

Mitosis vs. Meiosis

	Mitosis	Meiosis
Purpose	To distribute genetic material equally; To grow and repair	To produce diversity; For reproduction
Type of Cell?	Somatic cells	Germ cells
How many Cell Divisions?	1	2
Crossing Over?	No	Yes
Final Cell Ploidy?	Diploid (2n)	Haploid (n)
Daughter Cells	Two identical diploid(2n) cells	Four nonidentical haploid(n) cells

Prophase →

- *Duplicated chromosomes condense
- *Homologous chromosomes pair up
- * Crossing over and chiasmata occur (ONLY IN MEIOSIS)

Metaphase →

- *Nuclear membrane breaks down
- *Spindle microtubules are attached to each centromere on opposite poles
- *Paired chromosomes line up at the equator

Anaphase →

- *Sister chromatids are pulled to opposite poles of the cell by spindle fibers
- *Chromosome Disjunction

Telophase →

- *Cell pinches in the middle
- *Chromosomes decondense and new nuclear membranes form
- *Cytokinesis: Daughter cells separated by cytoplasmic membranes

Mitosis

Parent Cell

Meiosis

$2n=4$

