

Asexual reproduction

**Why is it important?**

**Meiosis allows for genetic diversity in offspring**

Sexual reproduction

**Compare and contrast meiosis and mitosis**

Pgamete Vs zygote

	Mitosis	Meiosis
<b>Divisions</b>	One	Two
<b>Independent Assortment</b>	No	Yes (metaphase I)
<b>Synapsis</b>	No	Yes – form bivalents
<b>Crossing Over</b>	No	Yes (prophase I)
<b>Outcome</b>	Two cells	Four cells
<b>Ploidy</b>	Diploid	Haploid
<b>Use</b>	Body cells	Sex cells (gametes)
<b>Genetics</b>	Identical cells	Variation



Haploid vs diploid

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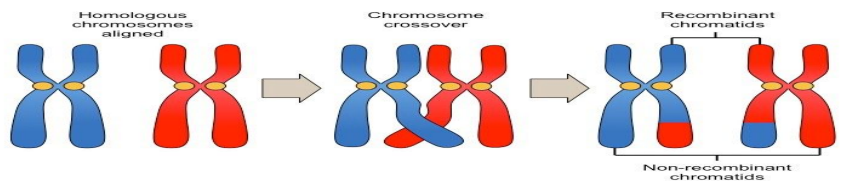
Stages of meiosis

**Asexual reproduction results in genetically identical offspring**

**Sexual reproduction results in genetically different offspring**

Meiosis vs mitosis

**Homologous chromosomes cross-over**



Stages of Meiosis I

Stages of Meiosis II

**1 Prophase I**  
Chromosomes condense. The nuclear envelope breaks down.

**2 Metaphase I**  
Pairs of homologous chromosomes move to the cell's equator.

**3 Anaphase I**  
Homologous chromosomes move to the cell's opposite poles.

**4 Telophase I**  
Chromosomes gather at the poles. The cytoplasm divides.

**5 Prophase II**  
A new spindle forms around the chromosomes.

**6 Metaphase II**  
Chromosomes line up at the equators.

**7 Anaphase II**  
Centromeres divide, and chromatids move to opposite poles.

**8 Telophase II**  
A nuclear envelope forms around each set of chromosomes. The cells divide.

