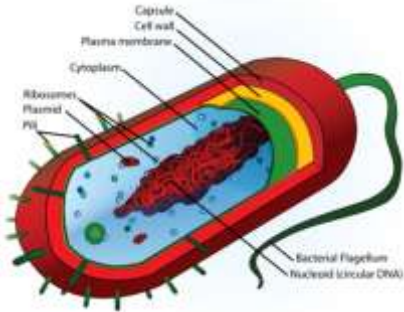
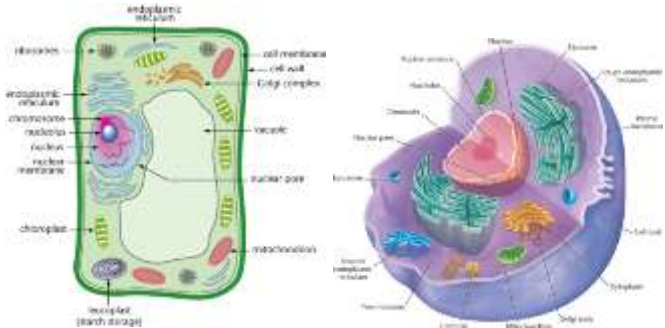


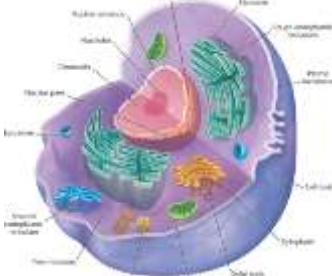
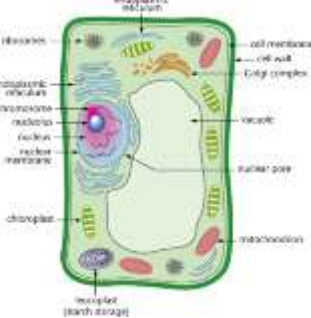
Cell Review Worksheet - ANSWERS

Cell Theory

1. What invention was an early step in the discovery of cells? Microscope
2. What are the 3 major principles of the cell theory?
 - a. All Living things are made of one or more cells
 - b. The cell is the smallest unit of life
 - c. All new cells come from preexisting cells
3. Contrast the characteristics of the 2 major groups of cells:

Prokaryotic	Eukaryotic
<p>Draw a picture of a prokaryotic cell</p> 	<p>Draw 2 pictures of eukaryotic cells (animal and plant)</p> 
<p>List organelles:</p> <p><u>Nucleoid Region, cytoplasm, cell membrane, ribosomes, capsule (pill shaped)</u></p>	<p>List organelles:</p> <p><u>Nucleus, cell membrane, cytoplasm, ribosomes, rough ER, Smooth ER, cell wall (plants only), chloroplasts (plant only), lysosome, vacuole, golgi body, mitochondria, ribosomes, chromosomes/chromatin</u></p>
<p>Types of prokaryotic cells:</p> <p><u>bacteria</u></p>	<p>Types of eukaryotic cells:</p> <p><u>Plants and animal</u></p>

4. Contrast the characteristics of the 2 major eukaryotic cells

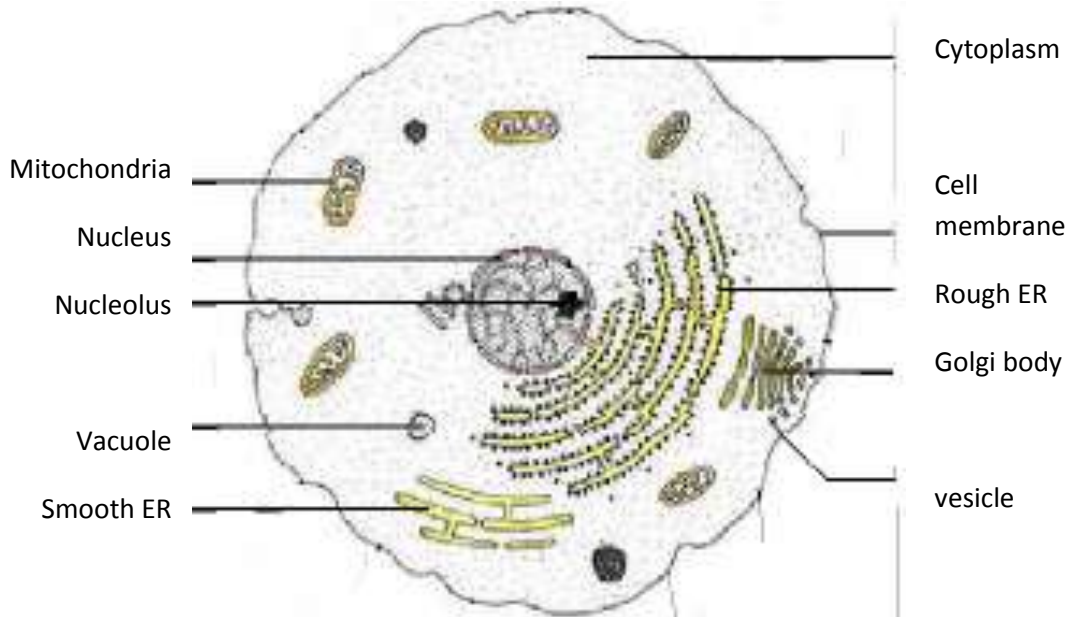
Animal	Plant
<p>Draw an animal cell</p> 	<p>Draw a plant cell</p> 
<p>List organelles an animal cell has that a plant cell does not have:</p> <p><u>Centriole, small vacuole</u></p>	<p>List organelles a plant cell has that an animal cell does not have:</p> <p><u>Cell wall, chloroplast, large vacuole</u></p>

Cell Organelles

5. Use the word bank below to answer the following questions. Some words may be used more than once:

Cytoskeleton	Vesicle	Nucleus	Nucleolus	rough ER	Ribosome	smooth ER
Golgi apparatus (body)		Mitochondria		Vacuole		Lysosome
Cell Membrane	Cytoplasm		Chloroplast	Cell wall		Centrioles

a. What type of cell is this? ANIMAL CELL. Label the cell parts:



b. Which organelle creates the energy required by cells? MITOCHONDRIA

c. Which organelles create proteins? RIBOSOMES

d. Which organelles processes and transports proteins? GOLGI BODY/APPARATUS

e. Which organelle contains digestive enzymes to break down foreign invaders? LYSOSOMES

f. Which organelle is a network of fibers that criss-cross to support a cell from the inside? CYTOSKELETON

g. Which organelle performs photosynthesis to make sugar? CHLOROPLASTS

h. Which organelle is thought to help with cell division in animal cells? CENTRIOLE

i. Which cell part is the internal fluid found in all cells? CYTOPLASM

j. Which organelle holds DNA and chromosomes? NUCLEOUS

k. Which cell part is made of cellulose that provides rigid support? CELL WALL

l. Which organelle is studded with ribosomes and is often the site of protein synthesis? ROUGH ER

m. Which organelle breaks down alcohol, and can also break down and make lipids? SMOOTH ER

n. Which organelle is responsible for making ribosomes? NUCLEOLUS

o. Which organelle carries materials from one part of the cell to another? VESICLES

p. Which organelle is a sac filled with fluid inside a cell; it stores materials the cell needs? VACUOLE

6. Macromolecules: List everything that you know about the different macromolecules in each box

<p><u>Lipids</u></p> <ul style="list-style-type: none"> • Waterproof • Located in the cell membrane • Large • Energy storage 	<p><u>Nucleic Acids</u></p> <ul style="list-style-type: none"> • DNA/RNA • Found in nucleus • Is the blue print for the cell
<p><u>Carbohydrates</u></p> <ul style="list-style-type: none"> • Sugar molecule • Helps with communication • Helps with transport • Energy • Used in mitochondria • Found also in the cell membrane 	<p><u>Proteins</u></p> <ul style="list-style-type: none"> • Amino acids • Made by ribosomes • Workers of the cell • Found cytoskeleton, cell membrane • Help with communication

List 2 ways that each macromolecule is related

- Lipids and Carbohydrates protection for plant cell and both are energy storage for the cells
- Lipids and Proteins both in the cell membrane and function to protected the cell, transport proteins in the membrane
- Lipids and Nucleic Acids nuclear envelope – made of lipids and protects the nucleus
- Carbohydrates and Proteins produce ATP that enzyme proteins need to function, ribosomes need ATP to produce proteins
- Carbohydrates and Nucleic Acids carbohydrates make ATP and ATP is needed to duplicate nucleic acids (DNA/RNA)
- Proteins and Nucleic Acids – Nucleic Acid make up DNA and RNA; DNA is the blue print for parts of the cell and proteins; nucleic acids have the instructions to make proteins.

7. What are the steps to properly use a microscope? Take off the cover; turn on the microscope; carefully put the slide on the stage; center the specimen over the light so what you are looking at will be in your field of view; start at the lowest objective (4x red) and using the coarse adjustment knob, bring the slide into view while looking through the eyepiece; then use the fine adjustment knob to focus and sharpen the image; if you need to use one of the higher objective (yellow 10x), make sure that what you are looking at is centered in your

field of view and turn the revolving nosepiece to the next highest objective; use the fine adjustment knob to focus (sometimes you need to use the coarse adjustment, if you do, turn the knob carefully so you don't break the slide); if needing to move to the highest objective (blue 40x), center what you are looking at, then turn the revolving nosepiece to the next objective and use the fine adjustment knob to focus. When finished: turn the revolving nosepiece to the lowest objective, lower the stage, turn off the light, take the slide off the stage, cover the microscope and push it against the wall.