



## Vocabulary: DNA Analysis



### Vocabulary

- Allele – one of two or more forms that a gene could take.
- Codon – a set of three nucleotides that codes for an amino acid or signifies a start signal or stop signal.
  - Sets of codons code for proteins, which in turn determine an organism's appearance and other traits.
- DNA – material in the cell that contains genetic information.
  - DNA stands for *deoxyribonucleic acid*.
  - The DNA molecule has the shape of a double helix, or twisted ladder. The sides are composed of a sugar (deoxyribose) and phosphate groups. The “rungs” of the ladder are composed of pairs of *nitrogenous bases*.
- DNA sequence – the order of *nitrogenous bases* in a segment of DNA.
  - In the *DNA Analysis* Gizmo, the partial sequence shown represents the presence or absence of a single nitrogenous base.
- Gene – a segment of DNA that determines or helps to determine a trait.
  - Most genes give instructions for building a particular protein.
  - Many traits are determined by more than one gene.
- Genotype – the genetic makeup of an organism.
- Identical twins – siblings that share a genotype.
  - In humans, identical twins typically occur when a fertilized egg divides separates so that it develops into two separate individuals.
- Nitrogenous base – a component of DNA that forms the “rungs” in the DNA structure.
  - There are four nitrogenous bases in DNA: adenine, thymine, cytosine, and guanine.
  - Each “rung” of DNA is composed of a bonded pair of nitrogenous bases. Adenine bonds to thymine while cytosine bonds to guanine.
- Phenotype – the physical appearance of an organism.
- Trait – a characteristic of an organism.
  - Examples of traits include skin color, eye color, hair, allergies, and many others.

