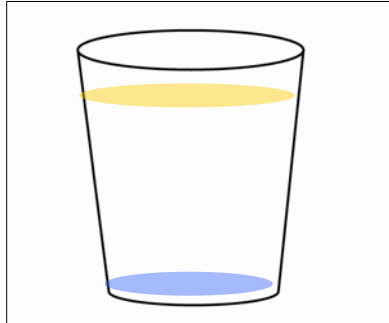


Chapter 3, Lesson 6 Activity Sheet Answers

1. The hot water stayed on top of the cold water because the hot water is less dense than the cold water.
2. The hot and cold water mixed when the cold water was placed on top because the cold water is more dense than the hot water, so it immediately sank (or mixed) with the water below it.

3.



The hot water floated to the top, while the cold water sank to the bottom. Cold water is more dense than room temperature water. Hot water is less dense than room temperature water.

4.

Comparing cold water and hot water to room-temperature water		
	Cold Water	Hot Water
Volume	Less	More
Mass	Same	Same
Density	More	Less

5. Cold water sinks in room-temperature water because the molecules in cold water are just a bit closer together, which slightly decreases its volume. This slight decrease in volume leads to an increase in density, so the more dense cold water sinks.

Hot water floats in room-temperature water because the molecules in hot water are just a bit further apart, which slightly increases its volume. This slight increase in volume leads to a decrease in density, so the less dense hot water floats.

6. The food coloring mixed more quickly in the cup containing ice because as the ice melted, the cold water sank to the bottom of the cup, agitating the food coloring, and causing it to mix with the rest of the water. The cup containing water but no ice did not have this extra mixing.