

True or False

If the answer is true, write "true" on the line. If the answer is false, replace the underlined word or phrase with one that will make the sentence correct. Write the new word(s) on the line.

1. _____ True _____ Forming a hypothesis is the first step of the scientific method.
2. _____ True _____ A scientific law is different from a scientific theory because it describes something in nature without attempting to explain it.
3. _____ True _____ In order for a hypothesis to be testable, scientists need to be able carry out investigations that will either support or disprove it.
4. _____ The Control Group _____ The experimental group is the group that is left alone during the experiment.
5. _____ True _____ The manipulated variable is the same thing as the independent variable.

Commented [1]: Very good work!

Matching

Match the word to the definition. Write the letter on the line.

6. F Scientific inquiry
7. E Hypothesis
8. G Control group
9. A Experimental group
- 10 B Independent variable
11. H Dependent variable
12. C Scientific theory
13. D Scientific law

- A. This group shows the effect of the variable being tested
- B. This is the one variable that is changed
- C. A well-tested explanation for experimental results
- D. The many ways in which scientists study the natural world
- E. A possible answer to a scientific question
- F. This describes an observed pattern in nature
- G. This group is left alone and not experimented on
- H. This is the variable that gets measured

Commented [2]: Reread the literature for items 6 and 13 and provide citations (paragraph number) for each response.

Identifying

Read through the following scenarios. Identify the control group, the experimental group, the independent variable, and the dependent variable.

Independent Variable	Dependent Variable	Experimental Group	Control Group
1. Dog Food	Dogs	Overweight dogs	Dogs with normal diet
2. New Sunscreen	skin	One arm	The other arm
3. Sunlight	Plant growth	plants with bright sun lamp	plants with normal sunlight

1. A company wants to test a new dog food that is supposed to help overweight dogs lose weight. 50 dogs are chosen to get the new food, and 50 more continue their normal diets. After one month, the dogs are checked to see if they lost any weight.

2. A new sunscreen has been developed that is supposed to be more effective at preventing sunburn. 30 participants spray one arm with the new formula, and spray the other arm with the leading formula. After 4 hours in the sun, their skin is evaluated for any redness.

3. A student wants to study the effect of sunlight on plant growth. In his experiment, 12 plants receive normal amounts of sunlight, but half of them are kept under bright sun lamps all night long. After 6 weeks, the plants' heights are measured.