CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
Kory A. Cascadden

Project Number
J0607

Project Title
Flash Frozen

Abstract

Objectives/Goals
The objective is to find out why boiling water freezes faster than room temperature water.

Methods/Materials
Materials
Two identical cups (that can at least hold a cup and a half of water); One measuring cup; One freezer set to ; One stove; One pot to boil water in; One source of water; Two stopwatches for each cup; One data journal.
Procedure
Take your measuring cup and fill it until it is a cup full. Then pour the cup of water into your pot. Then put your pot on the stove. Turn on the stove. While you are waiting for the water to boil measure another cup of water and put it into one of your identical cups. Then set it down until the water boils. Once the water has boiled pour it into your other identical cup (make sure to burn your hands on the hot pot) (also make sure you get all of the water in the cup). Now put both of the cups in the freezer. Then start your stopwatches at the same time. Check about every 5-10 minutes to see if they have frozen yet. Once one off the cups has frozen stop the stopwatch and make sure to write down the time it took to freeze and if the water was boiled or not. Once both cups have frozen repeat the whole thing to confirm your results.

Results
The boiling water froze completely, first.

Conclusions/Discussion
I proved my hypothesis (that the room-temperature water would freeze first) wrong.

Summary Statement
I tested the Mpemba effect (the effect that states boiling water freezes faster than room temperature water), the cause for the phenomena, and how it relates to the Leidenfrost effect.

Help Received
None. I did the project by myself.