

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

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

- 1. Hypothesize **F**
- 2. Observe **E**
- 3. Law **A**
- 4. Theory **C**
- 5. Conclusion **B**
- 6. Experiment **D**
- 7. Data **G**

- A.** Facts in science that have been shown to be absolutely true in all cases.
- B.** A statement about whether your hypothesis was right, is based on data.
- C.** Scientific facts supported by much evidence, but can't be retested for all cases.
- D.** A controlled test to gain evidence.
- E.** Careful study of a problem or situation.
- F.** How you think it works based on your observations.
- G.** Facts measured and collected in the lab.

Scientists present a scientific theory to news reporters. Your friend listens to the scientists and says she doesn't believe it because "it's just a theory". Respond to your friend.

*scient. theory was many facts to prove it.*

How is a Scientific Law different than a Scientific Theory?  
*A law is true in all cases + has been repeated.*

Why is the "Theory of Evolution" not a Law?  
*we can't repeat it.*

**Theory, Hypothesis, or Guess?**

*Remember: an hypothesis comes from observations that can be tested in an experiment. A Theory is scientific fact.*

- G** You think that a person is going to come late to the bus because they were late yesterday.
- H** You think that some plastic water bottles may not be healthy because you can taste the plastic in the water.
- T** <sup>earth</sup> The revolves around the sun. The sun does not revolve around the earth.
- H** You think that adding salt to water allows it to have a higher boiling point (it boils at a higher temperature).
- G** You think that your favorite basketball team will lose because they are playing on Thanksgiving, again.
- T** All matter consists of electrons, protons, and neutrons.

*The dandelions in a lawn are grow very short.  
 The dandelions in the tall grass by a lawn will grow tall.*

Give a reasonable hypothesis for the above observation:  
*ones in the lawn get cut down.  
 They have adapted.*

**Which of the following statements could be supported by the scientific method? Why?**

"Come to Willarby Auto Store—the best car dealership in town." *No - opinion*

"Try Dry-Toes Powder. A recent independent research company proved Dry-Toes Powder kept feet dry up to 30% longer than any other foot powder." *yes, can be tested*

"Acorn Powder helps you live longer and stronger. 89 year old Ethyl Krumke swears by Acorn Powder. 'I take my Acorn Powder every day, just like my mother!'" *No - opinion*

**Which part of the Scientific Method?**

**Exp.** A scientist measures the amount of acid necessary to dissolve a certain amount of magnesium.

**Hyp.** You believe your car won't start because you are out of gas.

**Obs.** You notice that a ball rolls farther up a hill depending on how fast it was going.

**concl.** You decide that adding salt to ice water allows the ice water to get colder than water alone.

Liquid	Color	Burns?	Volume	Density
<b>A</b>	Clear	No	35 mL	1 g/mL
<b>B</b>	Pale Yellow	Yes	12 mL	.94 g/mL
<b>C</b>	Clear	No	46 mL	1 g/mL
<b>D</b>	Blue	Yes	88 mL	.99 g/mL

*The above data was collected about 4 unknown liquids.*

What can you conclude from this experiment and why?  
*Liquid A+C are probably the same substance... because same color + density + flammability.*

*You walk into a room and notice that the lights will not come on. Use the scientific method to figure out why.*

Observation: *lights are out (dark)*

Hypothesis: *power is out*

Experiment: *try different room, light work*

Conclusion: *power is on.*

(Repeat as necessary) *hypo - bad bulb  
 exp. - change bulb  
 - works  
 concl. - light bulb was burned out.*