

Concept 2.2

Hypothesis-based science is a search for explanations.

B. Hypothesis-based science is about explaining nature.

Scientific Method:

- Idealized method of solving scientific problems .
- Science is actually less structured than most people realize.
- Often the sequence of steps does not exactly match the generalized scheme.

Scientific Method:

1. Observations
2. Question
3. Hypothesis - a suggested answer to a well-defined scientific question.
4. Prediction - “if.....then” statement
5. Test

Controlled Experiment - tests the effects of a single variable at a time.

Variable - a condition in an experiment.

- a) **Independent** - the variable that is changed from one test group to another; this variable is under the control of the experimenter.

b) **Dependent** - the variable you measure; changes as a result of the independent variable.

Constants - variables that are kept the same or controlled for all test groups; eliminating unwanted variables.

Control group - a group used to compare test groups to; not all experiments have a control group.

Organizing Data

a) Tables / Charts

b) Graphs