

Science @ Home

Freezing Water

Due Friday, 10/12

Background: There are certain circumstances under which hot water will freeze faster than cold water (called the Mpemba Effect). Your job is to choose a method for obtaining hot and cold water and determine which sample will freeze first. You don't have to make the Mpemba Effect happen, but you will need to decide how to get your two temperatures of water and hypothesize about which will freeze first.

Question: Which freezes faster, hot water or cold water?

What you do: Time how long it takes for two containers of water, one hot and one cold, to freeze in your freezer. You will have to determine what you are going to consider "frozen" and how often you are going to check.

What you turn in: The following sections of a lab report: *Question* (given), *Hypothesis* ("I think that hot/cold water will freeze first *because...*"), *Manipulated Variable*, *Responding Variable*, *3 Controlled Variables* (I have a description of the variables posted on my website under "How to do a lab report", but we will talk about them next week, too), *Materials*, *Procedure* (Describe how you got your hot/cold water, say how much water you used, and tell what you did from there), *Data Table*, and *Conclusion*. Your data table should include each of the times you checked your containers, and a description of what each looked like.

Helpful Hints: Check your notes (when you get them) or my website for a description of what goes in each part of a lab report. Also, if you use small cups, the experiment won't take as long, but you'll need to check it frequently (every 5-15 minutes); if you use big cups, it can take hours before both cups are frozen.

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