**Unit 1 Scientific Method Review Sheet Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. What is “science”?
2. What are the two major branches of science?
3. Where does Biology fit in and what does it study?
4. What are the five characteristics of all living things?
5. List the 8 steps of the scientific method.
6. Identify each of the following statements as an **Observation (O)** or an **Inference (I):**

\_\_\_ The squirrel is digging in the lawn.

\_\_\_ The squirrel is probably digging for nuts.

\_\_\_ My nose is itchy.

\_\_\_ The guy with the runny nose must have allergies.

1. Hypothesis must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**For questions 8-10 do the following 3 things**

**Identify the IV** (cause)

**Identify the DV** (effect)

**Construct a hypothesis** written in **If** independent variable, **then** dependent variable format.

1. Bats seem to fly mostly when it is dark.
2. Do fish eat more when the water is warm?
3. Birds that are alone will sing or chirp
4. How many variables should be **DIFFERENT** between the test and control groups?
5. For each of the following situations, identify the type of graph that would best depict the data and why

**Type of Graph Data Explanation**

\_\_\_\_\_\_\_\_\_\_\_ Shoe size of all the people in this class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_ Types of bugs turtles eats \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_ % cloud cover for every day of the week \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_ The population growth of mule deer over 10 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. In 2000, a law was passed against the use of cell phones while driving in Anytown, N.Y. The number of people who use cell phones while driving in Anytown has changed each year since then as shown in the table below. **Construct a line graph to visually display this data**.

**Cell Phone Use While Driving in Anytown, NY**

What type of graph would you use to  **Year Number of People**

depict the data given? 2000 309

2001 274

2002 256

2003 238

2004 197

2005 203

2006 195

2007 192

1. **Experimental Design Scenario**

Oscar noticed that he saw more pine trees growing by the beach than any other place. He wondered why and thought that maybe the trees liked the sandy soil. He designed an experiment in which he planted 2 little trees of the same size, one in dark potting soil and one in sandy soil. He gave each of them the same amount of water, light and fertilizer. After 2 months, the tree in the sandy soil grew 8 inches and the tree in the dark soil died.

* **Observation**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* What is the **Problem Statement** for this observation?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* What is the **I.V., D.V.** and **Hypothesis** that answers the Problem Statement?

|  |  |
| --- | --- |
|  Independent Variable |  Dependent Variable |
|  Hypothesis |

**TEST** Design:

* Variable tested-

 *(the “If” part of the Hypothesis)*

* What you are measuring-

 *(the” then” part of the Hypothesis)*

* Control group-
* Experimental / Test group-
* What type of graph would be most appropriate to **ANALYZE** this data?\_\_\_\_\_\_\_ Why?\_\_\_\_\_\_\_\_\_\_\_
* Make the graph for this data.
* What **CONCLUSION** could be made based on this scenario?

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**Graph for #14**

**Graph for #13**