

Experiment 1.3: Movement You Do Not See

Data:

The colors spread away from the M&M candies on both plates, but they spread away more quickly on the plate that was over the once-boiling water. Also, the colors stayed pretty well separated, forming a "V" shape extending from the candy from which they came. However, the colors were mixed a bit more on the plate that was over the once-boiling water.

Summary:

In this experiment, I got a pan of water boiling and then took it off the heat. I also put a mixture of ice and water in a bowl that was roughly the same size as the pan. I then placed four M&M candies, each of a different color, at the center of one plate so that they were all touching one another. I took a large spoon and scooped ice-cold water out of the bowl and gently poured it onto the plate to form a layer that touched the candies but did not cover them. I then put that plate on top of the bowl.

I repeated the process with the other plate, this time scooping the once-boiling water out of the pan and adding it to the plate. I then put that plate on top of the pan. I then watched the experiment for a few minutes and noted what was happening on each plate.

Conclusion:

The colors spread more rapidly in the hot water because the molecules that made up the hot water were moving more rapidly than the molecules that made up the cold water. That means they slammed into the candies more, dissolving more of the coating. There was more mixing of color in the hot water for the same reason.