

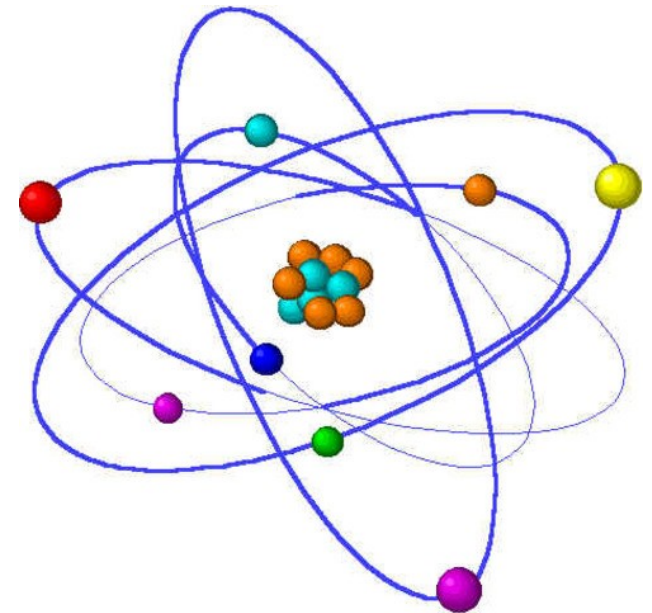
Analyze

To examine methodically by separating into parts and studying their interrelatedness.



Theory

An explanation for some naturally occurring event developed from extensive observations, experimentation, and reasoning.



Conclusion

A statement that tells what an investigation showed, based on observations and data.



Data

Measurements or observations collected and recorded in an experiment or investigation.



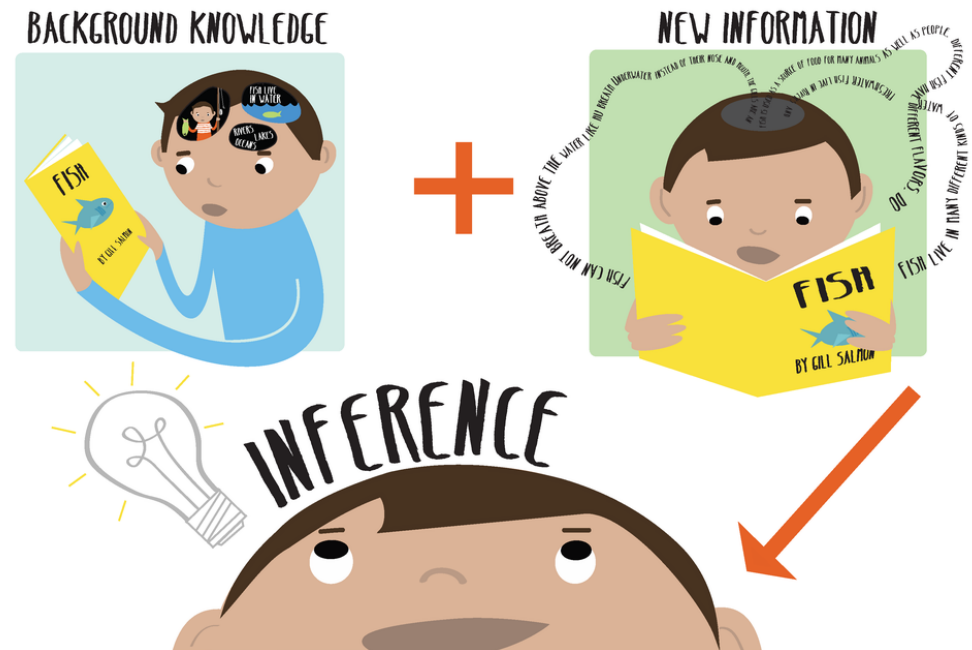
Experiment

A scientific test or procedure that is carried out under controlled conditions to answer a scientific question.



Inference

An explanation based on evidence that is not directly observed.



Investigation

An organized scientific study of the natural world including making observations, asking questions, gathering information, analyzing data, drawing conclusions, and/or communicating results.

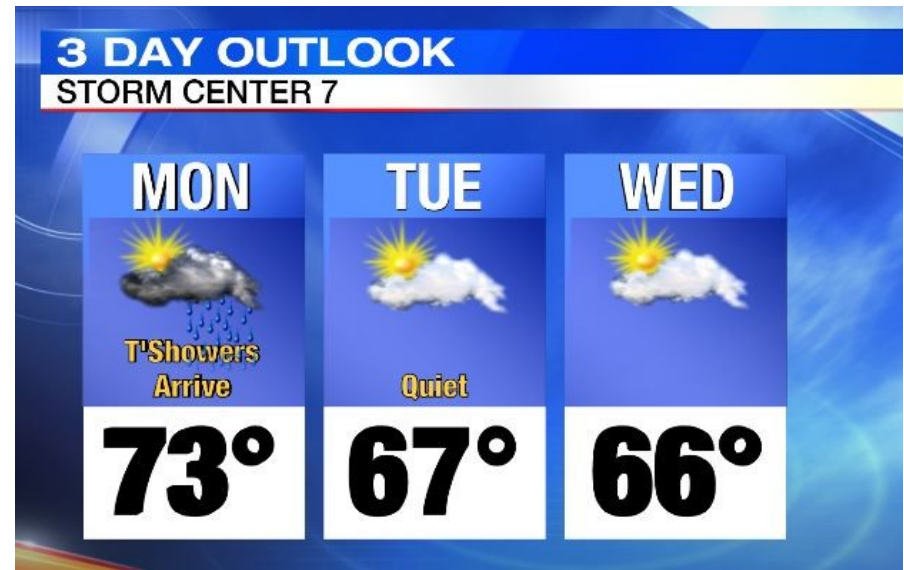
Observation

Information about the natural world gathered through the senses and/or scientific instruments.



Predict

To state what one thinks will happen under certain conditions based on data or observation.



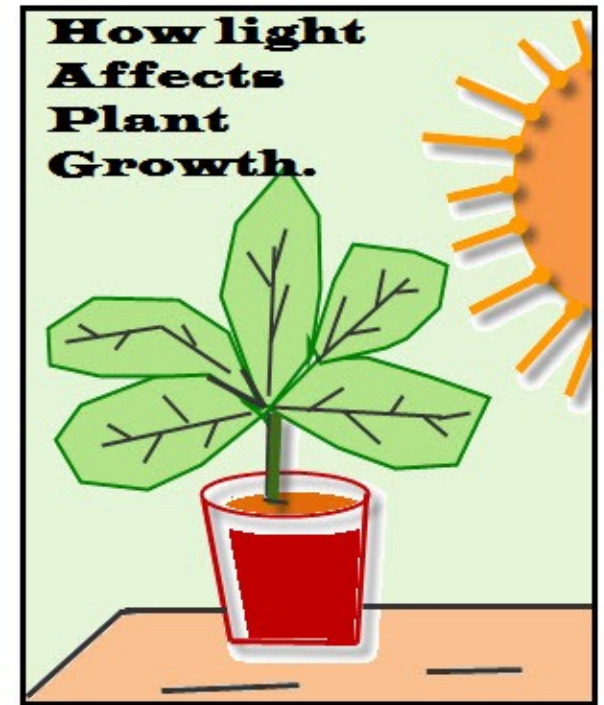
Trials

Multiple sets of measurements or observations in a scientific investigation.



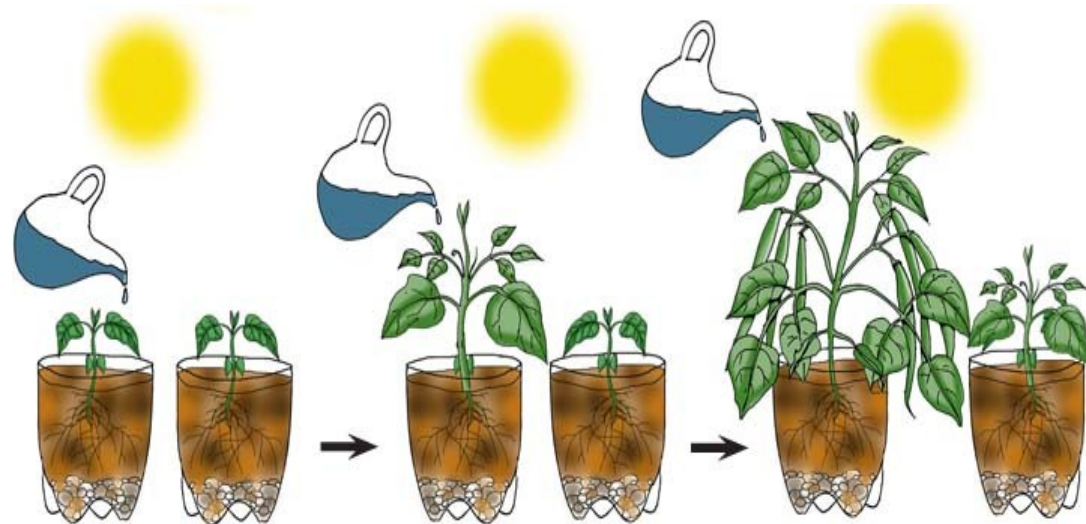
Variable

An event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment.



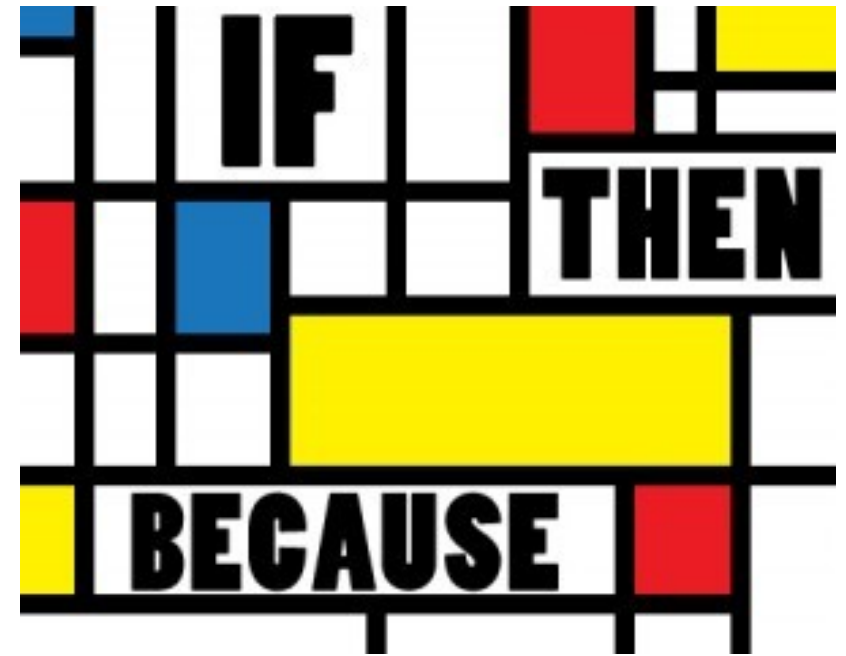
Controlled Variable

A factor or condition in a scientific experiment that is purposefully kept the same.



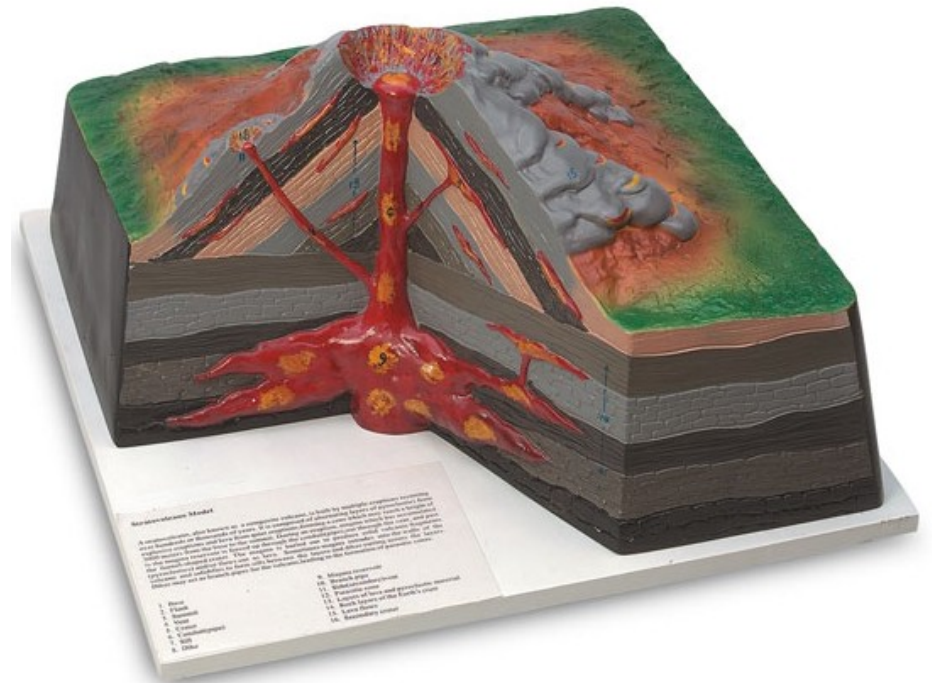
Hypothesis

A statement that can be tested scientifically through experiments and/or other scientific investigations.



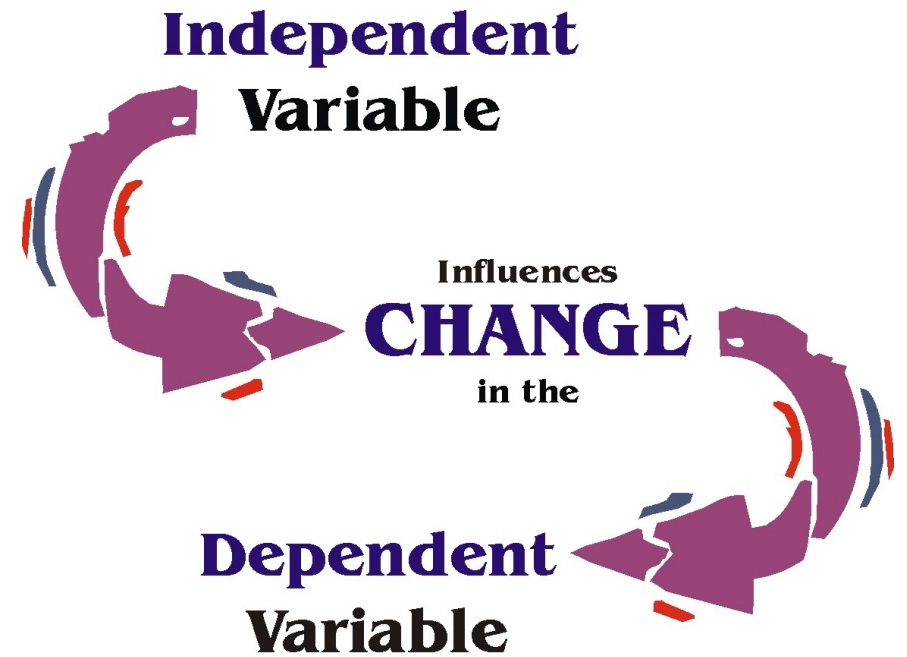
Scientific Model

A replica or description designed to show the workings or structure of an object or system.



Outcome Variable (Dependent Variable)

A factor, usually being measured or observed, that responds to, another factor.



Repetition

Making multiple sets of measurements or observations in a scientific investigation.



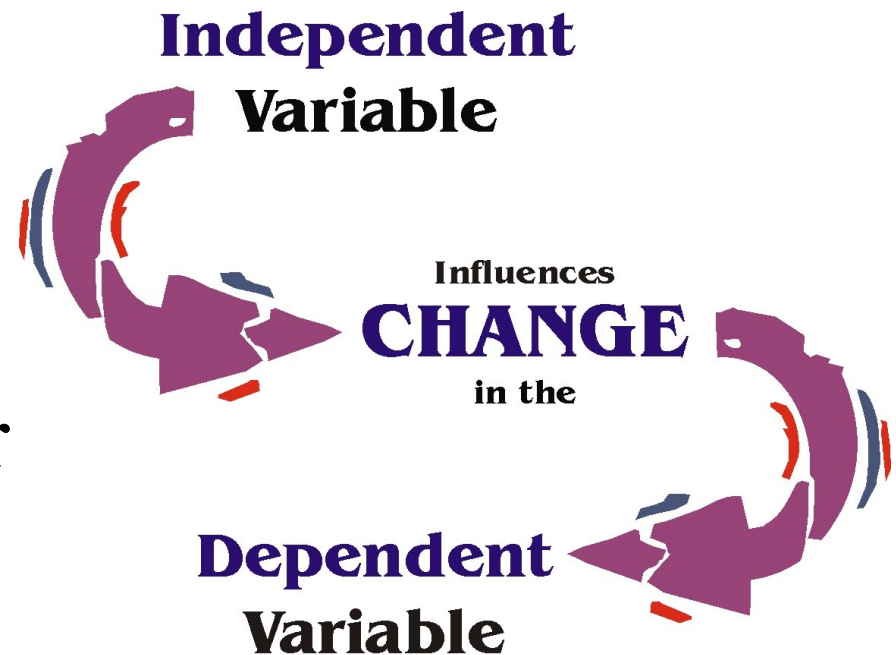
Replication

The reproduction of a scientific investigation by another person to ensure accuracy.



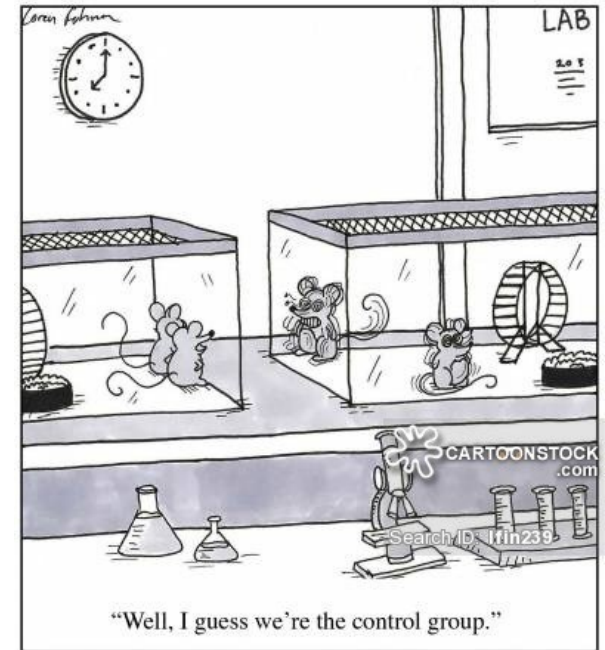
Test Variable (Independent Variable)

The variable manipulated by the experimenter in order to study changes in the outcome variable.



Control Group

A group that serves as a reference for comparison to the experimental group; a group that is untreated by the factor being tested.



Empirical Evidence

Evidence based on observations or experiments rather than theory.



Valid

A term used to describe the certainty of data or results of an investigation or experiment.



Reliable
Not Valid



Low Validity
Low Reliability



Not Reliable
Not Valid



Both Reliable
and Valid

Systematic Observations

Observations obtained by following a preplanned method of observation.



Scientific Law

Based on many observations of naturally occurring events that demonstrate it to be without exception under certain stated conditions.

