

Scientific Method and Experimental Design Vocabulary

observation- the action or process of observing something or someone carefully or in order to gain information. (Using your senses)

inference-a conclusion reached on the basis of evidence and reasoning

scientific method- a method of procedure that has characterized natural science since the 17th century, consisting in systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses.

control- is the experimental element which is constant and unchanged throughout the course of the investigation

hypothesis – a possible explanation for a set of observations or answer to a scientific question; must be testable

variable – a factor that can change in an experiment

manipulated variable – the one factor that a scientist changes during an experiment; also called independent variable

responding variable – the factor that changes as a result of changes to the manipulated, or independent variable in an experiment; also called dependent variable

controlled experiment - an experiment in which only one variable is manipulated at a time

data – facts, figures, and other evidence gathered through observations

scientific theory – a well-tested explanation for a wide range of observations or experimental results

scientific law – a statement that describes what scientists expect to happen every time under a particular set of conditions