



Experimental Design Planning Sheet

Team members:

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Question/Purpose:

Is the orange juice hypertonic?

Hypothesis

If orange juice is hypertonic, after 24 hours we will see the egg shrink in noticeable size.

Manipulated Variable - What you are changing

We are changing what the egg is soaking in from vinegar to orange juice.

Responding Variable- What will change in response to the manipulated variable

If the egg responds as we think, it will change in size and weight.

Controlled Variables - Everything that should stay the same

The controlled variables are the jar and the amount of time it is soaking.

Materials (List everything you need/used)

- Plastic Cup
- Marker (Sharpie)
- Jar
- Scale
- Orange Juice (The Liquid)
- Egg

Procedure (Write step by step, in order, what you will do for this experiment – repeatable by someone else.)

1. Put plastic cup on weighing scale
2. Take egg out of vinegar
3. Place in cup
4. Weigh the egg
5. Record weight of egg (58.7 g)
6. Take jar
7. Label the jar with weight and liquid
8. Put egg in jar
9. Add orange juice till about $\frac{3}{4}$ of the cup
10. Keep the egg in the juice for 24 hours
11. See results

Data: (List all information collected during your experiment. Tables of measurement, graphs observations, etc.)

We noticed it went down from the original weight (58.7 to 56.8). As well as that, the insides are quite liquid like. The egg is not died and you can see through slightly. The liquid doesn't fill up the egg all the way. The color of the egg got lighter.

Analysis: What inferences can you make in light of your data?

From this you can see that the egg was hypertonic, but not much. The egg lost some water, about 2 grams. The color of the egg changed to a lighter tone.

Conclusion: (What happened? Did your results support your conclusion? What was surprising? What did you learn?)

We were right in that the egg would lose some weight, but we thought it would lose about 5 grams. As well as that, we expected the orange juice would seep into the egg dying it an orange color. If you drink orange juice, you should drink a limited amount because it shrinks your cells. It only shrinks your cells by a small amount.