

Glossary

Allele – one of a number of different forms of the same gene for a specific trait

Amniocentesis – prenatal diagnostic technique that requires the removal of a small amount of fluid from the sac surrounding the embryo

Anticodon – a set of three tRNA nucleotides that binds to the codon

Chromosome – structure in the cell that contains the genetic information that is passed on from one generation of cells to the next. Made of DNA and protein

Codon – a set of three mRNA nucleotides that codes for an amino acid or signals the end of an amino acid sequence

DNA – deoxyribonucleic acid. A chain of nucleic acid molecules that contains your genetic information

DNA fingerprinting – technique for identifying individuals, generally using repeated sequences in the human genome that produce a pattern of bands that is unique for every individual

Double helix – term used to describe the structure of DNA; two strands that are coiled

Gamete – specialized reproductive cell involved in sexual reproduction. They have one half the total number of chromosomes as the organism's normal body cells.

Gene – section of DNA that codes for a trait

Gene Therapy – an approach to treat, cure, or ultimately prevent disease by changing the makeup of a person's DNA

Genetic Counselor – health professional academically and clinically prepared to provide genetic services to individuals and families seeking information about the occurrence, or risk of occurrence, of a genetic condition or birth defect

Genome – all the genes that an organism possesses

Genotype – genetic makeup of an organism

Gregor Mendel – Austrian monk who conducted the first experiments on heredity using pea plants, discovering that parents pass on specific traits to offspring by ways of “factors” as Mendel called them

Heredity – the passing of traits from parents to offspring

Heterozygous – an individual having two alleles for a trait that are different

Hitchhiker's Thumb – a recessive trait in humans where the end joint of the thumb can be bent at an angle of at least 45 degrees

Meiosis – process that produces gamete; cells with half the number of chromosomes as the organism's normal body cells

mRNA – messenger ribonucleic acid or messenger RNA. It carries the code from the DNA to the ribosome where the sequence is decoded into a protein

Nitrogen Base – component of a nucleotide that can bind to other nitrogen bases through a hydrogen bond

Nucleic Acid – large, complex organic molecules composed of carbon, oxygen, hydrogen, nitrogen, and phosphorus atoms. A chain of nucleotides.

Nucleotide – building block of a nucleic acid; composed of a sugar, phosphate, and nitrogen base

Phenotype – physical appearance of an organism

Probe – A radioactive strand of DNA often used to find particular sequences in a Southern Blot

Replication – the process by which a second copy of DNA is made using the first as a template

RNA – ribonucleic acid. A nucleic acid made of a single chain of nucleotides that helps carry out protein synthesis

Southern Blot – a DNA technology that uses a radioactive probe to match with specific DNA fragments

Transcription – the process by which the DNA code is copied onto mRNA

Transgenic – an organism that contains foreign genes

Translation – the process by which the mRNA code is converted to a sequence of amino acids (a protein)

tRNA – transfer RNA; molecule that binds to an mRNA codon and brings in the appropriate amino acid for that codon

Tongue Roller – a dominant trait in humans where individuals can roll their tongues into a tube-like shape

Widow's Peak – a dominant trait in humans resulting in a pointed hairline