

Learning about cells structure

Ages 5-10

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Background

Ever wondered what makes up your skin, organs or muscles? Cells are the building blocks that create life. All living things have cells. These tiny building blocks work together to create simple bacteria as well as more complex organisms, such as people and animals.

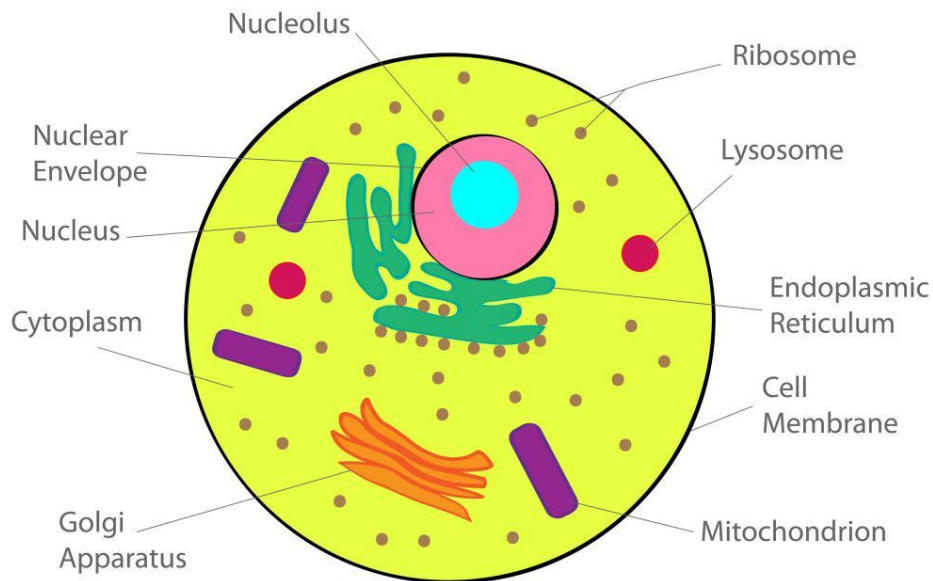
Materials

1. A paper plate
2. Craft supplies
3. Liquid school glue

Experiment

In complex organisms — such as plants, animals and people — cells are made up of several organelles. These are the parts of the cell that perform various functions and allow for the cell's independent operation. In the experiment, as the function of each organelle is explained, ask the students to place the appropriate art supplies on the plate.

Animal Cell



AmoebaMike.WordPress.com

A Nucleus – this controls what the cell does

Cytoplasm – this is where all the chemical reactions occur in the cell.

A Cell Membrane – this is a thin skin around the cells which holds the cell together and controls which substances pass in and out of the cell.

Endoplasmic Reticulum- Rough ER contains ribosomes to make proteins while smooth ER makes fats, also called lipids

Golgi Body – sorts and processes proteins

Mitochondria – this is like the battery of the cell and provides energy.

Lysosomes – these get rid of waste and also destroy a cell when it dies.

What did we learn from this experiment?

For explaining the function of each organelle, the instructor can also use analogy to help students understand the concept better.

The parts of the cell have similar functions to the services in a city.

- **City Hall:** The mayor in City Hall runs the city, the same way the nucleus runs the cell's operations. Label City Hall as the nucleus.
- **Power Plant:** Mitochondria generate energy for the cell the same as a power plant creates electricity for a city.
- **Garbage Facility:** Lysosomes remove waste from the cell in the same way garbage collectors get rid of the city's waste.
- **City Limits:** The cell membrane limits the extent of the cell just as the city limits indicate the edge of the city.
- **Post Office:** The post office delivers mail throughout the city, the same as the ER transports materials throughout the cell.
- **Package Delivery Service:** Sending packages to the city limits or beyond may start with a trip to the post office, after which the containers move through a delivery service to their destination. This delivery system mimics the movement of lipids from the ER to the Golgi body to the cell membrane. The package delivery service acts like the Golgi body of the cell.
- **Pharmacy:** Ribosomes create protein for the cells to keep it healthy. Pharmacies make medicines for people in a city to keep them fit. Just as cells have numerous ribosomes, cities also have multiple pharmacies in many cases.

Experiment material

1. [A paper plate](#)
2. [Craft supplies](#)
3. [Liquid school glue](#)
4. [Plastic squeeze bottle for the glue](#) (50 pcs)

