Date: **Name:**

Scientific Method Lab: Gummy Bears

Question:

What will happen to gummy bears if they are placed into different solutions?

A. Water
B. Vinegar
C. Water and Baking Soda
D. Water and Salt

Make Observations:

What do you notice about their: Weight, Size, Color, Texture, etc.

_____

_____

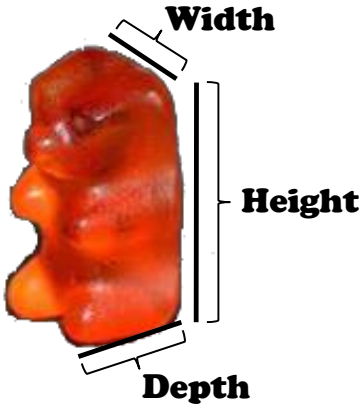
_____

Develop a hypothesis:

What you think will happen when the bears are placed in each solution

_____

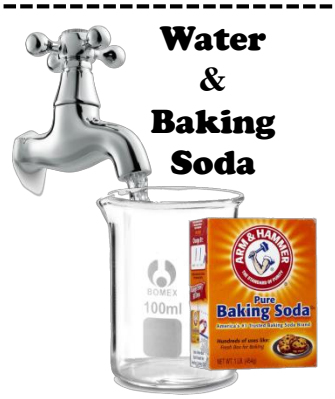
Part A: Measurements



Procedure: (Measurements should be in centimeters)

1. Get a gummy bear and measure its length, width, and depth (thickness).
2. Calculate the volume by multiplying the length, width, and depth.
   $V = L \times W \times D$
3. Measure its mass (weight) using a scale to the nearest 10^{th} of a gram.
4. Calculate the density by dividing the mass by the volume.
   $D = M/V$
5. Record all data onto the charts on the next page (Day 1).
6. Repeat procedure for each chart.

Part B: Preparations



Procedure:

1. Prepare four beakers:
   - A. Pour 50 ml of water only into a 100 ml beaker
   - B. Pour 50 ml of vinegar only into a 100 ml beaker.
   - C. Mix 50 ml of water with 15 ml (1 tbsp.) of baking soda into a 100 ml beaker.
   - D. Mix 50 ml of water with 15 ml (1 tbsp.) of salt in one beaker
2. Place a gummy bear into each beaker, and put the beaker on top of the labeled sheet of paper under the correct heading.
3. Let the gummy bears sit for one day.
4. On day 2, remove the gummy bears, dry them off and repeat the measurements from Part A for each gummy bear
5. Calculate the amount of change for each measurement for each gummy bear

Date: **Gummy Bear Data Charts:** **Name:**

Water

Day	Length	Width	Thickness	Volume	Mass	Density
1						
2						
Amount of Change						

Vinegar

Day	Length	Width	Thickness	Volume	Mass	Density
1						
2						
Amount of Change						

Water and Baking Soda

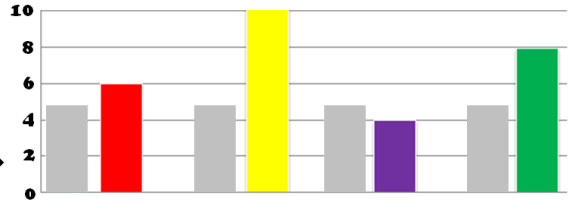
Day	Length	Width	Thickness	Volume	Mass	Density
1						
2						
Amount of Change						

Water and Salt

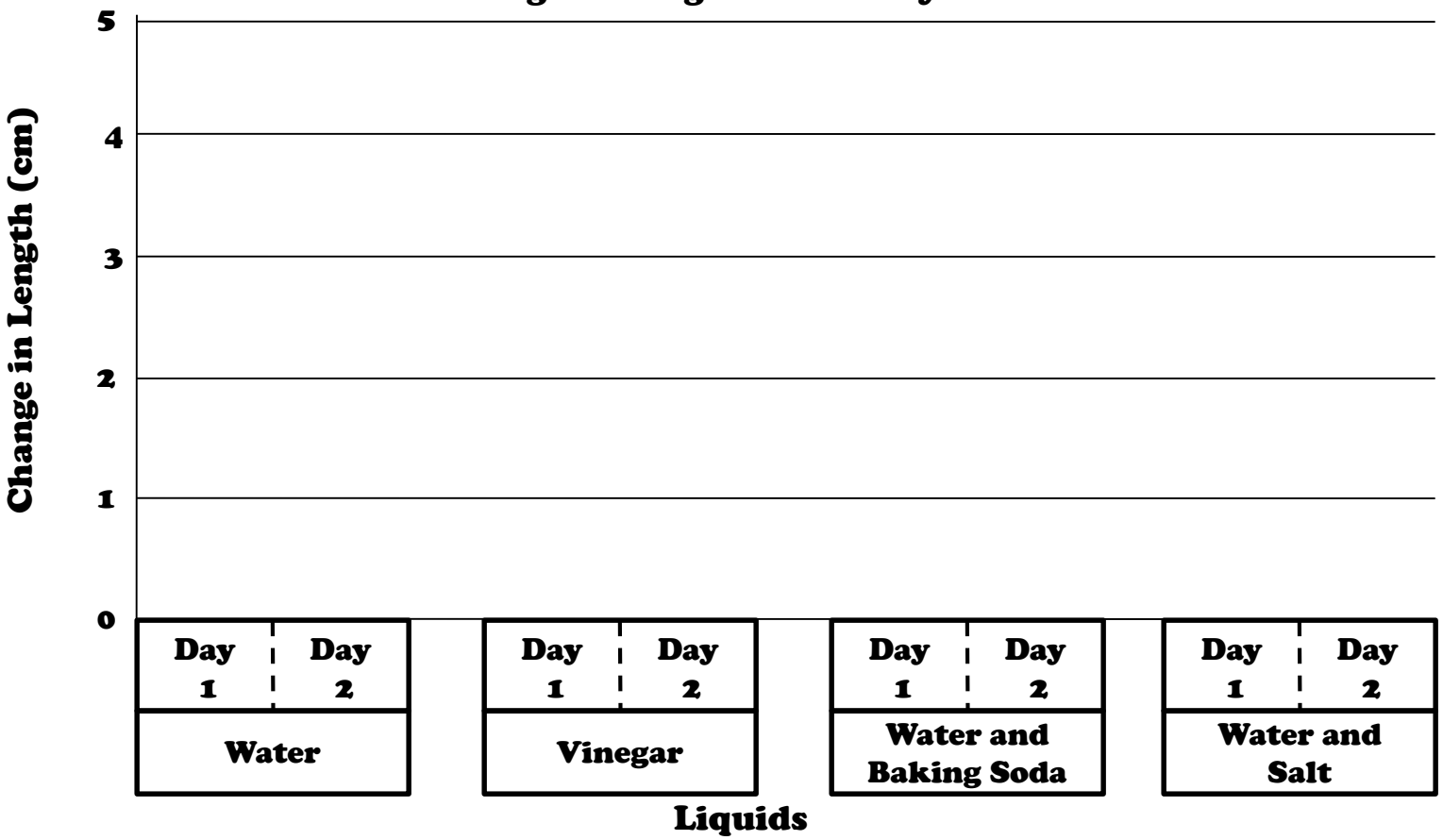
Day	Length	Width	Thickness	Volume	Mass	Density
1						
2						
Amount of Change						

Part C: Results

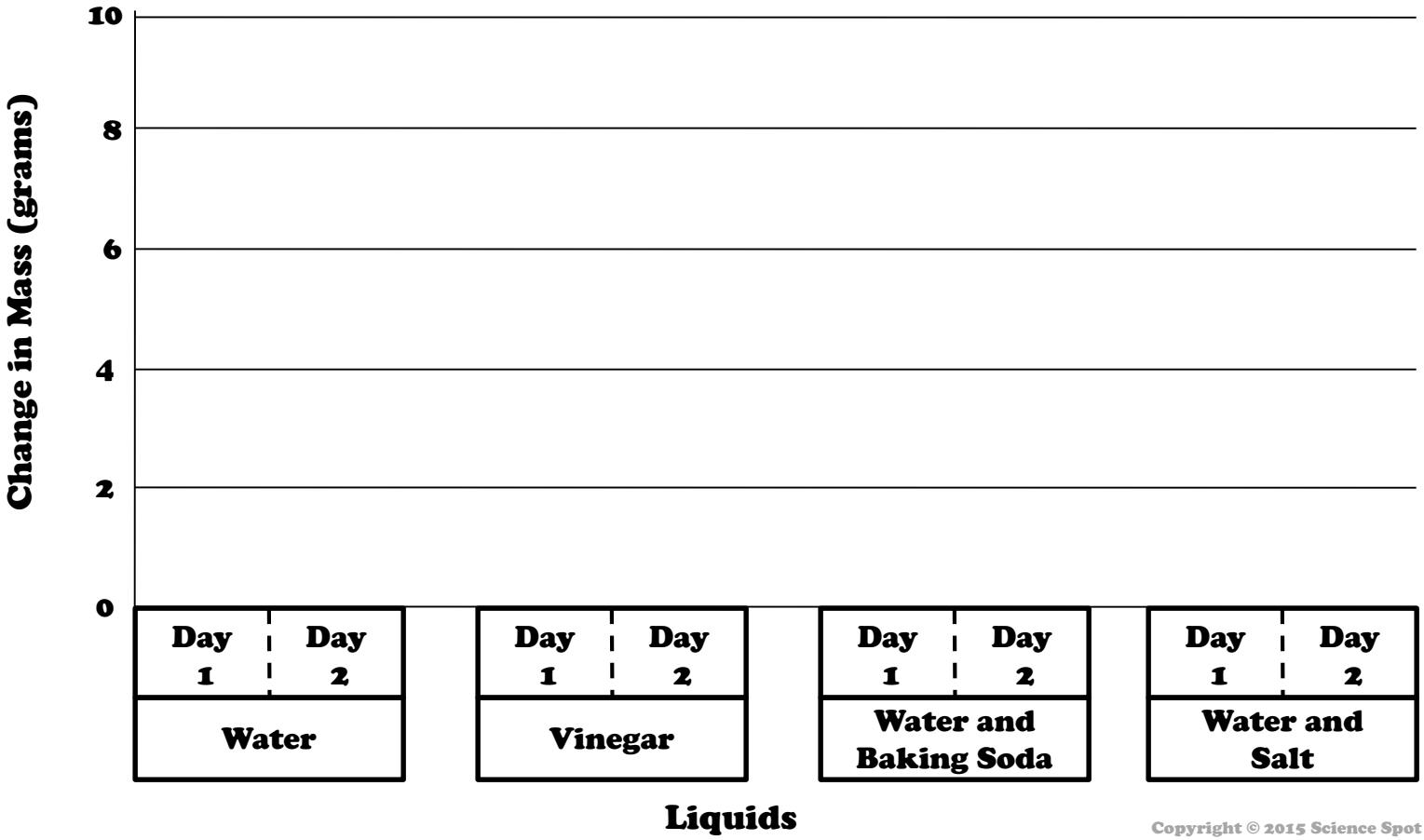
1. Use color pencils to complete the following bar graphs
2. Use gray to represent Day 1, and a different color for Day 2
3. An example of a completed bar graph is shown on the right →



Change in Length of Gummy Bears



Change in Mass of Gummy Bears



Part C: Conclusions/ Post Lab Questions
(Use Complete Sentences)

1. Was your hypothesis supported or rejected? Give evidence in your explanation.

2. What was the answer to the original question? Give evidence.

3. Which change was greater, volume or mass? Explain your answer

4. Was there a change in density? Explain why or why not

5. How do your results compare to that of your classmates?

6. What could be done to improve the accuracy of this lab?

7. Explain how the scientific method was or was not followed in this lab.

Water	Water and Baking Soda
Vinegar	Water and Salt