

Introduction: Science, Meaning of Life, Water

Science

Characteristics of science:

1. observable
2. explained by natural laws, empirical evidence
3. testable
4. conclusions are tentative
5. falsifiable

Scientific Method

1. Observations
2. Questions
3. Hypothesis
4. Prediction
5. Tests/Experiments
 - “controlled experiment”
 1. experimental group
 2. control group

Theory and Fact

Theory = structure of ideas that explain and interpret facts.

Fact = confirmed to such a degree that it would be foolish to dispute it.

Life

Properties of Living Systems

1. chemical uniqueness
2. hierarchical organization
3. reproduction
4. possession of genetic program
5. metabolism
6. development
7. environmental interaction

Water

1. high heat of vaporization
2. unique density behavior
3. high surface tension/cohesion
4. versatile solvent

Macromolecules

1. carbohydrates
2. lipids
3. proteins
4. nucleic acids