**EUKARYOTIC CELL STRUCTURE GUIDED NOTES**

1. Many structures in eukaryotic cells act like specialized \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ “little organs”. There are two major divisions in the structure of eukaryotic cells: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contains genetic information (\_\_\_\_\_\_\_), and with it the coded instructions for making \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other important molecules.

3. The nucleus also contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the granular material you can see in the nucleus. Chromatin is composed of \_\_\_\_\_\_ bound to protein. When it is time for the cell to divide (reproduce), chromatin condenses to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Chromosomes are thread-like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ material that is passed from one generation of cells to the next.

4. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the portion of the cell outside the nucleus. The organelles are found \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the cytoplasm. The function of the cytoplasm is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ materials within the cell and into and out from the cell.

 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­\_\_\_\_\_ are small particles of RNA and protein found throughout the cytoplasm. They function to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by following a set of instructions received from the nucleus.

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are saclike structures used to store materials like water, salts, proteins, and carbohydrates. They are most common in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells, where the pressure of the vacuole makes it possible to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ leaves and flowers. In animals, the vacuole is used to pump \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water out from the cell. They are then called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ vacuoles.

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ function to provide energy for the cell. They convert \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy stored in food (glucose) into a form that the cell can use. Inherited from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ only! Mitochondria are often found in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells. Notice the increased number of folds (\_\_\_\_\_\_\_\_\_\_\_\_) found inside the mitochondria. This increases the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ available for converting “food” into energy the cell uses.

8. In plant cells, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use light energy to perform \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Chloroplasts also contain their own \_\_\_\_\_\_\_\_\_\_\_\_\_. Chloroplasts also contain green pigment called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that gives plants their green color.

|  |  |
| --- | --- |
| **Animal Cell** | **Plant Cell** |
| Cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surrounds cell | Cell wall made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surrounds the cell |
|  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occupies most of the space in the cell. |  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is pushed to the sides of the cell. |
| Rarely contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If so, they are small and temporary. | Vacuole takes up majority of \_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell. |
| Stores reserve energy in form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  Stores reserve energy in form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

9. Remember \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells include animals AND plant cells! Animal and plant cells contain a cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that controls what enters and leaves the cell. Only plant cells have a rigid \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ made of cellulose to protect the cell from harm and provide rigid support of leaf and stem structures.