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

**I will be able to…**

* **define the steps of the Scientific Method in my own words**
* **contrast between hypotheses and speculations**
* **contrast between theories and laws**

**The Scientific Method**

**Steps in the Scientific Method—List and define each step**



1. Give an example of a question you might ask about a pendulum.
2. A hypothesis must be \_\_\_\_\_\_\_\_\_\_\_\_\_ and it \_\_\_\_\_\_\_\_\_\_\_\_\_\_ an outcome.
3. Some hypotheses are written as \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ statements.
4. Write a hypothesis for the observation you wrote in question 6.
5. What part of an experiment is the variable?
6. How many changed variables should there be in a good experiment?

**Laws and Theories**

1. Define a Theory \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. THEORIES \_\_\_\_\_\_\_\_\_\_\_\_ WITH NEW EVIDENCE
2. Define a Law: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. LAWS \_\_\_\_\_\_\_\_\_\_\_\_\_ WITH NEW EVIDENCE

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

**Practice Questions**

1. Put the steps of the scientific method in order and match each to its definition:

Conclusion, Experiment, Hypothesis, Observation, Retest

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °

­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

* A procedure to test the hypothesis by collecting data
* A testable answer to the question
* Information obtained through your senses
* Experiments must be repeated in order to verify the results
* The answer to the hypothesis based on the data obtained from the experiment

1. What should you do to your hypothesis if your results show that it is incorrect? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Put a check mark next to the following statements that are scientific hypotheses.

\_\_\_

\_\_\_

\_\_\_

\_\_\_

\_\_\_

* 1. Concrete is harder than blacktop
  2. The Moon is made of Swiss cheese.
  3. Joe Montana is the best quarterback of all time.
  4. There are things in an atom that will never be found.
  5. Nitrates cause plants to grow faster.

1. Write whether each of the following statements is a Theory or a Law.
   1. Species change over time because of variations in their genetic code that make them more fit for survival. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Objects fall to earth at a constant rate of 10 m/s2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Substances expand when they get hot. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Substances expand when they get hot because their molecules are moving faster. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What happens to a theory if many scientists do experiments that contradict it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What happens to a law if many scientists do experiments that contradict it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**NOW FILL THE FACTS YOU LEARNED INTO YOUR ESSENTIAL FACTS BOOKLET FOR UNIT 1!**