Mitosis & Meiosis

The Cell Cycle
Cells reproduce by a process called cell division. The cell cycle is the sequence of stages of growth and division that a cell undergoes. The three stages of the cell cycle include interphase, mitosis, and cytokinesis.

Interphase is the first stage of the cell cycle and the period before cell division. During this phase, the cell matures, copies its DNA, and prepares to divide.

Cytokinesis
During this stage the cell membrane pinches in at the middle of the cell dividing the cell into two separate daughter cells. Each daughter cell gets half of the cell organelles and an identical set of chromosomes.

Telophase
The chromosomes loosen on each side and the nuclear membrane begins to form around the chromatin (strands of DNA).

Anaphase
The spindle fiber splits the mitotic spindle and the chromatids move to opposite sides of the cell.

Preparation for Mitosis
Metaphase
The chromosomes line up along the center of the cell and the spindle fibers attach to each chromosome at the centromere.

Mitosis
The cell membrane breaks apart.

DNA Replication

Cell Growth

Meiosis
During meiosis, a parent cell divides into four sex cells each with half the number of chromosomes. Sex cells of males are called sperm cells and egg cells of females.

Meiosis Punnett Square
A Punnett Square shows all the possible allele combinations in the offspring of two organisms.

Mitotic cell
A cell preparing to undergo division. Notice the dense chromatin.