

Unit 2

Sustainable Development

Part 1: Ecology

Part 2: Environmental Awareness

Part 3: Sustainable Ecosystems and Communities

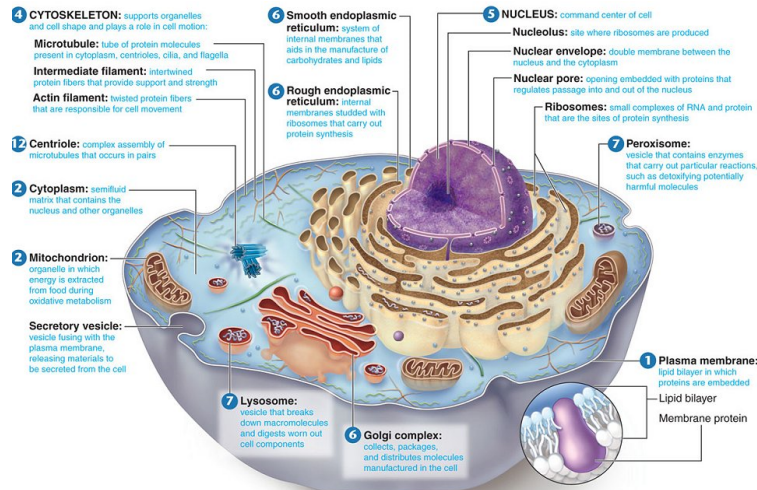
Organization of Life

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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

Animal Cell



✗ tissue - group of similar cells that performs a particular function

✗ - four main types: muscle, epithelial, nerve and connective

✗ muscle tissue - enables the body to move

✗ epithelial tissue - cover interior and exterior body surfaces

✗ nerve - transmits nerve impulses throughout the body

✗ connective - provides support for the body and connects its parts (*bones, cartilage*)

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

ie/ 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

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.

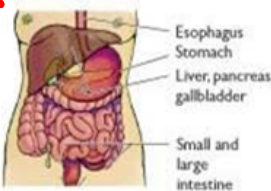

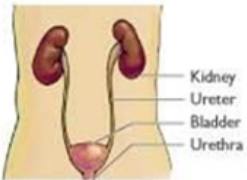
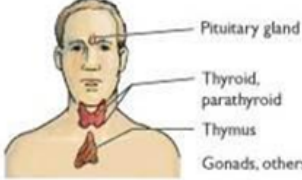
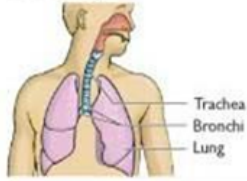
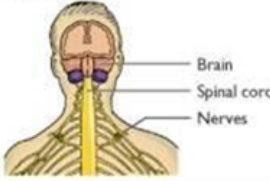
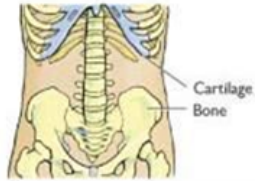
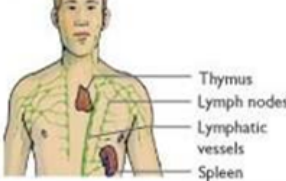

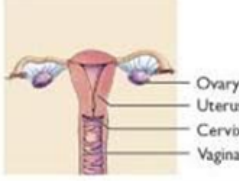
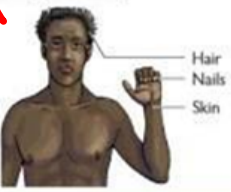
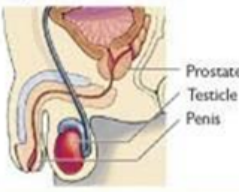
organ system - a group of organs that perform closely related functions.
- the human body has eleven organ systems...

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>

Ecology

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

An **ecologist** is a person who studies the interactions between organisms and the environment.

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7 Levels of Organization Studied by Ecologists

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

organism - a single living thing

species - group of organisms so similar to one another that they can breed and produce fertile offspring

population - group of individuals that belong to the same species and live in the same area (Not a count of every single organism all together)
ex) Human Populations is separate from Cow Population

community - a collection of different populations that live together in a defined area

ecosystem - a collection of all the organisms that live in a particular place together with their nonliving, or physical environment

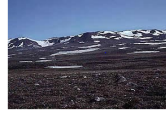
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add to
notes

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



Five Major Types of Biomes

Aquatic
Deserts
Forests
Grasslands
Tundra



Add to notes

To understand a world biome, you need to know:

- What the climate of the region is like.
- Where each biome is found and what its geography is like.
- The special adaptations of the vegetation.
- The types of animals found in the biome and their physical and behavioral adaptations to their environment.



- **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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Attachments

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