**NOTES: MEIOSIS**

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| **Mitosis** is the process of cell division that allows an organism to create daughter cells which are genetically **identical** to the parent cell. This is useful for organisms who asexually reproduce, and also useful to all organisms as they grow and repair their tissues. | **Meiosis** is the process of cell division that allows an organism to create daughter cells with half the number of chromosomes (haploid) that are **genetically unique**.  This is useful for organisms who sexually reproduce and need to produce **gametes**, or sex cells, which will combine during reproduction to form a new organism. |



Meiosis creates **genetic diversity** in two ways:

**CROSSING OVER**

* During prophase I
* Homologous pairs “clump” together in tetrads, and **exchange pieces of genetic information** to create unique gene combinations.

**INDEPENDENT ASSORTMENT**

* During metaphase I
* As homologous pairs line up as tetrads, the “side” each chromosome lines up on is random