

Science 9
Biology

Cell Structures Involved in Cell Division
Section 2.2

Review

A) cells are either **eukaryotic** (have a nucleus surrounded by a membrane) or **prokaryotic** (have no nucleus)

B) examples

- i. Eukaryotic: **Plants, animals, fungi and protists (e.g., algae)**
- ii. Prokaryotic: **bacteria**

C) both types of cells undergo **cell division**

**show interactive cell (animal and plant)

http://www.cellsalive.com/cells/cell_model.htm

The Nucleus

The nucleus is the **control center** of the cell

Structures of the Nucleus

- A) nuclear membrane: surrounds the **nucleus**, allowing some materials to pass **into and out** of the nucleus
- B) chromosomes: structures that direct all the **activities** of the cell. Made up of deoxyribonucleic acid (**DNA**) and protein.

C) Nucleolus: site for the production and assembly of **ribosomes**.

Ribosomes and Endoplasmic Reticulum

Ribosomes are tiny organelles that make **proteins** that the cells need in order to function properly.

Ribosomes are either **free** in the cytoplasm or **attached** to endoplasmic reticulum.

Endoplasmic Reticulum (ER) is a series of **tubes** and flattened sacs that **transport** material throughout the cell via canals.

ER with attached ribosomes → **rough ER**

-rough ER transports **proteins** throughout the cell.

ER without attached ribosomes → **smooth ER**

-smooth ER manufactures and transports **fats** in the cell.

Cytoplasm

Cytoplasm contains all the **organelles** in the cell.

Cytoplasm is where most of the cell's **activities** takes place and nutrients are:

a) **absorbed**

b) **transported**

c) **processed**

Microtubules

Tiny tubes that allow **movement** of the organelles within the cell and provide **support** for the cell.

Centrioles

An organelle made up of special **microtubules**.

Centrioles are found in all **animal** cells and are active during cell division because they **organize** the locations of the organelles. They produce spindle fibers, which are microtubules that separate **chromosomes** during cell division.

Assignment

- 1) Comparing cell structures found in plant and animals cells (graphic organizer w/s)
- 2) Label the animal and plant cell diagrams w/s
- 3) Reading check Handout pg. 124 #'s1-7

<https://www.youtube.com/watch?v=URUJD5NEXC8>

Very good video of animal and plant cell structures