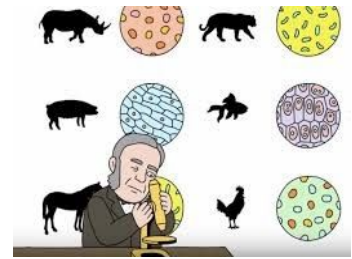


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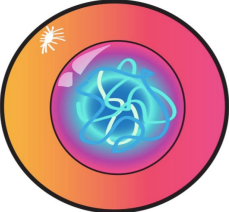
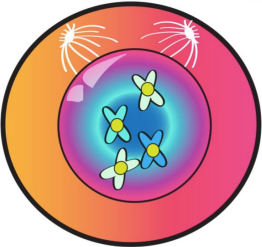
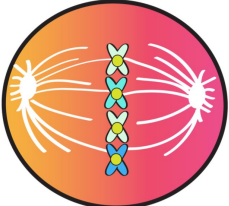
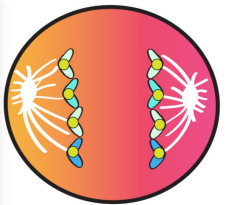
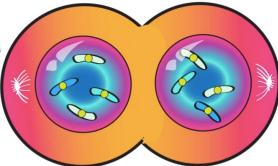
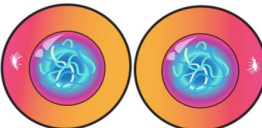
Cell Theory
Student #/Teacher ____



Study Guide

theory	an idea that is consistently supported by data.
Cell Theory Principle 1	All living things are made up of one or more cells.
Cell Theory Principle 2	Cells are the basic units of structure and function in all living organisms.
Cell Theory Principle 3	All cells come from other cells that already exist.
histologist	a scientist who studies cells.
bacteria and protozoans	single-celled organisms.

Zacharias Janssen	<ul style="list-style-type: none"> • Invented one of the first microscopes. • Possibly helped by his father, Hans.
Robert Hooke	<ul style="list-style-type: none"> • Used the term <i>cells</i> to describe the boxlike structures that made up cork. • Published drawings of his compound microscope and his observations in <i>Micrographica</i>.
Anton van Leeuwenhoek	<ul style="list-style-type: none"> • Built a simple microscope. • First to see one-celled organisms he called "wee beasties" or "animalcules."
Matthias Schledien	<ul style="list-style-type: none"> • Stated that all plants are made up of cells. • Co-created the first two principles of cell theory.
Theodor Schwann	<ul style="list-style-type: none"> • Concluded that all animals are made up of cells. • Co-created the first two principles of cell theory. • Remember: Schwann loves the swan which has animal cells.
Rudolf Virchow	<ul style="list-style-type: none"> • Observed cell division. • Stated that cells can come only from other living cells. • Credited with developing the third principle of the cell theory.
Robert Remak	<ul style="list-style-type: none"> • Published evidence that cells are derived from other cells, but didn't receive credit.

<p>Interphase</p> 	<ul style="list-style-type: none"> • Most of the cell's life is spent in interphase. • DNA is copying, preparing for mitosis. • "Inter"- it's in between divisions.
<p>Mitosis</p>	<ul style="list-style-type: none"> • the process in which one cell divides to form two identical new cells. • Remember PMAT.
<p>Prophase</p> 	<ul style="list-style-type: none"> • DNA is coiled up into x-shaped structures called chromosomes. • Spindle fibers appear.
<p>Metaphase</p> 	<ul style="list-style-type: none"> • Chromosomes line up in the middle of the cell. • Spindle fibers attach. • Remember: Chromosomes "met" in the middle.
<p>Anaphase</p> 	<ul style="list-style-type: none"> • Daughter chromosomes move to the ends of the cell. • Remember: Mean old "Ana" came and pulled them apart.
<p>Telophase</p> 	<ul style="list-style-type: none"> • Chromosomes begin to uncoil. • Nuclear membrane reforms around two daughter nuclei. • Remember: They're so far apart, they must call on the "telo"-phone.
<p>Cytokinesis</p> 	<ul style="list-style-type: none"> • Nucleus is fully divided.

cell differentiation	<ul style="list-style-type: none"> • Development of cells into different and specialized cell types. • Examples: blood cells, muscle cells, nerve cells, bone cells, skin cells
cell	<ul style="list-style-type: none"> • The basic unit that makes up all living things • the smallest level of organization of life in an organism.
tissue	<ul style="list-style-type: none"> • A group of specialized cells that work together to do a specific job. • Examples: muscle tissue, nerve tissue, epithelial (skin) tissue, connective tissue.
organ	<ul style="list-style-type: none"> • A group of tissues that work together to do a specific job. • Examples: heart, liver, lungs, stomach, skin, kidneys
organ system	<ul style="list-style-type: none"> • A group of organs that work together to do a job. • Examples: digestive system, nervous system, respiratory system, circulatory system,

