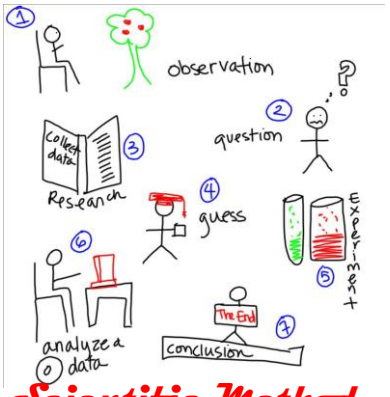
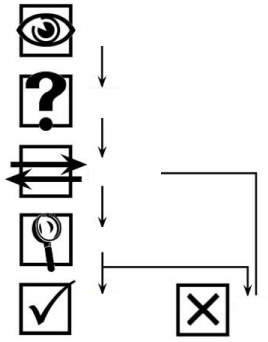


Scientific Method

The Scientific Method involves a _____ that are used to _____ _____.



Steps of the Scientific Method

1. **Problem/Question**:

Develop a _____ or _____that you would like to solve.

Steps of the Scientific Method

2. **Observation/Research**:

Make _____ and _____ _____

(if necessary).

Steps of the Scientific Method

3. **Formulate a Hypothesis**: Predict a _____to the problem or question.

Example: If soil temperatures rise, then plant growth will increase.

Steps of the Scientific Method

4. **Experiment**: Develop and follow a _____.

Included in the experiment are…

- independent variable,
- dependent variable,
- control group and
- constants.

Independent Variable

The independent, or _____, is a factor that's intentionally varied by the _____.

Dependent Variable

The dependent, or _____, is the factor that _____of changes made in the independent variable.

In a scientific experiment, the control is the group that _____ _____.

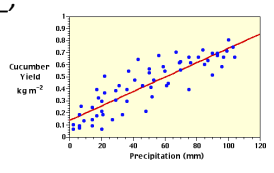
The control group may be a "_____ _____" or an "experimenter selected" group.

Factors in an experiment that _____. Constants need to remain _____ for the experiment to be _____.

Steps of the Scientific Method

5. **Collect and Analyze Results**: Modify the procedure if needed.

Include _____, _____and drawings if applicable.



Steps of the Scientific Method

6. **Conclusion**: Include a statement that _____ or _____ _____.

Make recommendations for further study and possible improvements to the procedure.

Example

- SpongeBob noticed that his favorite pants were not as clean as they used to be. His friend Sandy told him that he should try using Clean-O detergent, a new laundry soap she found at Sail-Mart. SpongeBob made sure to wash one pair of pants in plain water and another pair in water with the Clean-O detergent. After washing both pairs of pants a total of three times, the pants washed in the Clean-O detergent did not appear to be any cleaner than the pants washed

1) What is the problem?
2) What is Sponge Bob's hypothesis?
3) What is the independent variable?
4) What is the dependent variable?
5) Which group is the control group?
6) What should Sponge Bob's conclusion

Practice

1. A student wants to conduct an experiment to find out how pulse rates changes as the length of time spent exercising increases. The independent variable will be ____.

A. breathing rate
B. pulse rate
C. time spent exercising
D. the kind of exercise

2. In an experiment studying how increasing amounts of acid rain affect the living organisms in pond water, which of the following would be the dependent variable?

A. organisms in rainwater
B. acid rain and non-acid rain
C. a mixture of pond water and acid
D. number of organisms in pond water

3. An experiment for a new asthma medication was set up into two groups. Group one was given the new drug for asthma, while group 2 was given a sugar pill. The sugar pill serves as a _____.

A. Control
B. Dependent Variable
C. Experimental Variable
D. Constant