**Purpose:** To collect and analyze qualitative and quantitative data over time. To work together collaboratively.

**Problem**: How will your sea creature change over time?

**Background Information:** One of the most important skills in science is that of OBSERVATION. Most of the time we think of observation as something we do with our eyes when we see something, we observe it. However, all five senses can be used to make observations: sight, hearing, taste, touch and smell.

A good scientist is observant and notices things in the world. Observations in science are called DATA. We can make two kinds of observations: those that are facts and those that are opinions or Inferences. Facts are those observations that hold true for everybody.

Factual Observations or data can be either **QUALITATIVE or QUANTITATIVE**. Qualitative data is information describing the qualities or characteristics of something. Examples include color, tastes, and sounds, anything that can be described in words. Quantitative data is information that can be expressed in numbers. If information can be counted or measured, than it is quantitative data. Tools are often used to collect quantitative data. Examples include amounts, temperature, mass, and length. Observations are usually written or recorded in data tables and data charts.

**Hypothesis**- I think it will grow by \_\_\_\_\_\_\_\_\_\_ cm over time and shrink by \_\_\_\_\_\_\_\_\_\_\_\_ cm over time. *(15 points)*

**Qualitative Data:** Describe the "creature" each day. Include color, texture, estimated size, and any changes that occur between Days 2-8. *(5 points for each day)*

|  |  |
| --- | --- |
| Day | Observations |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

**Quantitative Data:** *Each day one person will take measurements.*

Each day one person will take measurements and you will record on your data table below.

Note the column for person who measureds name. That must show that everyone in the group participated! *(each box is 1 point = 25 points)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Day of Growth | Mass of Creature  (g) | Length of Creature (cm) | Width of Creature(cm) | Height or thickness of Creature (cm) | Name of person who measured each day |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |

**Conclusions**: *(you will type your answers or answer on notebook paper in Ink) (10 points each)*

1. Using data from day 1-5 select one data set of quantitative measurements to create a line graph on the y axis vs. time (days) on the x axis. Make sure to label the axis with the measurement and unit. The graph should also be titled.
2. Looking at your graph and data, when did the creature reach its maximum size?
3. On day 4, we did not put the creature back in water and it stopped growing and began to shrink. Describe the change that occurred. What process do you think began to occur after day four?
4. Tell me what you learned over the course of 5 days in at LEAST one paragraph. Include how the creature changed from day 1 to day 5, how well your grouped worked, what scientific skills you needed to be successful in this lab and why you think I chose this activity for you to complete.

Data Table.

Title \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

