**The Diversity of Cells**

All living things must:

How can plants move?

Do all living things exchange gases in the same way?

Microscope –

1665 – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was the first person to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_. He built his own \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Found \_\_\_\_\_\_\_\_\_\_\_\_\_ by looking at \_\_\_\_\_\_\_\_\_\_\_\_ bark from a cork \_\_\_\_\_\_\_\_\_.

1673 – Anton van Leeuwenhoek – discovered \_\_\_\_\_\_\_\_\_\_\_\_\_ by looking at \_\_\_\_\_\_\_\_\_\_ scum. While looking at animal \_\_\_\_\_\_\_\_\_\_\_\_\_\_, he noticed that there are differences in different \_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_ blood. He also was the \_\_\_\_\_\_\_\_\_\_\_ to see \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1838 – Matthias Schleiden – He studied \_\_\_\_\_\_\_\_\_\_\_\_\_\_. During his studies Matthias \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that all plants \_\_\_\_\_\_\_\_\_\_\_ made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1839 – Theodor Schwann – studied \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Schwann concluded that \_\_\_\_\_\_\_ animal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_. He wrote the first \_\_\_\_\_\_\_\_\_\_ parts of the \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:

* \_\_\_\_\_\_\_\_\_\_ organisms are \_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_ cells
* The \_\_\_\_\_\_\_\_\_\_ is the basic \_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ things

1858 – Rudolf Virchow – Contributed the \_\_\_\_\_\_\_\_\_\_\_ part of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* \_\_\_\_\_\_\_\_\_\_\_\_ cells \_\_\_\_\_\_\_\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_\_\_\_\_\_ cells.

**Eukaryotes vs Prokaryotes**

All \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be divided into \_\_\_\_\_\_\_\_\_\_\_ major \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organisms.

Prokaryotes are the largest group of organisms, mostly because of the large variety of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are generally more advanced than prokaryotes. There are many unicellular organisms that are eukaryotic, but all \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organism are eukaryotic.

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| **Eukaryotes** | **Prokaryotes** |
| * A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cell has a nuclear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surrounding genetic material, numerous membrane-bound \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and a complex internal structure. | * A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cell has \_\_\_\_\_\_\_ nuclear membrane, \_\_\_\_\_\_\_ membrane-bound \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and a simple internal structure. |

**Parts of a Cell**

**Cell membrane** – Protective \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that encloses a \_\_\_\_\_\_\_\_\_\_\_\_\_. Contains lipids, proteins and phospholipids. Some of the proteins and lipids \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of materials \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Cytoplasm** – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inside a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Organelles** – one of the small \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a cell’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to perform a specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Nucleus** – \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells \_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Contains cell’s \_\_\_\_\_\_\_\_\_\_\_.

**DNA** – Deoxyribonucleic Acid. All \_\_\_\_\_\_\_\_\_\_\_\_\_ contain \_\_\_\_\_\_\_\_\_\_\_\_. DNA is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that carries information needed to \_\_\_\_\_\_\_\_\_\_\_\_ new \_\_\_\_\_\_\_\_\_\_\_\_ and new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. In \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells, the DNA is enclosed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Chloroplasts** - Located in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and algae \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Photosynthesis takes place here. Contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ causing the organelle to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Vacuoles** - In \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and fungal cells. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water and other liquids. Help \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells. Plants wilt when vacuoles lose water.

**Plant vs Animal**

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| **Plant Cell** | **Animal Cell** |
|  |  |

**Plant vs Animal**

PLANTS

BOTH ANIMALS

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**Prokaryote vs Eukaryote**

EUKARYOTE

BOTH PROKARYOTE