**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Inference or Observation? (I or O)**

\_\_\_\_\_ 1. The volume of liquid is 30 mL

\_\_\_\_\_ 2. The color turns reddish-orange at 75 degrees

\_\_\_\_\_ 3. Condensation on a glass is from warm, moist air hitting a cold surface

\_\_\_\_\_ 4. The nest can hold three 25 gram eggs

\_\_\_\_\_ 5. The bowl-shape of a bird’s nest is what keeps the eggs from rolling out

\_\_\_\_\_ 6. The pond has grown more algae since our May visit

**Independent or Dependent Variable? (IV or DV)**

7. When different amounts of vinegar ( \_\_\_\_\_ ) is added to 20 grams of baking soda, produces different amounts of CO2 ( \_\_\_\_\_ ).

8. Wolf pack size on Isle Royal ( \_\_\_\_\_ ) is directly related to the moose population ( \_\_\_\_\_ ).

9. Temperature ( \_\_\_\_\_ ) will affect how well an enzyme functions ( \_\_\_\_\_ ).

10. H2O temperature ( \_\_\_\_\_ ) decreases with the more time it is left in a cool room ( \_\_\_\_\_ ).

11. The amount of oxygen produced ( \_\_\_\_\_ ) is directly related to leaf volume ( \_\_\_\_\_ ) in oak trees.

**Data Presentation – Line graph (LG), Pie chart (PC), or Bar graph (BG)?**

\_\_\_\_\_ 12. A comparison of the number of trees in 8 different tropical rainforests

\_\_\_\_\_ 13. Of all the insects in the world, the percent that is made up of Lepidoptera

\_\_\_\_\_ 14. The effect on plant growth as there is an increase in soil acidity

\_\_\_\_\_ 15. Contrasting a country’s gender and age profile for 2015

\_\_\_\_\_ 16. The change in atmospheric carbon dioxide over the last 100 years

\_\_\_\_\_ 17. T.A.I.L.S. refers most specifically to this type of graphical data representation

**Statistics** – match the description with its term.

\_\_\_\_\_ 17. Average/Mean a. The middle number in a series of data

\_\_\_\_\_ 18. Median b. Measure of how spread out the numbers in the data set are

\_\_\_\_\_ 19. Mode c. Sum of all the values divided by the number of values

\_\_\_\_\_ 20. Standard Deviation d. The most frequently observed value in a data set

**What would the control variable be?**

21. You test plant growth by giving plants different concentrations of acid solution.

 CV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. Experimenting how different colors of light effect plant growth.

 CV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. Investigation of how different species of bird compete at a platform bird feeder.

 CV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. You test how Mr. F’s tomato crop respond to different populations of caterpillars

 CV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Reflection Questions.**

25. How does a scientific experiment differ from an investigation? Which do you think our bird nest engineering challenge was? *Think variables, controls, observations, hypotheses, etc….*

26. Why is the development of a study or experiment using the same set of steps an important thing to do in science?

27. Describe the steps of the scientific method and the importance of each.

28. Your friend does a scientific experiment and argues that he/she doesn’t need a control variable. Regardless of what he/she is experimenting, are they right? Explain why or why not? DETAILS…

29. If you were hired by the U.S. Department of Fish & Wildlife to work “The Effect of Red Fox Territory Size on Rabbit Population” project, propose what your I.V., D.V., and C.V. would be in this project. Write a hypothesis and scientific question. What would a control variable be for this project?