Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Assignment:\_\_\_\_

**Biology Unit 1 Review Sheet**

**Objective: Scientific Method/Experimental Design**

*Learning Target: I can identify the different parts of a proper experiment, including control group, experimental group, independent variable, and dependent variable and understand their purposes.*

*Learning Target: I can identify the different processes that scientists use in inquiry including research, observation, inference, experiment, communication, hypothesis, prediction, analyze, conclude, and retest. / I can understand the importance of each step.*

*Learning Target: I can design a logical repeatable experiment to answer a question.*

*Learning Target: I can explain the difference between a theory, law and hypothesis.*

*Learning Target: I can create logical, testable hypotheses.*

1. List the steps of the scientific method below in order (ie Question🡪Conclusion) and briefly describe each.
2. Define the following:  
   a. Hypothesis   
   b. Independent Variable  
   c. Dependent Variable   
   d. Control Group  
   e. Experimental Group  
   f. Sample Size  
   g. Validity
3. If scientists wanted to test out how sunlight affected the growth of a pea plant, what might be a good hypothesis they would write to test this out?
4. What is the purpose of finding background information and doing research before you begin an experiment?
5. If you’ve done your whole experiment and followed your procedure exactly yet your data agree with your hypothesis, what should you do? What would you do if it did support your hypothesis?
6. If I make the statement, “Ms. Pilarz’s hair is curly and blue today” what is an observation based on this statement? What is an inference based on the statement?
7. How many independent variables do you want in a good science experiment and WHY? Describe using an example.
8. Answer the following questions based on the experiment below:

|  |  |
| --- | --- |
| Feet Away from Stage | Number of Interruptions |
| 10 | 25 |
| 20 | 35 |
| 30 | 40 |
| 40 | 35 |
| 50 | 25 |

*Justin Bieber was performing his hit singles at a farm during a fall festival. He noticed that as he started each song the goats that were 10 feet away from the stage kept screaming and interrupting him. He was wondering if they moved the goats farther away if they would interrupt him less so he could focus on his dances moves without distractions. During his sound check he preformed the experiment but moving the goats 10 feet further away at a time, up to 50 feet away and had his manager count how many times the goats screamed during his performance. He collected the following data:*

* 1. What was his hypothesis?
  2. What was his independent variable?
  3. What was his dependent variable?
  4. What was his control?
  5. What should be his conclusion?

**Objective: Graphing/Data**

*Learning Target: I can interpret graphs and tables and draw conclusions about an experiment.*

*Learning Target: I can create appropriate graphs and tables to convey the results of an experiment.*

*Learning Target: I can collect and analyze data to draw conclusions about an experiment.*

*Learning Target: I can indentify quantitative and qualitative data.*

1. Fill in the chart below:

|  |  |  |
| --- | --- | --- |
|  | Quantitative Data | Qualitative Data |
| Define |  |  |
| 2 Examples |  |  |

1. What type of graph would you make for the following sets of data?

|  |  |
| --- | --- |
| Age of child | Height in cm |
| 1 | 32 |
| 2 | 89 |
| 3 | 180 |

|  |  |  |
| --- | --- | --- |
| Season | Average Amount of Rainfall (in) | |
| Fall | 120 | |
| Winter | 250 | |
| Spring | 300 | |
| Summer | 50 | |
| Favorite Pizza Topping | | Percent of Class |
| Cheese | | 80% |
| Pepperoni | | 10% |
| Goat | | 4% |
| Donkey | | 6% |

**Objective: Classification/Taxonomy**

*Learning Target: I know the modern classification system, its purpose and founder.*

*Learning Target: I know the classification for humans.*

*Learning Target: I know what a species is and can identify them base on criteria given.*

*Learning Target: I know the six kingdoms.*

*Learning Target: I can write proper scientific names and know the scientific name for humans.*

1. Fill in the chart below:

|  |  |
| --- | --- |
| Fill in below the groupings of classification from the most general to the most specific.  *Come up with two sentences to memorize each of these!* | Match the classification group to what humans fall into. |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. Who created the system of classification we use today?
2. What are the six kingdoms?
3. How do you know if two animals are in the same genus? What about the same species?
4. Why is it important that we have scientific names for organisms?
5. How do you properly write a scientific name for an organism?

**Objective: Prefixes/Suffixes**

*Learning Target: I can use Latin prefixes/suffixes to define words.*

1. Define the following:

**Prefixes**  
a-                                 cyto-                            hetero-                         macro-  
  
anti-                            end-                            homo-                          micro-  
  
arche-                          exo-                             inter-                            path-  
  
auto-                            ecto-                            intra-                            pseudo-  
  
bio-                              haplo-                          lysis-                            troph- (both)  
  
**Suffixes**  
  
-biosis                          -morph                         -stasis                           -vore  
  
-ology                          -phase                          -therm                          -zygous