

Life Science Review 2014-2015

Ecosystems

[Food Webs](#) [Brain Pop Overview](#) [Carrying Capacity](#)

Decomposers	Predation	Producers	Bioaccumulation
Pesticide	Consumer	Scavengers	Biotic
Abiotic	Ecosystem	Niche	Habitat
Carrying Capacity	Limiting Factors	Population	Competition

Abiotic	Non-living things in an ecosystem such as air, water, and gravel.
Biotic	Living organisms in an ecosystem.
Ecosystem	Living organisms interacting with their non-living environment.
Population	Group of organisms of the same species (type).
Producers	Organisms, usually plants, that can make their own food.
Niche	The function (job) an organism does in an ecosystem.
Habitat	The place where an organism lives in an ecosystem.
Scavenger	Organisms, for example vultures and maggots, that feed on dead organisms.
Decomposers	Organisms, for example bacteria and fungi, that break down dead material back into soil.
Bio-accumulation	When a substance introduced into a food chain becomes more and more concentrated in the upper links of the chain mercury
Pesticide	A chemical used by humans to kill unwanted animals or plants.
Consumer	An organism that cannot make its own food.
Predation	One animal eating another. For example a hawk eating a mouse.
Competition	Organisms competing for available resources such as water, light, food, mates etc.
Limiting Factors	Factors that restrict the growth and size of populations.
Carrying Capacity	The size of a population an ecosystem can support given available resources.

Symbiotic Relationships

Parasite	Host	Mutualism	Symbiosis	Parasitism
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Symbiosis	A relationship where an organism lives on, in, or near another organism.
Parasitism	A relationship where one organism benefits and the other is harmed.
Parasite	An organism that lives on or in another organism.
Host	An organism that provides a place to live for another organism.
Mutualism	A relationship between two organisms where both benefit.

Cells

Cell Wall
Chloroplast
Prokaryote

Nucleus
Chlorophyll
Eukaryote

Mitochondria
Unicellular
Cell Membrane

Organelles
Cytoplasm

Mitosis
Multicellular

Unicellular	Organisms that consist of ONE cell.
Multi-cellular	Organisms that consist of MANY cells.
Cytoplasm	Living material outside the nucleus of the cell.
Prokaryotes	Cells with no organized nucleus, usually very small in size.
Eukaryotes	Cells with a well organized nucleus.
Organelles	Structures found inside a cell—"little organs"
chlorophyll	A green chemical that can capture light energy.
Cell Wall	The outside, rigid, non-living layer of a plant cell.
Cell Membrane	The flexible layer that surrounds all cells and controls what enters and leave the cell.
Mitochondria	The place where food (glucose) is made inside a plant cell; contains chlorophyll.
Nucleus	Cell structure that contains DNA and directs all the activities of the cell.
Chloroplast	Rod-shaped structure where glucose (sugar) is broken down to release energy for cell activities.
Mitosis	Part of cell division, it is the duplication and division of the nucleus and chromosomes. mitosis steps , mitosis movie

List the differences between plant and animal cells:

PLANT: has a rigid cell wall and chloroplasts, large central vacuole

ANIMAL: has a cell membrane, generally smaller, has small vacuoles

Processes (Old 180-181, 68, 169)

[Transpiration](#)

Fermentation

Excretion

[Photosynthesis](#)

[Cell Respiration](#)

Cellular Respiration	Glucose combining with oxygen to produce energy, carbon dioxide, and water.
Photosynthesis	Carbon dioxide combining with water to produce glucose and releasing oxygen. (requires chlorophyll)
Fermentation	A process of breaking down glucose into alcohol and carbon dioxide. (Yeast, and other cells when oxygen is not available)
Transpiration	The process of water being pulled up through a plant from the roots and out through openings (stomata) in the leaves.
Excretion	The process by which animals and eliminate waste products.

Reproduction	Sexual Reproduction	Budding	Cloning	Asexual Reproduction
	Fragmentation	Zygote	Regeneration	
Cloning	This process produced Dolly the sheep in Scotland.			
Asexual Reproduction	A new organism being produced from ONE parent. It is genetically identical to the parent.			
Sexual Reproduction	A new organism being produced by TWO parents.			
Regeneration	The process by which some organisms (earthworms, star fish) can produce new body parts.			
Zygote	Formed when a sperm cell and an egg cell unite.			
Fragmentation	The process of an organism being broken into pieces.			
Budding	Some organisms (yeast, jellyfish) produce a small growth that then breaks off to form a new organism.			

Genetics
Mendel [Watson and Crick](#) [Human Genome Project](#)

Gregor Mendel	An Austrian Monk who is often called the “Father of Genetics” (1860’s)
Watson and Crick	Described the structure of DNA (1953)
Human Genome Project	Identifying the genetic structure of human chromosomes (1990’s).

A. How might the environment affect how an organism’s development? [Hydrangea Color](#)
Hydrangea’s grow different colored blooms depending on the acidity in the soil, You can change the color of the blooms based on the nutrients you add to the soil.
The same plants at high altitude grow much smaller because the growing season is shorter.

B. Complete the following Punnett Square: [Punnett Square](#)
In the peas that Mendel studied tall (T) was dominant to short (t) for plant height. In a cross between a hybrid tall plant and a short plant what percent of the offspring would you expect to be short? Hybrid means that it has a big T and a little t.

	T	t
t	Tt	tt
t	Tt	tt

- A. 0 %
- B. 25 %
- C. 50 %**
- D. 100 %

Evolution (Old 506-510)

Darwin	Natural Selection	Evolution	Mutation
Mutation	Change in genes or chromosomes (DNA) that causes a new trait to be inherited.		
Natural Selection	Survival and reproduction of those organisms that are best adapted to their environment.		
Evolution	A change in a species over time.		
Darwin	A British naturalist who observed finches on the Galapagos Islands and developed the theory of Natural Selection.		

Body Systems

Digestive
Muscular
Reproductive

Respiratory
Immune

Circulatory
Endocrine

Skeletal
Nervous

Skeletal	Provides support for the body, protects delicate internal organs and to provides attachment sites for the organs.
Muscular	Provides movement for the body.
Circulatory	Transports nutrients, gases (such as oxygen and CO ₂), hormones and wastes through the body
Nervous	Relays <i>electrical</i> signals through the body. Directs behavior and movement and controls physiological processes such as digestion, circulation, etc.
Respiratory	Provides gas exchange between the blood and the environment.
Digestive	Breaks down and absorbs nutrients that are necessary for growth and maintenance.
Excretory (not listed)	Filters out cellular wastes, toxins and excess water or nutrients from the circulatory system.
Endocrine	Relays <i>chemical</i> messages through the body.
Reproductive	Manufacture cells that allow production of a new individual.
Immune	Destroys and removes invading microbes and viruses from the body.

Scenario: