

HOW SCIENTISTS WORK SERIES

What Is The Scientific Method?

Pre-Test

Directions: Read each of the following and circle the best answer.

- 1. The first record of the scientific method being used was approximately
 - a. 600 years ago.
 - b. 3,000 years ago.
 - c. 50 years ago.
 - d. 1,200 years ago.

- 2. To find out if a person's experiment was accurate and true, you can
 - a. repeat just the pre-experimental stage.
 - b. choose to agree with the hypothesis.
 - c. repeat all five steps in the scientific method.
 - d. draw your own conclusion.

- 3. Collecting data is part of
 - a. coming to a conclusion.
 - b. doing the experiment.
 - c. gathering material.
 - d. stating the problem.

- 4. During the experimental stage of the scientific method.
 - a. a hypothesis is formed.
 - b. measurements are often made.
 - c. most scientists draw their conclusion.
 - d. a scientific law is written up.

- 5. Another word for hypothesis is
 - a. research.
 - b. fact.
 - c. prediction.
 - d. summary.

- 6. When analyzing what has been observed, such as data collected in an experiment, leads to
 - a. drawing the conclusion.
 - b. coming up with a question.
 - c. a scientific inquiry.
 - d. a hypothesis.

- 7. Before the hypothesis can be stated a
 - a. theory is proposed.
 - b. galactic law is constructed by a group of professors.
 - c. conclusion is agreed upon.
 - d. problem needs to be stated in the form of a question.

- 8. If the experiment shows the original hypothesis to be false, the scientist
 - a. should doubt the accuracy of the equipment.
 - b. will not be able to solve the problem.
 - c. needs to repeat the experiment.
 - d. can state a new hypothesis.

- 9. The hypothesis is
 - a. formed after the conclusion.
 - b. a prediction.
 - c. stated when observations are being recorded.
 - d. the result of many theories being tried out.

- 10. During the experiment a person
 - a. makes a summary.
 - b. reads all they can about the subject.
 - c. tries to figure out what might go wrong.
 - d. keeps a record of what is happening.

HOW SCIENTISTS WORK SERIES**What Is The Scientific Method?****Post-Test**

Directions: Read each of the following and circle the best answer.

1. While following the steps of the scientific method, when are measurements taken?
 - a. Just before the hypothesis is made.
 - b. During the experimental stage.
 - c. Right after a scientific law is composed.
 - d. Half way through developing a theory.
2. The scientific method is
 - a. found and explained on 3,000-year-old Egyptian temple walls.
 - b. used by a small, select group in only the largest universities.
 - c. made up of five steps.
 - d. not used by scientists who have the best laboratories.
3. Part of the experimental stage in the program occurred when the experimenter
 - a. observed ice melting on different materials.
 - b. said her hypothesis was wrong because the data did not fit her prediction.
 - c. wondered what kind of material will melt ice.
 - d. thought ice would melt on a piece of glass first.
4. The hypothesis is
 - a. a list of materials needed in the experiment.
 - b. always right.
 - c. the last part of the experiment.
 - d. an educated guess.
5. The scientific method
 - a. should only be used for the most complex problems.
 - b. is not very useful today.
 - c. is seldom used by people doing research.
 - d. could be used by almost anyone.
6. A conclusion in the scientific method is based on what
 - a. a committee thought would be a reasonable answer.
 - b. was observed in the experiment.
 - c. theories in the past had been proposed.
 - d. a person expected would happen.
7. A new hypothesis may be made when
 - a. too many hours are being spent gathering equipment.
 - b. an experiment demonstrates the original hypothesis to be false.
 - c. there is not enough time to do the experiment
 - d. the equipment breaks down and does not work.
8. Scientists believe scientific knowledge should be based on
 - a. long held beliefs.
 - b. many years of experience.
 - c. experiments that record accurate data.
 - d. a vote by an educated group of people.
9. One of the benefits of the scientific method is that it can be used for
 - a. checking the results of a person's experiment.
 - b. predicting the chances of rain in the future.
 - c. learning about future stock prices.
 - d. finding the best places to go fishing.
10. Most hypothesis are usually
 - a. neither right nor wrong.
 - b. right all the time.
 - c. right half the time.
 - d. wrong.