

# SAMPLE

Name: \_\_\_\_\_

Due: Monday September 16, 2019

Choose one of the experiments below: (Some may be more expensive than others.)

1. Which liquid freezes the fastest?
2. Which gum holds its taste the longest?
3. Which battery last the longest in a flashlight?
4. Which type of paper towel holds the most drops of water?

1. What problem did you choose? Which liquid freezes the fastest? water, Gatorade, or Pepsi
2. What is your control subject? water
3. What is your Experimental subject A: Gatorade  
B: Pepsi
4. What information did you collect on your subjects:  
Control: *According to the water bottle it has zero calories, no sugar, or no sodium.*

EXP. A: *Gatorade has 250 calories, 200 mg of sodium, and 24mg of sugar.*

EXP. B: *Pepsi has 275 calories, 250 mg of sodium, and 50 mg of sugar.*

5. What is you Independent Variable? *Type of liquid.*

6. What are 4 controlled variables that will be important to your experiment?

1. *The same amount of liquid*
2. *The same freezer*
3. *The same amount of time tested.*
4. *The same the same container.*

7. What is your hypothesis? *I think that water will freeze the fastest, Gatorade the second fastest, and Pepsi the slowest of all. I am basing this on the fact that Pepsi has the most sodium content and sodium is what is in salt.*

8. What are your procedures in the experiment? (What do you do step by step.)(Don't miss any steps!!)

1. Buy 1 bottled water, 1 Gatorade bottle, and 1 Pepsi bottle.
2. Get three empty unused plastic cups. Label the cups with a Sharpie marker.
3. Use a measuring cup to measure the same amount of each liquid into each cup.
4. Place all three cups in the same freezer section.
5. Every 5 minutes take a toothpick and poke into the cups.
6. Record the time frame that each liquid froze at the surface.
7. Fill in the data table.
- 8.
- 9.

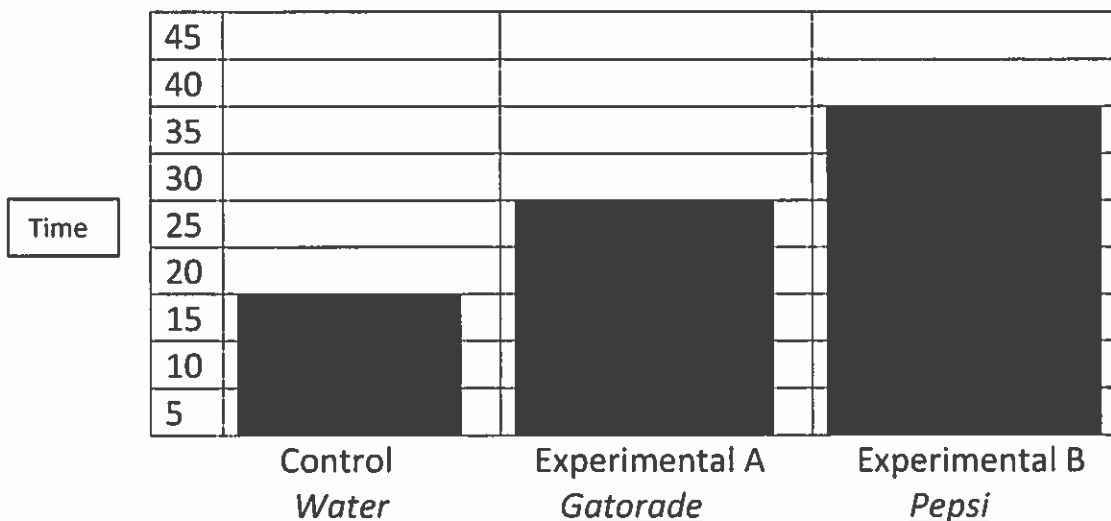
# Conduct Your Experiment Now!

## Data Collection and Conclusion

Fill in the data table below: (For the results use the units you used. Minutes, drops, hours)

Subjects in the experiment:	Results
Aquafina Water	15 minutes
Gatorade	25 minutes
Pepsi	35 minutes

Create a **bar graph** that shows your results: (Color is allowed but not required)



**Write a one page summary of what happened in your experiment?** (All dependent variables)

The water in my experiment froze the fastest. After about 20 minutes I could not get the toothpick to poke into the water. I could still poke through to the other two. After about 30 minutes I could not poke through the Gatorade. I could still feel liquid in the bottom of the Gatorade splashing around. The water was almost frozen solid. After 35 minutes I could not poke the toothpick through the Pepsi. The Pepsi also had a sort of frozen foam on top of the surface. By the time the Pepsi was frozen on top the water the entire water cup was frozen.

**What is your conclusion?**

My conclusion is that my hypothesis was correct. The Pepsi did take the longest to freeze. It took 35 minutes compared to the 15 that it took water to freeze. I think the extra sodium must have made a difference. I would like to do the experiment again with a different cola to see if the sodium amount has the same affect.