



THE GREAT POPCORN  
EXPERIMENT

M3-3 PHYSICS

## QUESTION

- How long would it take for three popcorn kernels (cold, room temperature, and hot) to pop in a heat lamp?



## ABSTRACT

My reason, or rationale for doing this is just to see how long popcorn takes to pop in lamps, it's very simple, but people just love popcorn, and maybe this could even be sold at supermarkets, grocery stores, or markets! What would you rather have at a movie theater, popped from a microwave, and probably burnt, or perfectly popped popcorn from a heat lamp?

## HYPOTHESIS

- If I put three different types of popcorn kernels under a heat lamp one at a time, then, the hottest kernel will pop first because it's already hot and will take the least amount of time to pop, while the coldest will take the longest amount of time.

## MATERIALS

- 9 Popcorn Kernels, Three Cold, Three Room Temperature, Three Hot, just in case one blows up or something that causes this experiment to be delay so I can make more cold popcorn kernels. I Heat Lamp, with one light bulb, white inside, a freezer, a microwave, and just my air conditioner to keep the kernel at room temperature. And finally, I'll need a plastic container to keep my kernels in.

# PROCEDURES

- Step 1: Put all kernels in their respected places, putting the kernel on ice for 30 minutes, the hot one in the microwave for 30 seconds, and leave the kernel on my kitchen counter until the frozen kernel is done.
- Step 2: After the frozen and room temperature kernel are done, I'm going to put the cold kernel under the lamp first.
- Step 3: Record my results for the cold kernel and put the hot kernel back into the microwave for 30 more seconds.
- Step 4: Record results for the hot kernel, and finally, put the room temperature kernel under the lamp.
- Step 5: Re-do steps 1-4 again for my other set of kernels to see if they all match up perfectly or pretty close.
- Step 6: After completing steps 1-5, I'll write my conclusion while checking over my notes, if something goes wrong I'll redo the steps again, this time with my understudies, or backups.
- Step 7: Verify my results and write my conclusion again, this time in the computer, not my data notebook.
- Step 8: Finally done! All of my evidence has come to a close and I've completed my work!

# VARIABLES

- Independent Variable: The time it takes for the kernels to pop
- Dependent Variable: The heat of my kernels
- Control Variable: The heat lamp

# EXPERIMENTAL PICTURES



In the Freezer



Getting ready for the experiment



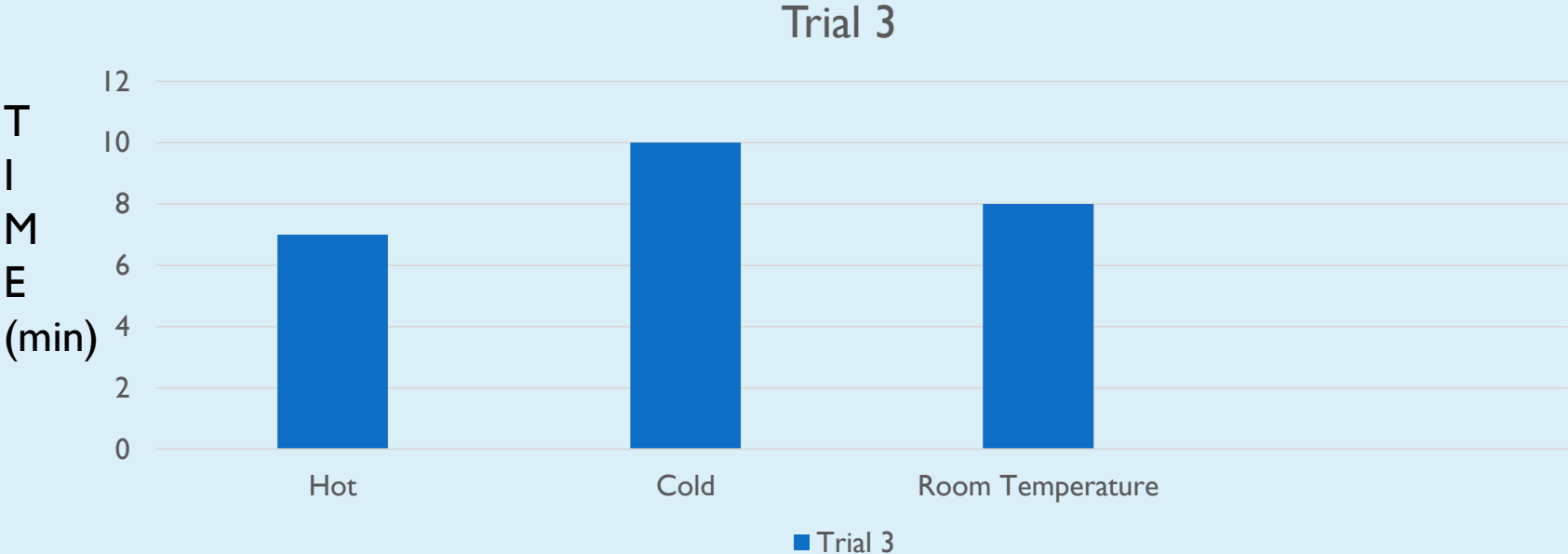
Hot kernels going under the lamp



# RESULTS

Trials	Hot Kernel	Cold Kernel	Room Temperature Kernel
1	6 mins	13 mins	11 mins
2	4 mins	13 mins	5 mins
3	7 mins	10 mins	8 mins

# RESULTS CONT.



## CONCLUSION

- In conclusion, my hypothesis was correct and the hot kernel really did heat up and pop the fastest, along with the room temperature kernel coming in second place, in fact, a very close second, and my cold kernel which came in last and took the longest to pop.

## WORK CITED

- Bag, By The. "Kernel Encore Gourmet Popcorn." *Kernel Encore Gourmet Popcorn*. N.p., n.d. Web. 15 Sept. 2016.
- "Classic Popcorn & Gourmet Popping Corn | Orville Redenbacher's." *Classic Popcorn & Gourmet Popping Corn | Orville Redenbacher's*. N.p., n.d. Web. 15 Sept. 2016.