

Lesson 2.4: The Cell Cycle

Cell cycle: The sequence of events in the cell from one **division** to the next.

Interphase: A stage in the cell cycle where every **organelle** is copied.

Before the cell divides, the **chromosomes** must also be copied (i.e., replicated). The cell spends approximately **90%** of the time of the cell cycle in interphase.

Summary of interphase:

1. Rapid cell **growth**
2. Duplication of chromosomes (**replication**)
3. More growth and preparation for **cell division**

Sister Chromatids: -The resulting **copies** of chromosomes during **interphase**. Sister chromatids are held together close to the middle by a **centromere**.

Cell Division:

Parent cell: - the cell that undergoes cell division to produce 2 cells (i.e, the **daughter cells**). In unicellular organisms, the 2 new cells are 2 new **organisms**. In multicellular animals the 2 new cells are simply added to the existing **tissue**.

Cell division includes two processes:

1. **Mitosis**: - the process of dividing the nuclear material (i.e., chromosomes)
2. **Cytokinesis**: - the process of dividing the cytoplasm and all the organelles in half.

Note: In plants, the cell does not pinch together, rather a **cell plate** forms in the middle.

- This type of cell division results in genetically identical daughter cells. (i.e., they are **clones**.)

<https://www.youtube.com/watch?v=g7iAVCLZWuM>

<https://www.youtube.com/watch?v=nPG6480RQo0>
(3D mitosis video)

Mitosis Lab

Students will draw a diagram and provide a description of each phase of mitosis on 11 x 17 paper. Students can use page 26-27 from BC Sc 9 text as a reference.