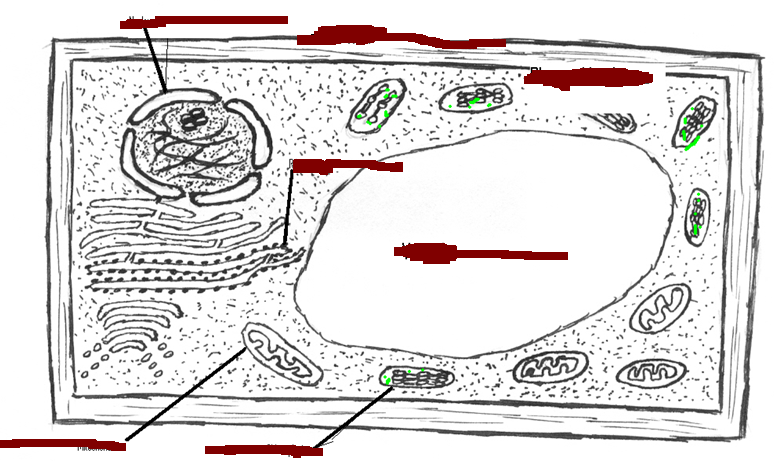
Biology Goal 1Guided Notes Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

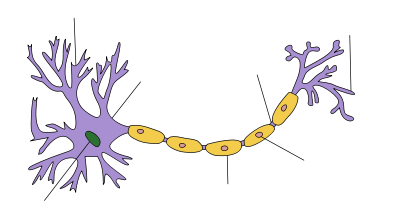
1. What is the function of the following organelles?
   1. Nucleus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Plasma membrane: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Cell wall: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Mitochondria: cellular respiration; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Vacuoles: stores \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Chloroplasts: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   7. Ribosomes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Label the cell below



1. The structure of the organelle determines it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Example: folded inner membrane in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ increases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for energy production during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. These organelles interact to carry out functions such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, transport of molecules, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and synthesis of new molecules. (Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which are assembled by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and used as enzymes for energy production at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,).
3. Microscopes
   1. Total Magnification = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ X \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. If eyepiece is 10x and the objective is 40 x then the total magnification is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Electron Microscopes have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ magnification than light microscopes.
   4. They allow one to see the organelles and viruses
   5. Two types: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How to use a microscope
5. **Place \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
6. **Move to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
7. **Move the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ until you see the object.**
8. **Use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to focus**
9. **If you wish to see on high power, move to high and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
10. Prokaryotic Cells
    1. Prokaryotic cells are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than eukaryotic cells.
11. Compare the structure of prokaryotic and eukaryotic cells :
    1. Presence of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are not present in prokaryotes.
    2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are found in both.
    3. \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ are present in both, but are not enclosed by a membrane in prokaryotes.
    4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DNA strands called plasmids are characteristic of prokaryotes.
    5. Prokaryotic cells are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. Plant Cells vs. Animal Cells

|  |  |
| --- | --- |
| Plant Cell | Animal Cell |
|  |  |
|  |  |
|  |  |
|  |  |

1. Cell Differentiation
   1. Multicellular organisms begin as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ masses of cells
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ determines the differentiation of cells and ultimately their specialization.
   3. During the process of differentiation, only\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts of the DNA are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; the parts of the DNA that are activated determine the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and specialized \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a cell.
   4. Because all cells contain the same DNA, all cells initially have the potential to become any type of cell; however, once a cell differentiates, the process cannot be reversed.
   5. Nearly all of the cells of a multicellular organism have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the same chromosomes and DNA.
   6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts of the genetic instructions are used in different types of cells, influenced by the cell's \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Cell Specialization
   1. Red blood cells carry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. White blood cells fight \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Muscle cells \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Nerve cells carry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Xylem carries \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Phloem carries \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   7. Label the pictures





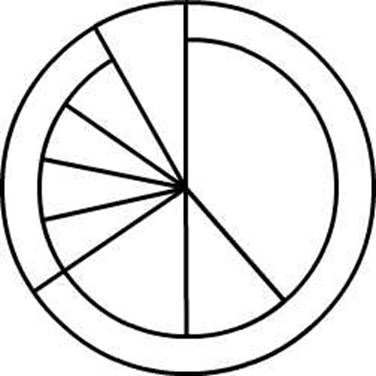
1. Cell communication
   1. Do cells communicate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ may be released by one cell to influence the development and activity of another cell.
2. Stem Cells
   1. Stem cells :
      1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that continually reproduce themselves**
      2. **Have, under appropriate conditions, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into one or more types of specialized cells.**

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which have not yet differentiated into various cell types are called embryonic stem cells.
  2. Stem cells found in organisms, for instance in bone marrow, are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. Scientists have recently demonstrated that stem cells, both embryonic and adult, with the right laboratory culture conditions, differentiate into specialized cells.

1. Homeostasis
2. Cells use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to regulate cell pH . Buffers are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Cells can respond to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, glucose levels, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in organisms.
4. Active and Passive Transport

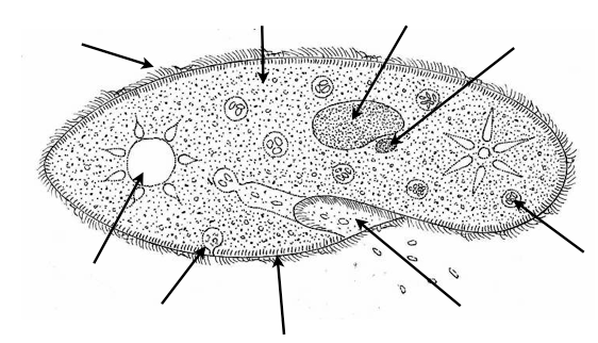
|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. Osmosis: Movement of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. If you place a cell into a very salty or sugary solution, the water will move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This makes the cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. If you place a cell into a solution that has less solute than the cell has, then water will move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and the cell will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   3. Freshwater moves towards \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Plasma Membrane
   1. The plasma membrane has a double layer of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ The membrane controls what \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the cell.
3. Cell Cycle
   1. Label the cell cycle



* 1. Cell Cycle: A series of events in the life of a cell
     + Interphase: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     + Mitosis: Prophase, Metaphase, Anaphase, Telophase
     + Cytokinesis
  2. Cells spend the majority of their life in\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Mitosis
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells use mitosis for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Unicellular organisms use mitosis for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   3. One cell makes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Identical daughter cells
   4. Diploid cell🡪 2 diploid cells
2. Structures of unicellular organisms help that them survive



* 1. Contractile Vacuole: regulates amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. Cilia: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for movement
  3. Flagella: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for movement
  4. Eyespots: Detect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. Pseudopods: “ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Adaptive Bahaviors
   1. Chemotaxis: Response to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Phototaxis : Response to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Geotaxis : Response to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_