Name _____ Date _____ Period _____

The Scientific Method- Problem and Hypothesis

The scientific method is a process used by scientists to solve problems and answer questions about the world around us. Most scientific investigations begin with a problem or question. A problem can be anything that can be observed and tested. The second step is to form a hypothesis, which is a possible explanation to the problem that can be tested with an experiment.

**Fill in the question that helps us identify each step

Identify and research a problem _____

Form a hypothesis _____

---

1. Homer notices that his shower is covered in a strange green slime. His friend Barney tells him that coconut juice will get rid of the green slime. Homer thinks Barney is right so he will clean his shower with coconut juice.

A. What is the problem?

B. What is Homer's hypothesis?

2. A shopping mall manager notices that the tile floor in front of Macys always seems to have more scratchs than the floor in front of Nordstroms. She talks to the lead maintenance man and finds out that he uses two different cleaners on the tile floor. The mall manager thinks the floor cleaner is helping to stop the scratches to the tile.

A. What is the problem?

B. What is the mall manager's hypothesis?

3. Jo Anna read that certain perfume esters (chemicals) would agitate bees. Because perfume formulas are secret, she decided to determine whether the unknown Ester X was present in four different perfumes by observing the bee's behavior. She placed a saucer containing 10 mL of the first perfume 3 m from the hive. She recorded the time required for the bees to emerge and made observations on their behavior.

A. What is Jo Anna's problem?

B. Jo Anna did not specifically tell us her hypothesis. Write a hypothesis for Jo Anna.

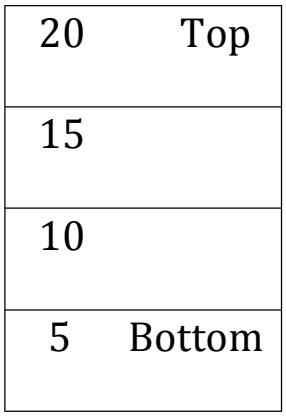
Name _____ Date _____ Period _____

In order to check a hypothesis, scientists perform experiments and gather data. Using their data, scientists determine if their hypothesis was **supported** or **not supported**.

A hypothesis is supported when the data from the experiment shows that the hypothesis was correct.

A hypothesis is not supported when the data from the experiment shows that the hypothesis is not correct.

Susan observed that different amounts of fossils are present in a cliff behind her house. She wondered if more fossils would be found at the top of the bank instead of the bottom. She marked the bank at five positions: 5, 10, 15, and 20 m from the surface. She removed 1 bucket of soil from each of the positions and determined the kind and number of fossils in each sample.



Cliff

A. Rewrite Susan's hypothesis from above:

B. Your job is to create a data table that supports Susan's hypothesis.

Depth	# of fossils
20	
15	
10	
5	

Conclusion: Susan's hypothesis was supported because

_____

_____

_____

_____

C. Your job is to create a data table that does not support Susan's hypothesis.

Depth	# of fossils
20	
15	
10	
5	

Conclusion: Susan's hypothesis was not supported because

_____

_____

_____

_____