

DNA VOCABULARY

Admixture- ethnic makeup.

Allele- genetic variation caused by mutation.

Autosomes- chromosomes unrelated to sex or gender (chromosomes 1-22).

Cell- basic unit of all organism.

Centimorgans- a unit of measurement for DNA. It tells you how much DNA you share with another match. In general, the more DNA you share with a match, the higher the cM number will be and the more closely related you are.

Chromosome- threadlike bodies that carry genes in a linear order. Humans have 23 pairs designated 1-22 in order of decreasing size. The 23rd one determines the sex of the person- X for female and Y for male.

Chromosome Mapping-

Deletion- takes place when a base pair is removed from the sequence.

DNA- (deoxyribonucleic acid) is the cell's genetic material and the main component of chromosomes which are found in a cell's nucleus and mitochondria. Shaped like a double-stranded helix, it looks like a coiled ladder. The sides consist of alternating phosphates and deoxyribose units and the rungs of the purine and pyrimidine bases of adenine, guanine, cytosine, and thymine.

Endogamy- the practice of marrying within a specific social group, caste or ethnic group.

Ethnicity- relating to or characteristic of a social group that shares a common and distinctive race, culture, religion, language.

Gene- the basic physical unit of heredity found in DNA. There are over 20,000 genes in the DNA of each person.

Genetic Marker- a gene or DNA sequence with a known location on a chromosome that can be used to identify individuals.

Genome- full set of chromosomes; a collection of all of our genes.

Genotype- information found in two alleles (gene variations), which is responsible for a particular trait. It is a total of genes transmitted from parent to offspring. Someone with *blood type A* must have at least one copy of the *A allele*, but they could have two copies: genotype *AA* or *AO*.

Haplotype- a combination of alleles (closely linked DNA sequences) on one chromosome that are often inherited together. (Family Clan) There are 4 main groupings: African, European, Asian and Native American and each share a common ancestor on the patriline or matriline. Haplogroups are assigned letters of the alphabet and refinements consist of additional number and letter combinations.

Heredity- Transmission of genetic characters from parent to offspring, creating a similar being, but with variations.

Insertion- A base pair is added to the sequence.

Markers- junk DNA filling space between the actual genes.

Mitochondria- a small spherical body in the cytoplasm of most cells responsible for cell metabolism as it converts food into energy.

mtDNA- genetic material in the mitochondria and passed down from females to her children. Sons cannot pass down their mother's mtDNA.

MRCA- Most Recent Common Ancestor

Mutation- an inheritable change in a gene or a chromosome through rearrangement, loss (deletion) or gain (insertion) of genetic material.

Phenotype- the physical expression or characteristics of that trait or genotype. Examples are blood type, sound of voice, shoe size, height, hair or eye color, certain diseases. (Sixteen genes are responsible for eye color).

Sequence-

SNP- single nucleotide polymorphism- define haplogroups which reach much further back in time. "Once in the lifetime of mankind." A genealogical DNA test might test about 700,000 SNPs, which are located at specific points in the genome.

STR- a short tandem repeat- useful genealogically to match with a recent timeframe of 500 years or so.

Subclade- a subgroup of a haplogroup.