The DNA (deoxyribose nucleic acid) is an essential component of life. Within the twisted strands comprising of nucleotides, the DNA contains a unique genetic code which forms the basic blueprint of a living being. The nucleotides comprise of a sugar attached to a phosphate group and a base. The sugar and phosphate group chain form the backbone of a DNA molecule. These nucleotides, arranged serially (sugar of one nucleotide bonding covalently with the phosphate of another) form one of the two strands of the DNA. The bases are either Adenine (A), Guanine (G), Cytosine(C) or Thymine (T). Bases A and T complement each other, while G and C complement each other.   
To join the two different strands, the complement bases in one strand, attach to their complement bases with a strong Hydrogen bonding. The hydrogen bonding occurs due to the presence of polarized Oxygen ion in one base, and either polarized Nitrogen or Hydrogen in the other base.

This bonding results in a strong bonding between the two strands of a DNA, and causes the DNA to have a double helix shape.

When DNA replicates, these bonds are essential as they break up, giving separate DNA strands away. Now, it is possible for nucleotides with complementing bases to approach the existing un-winded strands and form new DNA molecules by forming hydrogen bonds with the complementing base.