

Ecology

Ecology is the scientific study of interactions among organisms and between organisms and their environment or surroundings.

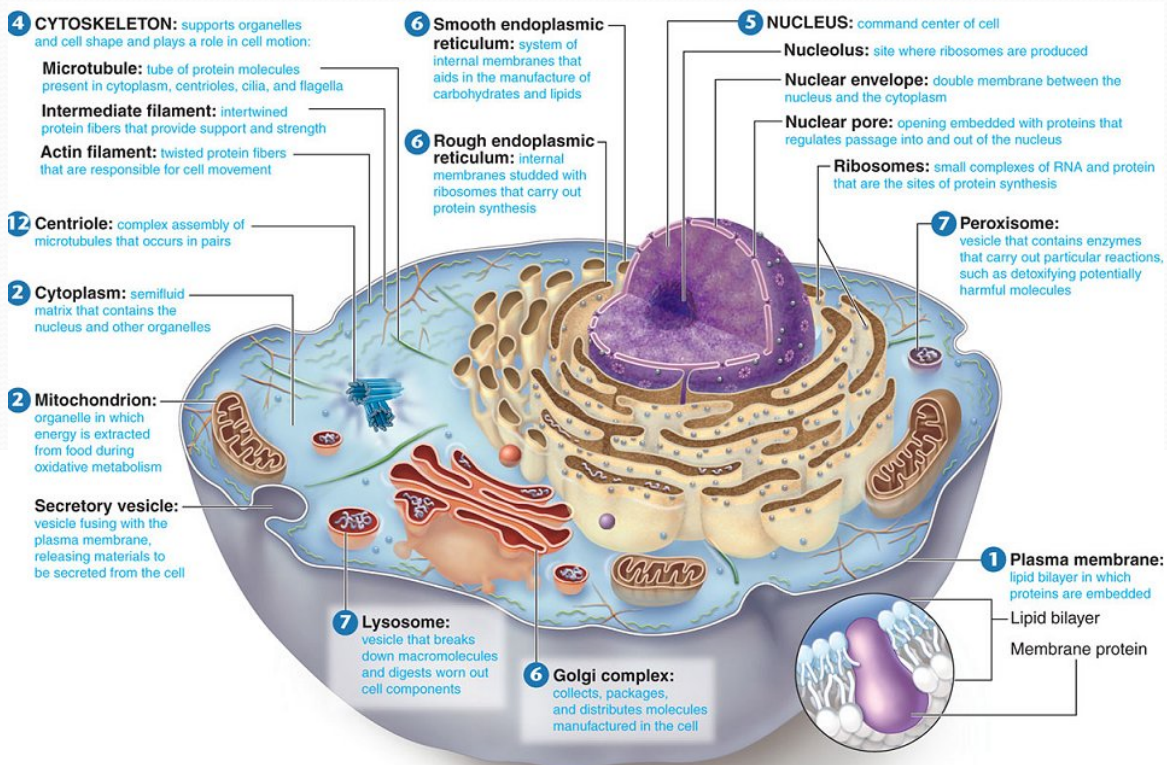
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Organizaon of Life

The levels of organization in a multicellular organism are individual **cells, tissues, organs and organ systems..**

cell - the basic unit of all forms of life.

EXAMPLE: Animal Cell



Plant Cell



tissue - group of similar cells that performs a particular function.
- four main types: muscle, epithelial, nervous and connective

- 1) *muscle tissue* - enables the body to move.
- 2) *epithelial tissue* - cover interior and exterior body surfaces.
- 3) *nervous* - transmits nerve impulses throughout the body.
- 4) *connective* - provides support for the body and connects its parts.

organ - a group of different types of tissues that work together to perform a single function.

ex: The eye is made up of epithelial tissue, nervous tissue, muscle tissue and connective tissue.

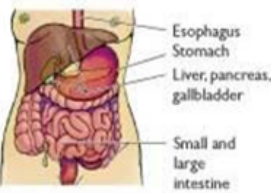
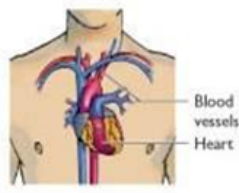
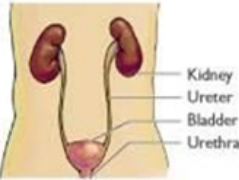
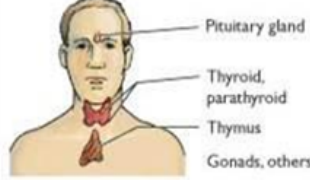
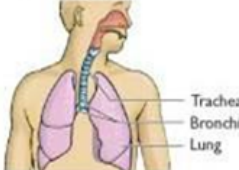
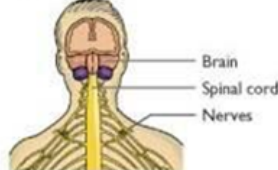
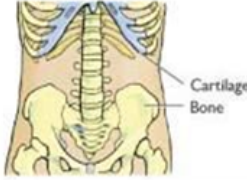
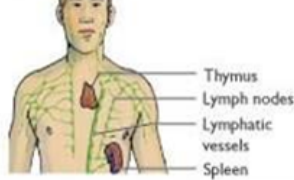
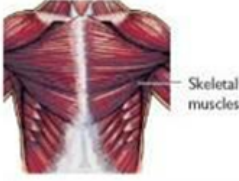
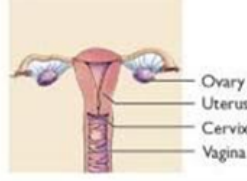

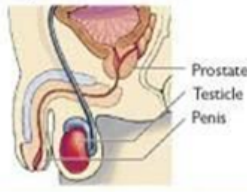
organ system - a group of organs that perform closely related functions.
- the human body has eleven organ systems...

nervous system
integumentary system
respiratory system
digestive system
excretory system
skeletal system
muscular system
circulatory system
endocrine system
reproductive system
lymphatic/immune system



KNOW the NAME and it's FUNCTION...

TABLE 5.1 | Organs and Functions of the Human Organ Systems

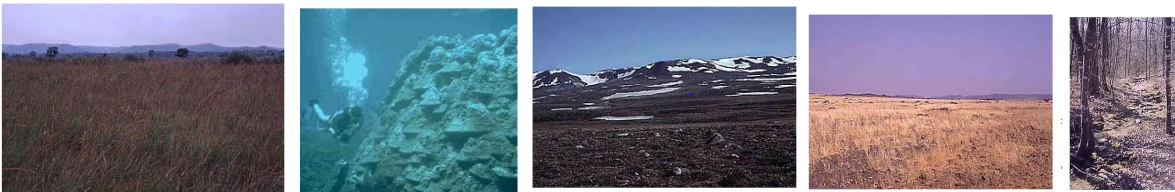
Organ System	Function	Organ System	Function
Digestive  <p>Esophagus Stomach Liver, pancreas, gallbladder Small and large intestine</p>	<p>Ingests and breaks down food so that it can be absorbed by the body</p> <p>Chapter 7</p>	Cardiovascular  <p>Blood vessels Heart</p>	<p>Enables the transport of nutrients, gases, hormones, and wastes to and from cells of the body</p> <p>Chapter 9</p>
Urinary  <p>Kidney Ureter Bladder Urethra</p>	<p>Eliminates liquid wastes; regulates water balance</p> <p>Chapter 11</p>	Endocrine  <p>Pituitary gland Thyroid, parathyroid Thymus Gonads, others</p>	<p>Secretes hormones into bloodstream for regulation of body activities</p> <p>Chapter 16</p>
Respiratory  <p>Trachea Bronchi Lung</p>	<p>Enables gas exchange, supplying blood with oxygen and removing carbon dioxide</p> <p>Chapter 10</p>	Nervous  <p>Brain Spinal cord Nerves</p>	<p>Senses environment; communicates with and activates other parts of the body</p> <p>Chapters 14 and 15</p>
Skeletal  <p>Cartilage Bone</p>	<p>Provides mechanical support for the body; stores minerals; produces red blood cells</p> <p>Chapter 6</p>	Lymphatic and Immune  <p>Thymus Lymph nodes Lymphatic vessels Spleen</p>	<p>Protects against infections</p> <p>Chapter 12</p>
Muscular  <p>Skeletal muscles</p>	<p>Enables movement, posture, and balance via contraction and extension of muscles</p> <p>Chapter 6</p>	Reproductive—Female  <p>Ovary Uterus Cervix Vagina</p>	<p>Produces eggs and supports the development of offspring</p> <p>Chapter 18</p>
Integumentary  <p>Hair Nails Skin</p>	<p>Protects body from environment, injury, and infection; stores fat</p> <p>Chapter 6</p>	Reproductive—Male  <p>Prostate Testicle Penis</p>	<p>Produces and delivers sperm and associated fluids</p> <p>Chapter 18</p>

Levels of Ecological Organizaon

The levels of organization studied by ecologists are organisms, species, populations, communities, ecosystems, biomes and finally the biosphere.

- **Organism** - an individual living thing.
- **Species** - group of individuals that are closely related and can mate to produce fertile offspring.
(don't have to be in the same place)
- **Population** - all the members of the same species that live in the same place at the same time.
- **Community** - a group of various species that live in the same place and interact with each other.
- **Ecosystem** - a collection of all the organisms that live in a particular place together with their nonliving, or physical environment

- **biome** - a group of terrestrial communities that covers a large area and is characterized by certian soil and climate conditions and particular assemblages of plants and animals



Five Major Types of Biomes

Aquatic
 Deserts
 Forests
 Grasslands
 Tundra



- **biosphere** - contains the combined portions of the planet in which all life exists, including land, water, and air, or atmosphere.
 - extends from about 8 km above Earth's surface to as far as 11 km below the surface of the ocean
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