**Station 1: Prefix/Suffixes**

Define the following underlined prefix/suffix

1. Autotroph
2. Heterotroph
3. Endoskeleton
4. Biology
5. Biology
6. Archesome
7. Exotherm
8. Scoliosis
9. Heterogenus
10. Homologous

**Station 2: Scientific Method**

Fill in the blanks using the vocabulary terms below

1. The point of doing an experiment is to test out your \_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Through research and gathering background information scientists can make an educated \_\_\_\_\_\_\_\_\_\_\_\_\_\_ about what they think will happen, called a hypothesis.
3. You often will do \_\_\_\_\_\_\_\_\_\_\_\_\_ before you begin an experiment to find out if anyone has already done it and what their results were.
4. Scientists want to have very detailed \_\_\_\_\_\_\_\_\_\_\_\_\_ in order to make their experiment repeatable, to address any safety concerns and to be able to easily adjust things if a problem occurs.
5. An experiment that tests out its hypothesis and follows the procedures exactly can be expected to be \_\_\_\_\_\_\_\_\_\_\_\_.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are made during an experiment and recorded as data.
7. At this point in the experiment you analyze your data and reflect on your hypothesis to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. Things that are testable, measureable, repeatable and observable make a good science \_\_\_\_\_\_\_\_\_\_\_\_\_.

Valid  
Research  
Question  
Conclusion   
 Hypothesis  
Procedures   
Prediction  
Observations

1. What is the difference between a law and a theory?
2. What should you do if your data doesn’t support your hypothesis?

**Station 3: Graphing**

1. What axis is the independent variable on?
2. What axis is the dependent variable on?
3. What type of graph would be best for the following data?

|  |  |
| --- | --- |
| Age of child | Size of Feet (cm) |
| 1 | 12 |
| 2 | 14 |
| 3 | 20 |
| 4 | 35 |

1. Create a graph of the data in question #3

**Station 4: Inferences/Observations and Qualitative/Quantitative**

1. What is the difference between an inference and an observation?
2. What is the difference between qualitative and quantitative data?
3. Describe two examples of qualitative data.
4. Describe two examples of quantitative data.
5. As you look around the room make two observations.
6. As you look around the room make two inferences.

**Station 5: Variables**

Ms. Pilarz wanted to see if changing the lighting in the classroom would affect the scores students would receive on tests. She typically leaves all the lights on for the test but began wondering if it was too bright to create a comfortable testing environment. She thought that if she only left half of the lights on students eyes would feel less strained and therefore have better test results. She randomly divided her classes into three groups. Group A took the test with all the lights on, Group B took the test with half the lights on, and Group C took the test with no lights on.

1. What was Ms. Pilarz’s hypothesis?
2. What was the independent variable of her experiment?
3. What was the dependent variable of her experiment?
4. What was the control group of her experiment?
5. What were at least two errors she made or things she could do to improve her experiment?
6. If she collected the following data, what would her conclusion be?

|  |  |
| --- | --- |
| **Type of Lighting** | **Average Test Score** |
| All Lights On | 83% |
| Half the Lights On | 82% |
| No Lights On | 60% |

1. What is the difference between a control group and an experimental group?
2. What does it mean for an experiment to be valid?

**Station 6: Classification**

1. Who came up with the system of classification we use today?
2. List all the groupings of classification from the most general to the most specific.
3. Next to you list on #2, list the categories that humans fall into for each grouping.
4. What are the six kingdoms we recognize today?
5. A group of organism that share similar characteristics and can sometimes breed together but don’t always create successful offspring are most likely in the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. A group of organisms that share similar traits and can create successful offspring must be in the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Station 7: Naming**

1. Why do we have a common system for naming, binominal nomenclature?
2. What are the rules for writing a scientific name?
3. Write an example of the proper way to write a scientific name.
4. Use your computer to look up and properly write the scientific names for the following animals:
   1. Dog
   2. Seahorse
   3. Badger
   4. Aye-Aye
   5. Human

**Stations 8:**

1. As a table, come up with your own science experiment (see example below), be sure to clearly include your independent variable, dependent variable and control group. Your experiment could be about anything, and you can make up fake data/examples.

*Example: Ms. Pilarz wanted to see if the volume level of music could affect the rate at which someone’s heart beat. She thinks that the higher volume the faster your heart might start beating. She recorded the heart beat of 50 different people as she exposed them to three different volume levels of the same song. She found that the average heart rate of someone listening to loud music was 96 beats per minute, someone listening to average in volume music was 97 beats per minute and someone listening to low volume music was 70 beats per minute.*

*Independent Variable: Loudness of music  
Dependent Variable: Heart beats per minute  
Control Group: Average Volume*