

Name: _____

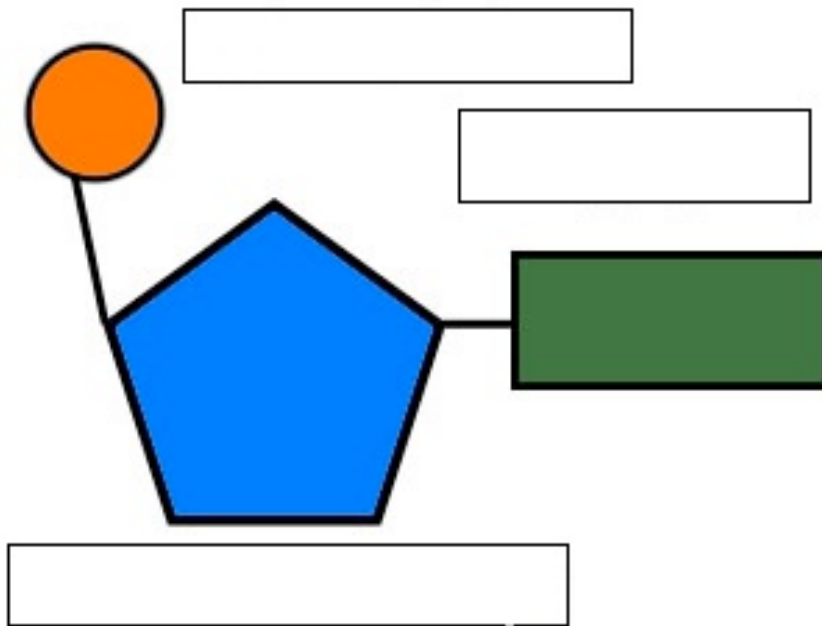
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DNA Structure Notes

Franklin, Watson, and Crick significantly changed the mystery of DNA by discovering the double helix structure and creating a model of DNA that has held up throughout the years. This discovery of the structure of DNA was important because it explained how DNA could serve as _____ (function determines structure).

Structure of Nucleotide

Each nucleotide has three parts: a phosphate group, a sugar molecule, and a nitrogen base. In DNA, the sugar molecule in the nucleotides is called _____. The sugar (deoxyribose) molecule and phosphate group are the same for each nucleotide, but the nitrogen bases may be any of four different kinds. There are four options for the nitrogen base: _____ (A), cytosine (c), _____ (T), and guanine (G). Adenine (A) and guanine (G) are classified as _____. Purines are bulky and contain a double-ring carbon and nitrogen. Cytosine (C) and thymine (T) are classified as _____. Pyrimidines are smaller and contain a single ring of carbon and nitrogen.



There are 4 bases in DNA and RNA

	Pyrimidines =		Purines =		Sugar
DNA	C =	T =	G =	A =	

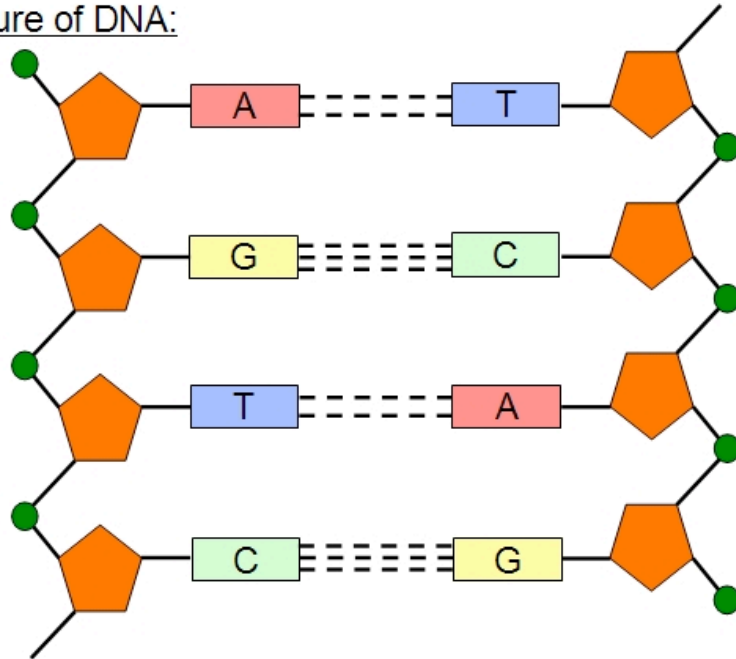
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Structure of DNA

DNA is arranged in a _____ structure (two strands twisted together) that resembles a winding staircase or ladder. The sides of the ladder are made of the _____ group and _____ molecules strung together. The rungs of the ladder are made up of two nitrogen bases paired together. This double helix structure is held together by weak _____ bonds between the pairs of bases.

Structure of DNA:



Function of DNA

DNA is an important macromolecule in all living organisms. Each organism has its own DNA that is _____ to the species to which it belongs. For example, all dogs have the same characteristic DNA. The purpose of DNA is to provide the _____ to make proteins through the process of protein synthesis. This is reflected in the Central Dogma Theory.

Central Dogma Theory



The Central Dogma Theory states that the information in DNA is transferred to an intermediate nucleic acid called _____. The RNA carries that information to the ribosomes to make _____.