

Ecology

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

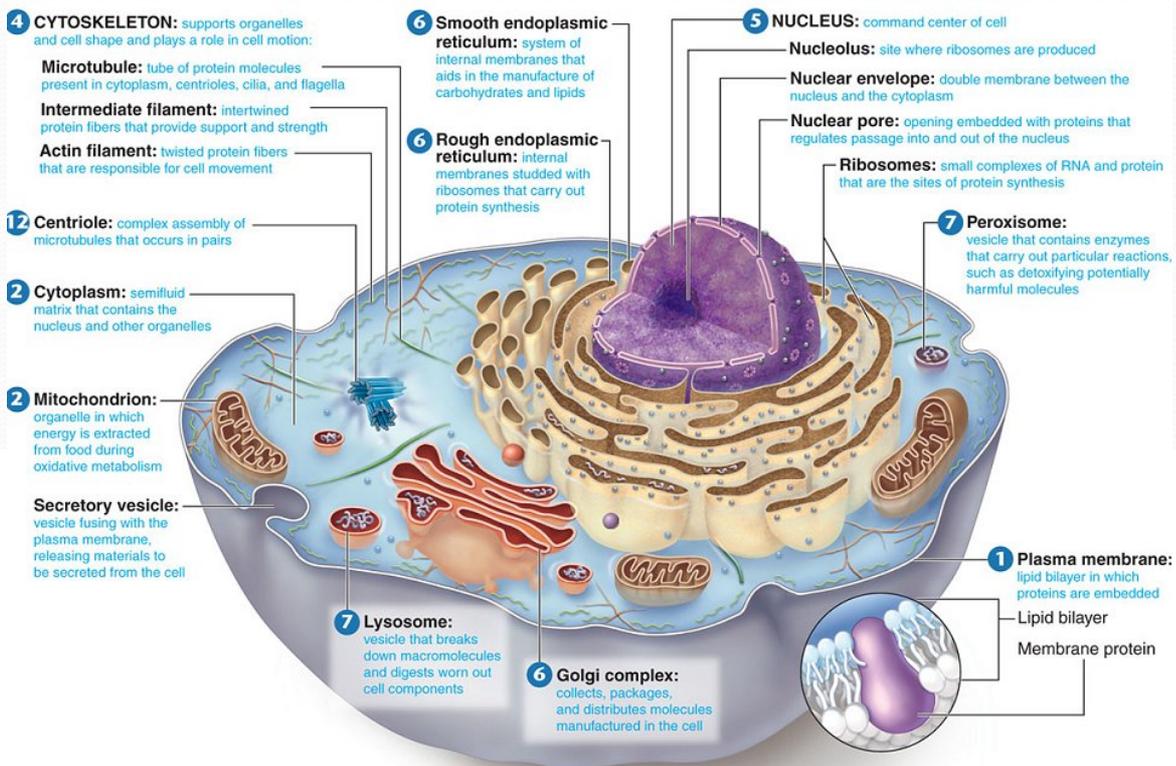
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Organization of Life

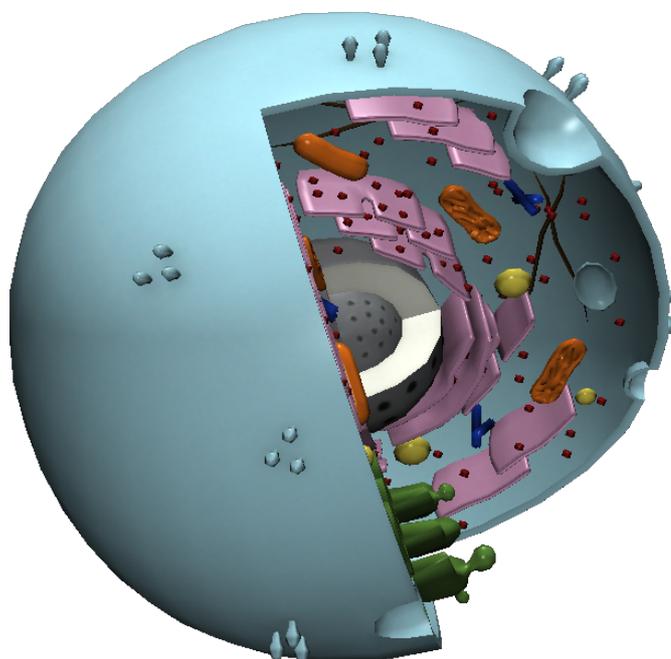
The levels of organization in a multicellular organism are individual **cells, tissues, organs and organ systems...**

cell - the basic unit of all forms of life.

EXAMPLE: Animal Cell



3D Animal Cell...



3D 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.

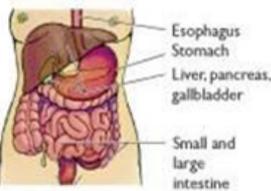
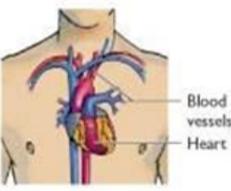
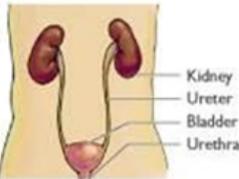
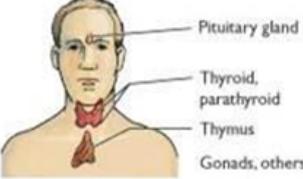
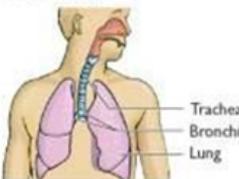
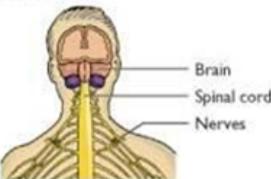
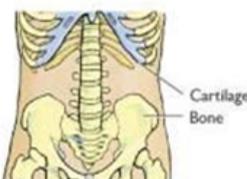
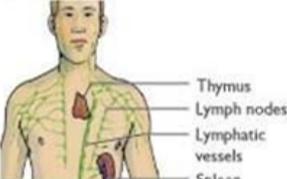
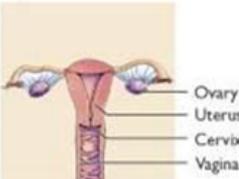
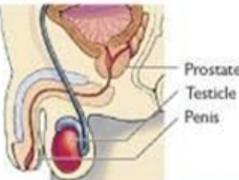
organ system - a group of organs that perform closely related functions.
- the human body has eleven organ systems...

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

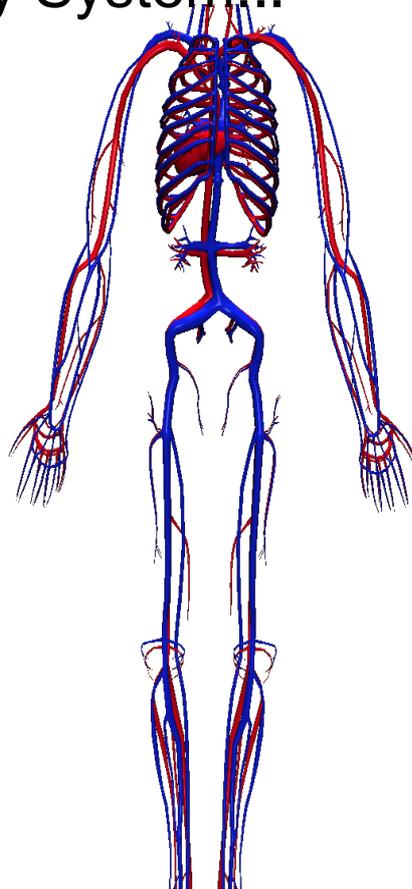


KNOW the NAME and it's FUNCTION...

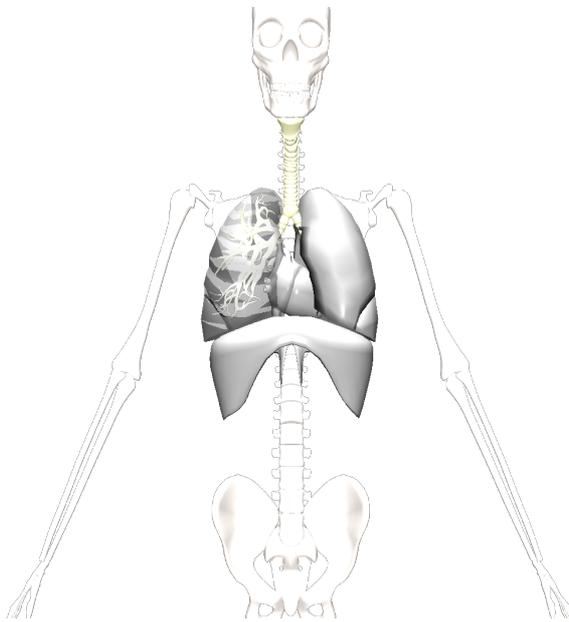
TABLE 5.1 | Organs and Functions of the Human Organ Systems

Organ System	Function	Organ System	Function
Digestive 	Ingests and breaks down food so that it can be absorbed by the body Chapter 7	Cardiovascular 	Enables the transport of nutrients, gases, hormones, and wastes to and from cells of the body Chapter 9
Urinary 	Eliminates liquid wastes; regulates water balance Chapter 11	Endocrine 	Secretes hormones into bloodstream for regulation of body activities Chapter 16
Respiratory 	Enables gas exchange, supplying blood with oxygen and removing carbon dioxide Chapter 10	Nervous 	Senses environment; communicates with and activates other parts of the body Chapters 14 and 15
Skeletal 	Provides mechanical support for the body; stores minerals; produces red blood cells Chapter 6	Lymphatic and Immune 	Protects against infections Chapter 12
Muscular 	Enables movement, posture, and balance via contraction and extension of muscles Chapter 6	Reproductive—Female 	Produces eggs and supports the development of offspring Chapter 18
Integumentary 	Protects body from environment, injury, and infection; stores fat Chapter 6	Reproductive—Male 	Produces and delivers sperm and associated fluids Chapter 18

3D Circulatory System...



3D Respiratory System...



Inside the Human Body National Geographic (Nine Parts)



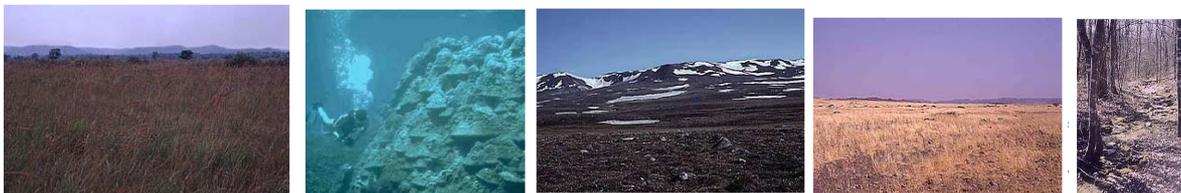
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Levels of Ecological Organization

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
-

Biosphere 2
???



POEM...If the Earth Were Only a Few Feet in Diameter



 "If the Earth were only a few feet in diameter"

Joe Miller, "If the Earth Were Only a Few Feet in Diameter..."



"If the Earth were only a few feet in diameter, floating a few feet above a field somewhere, people would come from everywhere to marvel at it. People would walk around it marveling at its big pools of water, its little pools, and the water flowing between the pools. People would marvel at the bumps on it, and the holes in it, and they would marvel at the very thin layer of gas surrounding it and the water suspended in the gas. The people would marvel at all the creatures walking around the surface of the ball and at the creatures in the water. The people would declare it sacred because it was the only one, and they would protect it so that it would not be hurt. The ball would be the greatest wonder known, and people would come to pray to it, to be healed, to gain knowledge, to know beauty, and to wonder how it could be. People would love it and defend it with their lives because they would somehow know that their lives, their own roundness, could be nothing without it. If the Earth were only a few feet in diameter..."

- Joe Miller

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.



Attachments

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