

## Concept 1.3

Ten themes unify the study of life.

### 1. Biological Systems:

- a combination of parts that forms something more complex.

### 2. Cellular Basis of Life:

- Organisms are made of cells; a multicellular organism's development and survival are based on the functions and interactions of its many cells

Cells    Tissues    Organs    Systems    Organisms

### 3. Form and Function:

- how something works is related to its structure.

### 4. Reproduction and Inheritance:

- how genetic information is passed from parents to offspring.

### 5. Interaction With the environment:

- organisms continuously interact with their environments.

## 6. Energy and Life:

- moving, growing, reproducing, and other activities require organisms to perform work; work depends on energy; energy comes from sugars, fats, and other molecules in your food.

## 7. Regulation:

- Homeostasis or “steady state” - ability to regulate internal environment, despite changes in their external environment.

## 8. Adaptation and Evolution:

- Adaptation - an inherited trait that helps the organism’s ability to survive and reproduce in it’s particular environment.
- Natural Selection - the natural environment “selects” certain inherited traits; the process in which “variation” allows some organisms to be better suited to the environment, live longer, and produce more offspring.
- Evolution - “a process of change” generation-to-generation change in the proportion of different inherited genes in a population.

**9. Biology and Society:**

- making ethical and societal decisions based on biological understanding.

**10. Scientific Inquiry:**

- asking questions and using observations or experiments to find possible answers to those questions.