

The Scientific Method

Scientists study problems and conduct experiments in a variety of ways. However, all use the scientific method. The scientific method is an organized way to find answers to a problem. Match each phrase in the word box to an activity that describes it. Then number the descriptions to show the correct sequence for the scientific method.

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|--|--|--|
| interpret data
identify the problem | observe and record
arrive at a conclusion | make a hypothesis
test the hypothesis |
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Making a Hypothesis

A group of students discusses what they believe will be the outcome of an experiment they are about to conduct. Each student records a statement that will either be proven or disproven by the experiment.

Each member of the group carefully watches as the experiment proceeds. One group member writes down the comments of the group as they call out what they see.

After the experiment is complete, the group discusses their observations. They review their notes and create a graph that shows the results of the experiment. The group discusses what these findings might mean.

Now that the group has decided on a hypothesis, they are ready to proceed with the experiment. As they work, the group is cautious to test only one variable at a time and to follow all directions carefully.

The group reviews their notes and the data they have collected. After a short discussion, they decide whether or not the original hypothesis is correct.

A science group begins a discussion related to what they have been studying in class. They take turns posing questions they still have about the topic. Together, they decide on an experiment they would like to conduct. They hope the experiment will answer some of the questions they still have.

Scientific Definitions

The scientific method uses specific vocabulary related to each step in the process. Match each term in the word box to its definition.

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| hypothesis
experiment
data | control
procedure
conclusion | variable
theory |
|----------------------------------|------------------------------------|--------------------|

Experiment

This is the organized process used to test a hypothesis.

This is an educated guess about the solution to a problem.

This refers to the observations and measurements recorded during an experiment.

This is a factor that changes in an experiment. Proper procedure calls for testing only one of these at a time.

This is a set of statements or ideas that explain a group of facts or phenomena.

This is the judgment based on the results of an experiment.

This is an individual or a standard used to check or verify the results of an experiment.

This refers to the series of steps taken in order to carry out an experiment.