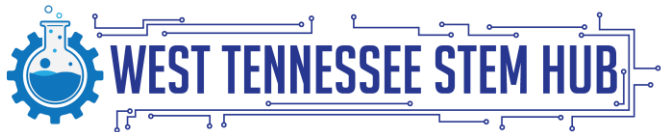


LEARNING RESOURCES: GIANT MAGNETIC ANIMAL CELL

BY: CAMILLE ROBINSON

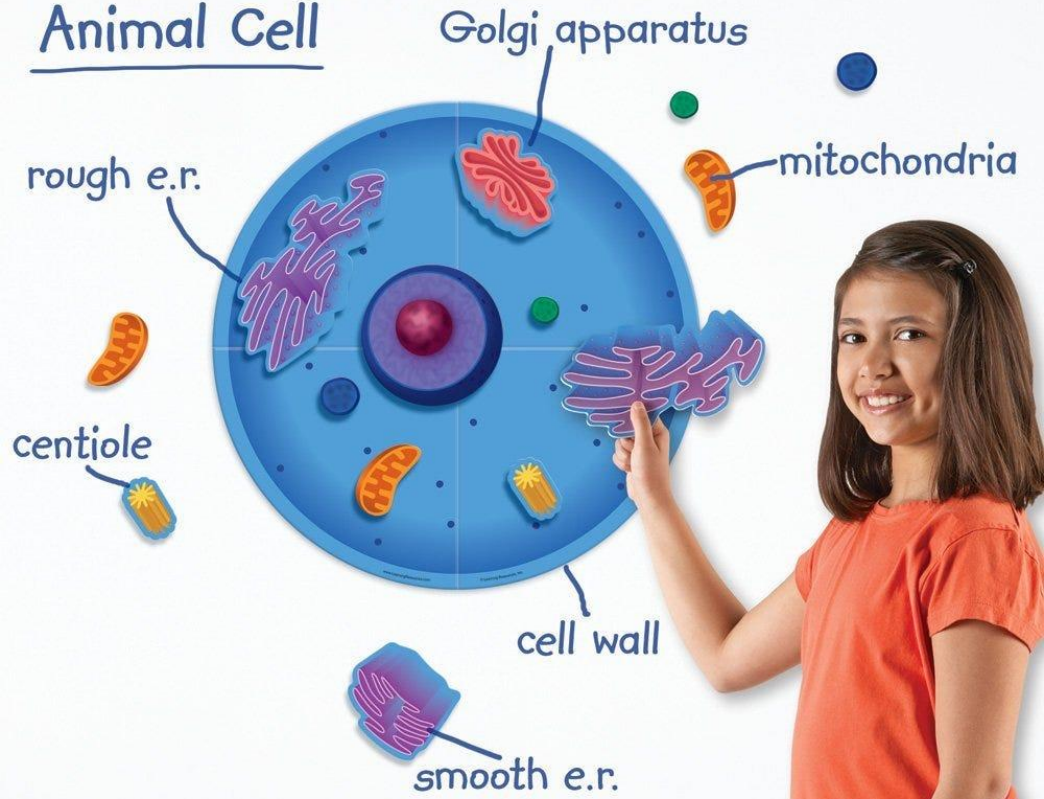


WHAT DOES THIS KIT CONSIST OF?

- For demonstration or student manipulation.
- Includes a 4-piece animal cell, 14 dimensional organelles, and an activity guide with background information about each organelle and reproducible diagram.
- Measures 18 inches.
- Grades 4+



Animal Cell



CONTENT COVERED BY THIS KIT

**Parts of an
Animal Cell**

**Animal Cell
Functions**

**Mitosis
Process**

ANIMAL CELL ORGANELLES

- **Cytoplasm** – All organelles of a cell reside in the cytoplasm.
- **Cell Membrane** - The cell membrane holds all the parts of a cell. Every cell is enclosed by a cell membrane. It controls the passage of materials in and out of the cell.
- **Nucleus** – The nucleus is the controlling center of a cell. It also contains the DNA for the cell.
- **Nucleolus** – Located inside the nucleus, the nucleolus produces RNA in the form of ribosomes.

ANIMAL CELL ORGANELLES

- **Chromatin** – Part of the nucleus that contains most of the DNA of the nucleus.
- **Rough Endoplasmic Reticulum (Rough ER)** - Covered with ribosomes, the rough ER produces protein and transports materials throughout the cell.
- **Smooth Endoplasmic Reticulum (Smooth ER)** - The smooth ER transports materials throughout the cell and produces membrane proteins and digests lipids.
- **Mitochondria** - The main energy source for a cell. The mitochondria converts oxygen and nutrients into energy for the cell to use.

ANIMAL CELL ORGANELLES

- **Vacuole** – Helps with digestion by storing food and waste material.
- **Lysosomes** – Digestion is the main function.
- **Ribosome** – Some ribosomes are attached to the rough ER and they synthesize proteins for the lysosomes.
- **Golgi Apparatus** - Prepares proteins and fats that are created in endoplasmic reticulum for transport to the outside of the cell.
- **Centrioles** – Centrioles divide into two parts during cell division and assist in the cell division process. They are only found in animal cells.

MITOSIS



INTERPHASE



PROPHASE



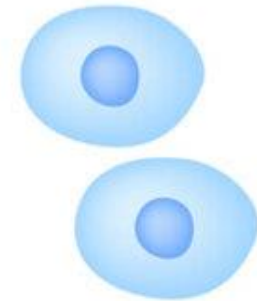
METAPHASE



ANAPHASE



TELOPHASE



MITOSIS
COMPLETED

What is mitosis? -> The process in which a cell reproduces by dividing and becoming two different but identical cells. This process occurs in six stages.

MITOSIS PROCESS

- Prophase – In this phase, the nucleus disappears and twin chromosomes appear that are exact copies of each other.
- Prometaphase – The nuclear membrane disappears completely and the twin chromosomes begin moving.
- Metaphase – The twin chromosomes line up in the middle of the cell.

MITOSIS PROCESS (CONT.)

- Anaphase – The twin chromosomes separate and begin moving to opposite ends of the cell.
- Telophase - A new membrane forms around the two groups of chromosomes.
- Cytokinesis – The cell membrane closes together in the middle of the cell, separates and forms two new cells.

SOURCES

- https://www.learningresources.com/catalog/product/view/ignore_category/1/id/1419/s/giant-magnetic-animal-cell/ (Slide 1-4) (Slide 9-10)
- <https://www.learningresources.com/amfile/file/download/file/1624/product/1419/> (Slide 5-7)
- <https://stock.adobe.com/search?k=mitosis> (Slide 8) (Photo)
- <https://www.yourgenome.org/facts/what-is-mitosis/> (Slide 9)