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

Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Scientific Method Notes**

**What is the scientific method?** It is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that is used to find \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to questions about the world around us.

**Is there only one “scientific method”?** No, there are several versions of the scientific method. Some versions have more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, while other may have only a few.

**Similarities in the scientific method.** They all begin with the identification of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to be answered based on observations of the world around us and provide an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ method for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and analyzing an experiment.

**What is a hypothesis?** It is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ based on observations and your research of the topic. It is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ statement. It is NOT A GUESS.

**What is data**? If is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gathered during an experiment. What are some examples of data we could collect? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Steps to the Scientific Method**

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

What do you want to know or explain? Use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ you have made to write a question that addresses the problem or topic you want to investigate.

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

A hypothesis is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ statement. What do you think will happen? Predict the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to your question or the outcome of the experiment.

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

How will you test your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? Develop a procedure for a reliable experiment and address safety rules. Identify constants, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (dependent & independent), and the control. Construct a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to record your data.

**Constants:** These are the ­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that will remain the same in each part of the experiment.

**Variables:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Variable – The factor that you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, that will change with each experiment.

 \_\_\_\_\_\_\_\_\_\_\_\_\_ Variable – \_\_\_\_\_\_\_\_\_\_\_\_\_ that you collect (what you count or \_\_\_\_\_\_\_\_\_\_\_\_ in an experiment.

**Control:**  The \_\_\_\_\_\_\_\_\_\_\_\_ or baseline experiment – it is what you \_\_\_\_\_\_\_\_\_\_\_\_\_\_ your results to.

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

Follow the steps in your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to perform your experiment. Record data (in your table) and make general observations. Make sure to include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Graph the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Make sure to include all \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Write an analysis which summarizes your \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and state how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ your results are. Write a conclusion that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the weaknesses of the experiment, and how the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ could be improved. Also include any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that may come up from your experiment that you could also test.