Lesson Outline for Teaching

Lesson 1: Characteristics of Life

A. Characteristics of Life

1. All living things are organized, grow and develop, reproduce, respond, maintain certain internal conditions, and use energy.

2. Things that have all the characteristics of life are called organisms.

B. Organization

1. Whether an organism is made of only one cell—the smallest unit of life—or many cells, all living things have structures that have specific functions.

2. Living things that are made of only one cell are called unicellular organisms.

3. Living things that are made of two or more cells are called multicellular organisms.

4. Living things with more than one cell have a greater level of organization because groups of cells function together.

C. Growth and Development

1. Living things grow by increasing cell size or increasing cell number.

2. The changes that occur in an organism during its lifetime are called development.

D. Reproduction

1. Reproduction is the process by which one organism makes one or more new organisms.

2. Some organisms must have a(n) mate to reproduce, but others can reproduce without one.

E. Responses to Stimuli

1. All living things can respond to changes in the environment. These changes are called stimuli and can be internal or external.

2. Hunger and thirst are examples of internal stimuli.

3. Some examples of external stimuli are light and temperature.

F. Homeostasis

1. An organism's ability to maintain steady internal conditions when outside conditions change is called homeostasis. Maintaining these conditions ensures that cells can function.

2. When your outside environment becomes too hot or too cold, your body responds by sweating, shivering, or changing the flow of blood to maintain a body temperature of 37°C.

Lesson Outline continued

G. Energy

1. Cells continuously use energy to transport substances, make new cells, and perform chemical reactions.

2. For most organisms, the energy they use originally came to Earth from the Sun.

Discussion Question

What are some differences between living and nonliving things?

All living things are organized, grow, and develop, reproduce, respond, maintain certain internal conditions, and use energy. Nonliving things do not have all these characteristics.