What Are Some Types of Investigations?

Science Words

Say each word quietly to yourself. Then read the meaning.

Read the tip to help you remember.

scientific methods [sy•uhnTIF•ik METH•uhdz] ways that scientists perform investigations. Scientific methods use logic and reasoning.

You have a method for doing your homework. You might do it right after school or in the evening. You might do sitting in a particular chair or in a particular place. Your method is your way of doing something. *Scientific methods* are scientists' ways of doing their work.

experiment [ek•SPEHR•uh•muhnt] an investigation used to test a hypothesis in which all the conditions are controlled

Experiment, explore, and *exact* begin the same way. An *experiment* is an exact and careful way to explore a question.

variable [VAIR•ee•uh•buhl] any factor or condition in an experiment that can be changed

Variable begins the same way as *vary*, which means "change." *Variable* ends with *–able*. A *variable* is something that is able to be changed.



In this investigation, the variable is light. One plant is exposed to light. The other plant is not exposed to light. All other conditions are the same.

control [kuhn•TROHL] the setup to which all the other setups are compared

Control has one meaning in everyday conversation and a different meaning in science. In everyday conversation, if you have *control* over something, you are in charge of it. In science, a *control* is a standard other things are compared to.

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Science Concepts

Read the Ideas more than once. Do your best to remember them.

- 1. A scientific investigation always begins with a question.
- 2. Scientists use scientific methods based on logic and reasoning.
- 3. Scientists may use repeated observations or make models for an investigation.
- 4. In an experiment, scientists test an idea by controlling the conditions around it.
- 5. An experiment begins with observations and a hypothesis that can be tested.
- 6. An experiment should have at least two setups, with one being the control.
- 7. Scientists must identify all the variables, but change only one variable at a time.
- 8. Scientists follow a careful procedure, or set of steps, to carry out their experiment.
- 9. Scientists record and analyze the data they collect; they draw conclusions from their data.
- 10. Scientists use charts, graphs, and diagrams to display data they have collected.