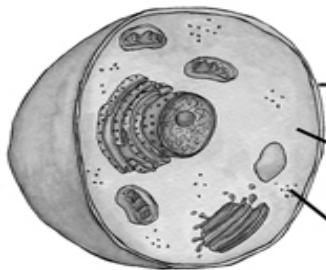


## Animal Cell Organelles



1. Each cell has a protective outer layer – the **plasma membrane**. The plasma membrane lets certain things into the cell that it needs, but keeps other things out. This is called *semi-permeable*.

2. 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.

3. Little grains floating around inside the cell are **ribosomes**, where proteins are made.



4. 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.

5. The nucleus is surrounded by a **nuclear membrane**, which controls what goes in and out.



6. **Rough endoplasmic reticulum (rough ER)** is a series of folded membrane pathways spotted with ribosomes. Together the **ribosomes** and the rough ER make new proteins and new membranes that the cell needs.



7. **Smooth Endoplasmic Reticulum (smooth ER)** has no ribosomes on it and forms containers called **transport vesicles** that are used to move things around inside the cell.



8. **Golgi apparatus** are made up of sacculi that package up things to be transported around the cell or that need to leave the cell, like hormones.



9. **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.

10. **Vacuoles** are membrane large membranous sacs for storing things. **Vesicles** are smaller sacs.



cristae

11. **Mitochondria** have a double membrane that folds in on itself forming little finger-like projections called **cristae**. Inside is a gel-like matrix with enzymes that break down sugars to make **ATP**, which is used by the cell as energy. These very important organelles contain their own DNA and ribosomes, reproduce by division and can even produce some of their own proteins.