Hypothesis

- We use the generalizations formed from our observations to formulate a **hypothesis**, or testable statement.
- This serves as a basis for making predictions or carrying out further experiments.

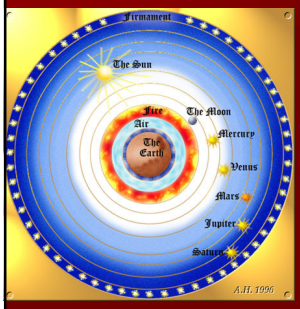
Formulating Hypotheses

- Scientists attempt to derive the simplest possible explanation that accounts for the data. This principle is known as……

Scientists Accept Two Types of Evidence

- Confirmation of hypotheses by data strengthens their validity.
- Repeated and widespread inconsistency of data with a hypothesis eventually leads to the rejection of that hypothesis.

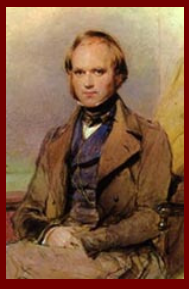
Successful Hypotheses



- Lead to the development of ***models***, an explanation of how phenomena occur and how data and events are related.

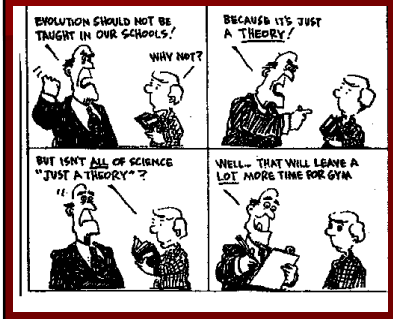
Successful Models

- If they explain many phenomena, it may lead to the development of a ***theory***, a broad generalization that explains a body of facts or phenomena and can predict the results of new experiments or observations.



Charles Darwin

Theories are NOT guesses!



- A theory provides a causal explanation of the world and predicts its future behavior.

Laws

- General statements reflecting the expectation that certain patterns of events will always occur if and when certain conditions are met. Generally fully quantized.