CELLS: THE BASIC UNITS OF LIFE

VOCABULARY LIST

Cell  The smallest biological unit capable of carrying out all of the fundamental activities of life. The basic unit of structure and function of any living thing.

Cell Membrane  The thin, flexible layer that surrounds a cell and which controls all that enters and leaves the cell.

Cell Wall  In plant and bacterial cells, the outermost non-living cellulose layer that surrounds the entire cell, including the cell membrane.

Centriole  In animal cells, a structure outside the nucleus that organizes the spindle fibers during cell reproduction.

Centrosome  Another name for the centriole.

Chlorophyll  A green pigment found in the chloroplasts of plant cells that is essential for photosynthesis.

Chloroplasts  The chlorophyll-containing organelles found in the cytoplasm of plant and algae cells.

Chromatin  The coils of DNA and protein that condense to form chromosomes. Chromatin can be thought of as chromosomes with no distinct shape.

Chromosomes  Distinct wormlike cell structures formed from chromatin during cell reproduction.

Contractile Vacuoles  Large sacs found in the cells of certain protozoans that remove the water that has accumulated inside the cell by pumping it to the outside of the cell.

Cilia  Hairlike structures found on the outside of certain cells. The protozoans called ciliates use cilia to propel themselves through the water in which they live.

Cytoplasm  That part of a cell’s protoplasm that lies outside of its nucleus.

Deoxyribonucleic Acid (DNA)  A large and very complex biochemical that stores the information needed to construct proteins and that carries the genetic information about an organism.

DNA  The abbreviation for deoxyribonucleic acid.

Endoplasmic Reticulum  The intricate system of tubes leading from the nuclear membrane into the cytoplasm that is involved in transporting proteins.

Enzyme  A special class of proteins that control the rates of biochemical reactions.

Flagellum  A long, whiplike cell structure used to propel sperm cells as well as the cells of the protozoans known as flagellates.

Food Vacuoles  The sacs where food particles are digested that are found in the cytoplasm of protozoan cells.

Gene  The basic unit of heredity, made up of a specific region on a DNA molecule. Also a specific region of a DNA molecule that holds the code for one specific protein.

Golgi Apparatus  A subcellular organelle involved in packaging proteins for export from the cell.

(Continued on Blackline Master 2)
Lysosomes In animal cells, the organelles where large food molecules are broken down into smaller, more useful, food molecules.

Microtubules Tiny tubules inside the cell that form the cell’s internal "cytoskeleton" and that help rearrange structures inside the cell.

Mitochondria The organelles known as the "power houses of the cell" where the stored energy of food is made available for use within the cell.

Multicellular A word used to describe organisms made up of many cells.

Nuclear Membrane A layer inside the cell that surrounds the nucleus and contains many tiny pores.

Nucleus A large structure within the cell that contains chromatin, the nucleolus, and is surrounded by a nuclear membrane.

Nucleolus The "little nucleus" found inside the nucleus which is made up of RNA and protein.

Organelle A tiny cell structure; a miniature organ. Ribosomes, mitochondria, and chloroplasts are all organelles.

Phagocytosis A method by which cells take in food by surrounding and engulfing it. Amebae and white blood cells take in food by this method.

Photosynthesis The process by which plant cells make food and oxygen from water, carbon dioxide, and sunlight.

Plasma Membrane Another name for the cell membrane.

Plasmalemma Another name for the cell membrane.

Protein A class of biochemicals made up of amino acids that can be important in building and repairing cells or in controlling chemical reactions inside the cell.

Protoplasm All the living materials inside a cell.

Ribonucleic Acid (RNA) A class of nucleic acids that can be used either in reading the genetic information on the DNA or in guiding the process of making proteins.

Ribosomes The organelles where proteins are assembled.

RNA The abbreviation for ribonucleic acid.

Spindle Fibers Microtubules visible during cell division that are involved in separating chromosomes into two separate identical groups.

Tissue Layers of closely related cells that work together to perform a specific function, such as muscle tissue, liver tissue, nervous tissue, etc.

Unicellular An organism composed of just one cell.
**ACROSS**
1. Wormlike cell structures derived from chromatin during cell reproduction.
2. The basic unit of structure and function of any living thing.
3. A structure in animal cells that organizes the spindle fibers during cell reproduction.
4. All the protoplasm outside the nucleus.
5. The organelles of plants where photosynthesis occurs.
6. The abbreviation for ribonucleic acid.
7. The organelles where proteins are assembled.
8. A threadlike material of DNA and protein found in the nuclei of non-dividing cells.
9. The organelles in animal cells where large molecules are broken down into smaller molecules.
10. The abbreviation for deoxyribonucleic acid.
11. The cytoplasm's intricate network of tiny tubes is called the __________ reticulum.
12. The __________ apparatus is used to export certain proteins to the outside of the cell.

**DOWN**
1. The powerhouse of the cell.
2. Layers of closely-related cells that work together to perform specific tasks.
3. The outer, non-living, layer of plant cells.
4. The thin, flexible layer that surrounds animal cells.
5. All the protoplasm outside the nucleus.
1. True or False: Cytoplasm is the part of a cell's protoplasm found inside of the nucleus.

2. True or False: The nucleus contains very little of the cell's DNA.

3. True or False: Genes are made up of DNA.

4. These organelles called _________________ are where proteins are assembled.

5. These organelles called _________________ are thought of as the "powerhouses of the cell."

6. Layers of identical cells found in most multicellular organisms are called______ ________.

7. The outer, non-living, layer of plant cells is called the _______ ________.

8. Both animal and plant cells contain a thin, flexible layer called the ___________ ____________
   that is very important in controlling what enters and leaves the cell.

9. True or False: Proteins can be packaged for export outside the cell by a special structure called the Golgi apparatus.

10. Photosynthesis is carried out in these organelles called _________________.

VOCABULARY WORD MATCH
Place the alpha character from the list on the right on the line preceding the matching word on the left.

___ Cell
A. Distinct wormlike cell structures formed from chromatin during cell reproduction.

___ Cell Wall
B. A class of biochemicals made up of amino acids that can be important in building and repairing cells or in controlling chemical reactions inside the cell.

___ Chromosomes
C. A large structure within the cell that contains chromatin, the nucleolus, and is surrounded by a nuclear membrane.

___ Deoxyribonucleic Acid (DNA)
D. The basic unit of heredity, made up of a specific region on a DNA molecule. Also a specific region of a DNA molecule that holds the code for one specific protein.

___ Enzyme
E. The process by which plant cells make food and oxygen from water, carbon dioxide, and sunlight.

___ Gene
F. A special class of proteins that control chemical reactions.

___ Nucleus
G. A large and very complex biochemical that stores the information needed to construct proteins and that carries the genetic information about an organism.

___ Photosynthesis
H. A class of nucleic acids that can be used either in reading the genetic information on the DNA or in guiding the process of making proteins.

___ Protein
I. The basic unit of structure and function of any living thing. The smallest biological unit capable of carrying out all the fundamental activities of life.

___ Ribonucleic Acid (RNA)
J. In plant and bacterial cells, the outermost non-living cellulosic layer that surrounds the entire cell, including the cell membrane.
TRUE OR FALSE - Place a T for True and an F for False in the box preceding each statement.

1. All bacterial cells are dangerous to humans.  
2. Plants and animals both have tissue.  
3. Scientists no longer accept the basic principles of the early 19th century "Cell Theory" of Theodore Schwann and M. J Schlieden.  
4. The internal structures of the cell are at rest at times.  
5. Even highly trained scientists using the most modern and sophisticated equipment do not understand many of the complex biochemical reactions which underlie cellular functions.

FILL IN THE BLANK

1. Living things are all made up of _________.
2. All living things have 7 characteristics. List at least five of them below.

3. Many of nature's simplest creatures are nothing more than single, independently living cells and are called ___________ organisms.
4. In larger, more biologically advanced creatures called ________________, many different kinds of cells are joined to perform specialized tasks.
5. Cells can be thought of as marvelous and complex miniature factories whose final product is _________.

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