

Name: _____ Date: _____ Class: _____

Chapter 2.1-2.2
Matter and Energy Lab

When conducting lab experiments all students must follow the posted lab safety rules.

Your group will visit each of the 4 stations. If your next station is not available, be respectful and complete your questions while you wait.

You can use your text book and the power point notes for chapter 2.2.

Station 1

Materials: balloon, eye dropper, vanilla extract

Before class, five drops of vanilla extract were placed inside one of the inflated balloons and water was placed in the other. No extract was spilled on the outside of the balloon. The balloons are labeled balloon one and two.

Directions: Smell each of the balloons.

Can you tell which balloon is filled with vanilla extract? Which one?

Which chemical theory explains this difference?

What is happening to the particles inside the balloon?

Station Two

Materials: water, and vegetable oil

Directions:

Dip one index finger into the water. Dip your other index finger into the oil.
Gently wave each finger in the air.

Do your fingers feel cool? Explain any differences.

How quickly does each liquid evaporate? Explain.

Use kinetic theory to explain your observations.

Station Three

Materials: graduated cylinder, two clear containers, cold water, hot water, stop watch, food coloring, two eye dropper

Read the directions thoroughly before beginning the experiment. Tell the teacher when you are ready for the hot water.

1. Fill the graduated cylinder with cold water up to the pre-marked line.
Empty the cold water into the "cold" container.
2. Fill the graduated cylinder with hot water up to the pre-marked line.
Empty the hot water into the "hot" container.
3. Fill both of the eye droppers up to the line with food coloring.
4. Pick two people to add the coloring and one person to use the stop watch.

5. Add three drops of coloring to both the hot and cold containers. As soon as three drops have been added start the stop watch. Watch the containers and record the time when the first and second container has fully dispersed the color. *Do not cause any motion to the containers or the table.*

Time One: _____ Container:

Time Two: _____ Container:

Which container dispersed the color first?

What caused the difference in dispersion of the color in the liquids?

How could the kinetic theory explain this difference?
