



## Template #3 Here We Go!

Date: \_\_\_\_\_

Due Date: \_\_\_\_\_

The purpose of this template is to help you perform your experiment and record your **Observations**. After you have your data from your experiment you can do your **Results and Calculations** where you analyze your quantitative data and display the results (in charts & graphs).

In Template #2 you designed how you would be recording the observations from your experiment. Here is where you will record your results (don't limit yourself to this template - if you need more space use another sheet).

### Qualitative Observations (what you see, hear, feel, taste, or smell)

Describe the qualities of objects, events, or processes that you observe when performing your experiment.

You should look for such things as:

- state of matter (solid, liquid, gas)
- clarity (transparent, translucent)
- colour (colour or shades)
- form (shape)
- smell (pudgent, strong, spicy, sweet, or odourless)
- malleability (the ability of the substance to change shape)
- taste (sweet, sour, bitter, or salty)
- brittleness (easy to break?)
- texture (smooth, rough, or coarse)
- hardness (soft, tender, tough, hard)
- shininess (lustre, shiny, polished, dull)
- viscosity (a liquids resistance to flow) densit

@ 0 tbsp - all three glasses are filled equally w water, very clear, egg sank at the same speed and stopped moving when it hit bottom

@ 1 tbsp - sugar + salt dissolved easily, salt water became a little cloudy, egg sank a little slower + even bounced a little when it hit the bottom

@ 2 tbsp - took longer to dissolve, salt water cloudier

@ 3 tbsp - can't see through salt water, sugar water yellowish, egg sinking slower + bouncing more at bottom

@ 4 tbsp - in salt water it bounced + then the egg floated in middle of glass

@ 6 tbsp - water level has risen to top of glass very hard to dissolve

@ 8 tbsp - egg now floats in sugar water.



## Quantitative Observations (what you measure or count)

You should look for such things as:

- temperature (Celsius)
- volume (mL, L, cm cubed)
- mass (milligram, gram, kilogram)
- force (newton - N)
- pressure (kilopascal kPA, pascal - Pa)
- electricity (ampere - A)
- length (mm, cm, m, km)
- time (minutes, seconds)
- area (squared - cm, mm, m)
- energy (joule J, kilojoule kJ)
- light intensity (candela)

When measuring make sure to use the equipment carefully and correctly to help ensure your measurements are as accurate as can be. You should always get a number of observations and take the average result for the three.

For example if checking a temperature take the temperature 3 times and average the results.

Use a table to help organize the data you collect during your experiment. You can use the table below as a template.

\* Notice I changed it.

(CONTROL) Tablespoons of Salt/Sugar Added

| Solution | 0 tbsp | 1 tbsp | 2 tbsp | 3 tbsp | 4 tbsp |
|----------|--------|--------|--------|--------|--------|
| Water    | 0.8    | 0.8    |        |        |        |
| Salt     | 0.8    | 1.24   | 1.4    | 3.92   | 10     |
| Sugar    | 0.8    | 1.2    | 1.37   | 2.0    | 2.8    |
|          |        |        |        |        |        |
|          |        |        |        |        |        |
|          |        |        |        |        |        |
|          |        |        |        |        |        |

Time to sink to bottom in seconds.

## Results & Calculations (making sense of your data)

After collecting your data you need to organize it in order to make sense of it. Reading data from a table can be confusing and difficult to make comparisons and conclusions with. The best way to present data is through graphs. It allows you to see more precisely what the relationship is, so it can be accurately described in word and by mathematics.

You have to consider what type of graph is best for your data. Three of the most useful types of graphs are **broken line graphs**, **bar graphs**, and **circle graphs**. Be sure to include your graphs in both the lab report and as part of your display. A number of computer programs are available that will make your graphs look professional such as Quatro Pro, AppleWorks, and MS Excel.

Be sure to refer back to your Math notes and textbooks to make sure you are creating the graphs correctly!

I decided on a better way of recording my data than I had in template #2!

**Tablespoons of Salt or Sugar Added**

| Solution    | 0 tbsp | 1 tbsp | 2 tbsp | 3 tbsp | 4 tbsp | 5 tbsp | 6 tbsp | 7 tbsp | 8 tbsp | 9 tbsp |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Water       | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    |
| Saltwater   | 0.8    | 1.24   | 1.4    | 3.92   | 10     | 10     | 10     | 10     | 10     | 10     |
| Sugar Water | 0.8    | 1.2    | 1.37   | 2      | 2.8    | 3      | 3.2    | 3.8    | 5      | 10     |

Time to sink to bottom in seconds.

**Egg Buoyancy**

