

Study Guide

Section 1: Introduction to Biology - Biology is a branch of science that studies life in great detail. Its name originates from 'bio', meaning 'living', and 'logy', meaning 'study'. - Living beings are defined as those who interact with their environment, use energy, and reproduce. For instance, human beings eat for energy, respond to their surroundings, and reproduce to keep their species alive. - The field of biology strives to answer pertinent questions about the different types of living organisms, how they function, and how they differ from one another.

Section 2: Seven Characteristics of Living Things The study of biology encompasses seven primary characteristics that define living things:

1. Order

2. This refers to the organized structure of living organisms. For example, the petals of a rose are intricately whirled around each other, demonstrating the highly ordered structure that typifies life.

3. Reproduction

4. This means that organisms reproduce their own kind. For example, a gray wolf will always give birth to a wolf pup, not a horse.

5. Growth and Development

6. All living organisms grow and develop based on the information inherited via DNA. This genetic information results in humans and animals sharing physical characteristics with their parents or close relatives.

7. Energy Processing

8. Humans and other living organisms ingest food to gain the energy needed for their activities and various chemical reactions.

9. Response to the Environment

10. Many organisms react to their environment and stimuli. For example, human laughter can be a response to tickling.

11. Regulation (Homeostasis)

12. Organisms maintain internal stability, known as homeostasis, to sustain life. For example, sunbathing lemurs act to raise their body temperature on cold mornings.

13. Evolutionary Adaptation

14. Organisms evolve over generations to adapt to their environment. For instance, lions have adapted to blend in with the savanna for successful hunting.

This study guide introduces the basic concepts of biology and its seven characteristics of life. Future lessons will delve more into the concepts of genes and DNA.