# Cells Study Guide

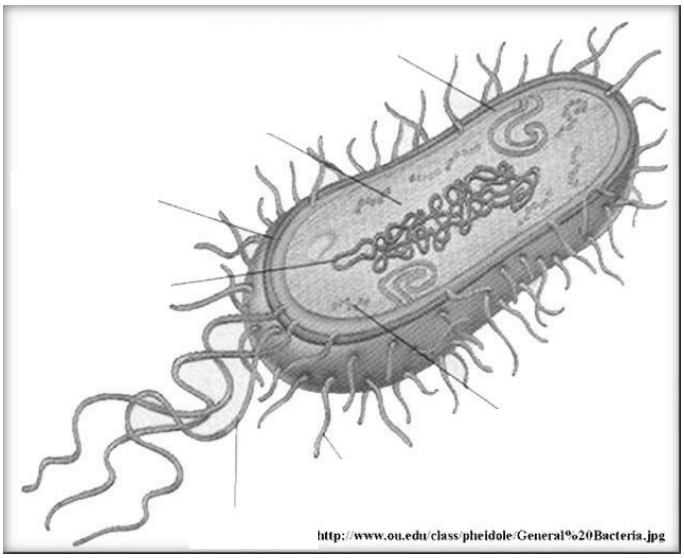
***Distinguish between prokaryotic and eukaryotic cells, and plant and animal cells:***

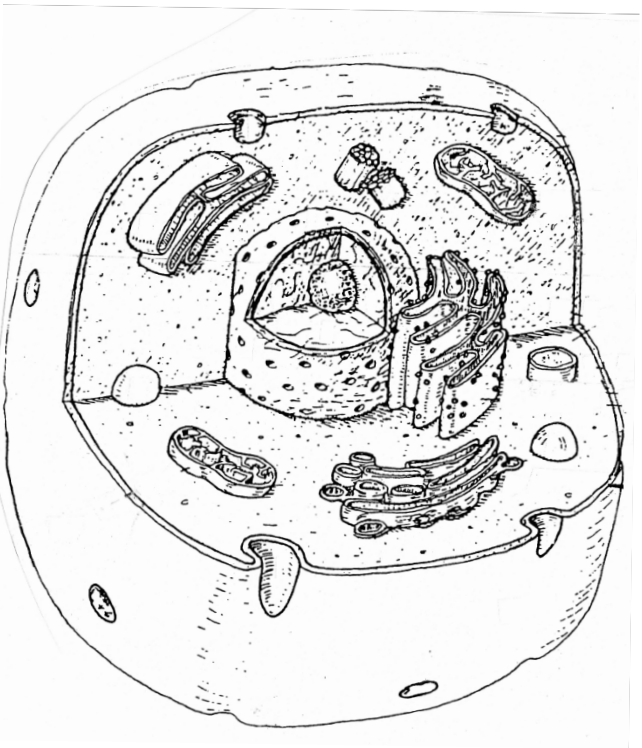
Two types of cells, _____ and _____ make up organisms. _____ Is singled cell and doesn't have a _____. An example organism is a _____, which are very small. _____ Are much larger and contain a _____. They are mostly multicellular and are found in _____, _____, _____, and _____. These cells contain small structures inside the cell called _____.

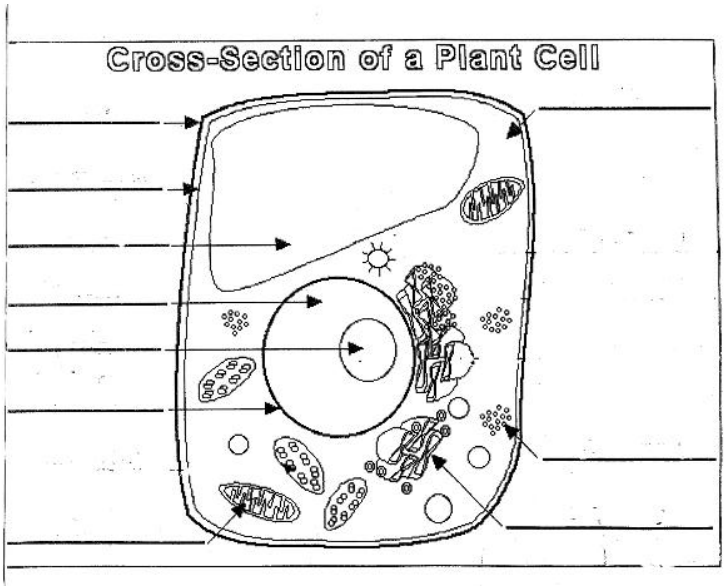
All cells (_____ & _____) have the following four items:

1. _____
2. _____
3. _____
4. _____

***Identify the organelles and type of cells in the following picture***





| Organelle | Function | Prokaryotes | Eukaryotes Plants | Eukaryotes Animals |
|---|---|---|---|---|
| Nucleus | | | | |
| Nucleolus | | | | |
| Cell Membrane | | | | |
| Cell Wall | | | | |
| Cytoplasm | | | | |
| Ribosome | | | | |
| Lysosome | | | | |
| Mitochondria | | | | |
| Chloroplast | | | | |
| Vacuole | | | | |
| Golgi Apparatus | | | | |
| Smooth/Rough ER | | | | |
| DNA | | | | |
| Flagella | | | | |
| Cilia | | | | |
| Centriole | | | | |
| Cytoskeleton | | | | |

***Describe how eukaryotic cells convert and use energy:***

**Photosynthesis:**
Write the equation for photosynthesis below

What are the products & reactants of photosynthesis?

Photosynthesis is a process that uses _____ to make sugars that store _____ _____. It occurs in the _____ organelle and specifically _____ of that organelle.

Draw a simple diagram below to illustrate photosynthesis:

**Cellular Respiration**:
Write the equation for respiration below

What are the products & reactants of respiration?

Cellular respiration is a process that uses _____ _____ to make _____ when oxygen is present. It takes place in the _____ organelle that make the majority of the cell's energy, called _____.

Draw a simple diagram below to illustrate cellular respiration:

In the table below, compare and contrast the location, reactants and products, organism type, and type of chemical reactions (Advanced should be able to distinguish between Kreb & Calvin cycle).

| | Photosynthesis | Respiration |
|---|---|---|
| Location | | |
| Reactants | | |
| Type of Organism | | |
| Specific processes or cyles that are used | | |
| Products | | |

***Identify examples from the history of science that illustrate modification of scientific knowledge in light of challenges to prevailing explanations.***

Identify the three components of the cell theory:

Which scientist is responsible for naming cells?

Describe how multiple scientists contributed to the discovery of cells.