BIOLOGY VOCABULARY LIST

Term to Know	Definition

Instructions: At the beginning of each class (during the first 5 minutes) students should together think of a short definition and picture that best associates with the Vocab Word of the Day (VWOD). Students should put ideas of short definitions and pictures on the board. At the end of 5 minutes students should have a completed flash card for the VWOD that has the term on one side and the picture and simplified definition on the back.

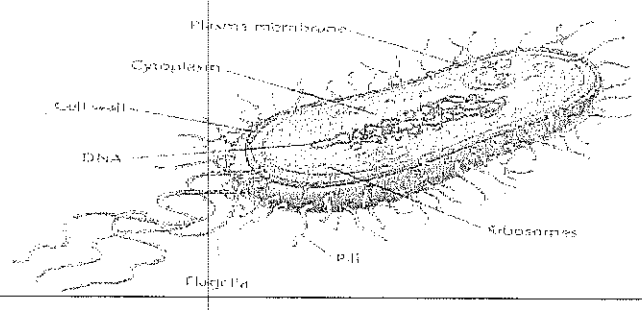
Example Index Flash Card:

Front side of index card

Bacteria

Back side of index card

One celled organism, no nucleus but has DNA



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1	Bacteria	A single celled prokaryotic organism that does not have a true nucleus or any membrane bound organelles but does have genetic information (DNA). Bacteria can be good or bad and found in many different environments.
2	Carbohydrate	A large group of organic compounds occurring in foods and living tissues and including sugars, starch, and cellulose that provide quick energy. They contain hydrogen and oxygen in the same ratio as water (2:1) and typically can be broken down to release energy in the animal body
3	Cellular respiration	set of the metabolic reactions and processes that take place in the cells of organisms to convert biochemical energy from nutrients into ATP energy and carbon dioxide waste
4	Denature	When the environmental conditions alter the natural qualities of an enzyme; enzyme no longer functions properly
5	Diffusion	Movement of particles from high to low concentration
6	Digestion	process of breaking down food by mechanical and enzymatic action in the alimentary canal into substances that can be used by the body
7	Endocytosis	taking in of matter by a living cell by invagination of its membrane to form a vacuole
8	Enzyme	A protein that acts as a catalyst by speeding up a chemical reaction in the body; enzyme has an active site with a specific shape that reacts with a specific substrate
9	Eukaryote	An organism consisting of a cell or cells in which the genetic material is DNA in the form of chromosomes contained within a distinct nucleus; cells have membrane bound organelles. Eukaryotes include all living organisms other than the eubacteria and archaebacteria.
10	Prokaryote	a microscopic single-celled organism that has neither a distinct nucleus with a membrane nor other specialized organelles. Prokaryotes include the bacteria and cyanobacteria.
11	Fungus	any of a group of unicellular, multicellular, or syncytial spore-producing organisms feeding on organic matter, including molds, yeast, mushrooms, and toadstools
12	Glucose	a simple sugar that is an important energy source in living organisms and is a component of many carbohydrates. Broken down in Cellular Respiration to make ATP (takes place in the Mitochondria)
13	Homeostasis	the tendency toward a relatively stable equilibrium between interdependent elements, esp. as maintained by physiological processes.
14	Isotonic	denoting or relating to a solution having the same osmotic pressure as some other solution, esp. one in a cell or a body

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		fluid. Example of an isotonic solution in our body would be a saline solution
15	Monomer	a molecule that can be bonded to other identical molecules to form a polymer. Lipids (fatty acids), Carbs (monosaccharides), Proteins (amino acids), Nucleic Acids (nucleotides)
16	Organelle	any of a number of organized or specialized structures within a living cell.
17	Osmosis	The process in which water tends to pass through a semipermeable membrane from a high concentration into a low concentration, thus equalizing the concentrations of water on each side of the membrane. (a process by which molecules of a solvent tend to pass through a semipermeable membrane from a less concentrated solution into a more concentrated one, thus equalizing the concentrations on each side of the membrane.)
18	Plasma Membrane	The phospholipid bilayer (cell membrane) that is semi-permeable. It is responsible for regulating transport in and out of the cell. It is also responsible for protecting the cell and maintaining structure for the cell.
19	Polymer	a substance that has a molecular structure consisting chiefly or entirely of a large number of similar units bonded together, e.g., many synthetic organic materials used as plastics and resins.
20	Protist (Protozoa)	a diverse group of unicellular eukaryotic organisms, many of which are motile. Originally, protozoa had been defined as unicellular protists with animal-like behavior, e.g., movement. Protozoa were regarded as the partner group of protists to protophyta, which have plant-like behaviour, e.g. photosynthesis. Examples: amoeba, euglena, paramecium
21	Semi-Permeable	(of a material or membrane) allowing certain substances to pass through it but not others, esp. allowing the passage of a solvent but not of certain solutes.
22	ATP (adenosine tri-phosphate)	a compound consisting of an adenosine molecule bonded to three phosphate groups, present in all living tissue. The breakage of one phosphate linkage (to form *adenosine diphosphate, ADP*) provides energy for physiological processes such as muscular contraction.

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23	Autotroph	Organism that makes its own food. Plants are autotrophs because they can make their own food by photosynthesis (glucose from sunlight water and carbon dioxide), chemoautotrophs use chemicals in their environment to make their food.
24	Heterotroph	Organisms that cannot make its own food. These organisms need to ingest food. Examples include animals, protozoa and fungi.
25	Anaerobic Cellular Respiration	Cellular Respiration that takes place without the presence of oxygen. Only glycolysis occurs producing 2 ATP and a byproduct of either ethyl alcohol in plants or lactic acid in animals. This is less advantageous than aerobic cellular respiration.
26	Interphase	First phase and longest stage of the cell cycle. This is when the cell grows and functions. Protein synthesis and dna replication occurs. (G1, S, G2 phase)
27	DNA	Deoxyribonucleic Acid – this is the organic molecule that stores genetic information. It can be found in the nucleus of eukaryotic cells or free-floating in prokaryotic cells. It is use to make proteins in the cell.
28	Protein Synthesis	When proteins are made; transcription and translation are the two parts; transcription is when mRNA is made in the nucleus from DNA; translation is when mRNA is made into amino acid chains, which are protein
29	Messenger RNA	Made by RNA polymerase in the nucleus from looking at DNA; A matches with U and G matches with C; carries the code to the ribosome
30	Mutation	Random change in the DNA that can sometimes lead to a physical change
31	Helicase	Enzyme that unwinds and splits the two strands of DNA
32	Mitosis	Process when the cells nucleus prepares for division; prophase, metaphase, anaphase, and telophase; makes cells that are identical to the parent cell; organisms that reproduce asexually reproduce this way
33	Meiosis	How sex cells (gametes) are made; occurs in the testes and ovaries
34	Cytokinesis	When the cytoplasm of the cell divides; two new cells; in animals the cytoplasm separates; in plants they stay together with a new cell wall
35	ALLELE	One of two or more alternative forms of a gene that arise by mutation and are found at the same place on a chromosome
36	GENOTYPE	genetic makeup of a cell, an organism, or an individual (i.e. the specific allele makeup of the individual)
37	PHENOTYPE	set of observable characteristics of an individual resulting from the interaction of its genotype with the environment.
38	DOMINANT	relationship between alleles of a gene, in which one allele masks the expression (phenotype) of another allele at the same locus

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39	LAW OF SEGREGATION	members of a pair of homologous chromosomes separate during the formation of gametes and are distributed to different gametes
40	LAW OF INDEPENDENT ASSORTMENT	each member of a pair of homologous chromosomes separates independently of the members of other pairs so the results are random.
41	Gene	a unit of heredity that is transferred from a parent to offspring and is held to determine some characteristic of the offspring./ It is a distinct sequence of nucleotides forming part of a chromosome, the order of which determines the order of monomers in a polypeptide or nucleic acid molecule which a cell may synthesize
42	evolution	the process by which different kinds of living organisms are thought to have developed and diversified from earlier forms during the history of the earth. Supported by the theory of natural selection and by evidence such as: genetic similarities and homologous similarities among species
43	adaptation	An advantageous genetic characteristic that helps an organism survive and reproduce
44	Natural selection	The theory of its action was first fully expounded by Charles Darwin and is now believed to be the main process that brings about evolution. The process in which individuals that have adaptaptations survive and reproduce to pass on the genes for those adaptations
45	Zygote	a diploid cell resulting from the fusion of two haploid gametes; in humans a zygote has 46 chromosomes
46	Virus	an infective agent that typically consists of a nucleic acid molecule in a protein coat, is too small to be seen by light microscopy, and is able to multiply only within the living cells of a host
47	Pharynx	the membrane-lined cavity behind the nose and mouth, connecting them to the esophagus
48	Stomach	the internal organ in which the major part of the digestion of food occurs, being (in humans and many mammals) a pear-shaped enlargement of the alimentary canal linking the esophagus to the small intestine.
49	Small intestine	the part of the intestine that runs between the stomach and the large intestine; the duodenum, jejunum, and ileum collectively This is where most of the nutrients and monomers are absorbed into the bloodstream so that they can be brought to the cells for use; ex. glucose
50	Large intestine	the last part of the digestive system in vertebrate animals. Its function is to absorb body water from the matter, and then to pass useless waste material from the body
51	Gallbladder	a small organ where bile is stored, before it is released into the small intestine. Humans can live without a gallbladder.
52	Arteries	blood vessels that carry blood away from the heart. While most arteries carry oxygenated blood, there are two exceptions to this norm, the pulmonary and the umbilical arteries.

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53	Veins	blood vessels that carry blood toward the heart. Most veins carry deoxygenated blood from the tissues back to the heart; exceptions are the pulmonary and umbilical veins, both of which carry oxygenated blood to the heart. Veins differ from arteries in structure and function; for example, arteries are more muscular than veins, veins are often closer to the skin and contain valves to help keep blood flowing toward the heart
54	Capillaries	smallest of a body's blood vessels and are parts of its microcirculation. Their endothelial linings are only one cell layer thick. These microvessels, measuring around 5 to 10 micrometer in diameter, connect arterioles and veins, and they help to enable the exchange of water, oxygen, carbon dioxide, and many other nutrients and waste chemical substances between blood and the tissues
55	Red blood cells	**Red blood cells** (**RBCs**), also called **erythrocytes**, are the most common type of blood cell and the vertebrate organism's principal means of delivering oxygen (O_2) to the body tissues via the blood flow through the circulatory system. They take up oxygen in the lungs or gills and release it into tissues while squeezing through the body's capillaries.
56	Kidney	The **kidneys** are bean-shaped organs that serve several essential regulatory roles in vertebrate animals. They remove excess organic molecules (e.g. glucose) and it is by this action that their best-known function is performed: the removal of waste products of metabolism (e.g. urea, though 90% of this is reabsorbed along the nephron.) They are essential in the urinary system and also serve homeostatic functions such as the regulation of electrolytes, maintenance of acid–base balance, and regulation of blood pressure (via maintaining salt and water balance). They serve the body as a natural filter of the blood, and remove water soluble wastes, which are diverted to the urinary bladder. In producing urine, the kidneys excrete wastes such as urea and ammonium, and they are also responsible for the reabsorption of water, glucose, and amino acids. The kidneys also produce hormones.
57	Liver	a vital organ of the digestive system present in vertebrates and some other animals. It has a wide range of functions, including detoxification, protein synthesis, and production of biochemicals necessary for digestion.
58	Larynx	the hollow muscular organ forming an air passage to the lungs and holding the vocal cords in humans and other mammals, the voice box
59	Trachea	large membranous tube reinforced by rings of cartilage, extending from the larynx to the bronchial tubes and conveying air to and from the lungs; the windpipe
60	Alveoli	a small cavity, pit, or hollow, in particular; any of the many tiny air sacs in the lungs where the exchange of oxygen and carbon dioxide takes place; the bony socket for the root of a tooth
61	Sensory neurons	relating to sensation or the physical senses; transmitted or perceived by the senses
62	Motor neurons	nerve cell forming part of a pathway along which impulses pass from the brain or spinal cord to a muscle or gland
63	Skeletal muscle	muscle that is connected to the skeleton to form part of the mechanical system that moves the limbs and other parts of the body

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64	Smooth muscle	muscle tissue in which the contractile fibrils are not highly ordered, occurring in the gut and other internal organs and not under voluntary control
65	Cardiac muscle	involuntary striated muscle that is found in the walls and histological foundation of the heart, specifically the myocardium

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66	Cartilage	firm, whitish, flexible connective tissue found in various forms in the larynx and respiratory tract, in structures such as the external ear, and in the articulating surfaces of joints.
67	Ligaments	a short band of tough, flexible, fibrous connective tissue that connects two bones or cartilages or holds together a joint
68	Tendons	a flexible but inelastic cord of strong fibrous collagen tissue attaching a muscle to a bone.
69	thyroid	gland in the neck that secretes hormones regulating growth and development through the rate of metabolism.
70	producer	Organism that makes it own food; plants do this via photosynthesis (using sunlight and water to make glucose)
71	Food web	A diagram that shows all of the links of energy transfer in an ecosystem; multiple food chains
72	Food chain	A diagram that shows the transfer of energy up trophic levels (producer → primary consumer→ secondary…)
73	Energy pyramid	Diagram that displays the amount of energy gained by eating at each trophic level; producers have the most energy available; ONLY 10% energy is transferred among each trophic level
74	Consumer	An organism that needs to eat another organism to survive because they cannot produce their own food
75	Trophic level	Hierarchies in an ecosystem; members of the same trophic level share the same function in that part of the food chain
76	Parasitism	When one organism benefits from a relationship with another type of organism, where the other organism is hurt by the relationship ex. Tick and human
77	Mutualism	Two different organisms benefit from a relationship: ex. Fish and sea Anemone
78	Commensalisms	When two different organisms are in a relationship where one benefits and one is neither negatively or positively affected
79	Decomposer	An organism that makes energy by breaking down dead decaying matter; fungus can be decomposers They are heterotrophs
80	Nitrogen fixing bacteria	Bacteria that converts atmospheric nitrogen to fixed usable nitrogen in the ground; these bacteria are often found on the roots of legume plants (bean plants)
81	succession	Observed process of change in the species structure of an ecosystem over time
82	independent variable	Variable that varies between the control and experimental group; it is the variable you are testing (at the beginning of your hypothesis)
83	dependent variable	Variable that you are measuring; result you are looking for (on the second half of the "if/then" statement)