

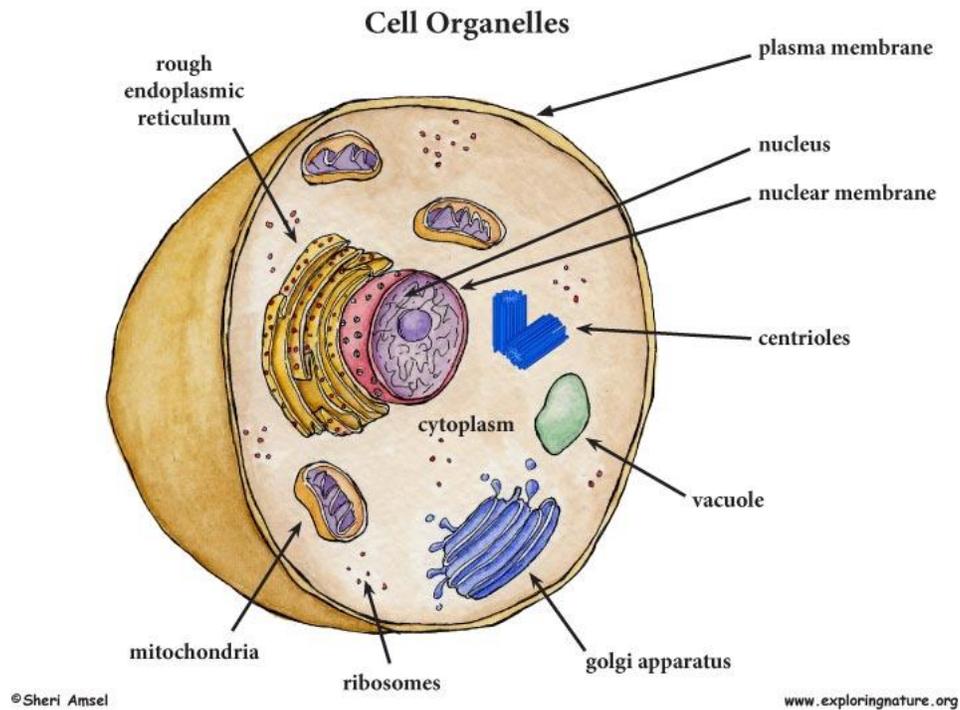
Name _____ Period _____

SCIENCE B NTI DAY 5

Cell Organelles

Each cell has a protective outside layer called the **plasma membrane**. The plasma membrane lets certain things into the cell that it needs, but keeps other things out. This is called **semipermeable**. Inside the cell is a watery medium that everything floats in called **cytoplasm**. The cytoplasm contains all the working parts of the cell, the **organelles**. Each organelle has a job. The **nucleus** has our DNA that contains all our genetic information. The DNA is found on structures in the nucleus called **chromosomes**. There are 23 pairs (46 total) of chromosomes in each nucleus of each cell. The nucleus is surrounded by a **nuclear membrane**, which controls what goes in and out. Little grains floating around inside the cell are **ribosomes**, where proteins are made. **Rough endoplasmic reticulum (rough ER)** is a bunch of folded membrane pathways spotted with ribosomes. Together the ribosomes and the rough ER make new proteins and new membranes that the cell needs. **Smooth Endoplasmic Reticulum (smooth ER)** has no ribosomes on it and makes containers called **vesicles** that are used to move things around inside the cell. **Golgi apparatus** are made up of flat vesicles that package up things that need to leave the cell, like hormones. **Lysosomes** are vesicles that have digestive enzymes inside them and break down the things that the cell doesn't need. They also kill bacteria that invades the body. **Vacuoles** are membrane sacs for storing things. **Mitochondria** have a double membrane that folds in on itself forming little fingers called **crisetae**. They break down sugar to make **ATP**, which is used by the cell as energy. All the organelles are working together to keep things in the body in balance (**equilibrium**).

Plants are made up of cells too. Plant cells are a bit different from animal cells. For one thing, plant cells have a thick **cell wall** surrounding the plasma membrane. Their vacuoles, which store water, are much larger. They have **chloroplasts**, the organelles that carry out photosynthesis, to make energy for the plant using sunlight, water and carbon dioxide.



Cell Organelle Facts:

1. Each cell has a protective outer layer – _____ It lets certain things into the cell that it needs, but keeps other things out. .
2. Inside the cell is a watery medium that everything floats in called _____.
3. Little grains floating around inside the cell are _____ where proteins are made.
4. The nucleus has our _____ that contains all our genetic [SEP]information. It s found on structures in the nucleus called _____. There are 23 pairs (46 total) of chromosomes in each nucleus of each cell.
5. The **nucleus** is surrounded by a _____, which [SEP]controls what goes in and out.
6. _____ is a series of folded membrane pathways spotted with ribosomes. Together the ribosomes it makes new proteins and new [SEP]membranes that the cell needs.
7. _____ has no [SEP]ribosomes on it and forms containers called transport **vesicles** that are used to move things around inside the cell.
8. _____ package up things to be transported around the cell or that need to leave the cell.
9. _____ are vesicles that have digestive enzymes inside them and break down the things that the cell doesn't need. They also kill bacteria that invades the body.
10. _____ are membrane large membranous sacs for storing things.

