

**UNIT #1: CELL CHEMISTRY
(SECTION 2: DNA STRUCTURE)**

DNA MODEL

In the previous set of notes, you observed that a DNA molecule looks a bit like a ladder. Two strands run side by side. The bases make up the “rungs” of the ladder.

There is complementary base pairing. In other words the adenine (A) on one strand always faces a Thymine (T) on the opposite strand. Likewise, Guanine (G) always faces a Cytosine (C).

The two strands are held together by the hydrogen bonds that form between the complementary bases. Dotted lines were used to represent these hydrogen bonds.

Within each strand, the sugars (S), phosphates (P) and bases are all held together by strong covalent bonds. Covalent bonds are drawn as solid lines.

The diagram in the notes only shows a very short section of a DNA molecule. This section is only six base pairs long. Complete DNA molecules usually contain millions of base pairs.

The model that you will make shall be twelve base pairs long. The gene strand will have this order of bases, running from top to bottom:

TAC AGG CGG ATT

You will make this strand along with its complementary (facing) strand. Pay careful attention to the details, in particular how the bases attach to the sugars, and the arrangement of the bonds between the parts.

Online students can download all of the required parts. They only need to find a sheet of paper or cardboard, upon which to attach these parts.

On the next page, you will find an example of a very good DNA model.

