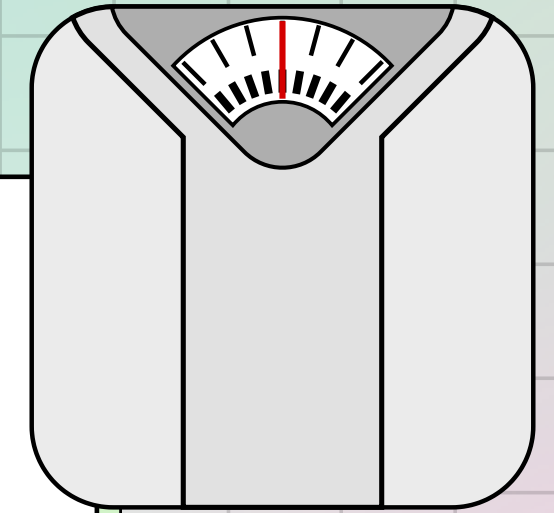


How does the heat of an Oven affect the weight of a cupcake?



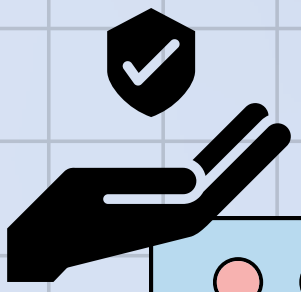
By: Maya
Rafalovsky and
June Paleudis



Research Question

**How does the heat of
the oven affect the
weight of a cupcake?**

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MDM Company

Safety Cautions



Because we are using fire (oven) we need to take into account that there could be danger with this.

- The cupcake could burn and catch on fire
- The oven could burn somebody's hands if we take it out without a glove
 - This wont happen because we have used the oven for baking before



Variables + Hypothesis

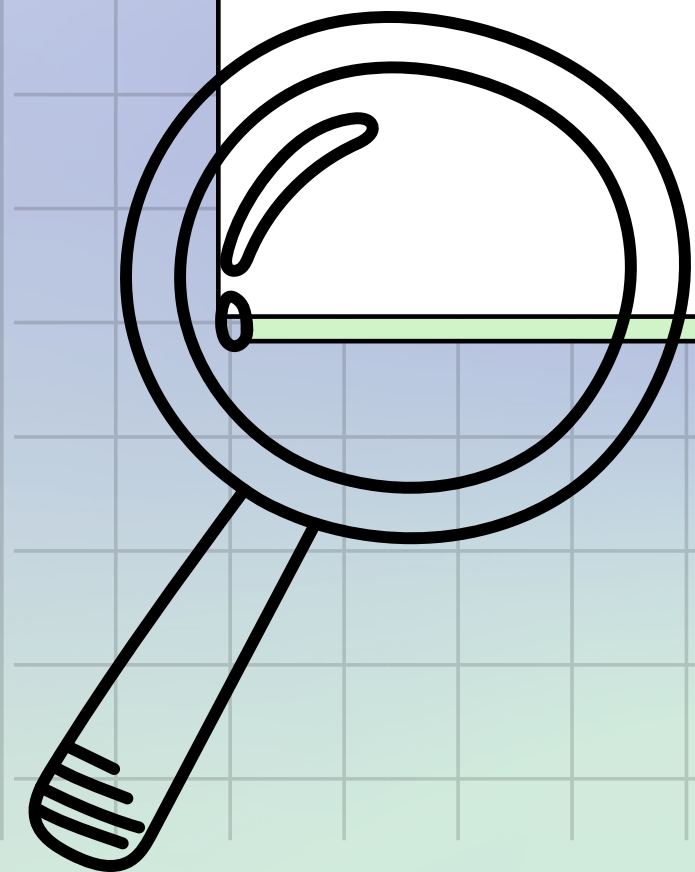
Independent Variable : Temperature

Dependent variable: cupcake

Control Variable: cupcake baked at the temperature according to recipe.

Hypothesis

We infer that, with the temperature of the oven rising, the cupcakes will get lighter. We think that because, when the temperature rises, the cake, if overheated, might burn which will have a result



Ingredients



- 1 ¼ cups All-purpose flour,
- ½ cup unsalted butter,
- ¾ cup Sugar,
- 2 large eggs,
- ½ cup Buttermilk,
- 1 ¼ tsp baking powder,
- ½ tsp salt
- 2 tsp vanilla.
- OZ baking scale
- One 12 cupcake baking pan
- <https://natashaskitchen.com/perfect-vanilla-cupcake-reperfect-vanilla-cupcake-recipe/>



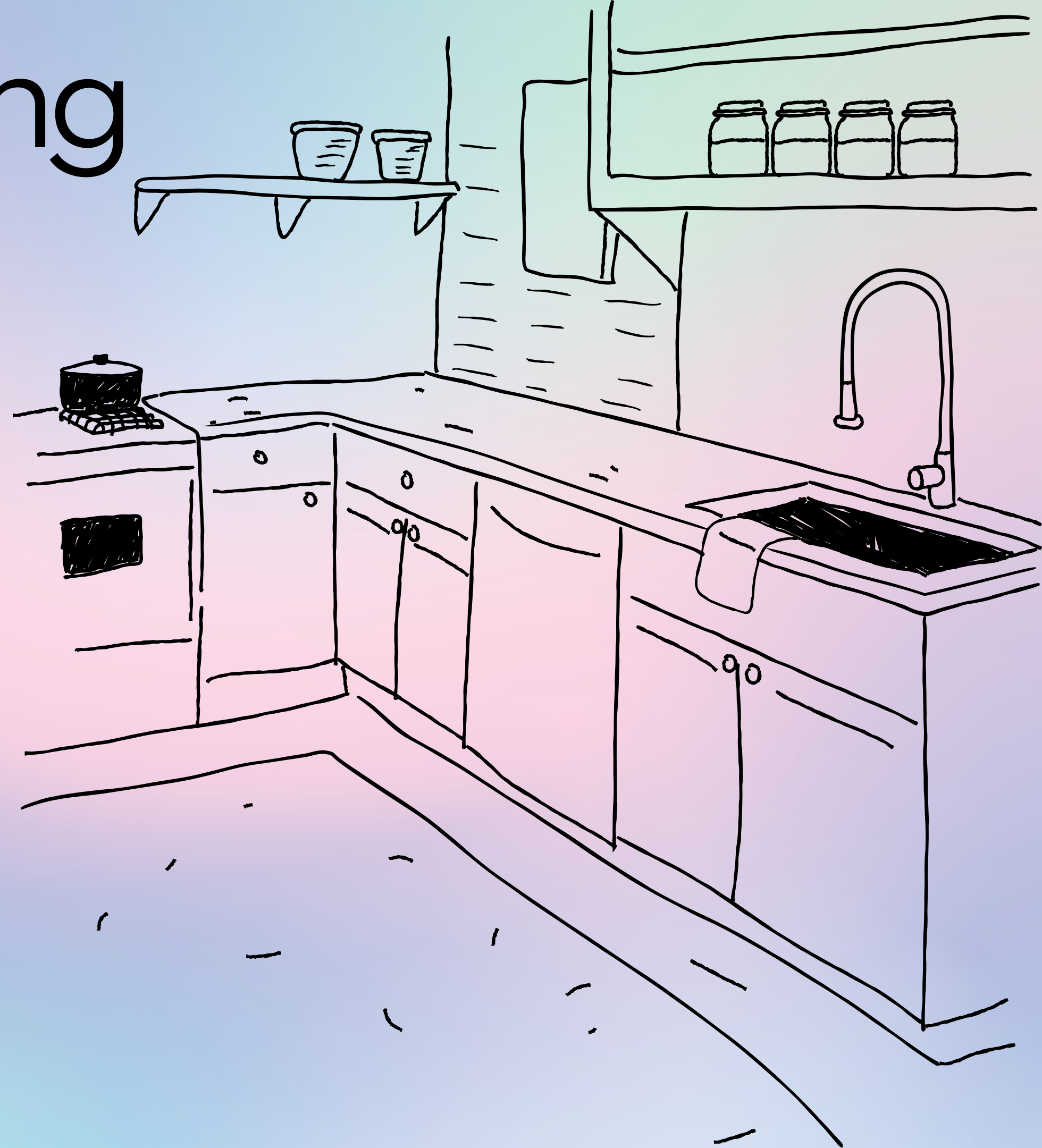
Procedure

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1. Wash Your Hands
 2. Gather all the ingredients
 3. Combine all of the dry ingredients (1 $\frac{1}{4}$ cups of purpose flour, 1 $\frac{1}{4}$ teaspoons of baking powder, and half a teaspoon of salt). Then mix and set aside.
 4. In a new mixing bowl combine half a cup of softened, unsalted butter, with $\frac{3}{4}$ cup of granulated sugar. Mix until the mixture is thick and fluffy.
 5. Add two large eggs, beat them in one at a time using an electric mixer.
 6. Once all mixed together, add two teaspoons of real vanilla extract.
 7. Add flour in thirds as well as your room temperature butter milk.
 8. Make sure to preheat your oven now at 350 degrees. Make sure the rack is in the center of the oven.
 9. Beat until the batter is smooth with no exes on the sides of the bowl.
 10. Get a six cupcake tin out and fill up the tins bake at 350 and then record results, measure by weighing the cupcake on a scale
 11. Refill tin and bake at 375 for 20 min record results
 12. Refill tin and bake at 400 for 20 min record results
-
1. Take results and create a graph
 2. Write your conclusion

Process of baking



Quad Chart

Purpose

The purpose of our experiment is to find out if the weight of the cupcake is affected by the temperature of the oven the cupcake is being cooked in.

Results

The results of our experiment were that the cupcakes that were cooked at a higher temperature can be only .2 oz heavier than the Controlled Variable.

Procedures

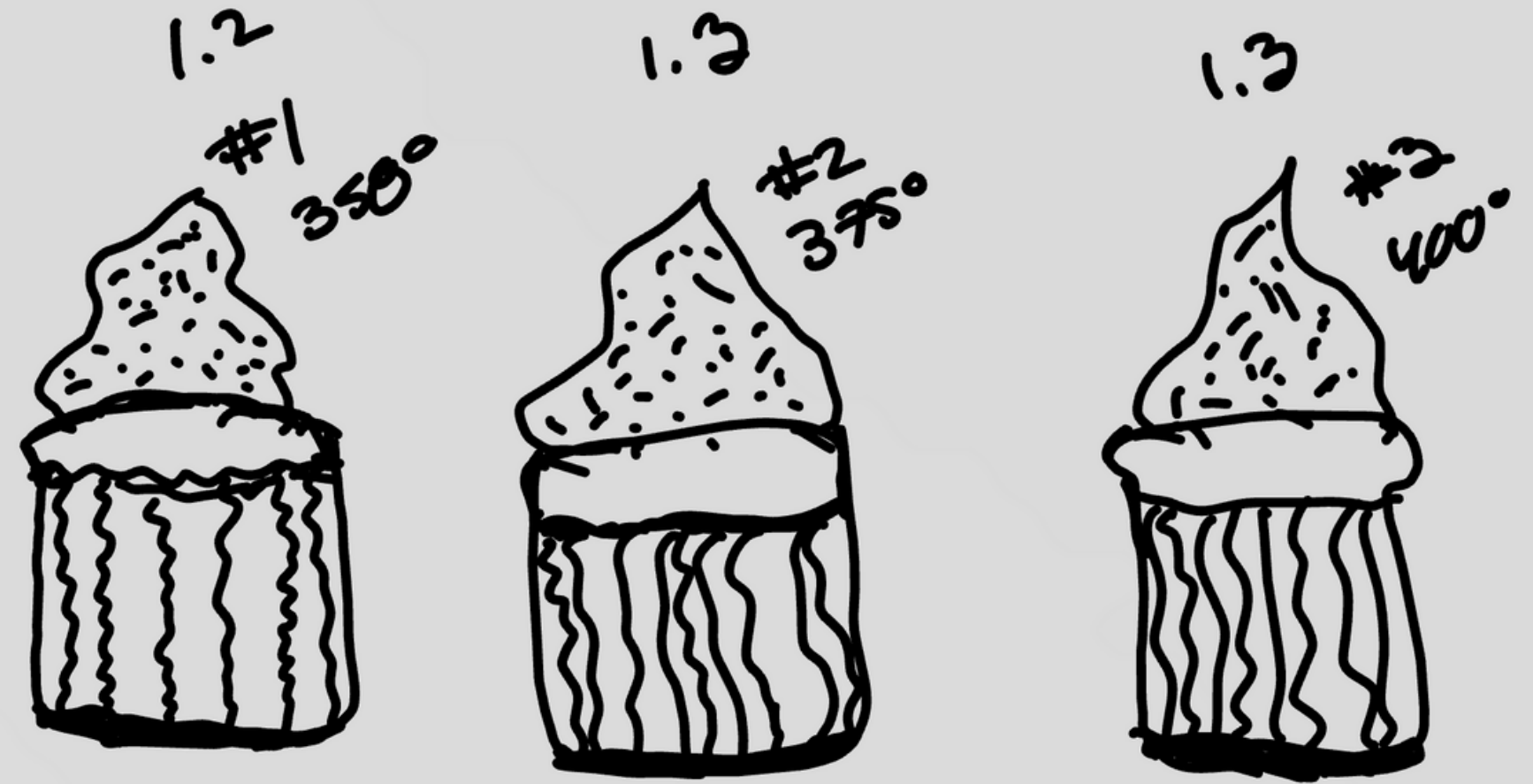
- 1.
2. Wash Your Hands
3. Gather all the ingredients
4. Combine all of the dry ingredients (1 1/4 cups of purpose flour, 1 1/4 teaspoons of baking powder, and half a teaspoon of salt). Then mix and set aside.
5. In a new mixing bowl combine half a cup of softened, unsalted butter, with 3/4 cup of granulated sugar. Mix until the mixture is thick and fluffy.
6. Add two large eggs, beat them in one at a time using an electric mixer.
7. Once all mixed together, add two teaspoons of real vanilla extract.
8. Add flour in thirds as well as your room temperature butter milk.
9. Make sure to preheat your oven now at 350 degrees. Make sure the rack is in the center of the oven.
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12. Refill tin and bake at 375 for 20 min record results
13. Refill tin and bake at 400 for 20 min record results
- 14.
15. Take results and create a graph
16. Write your conclusion

Analysis

The higher the temperature the weight goes up. The weight did not go up as much as we expected but still went up.

Labeled Diagram

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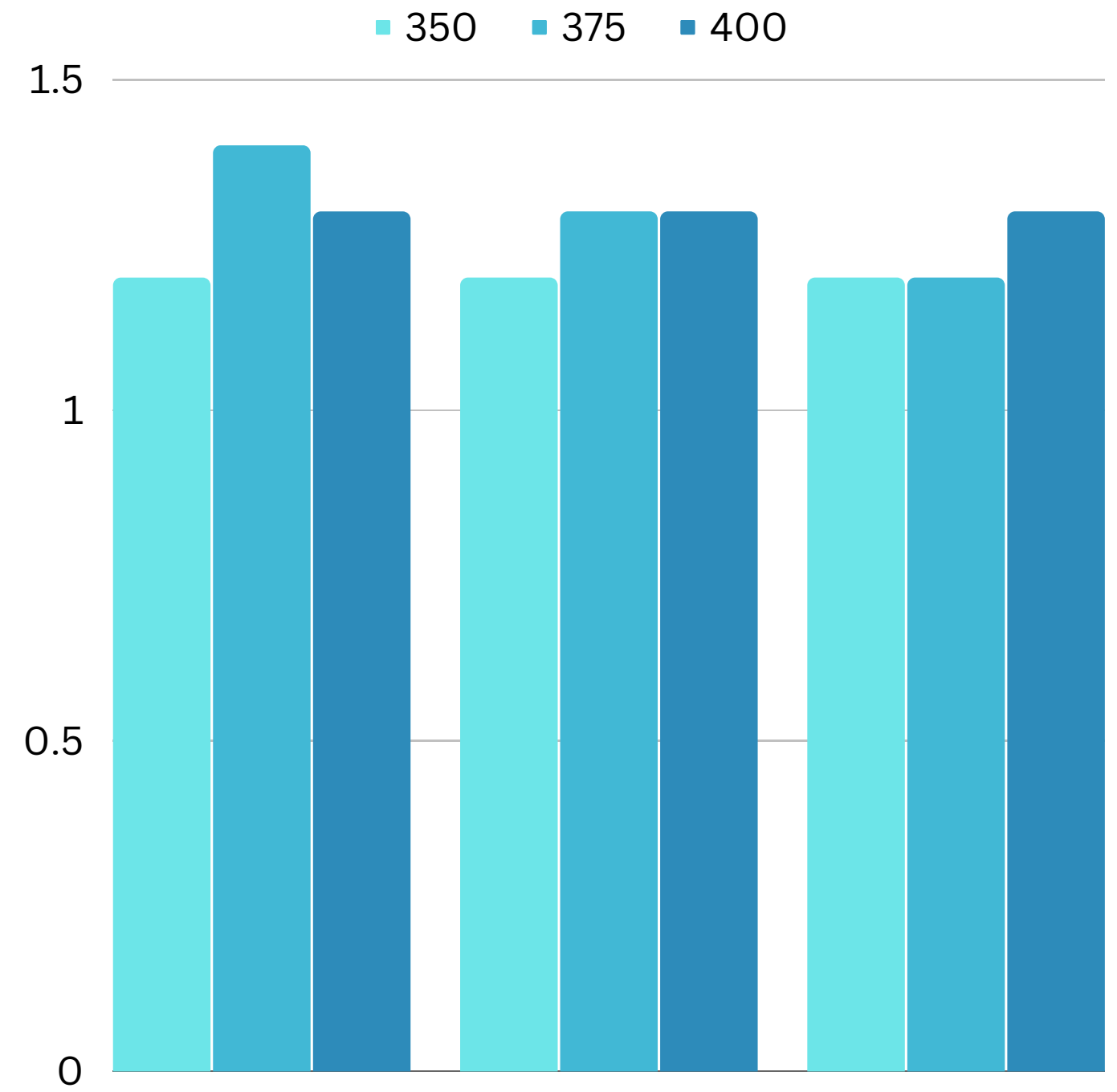
Results:

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375	375	400
1.2 oz	1.4	1.3
1.2 oz	1.3	1.3
1.2 oz	1.3	1.3

Experiment Data

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Conclusion and future work

Conclusion

Our Hypothothis was wrong the cupcakes changed by around 0.2 oz heavier with the higher temperatures .

Future Work

Next time we do this experiment we think that we should try changing the temperatures more drastically so that we can try to find a bigger difference from the control variable.

Thank you!

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Hope you enjoyed!