

Biology I/Unit 1 Study Guide

bio1u1sg (Nature of Science)

Study Objectives

1. List the characteristics of living things.
2. Identify three important themes that help explain the living world.
3. **Distinguish among hypothesis, theory, and law as scientific terms and how they are used to answer a specific question.**
4. **Explain how scientific and technological innovations as well as new evidence can challenge portions of or entire accepted theories and models.**
5. **Recognize that in order to be valid, scientific knowledge must meet certain criteria.**
6. **Explain how traditions of ethics, peer review, conflict and general consensus influences the conduct of science.**
7. **Recognize that some scientific ideas are incomplete, and opportunity exists in these areas for new advances.**

Vocabulary

hypothesis theory law ethics peer review consensus empirical evidence prediction control group experimental group independent variable
dependent variable quantitative data qualitative data inference bias

Assignments/Assessments

- Reading: Chapter 1 (pages 5-20)
- Handout "Nature of Science"
- Notebook **10pts**
 - ✓ Notes (2-column)
 - ✓ Crossword
- Inquiry Lab: Greenspace Investigation **10pts**
- Skill Lab: Head vs Height **10 pts**
- Vocabulary Quiz **15pts**
- Test **10pts**

Misconception

Theory - the word theory is frequently used to suggest an idea that is uncertain or an opinion. A scientific theory is a general truth that explains the observations of many scientists. A scientific theory is accepted only after it has been supported by a vast body of experimental data. Several theories that have been widely accepted by scientists are the **cell theory, atomic theory, theory of evolution by natural selection, plate tectonic theory, germ theory of disease and big bang theory.**

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