

Mitosis "Flip" Book



Introduction:

Mitosis is a process of cell division which results in the production of two daughter cells from a single parent cell. The daughter cells are identical to one another and to the original parent cell.

In a typical animal cell, mitosis can be divided into four principal stages:

- **Prophase:** The chromatin, diffuse in interphase, condenses into chromosomes. Each chromosome has duplicated and now consists of two sister chromatids. At the end of prophase, the nuclear envelope breaks down into vesicles.
- **Metaphase:** The chromosomes align at the equator and are held in place by microtubules attached to the mitotic spindle and to part of the centromere.
- **Anaphase:** The centromeres divide. Sister chromatids separate and move toward the corresponding poles.
- **Telophase:** Daughter chromosomes arrive at the poles and the microtubules disappear. The condensed chromatin expands and the nuclear envelope reappears. The cytoplasm divides, the cell membrane pinches inward ultimately producing two daughter cells (phase: Cytokinesis).

Objective: Students will create a flip book illustrating the changes to a cell during mitosis.

Materials:

- 3 - 4 sheets of typing paper
- Crayons or colored pencils
- Stapler
- Scissors
- Cell template sheet

Procedure:

1. Starting with a single sheet of typing paper, fold the paper into 8 equal sections
2. Cut the sections apart making sure each section is the same size.
3. Repeat steps 1 & 2 with the other 2 sheets of typing paper.
4. You will need to cut one additional sheet to make a cover sheet for your flip book.
5. Using the numbered mitosis template sheet as a guide, sketch each picture ENLARGED onto a sheet of your flipbook.
6. Use colored pencils or crayons to color chromosomes, centromeres, etc. **BE SURE TO USE THE COLOR KEY ON THIS SHEET (THE SAME COLOR FOR EACH CELL PART ON EACH PAGE).**