WHAT IS SCIENCE?
A Summary by Jay E. Gould

Science can be concisely defined as the methodical and controlled, rational and empirical, search for truth, i.e., reality.

WHAT IS THE SCIENTIFIC IDEAL?
( Goals, Requirements, and Methods)

Objective knowledge based on evidence and reason,
i.e., empiricism and rationalism, as opposed to just superstition, authority, or intuition (which are other approaches to knowledge).

By knowledge we mean understanding (i.e., description and explanation), which can lead to prediction, control, and systematization--these are the four goals of science.

By evidence we mean empirical data (i.e., objective experiences/observations), that are repeatable and public
(i.e., capable of being observed more than once and by more than one individual)--these are the three requirements of scientific observation.

By reason we mean rational analyses of data obtained through a systematic logic of inquiry
(i.e., steps of the scientific method, manipulation and control of variables, and the use of operational definitions)--these are the methods of science.

WHAT IS THE SCIENTIFIC ATTITUDE?
(Fundamental to the Methods)

A questioning, critical, and yet open-minded perspective, stressing empiricism and rational impartiality in all of science’s activities. This leads to, among other things, 1) new and better approaches to old problems, 2) the discovery of errors and deficiencies, and 3) more accurate and complete understanding.