EXPERIMENTAL DESIGN VOCABULARY

1. **Scientific Method:** The process that scientists use to answer questions and solve problems.

2. **Question:** The first step in the scientific method. This identifies the problem and gives your experiment a purpose. You can then do research on your topic to learn more about it.

3. **Hypothesis:** An educated prediction or guess about the relationship between the variables that can be tested. A hypothesis statement should always be written as If…then…
   Example: _____

4. **Procedures:** The steps you use when conducting an experiment to test your hypothesis.

5. **Independent variable (IV):** The variable that is purposefully changed by the experimenter. This is the thing you are testing.
   Example: _____

6. **Dependent variable (DV):** The variable that responds to the change (due to or affected by the independent variable). It is the result that you are expecting to happen.
   Example: _____

7. **Constants (C):** All factors that remain the same throughout the entire experiment.
   Examples: _____

8. **Control Group:** A type of experiment where all of the variables are controlled and not being tested. This is used as a comparison for the independent variable.
   Example: _____

9. **Data:** Information that is gathered through testing. Collected in the form of tables, charts, and graphs.

10. **Observations:** Use of the five senses to gain information in order to answer questions or collect data.
    Example: _____

11. **Inference:** An assumption or conclusion based on an observation, experience, or information.
    Example: _____

12. **Repeated Trials:** The number of experimental repetitions tested at each level of the independent variable. This helps to ensure accurate results in case of mistakes or errors.

13. **Conclusion:** A summary after an experiment that analyzes and evaluates your data, results, and hypothesis. Conclusion statements should always be written as an explanation not a description. Explanations tell why or how.

14. **Communication:** You should always share and compare results of an experiment with others to check your data and ensure that your results and conclusions are correct.

<u>Qualitative and Quantitative</u>

1. **Qualitative data:** Includes observations that use adjectives and adverbs to describe things. They are observations or data that tell what kind.

2. **Quantitative data:** Involve actual numbers. They are observations or data they tell how much.

Name: _____

SCIENTIFIC METHOD VOCABULARY PRACTICE

Directions: Chose the vocabulary word from the box that best matches the steps in the scientific method.

Hypothesis	Data	Procedures	Variables
Experiment	Conclusion	Control	Observations

1. _____ This is the organized process used to test a hypothesis.

2. _____ This is an educated guess about the solution to a problem.

3. _____ This refers to the observations and measurements recorded during an experiment.

4. _____ This is a factor that changes in an experiment. You should only test one of these at a time.

5. _____ This refers to using the five senses to collect information.

6._____ This is a judgment or summary based on the results of an experiment.

7._____ This is a variable that is kept constant and doesn't change in an experiment.

8._____ This refers to the series of steps taken in order to carry out an experiment.