

Chapter Two: It's Alive!! Or Is It?

Section 1: Characteristic of Living Things

Six characteristics of living things:

1. All living things are composed of one or more cells
 - a. **Cell:** membrane covered structure that contains all the materials necessary for life
 - i. most are too small to be seen with the naked eye
 - b. Cell Theory
 - i. All living things are made of cells
 - ii. Only living cells can make other living cells
 - iii. Cells are the basic unit of structure and function
2. Living things sense and respond to change
 - a. **Stimuli:** a change that affects the activity of the organism
 - i. Ex. chemicals, gravity, light, sound, hunger
 - b. **Homeostasis:** the maintenance of a stable internal environment in a changing environment
 - c. Ex. Human body remains a constant temperature of 37 °C or 98.6 °F
 - i. Too hot...sweat
 - ii. Too cold...muscles twitch (shivering)
3. Living things reproduce
 - a. **Sexual reproduction:** produce offspring that will share characteristics of both parents
 - b. **Asexual reproduction:** produces offspring that are identical to the parent
 - i. most single-celled organisms reproduce this way

4. Living things have DNA
 - a. The cells of all living things contain DNA
(**D**eoxy**R**ibonucleic **A**cid)
 - i. Controls the structure and function of cells
 - b. **Heredity**: the passing of traits from one generation to the next
5. Living things use energy
 - a. **Metabolism**: the total of all the chemical activities that the organism performs
 - i. making food, breaking down food, moving material into and out of the cell, and building cells
6. Living things can grow and develop
 - a. Single-celled organisms: the cell gets larger in size
 - b. Many-celled organisms: the cell divides and the number of cells gets larger, and the organism gets bigger.