

What is Biology?

the study of living things

studied by a biologist

divided into smaller branches that are more specific

Branch of Biology

Botany

Ecology

Anatomy

Genetics

Microbiology

Zoology

What is Studied

plants

interactions in the environment

body structures

heredity

microorganisms

animals

Two Types of Sciences

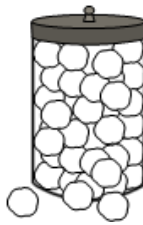
Natural and Applied Science



Biology

Biology is a natural science (also includes chemistry and physics)

Applied Sciences i.e. Medicine, agriculture, biotechnology are applied sciences because they use knowledge from the natural sciences. i.e. a doctor must use biology and chemistry to solve medicinal problems.



Read pages 4,5

Answer the following questions:

1. Describe three branches of biology.
2. Would a Pharmacist be considered a natural or applied science?

Complete Section Review 1-1 Part A



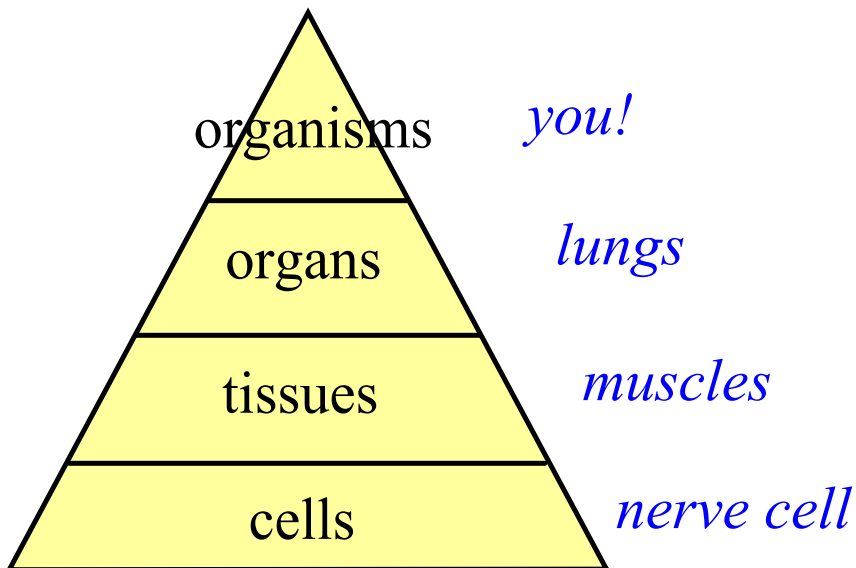
Chapter 2: The Nature of Living Things

- *What is an organism?*

Organism is a general term meaning a living thing.

The smallest functioning unit of an organism is its cell.

- *How are cells organized to create organisms?*



organism: living things made up of all other levels of the pyramid

organ: collection of tissues that work together toward a goal

tissues: collection of cells with similar structure and function

cells: building blocks; smallest unit in the body

If Biology is the study of living things how do we decide what is alive?

All living things have characteristics that non-living things do not have.

Make a list of all the reasons you can think of that you can be considered to be "alive."

There are 6 characteristics used to determine whether or not something is alive and is an organism:

1. Organisms are made up of one or more cells.
2. Organisms use energy.
3. Organisms are adapted to their environments.
4. Organisms respond to stimuli.
5. Organisms produce more organisms of the same kind.
6. Organisms grow and develop.

1. Cells

- unicellular organisms are made up of only one cell. e.g. bacteria, amoeba
- multicellular organisms are made up two or more cells. e.g. tree, cat, onion plant

2. Energy

- energy is the ability to do work
- sources of energy include the sun and food

3. Adaptation

- an adaptation is a characteristic that allows an organism to live successfully in its environment
- e.g. fish are adapted to water by having gills

4. Stimulus/Response

- A response is a reaction to change in the environment.
- A change in the environment that causes a response is called a stimulus.
- e.g. pupil dilation activity

5. Reproduction

- For a species to survive, an organism must be able to create new members of its species.
- This is known as reproduction.
- There are 2 types of reproduction:
 - a) Asexual Reproduction
 - needs only one parent
 - organism splits in two
 - organism "buds"
 - offspring is exact copy of parent
 - b) Sexual Reproduction
 - needs 2 parents
 - DNA is exchanged and combined
 - offspring has characteristics of both parents

6. **Growth and Development**

- "Development" is the sum of all changes

"Growth" is when new materials are added.

Attachments

Cell_Parts_in_Plants_and_Animals.asf

Introducing_the_Cell.asf