
Colored Convection Currents Experiment

The experiment that my group has chosen is called colorful convection currents, this is an experiment that conducts convection as the drop of food coloring spreads out fastest in the hot water because the molecules are moving the fastest of the three jars. By doing this experiment we can see how the food coloring spreads out fairly quickly in room temperature water and slowest in the cold water.

Eventually the food coloring spreads throughout all three jars. When placed into water, food coloring will begin to mix with the water. The food coloring will mix the fastest in the hot water because the molecules are moving fast. As the food coloring in the room temperate water will take longer to mix with the water because the molecules are moving more slowly. And the food coloring in the cold water will take a long time to mix with the water because the molecules are moving even slower.

Even though the glasses of water look the same, the difference in the water temperate causes the molecules that make up the water to behave differently. Because molecules move faster when they are warmer and slower when they are colder, the molecules in the hot water are moving around faster than the molecules in the cold water. When placed into water, food coloring will begin to mix with the water. The food coloring will mix the fastest in the hot water because the molecules are moving fast. The food coloring in the room temperate water will take longer to mix with the water because the molecules are moving more slowly. And the food coloring in the cold water will take a long time to mix with the water because the molecules are moving even slower.

Thermal energy is the internal energy of an object from the kinetic energy of its atoms and molecules. The atoms and molecules from a hotter object have greater kinetic energy than those of a colder one, in the form of vibrational, rotational, or, in the case of a gas, translational motion. Thermal energy does not refer to the motion of an object as a whole. While a hot object has greater thermal energy than a cold object of the same type, it is possible for a large cold object, such as a mountain lake, to have more thermal energy than a small hot object, such as a cup of boiling water. Molecules move faster when they are warmer and slower when they are colder. The drop of food coloring spreads out fastest in the hot water because the molecules are moving the fastest of the three jars.