

MITOSIS AND MEIOSIS VOCABULARY LIST

Anaphase: The mitotic stage that follows metaphase; duplicated chromosomes separate at the centromere and migrate toward the mitotic centers.

Asters: Microtubules and fibers that radiate out from the centrioles.

Asexual Reproduction: Reproduction involving only one parent.

Blastula: A hollow ball of cells formed during the early stages of embryological development. Whitefish blastula cells are used to demonstrate animal mitosis.

Centromere: The part of a chromosome where the chromatids are joined together.

Centriole: In animal cells, a cytoplasmic organelle that organizes the mitotic spindle fibers during cell reproduction.

Chromatid: One of the two strands that make up chromosomes seen in prophase and metaphase that have duplicated their DNA during interphase. During anaphase, chromatids separate to form daughter chromosomes.

Chromatin: The coils of DNA and protein that condense to form chromosomes. Chromatin can be thought of as chromosomes with no distinct shape.

Chromosome: Distinct wormlike structures formed from chromatin during cell reproduction.

Crossing Over: An exchange of chromosomal material between homologous pairs that occurs during prophase one of meiosis.

Cytokinesis: Cytoplasmic division that follows division of the nucleus.

Diploid: Having two of each chromosome. Humans have 23 different chromosomes, yet in each body cell, these chromosomes occur in twos called homologous pairs. For this reason, each body cell possesses a diploid number of 46 chromosomes.

DNA Replication: The process of doubling the DNA that occurs before mitosis.

Germ Cells: The only cells that can undergo meiosis--found in the ovaries of females and the testes of males.

Haploid: The actual number of different types of chromosomes a cell possesses.

Homologous Pairs: In diploid cells, a pair of identical chromosomes is called an homologous pair.

Interphase: The phase of a cell's life cycle between the reproductive stages of mitosis. DNA replication occurs during interphase. Most cells spend about 95% of their life cycles in interphase.

(Continued on Blackline Master 2)

MITOSIS AND MEIOSIS
VOCABULARY LIST
(Continued from Blackline Master 1)

Meiosis: The process that germ cells undergo by which the number of diploid chromosomes is reduced by half. Sperm and egg cells are created by meiosis.

Metaphase: The stage of mitosis where duplicated chromosomes line up along the center of the mitotic spindle.

Microtubules: Tiny tubes that make up most of a cell's "cytoskeleton." Spindle fibers are made up of microtubules.

Mitosis: The duplication and division of the chromosomes and nucleus during cell reproduction.

Mitotic Centers: The centers of mitotic activity of a cell--toward which separated chromosomes migrate.

Oogenesis: The meiotic process that results in the formation of eggs in a female.

Ova: Another word for eggs.

Ovum: One egg.

Polyploid: Having more than a diploid number of chromosomes.

Prophase: The first stage of mitosis when chromosomes form from chromatin and the nuclear membrane is absorbed into the cell.

Reduction Division: Cell division such as occurs in meiosis that results in the production of cells with half the number of chromosomes found in the original parent cells; cell reproduction without DNA replication.

Sexual Reproduction: Reproduction requiring two parents.

Somatic Cells: Body cells. Cells other than germ cells.

Spermatogenesis: The meiotic process that results in the formation of sperm cells in males.

Spindle Fibers: Microtubules visible during cell division that are involved in separating the chromosomes into two separate, yet identical groups.

Synapsis: The pairing of homologous chromosomes during meiosis. Synapsis does not occur during mitosis.

Telophase: The last stage of mitosis when the chromosomes return to the form called chromatin and the nuclear membrane reforms. Telophase usually happens simultaneously with cytokinesis.