**DNA as the carrier of genetic information**

DNA contains the genetic instructions specifying the biological development of all cellular forms of life and many viruses. DNA acts as genetic material and used to store the genetic information of an organic life form. DNA encodes the sequence of the amino acid residues in proteins using the genetic code, a triplet code of nucleotides. For all currently known living organisms, the genetic material is almost exclusively DNA. some viruses use RNA as their genetic material.

The first genetic material is generally believed to have been initially manifested by self replicating RNA molecules floating on bodies of water. This hypothetical period of evolution of cellular life is known as the RNA world. This hypothesis is based on the RNA’s ability to act both as genetic material and as a catalyst, known as ribozyme or ribosome. However, once proteins, which can form enzymes, came into existence, a more stable molecule DNA became the dominant genetic material, a situation continued today. Not only does DNA’s double-stranded nature allow for correction of mutations but RNA is inherently unstable. Modern cells use RNA mainly for the building of proteins from DNA instructions, in the form of messenger RNA, ribosomal RNA, and transfer RNA.