

KEY TERMS

Asexual Reproduction: One parent always passes on a duplicate of all of its genes to offspring. Rare mutations aside, offspring can only be genetically identical copies, or clones, of the parent.

Sexual Reproductions: 2 parents, each with 2 genes for nearly every trait pass on 1 of each gene to offspring by way of meiosis, gamete formation, and fertilization. Thus the first cell of new individual inherits 2 genes for every trait – one from each parent.

Genes: Specific portions of DNA module that contain the inherited instructions for producing or influencing a trait in offspring.

Allele: One of two or more alternative forms of a gene at a given locus on a chromosome.

As a result of past mutations, different individuals of a species might be carrying different molecular forms of a gene that “say” slightly different things about how a trait will be expressed in offspring.

Diploid (2n): 2 chromosomes of each type in a cell. The two are homologous chromosomes. The 2 homologues of a pair resemble each other in length, shape, and which genes they carry.

Haploid (n): Having only 1 of each pair of homologous chromosomes that were present in the nucleus of a parent cell, an outcome of meiosis.

Sister Chromatids: When a chromosome has undergone replication prior to nuclear division it consists of 2 DNA molecules and associated proteins.

Crossing Over: During Prophase I of meiosis, an event in which nonsister chromatids of a pair of homologous chromosomes break at one or more sites along their length and exchange corresponding segments at the breakage points.

* New combinations of alleles replace old ones in a chromosome

Homologous Chromosomes: Two chromosomes that are identical. They have the same length, the same centromere location, and the same genes – and they line up with each other during meiosis.