

Lesson 4.1 Glossary

A

Absorption – The intake of water, gases, nutrients or other substances.

Aerobic – Pertaining to organisms that grow only in the presence of oxygen, as bacteria in properly prepared compost.

Anaerobic – Living or active in the absence of free oxygen.

Anatomy – The branch of biology that deals with the structure of organisms.

C

Cell membrane – Also called the plasma membrane. A selectively permeable, limiting membrane surrounding the protoplasm.

Cellular respiration – Energy yielding oxidative reactions in living organisms that typically involve transfer of oxygen and the production of carbon dioxide and water as end products.

Centrosome – A minute protoplasmic body sometimes held to be the dynamic center of mitotic activity.

Concentration – The amount of a component in a given mass or volume.

Cytoskeleton – Protein filaments and microtubules in the cytoplasm that controls cell shape and is involved in cell movement.

D

Diffusion – The process by which molecules move from an area of greater concentration to an area of lesser concentration.

E

Endoplasmic reticulum – Structure extending throughout the cytoplasm of a cell. It functions in the transport of cell products and as a surface for protein synthesis by the ribosomes.

Equilibrium – A state that exists when the concentration of a substance is the same throughout a space.

Epithelial – Cellular tissue covering all the free body surfaces, cutaneous, mucous, and serous, including the glands and other structures derived therefrom.

G

Golgi (apparatus) – Cell organelle, important for glycosylation and secretion in cells.

H

Hibernation – To spend the winter in close quarters in a dormant condition, as bears and certain other animals.

Hypertonic – Describing a solution whose solute concentration is higher than that inside a cell.

Hypotonic – Describing a solution whose solute concentration is lower than that inside a cell.

I

Isotonic – Describing a solution whose solute concentration equals that inside a cell.

L

Lateral – A directional or positional term meaning away from the middle or toward the side.

Lysosome – An organelle bounded by a membrane and containing enzymes capable of breaking down proteins and other molecules.

M

Membrane – A thin, flexible sheet of vegetable or animal tissue; the thin protoplasmic tissue connecting, covering, or lining a structure, such as a cell of a plant or animal.

Metabolism – Physical and chemical processes in an organism by which living matter is produced, maintained, and destroyed, and by means of which energy is made available.

Mitochondria – Cell organelles composed of an outer membrane and a winding inner membrane. A series of chemical reactions that occur on the inner membrane convert the energy of oxidation into the chemical energy of ATP.

N

Nucleolus – A spherical body found within the nucleus of a eukaryotic cell.

Nucleus – The central portion of the cell protoplast surrounded by a very thin membrane. It consists of nucleoplasm and includes within itself variously arranged chromatin, nuclear sap, and nutritive substances.

O

Osmosis – The flow of water through a semi-permeable membrane separating two solutions, which permits the passage of the solvent but not the dissolved substance. The water will flow from a weaker to a stronger solution, thus tending to equalize concentrations.

P

Protoplast – A unit of protoplasm in one cell.

Protoplasm – The gelatinous, colloidal material of plants and animals in which all life activities occur.

R

Respiration – A chemical process that takes place in living cells whereby food (fats, carbohydrates, and proteins) is “burned” (oxidized) to release energy and waste products, mainly carbon dioxide and water. Living things use energy produced through respiration to derive vital life processes, such as growth and reproduction.

Ribosome – A particle that lies along the endoplasmic reticulum and is composed of a protein portion and RNA. The site of protein synthesis.

S

Secretory vesicle – Membrane bounded sac derived from the Golgi apparatus and containing material that is to be released from the cell.

Solute – A dissolved substance.

T

Tissue – Groups of cells working together to carry out a common function, such as muscle tissue, connective tissue, and epithelial tissue.

V

Vacuole – A cavity that is within the cytoplasm, filled with a watery fluid, bound by a membrane, and considered to be nonliving.