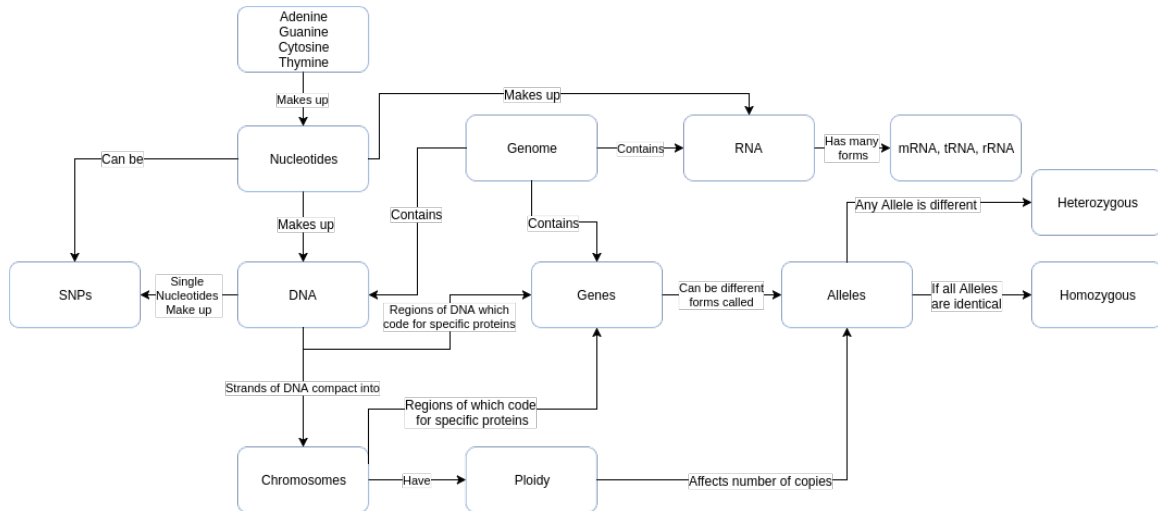


# Genetics Dictionary

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## 1 QTL

- Quantitative Trait Locus
- See [./QTL.org](#)

## 2 Phenotype

- The physical manifestation of a trait

## 3 Genotype

- The genetic makeup of an individual organism

## 4 Nucleotide

- Building blocks of nucleic acids
- Basis of constructing DNA

## 5 SNPs

- Single\*nucleotide polymorphism
- Is a region of DNA which varies
- i.e. C\*G changing to a T\*A in one specific place
- Can be found through the PCR process (amongst others)

## 6 DNA

- Deoxyribonucleic acid
- Is a molecule that carries all genetic instructions of a living organism

## 7 Chromosome

- is a DNA molecule that has been packaged into thread-like structures
- Each chromosome is made up of DNA tightly coiled many times around proteins called histones
- Is visible under microscope when cells are dividing.
- Linear arrangements of condensed DNA

## 8 Ploidy

- The number of sets of chromosomes in a cells
- The possible number of alleles for autosomal and pseudoautosomal genes

## 9 Gene

- A region of DNA
- Made up of nucleotides
- Sometimes called locus of DNA
- Is the molecular unit of heredity

## 10 Genome

- Encompasses DNA, RNA and mitochondria/chloroplasts of an organism.

## 11 Homozygous

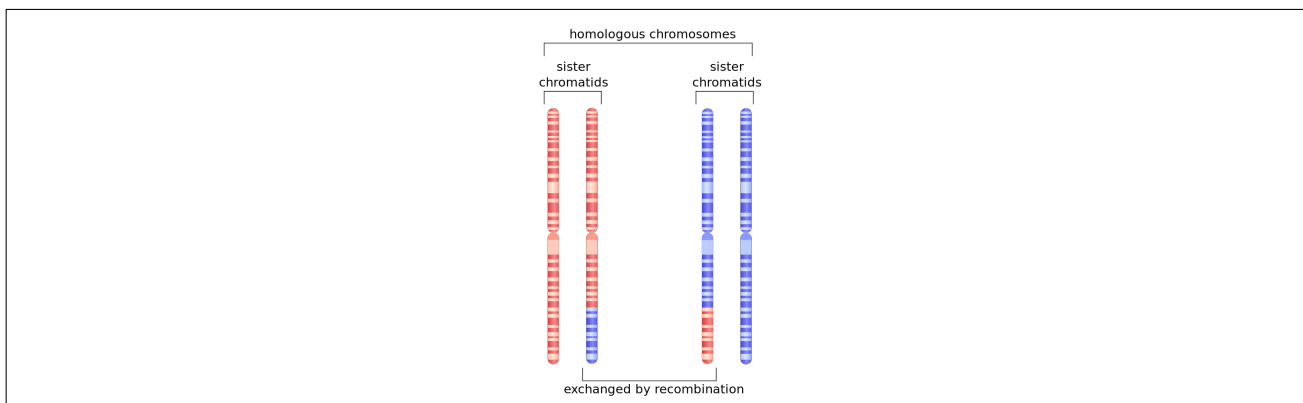
- An gene is said to be homozygous when identical alleles of the gene are present on all chromosomes
- Homozygous\*dominant for a trait carries multiple copies for the dominant trait

## 12 Heterozygous

- A gene is said to be heterozygous when at a gene locus there is two different alleles (copies of the same gene)

## 13 Homologous Chromosomes

- Are the set made from both parents during meiosis
- Homologs have the same genes in the same loci where they provide points along each chromosome
- They enable a pair of chromosomes to align correctly before separating during meiosis
- Fig. 1 Illustrates this process



**Figure 1:** During the process of meiosis, homologous chromosomes can recombine and produce new combinations of genes in the daughter cells.

## 14 Recombination

- Is a process by which pieces of DNA are broken and recombined to produce new combinations of alleles
- In eukaryotic cells, this typically happens during meiosis
- Genes that are located further apart on the same chromosome have a greater chance of undergoing recombination

## 15 Meiosis

- Is a form of cell division that produces gametes
- During the first phase of meiosis, the homologous pairs of parental chromosomes can overlap and temporarily fuse, causing a crossover

- 16 Gametes
- 17 Backcross
- 18 Alleles
- 19 Chromosomes
- 20 Recombination
- 21 Progeny
- 22 Transcription
- 23 Candidate gene
- 24 Heritability