Biology Key Terms

Cell Reproduction

Cell division – the organized process of creating two new cells; it consists of both Mitosis or meiosis followed by cytokinesis.

Cell cycle – timeline of events that occurs during the lifetime of a cell; it involves both interphase and cell division.

Mitosis - when the nucleus of a cell divides into two identical nuclei.

Cytokinesis - when the rest of the cell divides to form two new daughter cells.

Chromatin - form of DNA inside the nucleus that appears as disorganized, long strands.

Chromosomes - form of tightly coiled, shortened and thickened DNA; appears prior to DNA replication and therefore mitosis. Can refer to a duplicated chromosome or a sister chromatid that has been separated from its partner sister chromatid.

Sister chromatids - the two sides of the "X" formed by replicated chromosomes; connected by centromere. Together they can be called a duplicated chromosome.

Centromere - a central protein bundle that connects sister chromatids.

Karyotype – a picture of the chromosomes within an organism's body cells, arranged by homologous pairs. It is used as a way to determine sex and diagnose some disorders.

Autosomes - all chromosomes except for the sex chromosomes.

Sex Chromosomes - In many species, such as humans, the chromosomes received from parents determine the sex of a child.

The human's 23rd chromosome pair determines whether the child is a male (XY) or female (XX.)

Homologous pairs - matching chromosomes that each came from one parent (father, mother); homologs code for different versions of the same genes.

Gene - a length of DNA that codes for a protein/trait.

Alleles - two alternate forms of each gene present on a specific chromosome in an organism (such as blue eyes or brown eyes). Since you have two copies of each chromosome, you have two alleles for each gene.

Tumor - an abnormal mass of tissue caused by excessive cell growth

Mutation - a change in the DNA code of an organism

Spindle fibers - thin protein filaments that are constructed by the centrioles in prophase; during cell division (mitosis or meiosis) they assist in guiding the chromosomes to separate properly.

Cell plate - a structure which eventually forms a cell wall between daughter cells during cytokinesis (occurs in plants or other organisms with a cell wall.)

Cleavage furrow - the indentation, or pinched area of the cell surface that begins cytokinesis; not seen in organisms with a cell wall.

Meiosis - the division of a nucleus that results in four nuclei with one half the original number of chromosomes; used to produce gametes.

Diploid number - the total number of chromosomes in normal body cells; two matching homologs of each kind.

Haploid number - one half the total number of chromosomes in a normal body cell; one of each kind of homolog.

Tetrad - homologous chromosomes from each parent pair up to form two attached sets of chromatids ("tetra" = four, for the four chromatids)

Crossing over - each chromatid may exchange a part of itself with its homolog as it crosses over the other during late prophase I or early metaphase I of meiosis.
Genetic recombinations - different ways chromosomes can provide variation in the species depending on which chromosomes are inherited and whether or not crossing over occurs.
Gametogenesis - production of gametes by meiosis (oogenesis and spermatogenesis are the two types)
Oogenesis - meiosis that produces eggs (ova)
Ovum - haploid, female reproductive cell, also called an egg.
Spermatogenesis - meiosis that produces sperm.
Sperm - haploid, male reproductive sex cell.
Somatic cell - body cell (liver, skin, stomach, etc.)
Gametes, or sex cells - sperm and egg cells.