

Living Environment Vocabulary

By Prentice Hall 2001 Review Book Unit

<u>Similarities and Differences Among Living Organisms</u>	<u>Topic 1</u>
cell	the basic unit of structure and function that makes up all organisms
metabolism	all the chemical reactions that occur within the cells of an organism
homeostasis	the ability of an organism to maintain a stable internal environment even when the external environment changes
reproduction	the process by which organisms produce new organisms of the same type
cell respiration	the process in which nutrients are broken apart, releasing the chemical energy stored in them
synthesis	a life process that involves combining simple substances into more complex substances
organic	term used to describe molecules that contain both hydrogen and carbon
inorganic	a type of molecule that does not contain both carbon and hydrogen but can contain any other combination of elements
organelle	a structure within the cell that carries out a specific function

tissues	a group of specialized cells that perform a specific function
organ	a body structure made of different kinds of tissues combined to perform a specific function
organ system	several organs that work together to perform a major function in the body
cytoplasm	the jellylike substance that is between the cell membrane and the nucleus and that contains specialized structures
nucleus	a large structure within a cell that controls the cell's metabolism and stores genetic information, including chromosomes and DNA
vacuoles	storage sacs within the cytoplasm of a cell that may contain either wastes or useful materials, such as water or food
ribosomes	tiny structures in the cell that are the sites of protein production
mitochondria	pod-shaped organelles that contain enzymes used to extract energy from nutrients
enzymes	proteins that speed up the rate of chemical reactions in living things
chloroplasts	green organelles that contain chlorophyll; where photosynthesis takes place
cell membrane	the thin boundary between the cell and its environment

diffusion	the movement of molecules from areas of high concentration to areas of low concentration
active transport	the process by which cells use energy to transport molecules through the cell membrane from areas of low concentration to areas of high concentration
digestion	the process that breaks down large food molecules into simpler molecules that the organism can use
amino acids	any one of several building blocks of protein
simple sugars	the result of digested starches
receptor molecules	certain protein molecules in the cell membrane that can receive chemical messages from other cells
hormones	a chemical produced in the endocrine glands
respiration	the process by which the chemical bond energy stored in nutrients is released for use in cells
circulation	the flow of materials within a cell as well as between parts of a multicellular organism
excretion	the removal of all the wastes produced by the cells of the body
immunity	the body's ability to destroy pathogens before they cause disease

**Homeostasis in
Organisms**

Topic 2

enzymes

proteins that speed up the rate of chemical reactions in living things

respiration

the process by which the chemical bond energy stored in nutrients is released for use in cells

synthesis

a life process that involves combining simple substances into more complex substances

biochemical process

a chemical process that occurs in a living thing

photosynthesis

the process by which some organisms are able to capture light energy and use it to make food from carbon dioxide and water

homeostasis

the ability of an organism to maintain a stable internal environment even when the external environment changes

glucose

a sugar that is a major source of energy for cells

ATP

(adenine triphosphate) a compound that stores energy in cells

chloroplasts

green organelles that contain chlorophyll; where photosynthesis takes place

gas exchange

the process of obtaining oxygen from the environment and releasing carbon dioxide

catalyst	a substance that can speed up the rate of a chemical reaction without being changed or used up during the reaction
pH	a measure of whether a substance is acidic, neutral, or basic
dynamic equilibrium	the constant small corrections that normally occur to keep an organism's internal environment within the limits needed for survival
feedback mechanism	a cycle in which the output of a system either modifies or reinforces the first action taken by the system
stimulus	any change in the environment that causes an organism to react
pancreas	an endocrine organ that secretes insulin
insulin	a hormone that prompts glucose to move from the blood into body cells, resulting in a lower glucose level in the blood
guard cells	specialized cells that control the opening and closing of the pores on the surface of a leaf
disease	a condition, other than injury, that prevents the body from working as it should
pathogen	an organism that invades the body, causing disease

virus	a nonliving particle of protein and genetic material that reproduces by invading the cell of a living organism
bacterium	any one of many single-celled organisms without a distinct nucleus
fungi	the kingdom of organisms that are mostly multicellular, have cell walls made of chitin, and are heterotrophic
parasite	an organism that survives by living and feeding on other organisms
immune system	the body's primary defense against disease-causing pathogens
antigen	a molecule found on the outer surfaces of cells that the immune system recognizes as either part of the body or an outside invader
antibody	a protein, produced by the immune system, that either attacks invading pathogens or marks them for killing
microbe	any microscopic organism
vaccines	a substance made of weakened, killed, or partial pathogens and designed to protect the body from future invasions of that pathogen
AIDS	(<u>a</u> cquired <u>i</u> mmunode <u>f</u> iciency <u>s</u> ndrome) the disease that results when the HIV virus attacks the human immune system

allergy	a condition in which a person's immune system is overly sensitive to environmental substances that are normally harmless
<u>Genetic Continuity</u>	<u>Topic 3</u>
gene	a segment of DNA (on a chromosome) that contains the code for a specific trait
trait	a characteristic that is passed from parent to offspring through the genes
heredity	the passing of traits from parent to offspring
DNA	(<u>d</u> eoxyribo <u>n</u> ucleic <u>a</u> cid) the material found in all cells that contains genetic information about that organism
chromosome	a thick threadlike structure that contains genetic information in the form of DNA
asexual reproduction	a method of reproduction in which all the genes passed on to the offspring come from a single individual or parent
sexual reproduction	a method of reproduction that involves two parents producing offspring that are genetically different from either parent
clone	an organism that is genetically identical to the organism from which it was produced
sperm	the male sex cell

egg	a sex cell produced by a female
genetic recombination	the formation of a new combination of genes during sexual reproduction
subunit	the section of a DNA molecule that contains a sugar, a phosphate, and a base
bond	a chemical link between atoms that hold molecules together
replicate	to copy
template	the pattern for a new molecule
mutation	any alteration in the sequence of DNA
expressed	the way that an unseen gene is seen in an organism as an actual physical trait
genetic engineering	a set of technologies that humans use to alter the genetic instructions of an organism by substituting DNA molecules
biotechnology	the combination of technology and biological sciences
selective breeding	the process of choosing a few organisms with desirable traits to serve as the parents of the next generation

Reproduction and Development

Topic 4

asexual reproduction

a method of reproduction in which all the genes passed on to the offspring come from a single individual or parent

sexual reproduction

a method of reproduction that involves two parents producing offspring that are genetically different from either parent

sperm

the male sex cell

egg

a sex cell produced by a female

species

A group of organisms that share certain characteristics and can mate with one another, producing fertile offspring

sex cell

an egg (female) or a sperm (male)

gametes

an egg or sperm cell; a sex cell

mitosis

the process that divides the cell's nucleus into two, each with a complete set of genetic material from the parent cell

meiosis

the process that results in the production of sex cells (sperm and egg)

fertilization	the process that combines a sperm cell and an egg cell
zygote	the cell that results from the joining of the egg and sperm
recombination	the additional mixing of genetic material from a sperm and egg which results in a unique combination of genes
differentiation	the process that transforms developing cells into specialized cells with different structures and functions
embryo	an organism in the early stages of development
gene expression	the result of activated genes
ovary	the organ of the human female reproductive system that produces an egg cell, the female gamete
progesterone	a hormone associated with sexual development and the reproductive system
estrogen	a hormone (produced by the ovaries) that controls female sexual development and the reproductive process
uterus	the organ, in female animals, where the embryo develops into a fetus

placenta	the organ that enables nutrients and oxygen to pass from the mother's blood to the fetus, and waste products to pass from the fetus to the mother's blood
testes	the male reproductive organ, that produces sperm and the hormone testosterone
testosterone	a hormone associated with male sexual development and reproduction
fetus	the unborn, developing young of an animal during the later stages of development
cloning	a technique used to make identical organisms
<u>Evolution</u>	<u>Topic 5</u>
evolution	the process by which species have changed over time
theory	an explanation, supported by many observations and/or experiments, that can be used to accurately explain related occurrences
fossil record	a collection of fossils used to represent Earth's history

geologic time	Earth's history as revealed by layers of rock
natural selection	the process by which the organisms that are best adapted to a specific environment survive and produce more offspring than organisms that are not as well adapted
overproduction	the potential for a species to increase its numbers beyond the area's carrying capacity
genetic variation	the normal differences found among offspring
adaptive value	any trait that helps an organism survive and reproduce under a given set of environmental conditions
mutation	any alteration in the sequence of DNA
extinction	the disappearance of all members of a species from earth
<u>Ecology</u>	<u>Topic 6</u>
ecology	The study of how living things interact with each other and with their environment
environment	Every living and non-living thing that surrounds an organism

ecosystem	All the living and non-living things that interact in a specific area; a subdivision of the environment
biotic	The living parts of the environment
abiotic	Nonliving parts of the environment
habitat	The place where a plant or animal lives
population	All the individuals of a single species that live in a specific area
community	A combination of all the different populations that live and interact in the same environment
biosphere	All of Earth's ecosystems, collectively; the biologically inhabited portions of Earth, including all of the water, land, and air in which organisms survive
competition	The struggle between organisms for the same limited resources in a particular area
limiting factors	Any factor in the environment that limits the size of a population
predator	An animal that hunts and kills other animals for food
prey	An animal that is hunted and killed by predators
carrying capacity	The largest population of any single species that an area can support

ecological niche	The specific role played by an organism or a population of organisms in the ecosystem
food chain	A representation that identifies the specific relationships among organisms
autotroph	An organism that produces its own food; the source of energy for all other living things on Earth (starts with “a”)
producer	An organism that makes its own food from light energy and inorganic materials (starts with “p”)
heterotroph	An organism that cannot make its own food; a consumer
herbivore	An organism that eats only plants
carnivore	An organism that survives by eating animals
decomposer	An organism, generally a bacteria or fungus, that consumes dead organisms and organic waste
scavenger	A carnivore that feeds on the bodies of dead organisms
parasite	An organisms that survives by living and feeding on other organisms
host	The organism in a parasitic relationship that provides the home and/or food for the parasite

food webs	A representation of many interconnected food chains that shows the feeding relationships among producers, consumers, and decomposers
energy pyramid	A diagram showing how food energy moves through the ecosystem
biodiversity	The variety of species in an area
ecological succession	The process by which an existing community is replaced by another community
consumer	An organisms that obtains it's energy from producers (starts with "c")
<u>Human Impact on Ecosystems</u>	<u>Topic 7</u>
renewable resources	Earth's resources, such as our food supply and solar energy, which, given time, can be replaced
nonrenewable resources	Any resources, such as fossil fuels and minerals, that cannot be replaced
pollution	A harmful change in the chemical makeup of the soil, water, or air
water cycle	The process by which water continuously moves from Earth's surface to the atmosphere, and back
energy flow	The movement of energy through an ecosystem

direct harvesting	The destruction of an organism, or the removal of an organism from its habitat
deforestation	Forest destruction that results from human activity
technology	All of the practical scientific knowledge that has been used to meet human needs
industrialization	The process of converting an economy into one in which large-scale manufacturing is the primary economic base
nuclear fuel	An energy source that results from splitting atoms
fossil fuels	A fuel, such as coal and gas, that comes from the remains of organisms that lived millions of years ago
global warming	An increase in Earth's average surface temperature caused by an increase in greenhouse gases
ozone shield	The layer of ozone gas in the upper atmosphere that protects Earth from some of the sun's radiation
trade-off	An exchange or agreement made to reach
<u>Scientific Inquiry and Skills</u>	<u>Topic 8</u>

Evidence	Support for the idea that something is true
Inference	A conclusion or deduction based on observations
Assumption	Something that is accepted as true, but may or may not actually be true
opinions	Ideas people have that may or may not be based on fact
biased	A tendency to favor something; prejudice
scientific literacy	A basic knowledge of the natural world combined with an understanding of the diverse ways that scientists gain knowledge
research plan	The initial stage of an experiment that involves finding background information, developing a hypothesis, and devising an experimental method for testing the hypothesis
hypothesis	A statement that predicts a relationship between cause and effect in a way that can be tested
dependent variable	The part of an experiment that is measured to test the hypothesis.
independent variable	A factor that might influence the dependent variable in an experiment. The factor that is purposely changed by

	the experimenter.
control	That group in an experiment in which everything – except the variable to be tested – is identical; the standard of comparison in an experiment.
controlled experiment	An experiment in which all variables – except the one being tested – are exactly the same.
data	The results of specific trials or tests completed during experiments
conclusion	The decision made about the outcome of an experiment; usually based on how well the actual result matches the predicted result
model	A representation used to explain or demonstrate a process or structure; also used to predict what might occur in a new situation
peer review	The process by which scientists carefully examine the work of other scientists to look for possible flaws in their experimental design or their interpretation of results
experiment	A series of trials or tests that are done to support or refute a hypothesis

observation

Any information that is collected with any of the senses

Laboratory Skills

Topic 9

metric ruler
graduated cylinder
volume
mass
balance
triple-beam balance
electronic balance
microscope
magnification
stereoscope
compound light
microscope
electrophoresis
chromatography
stains
indicator
dichotomous key
