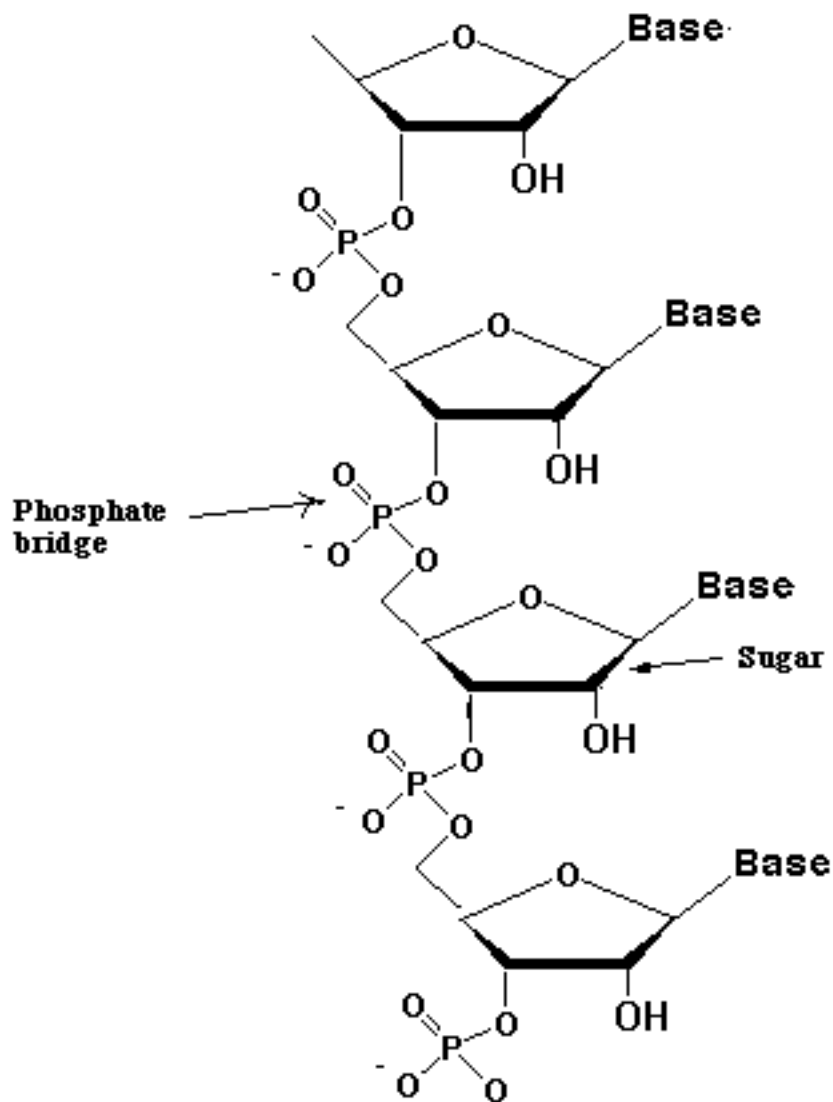


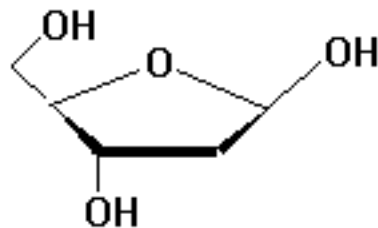
Schematic Representation of RNA



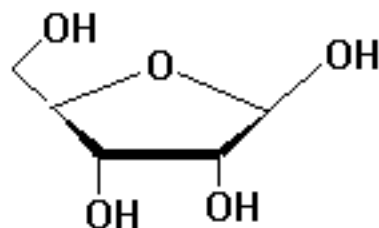
Nucleic Acids have three Components

1. Sugars
2. Phosphate Bridges linking the sugars
3. Bases attached to the sugars

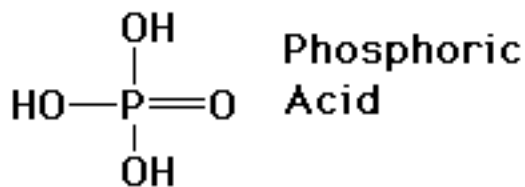
Sugars associated with nucleic acids



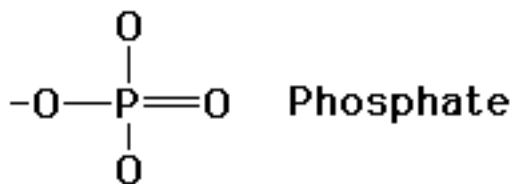
Deoxyribose (in DNA)



Ribose (in RNA)

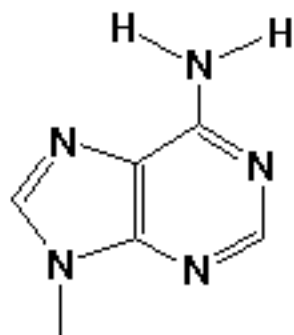


Phosphoric
Acid

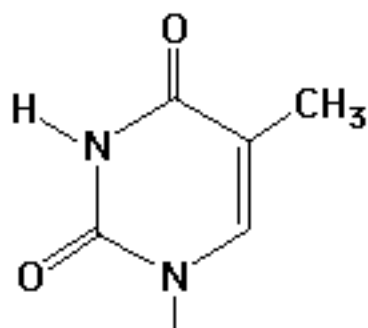


Phosphate

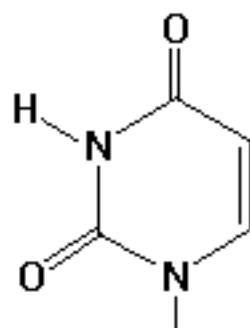
Nucleic acid bases



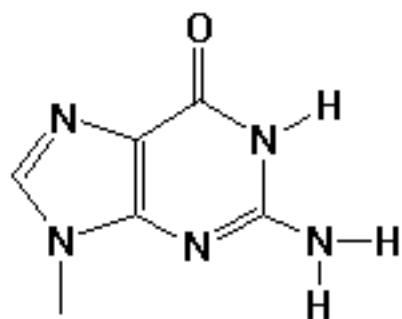
Adenine



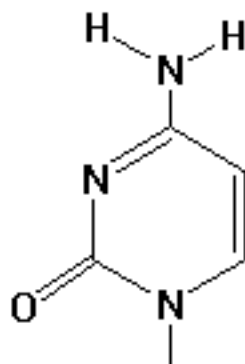
Thymine



Uracil

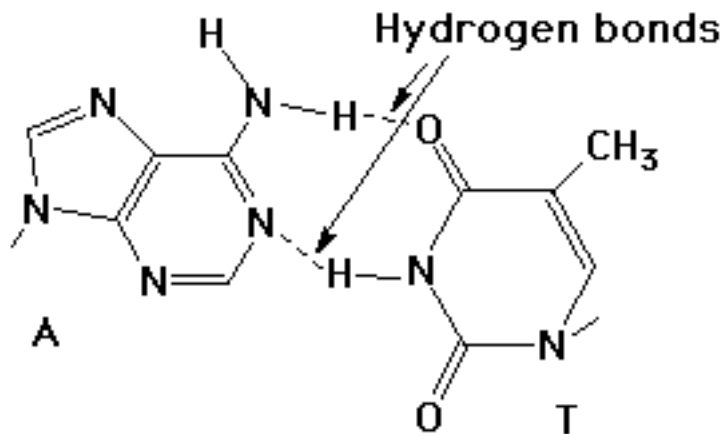


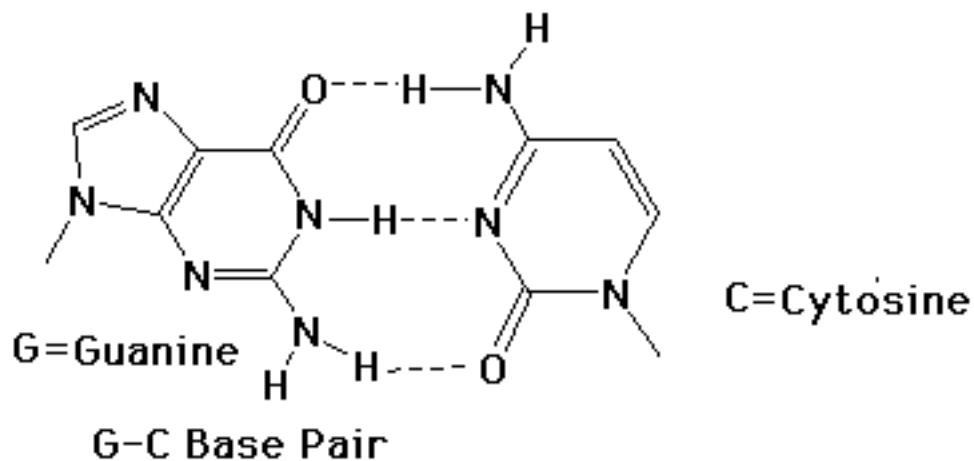
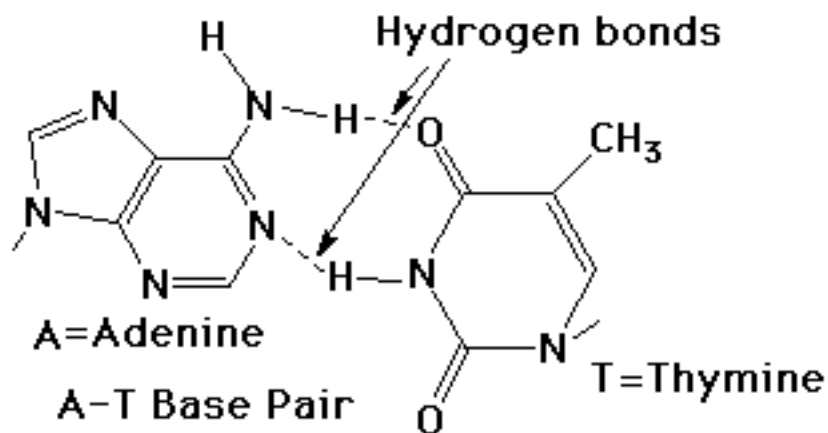
Guanine

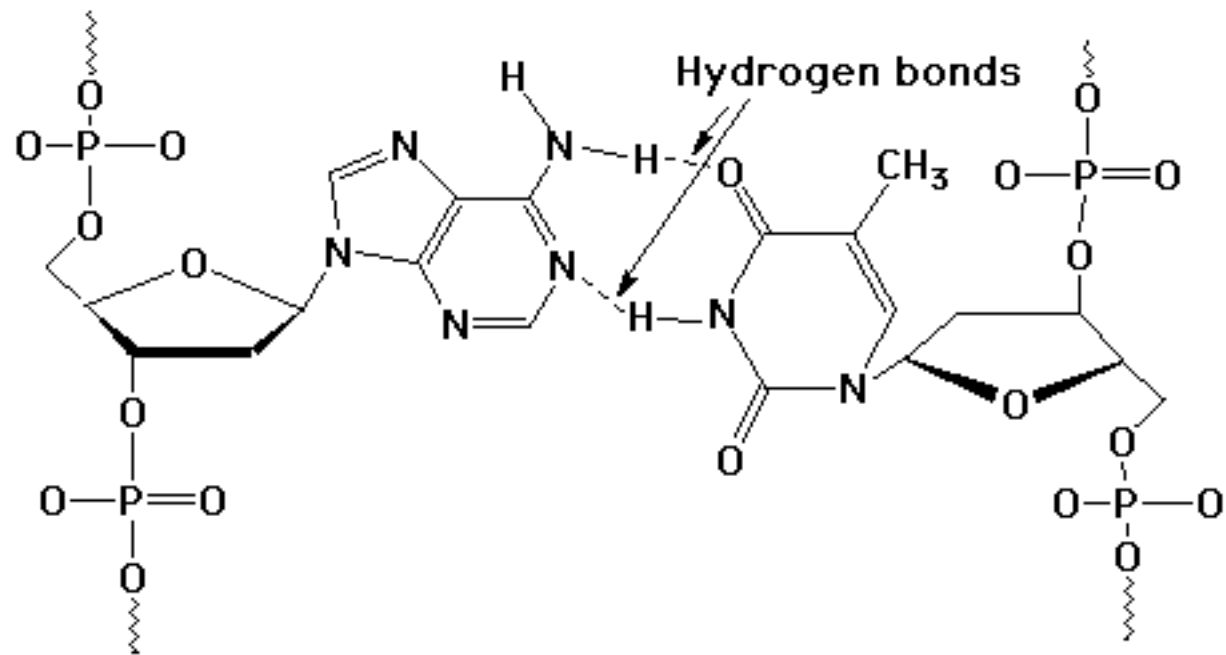


Cytosine

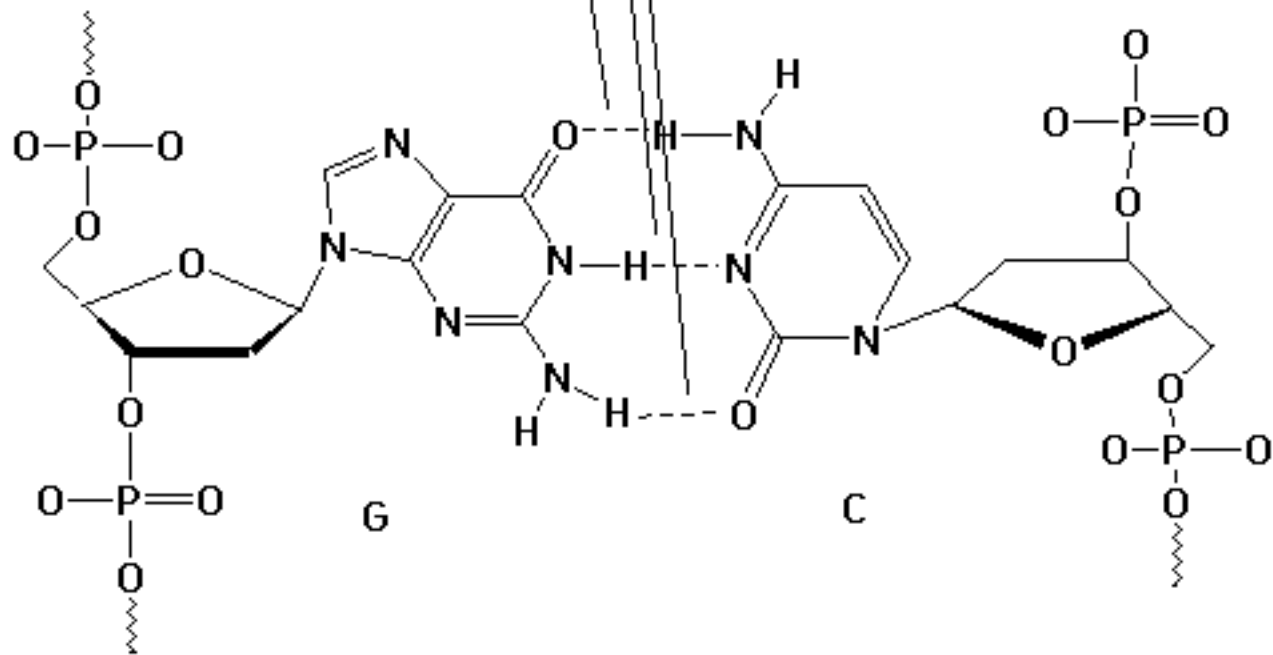
A-T Base Pair

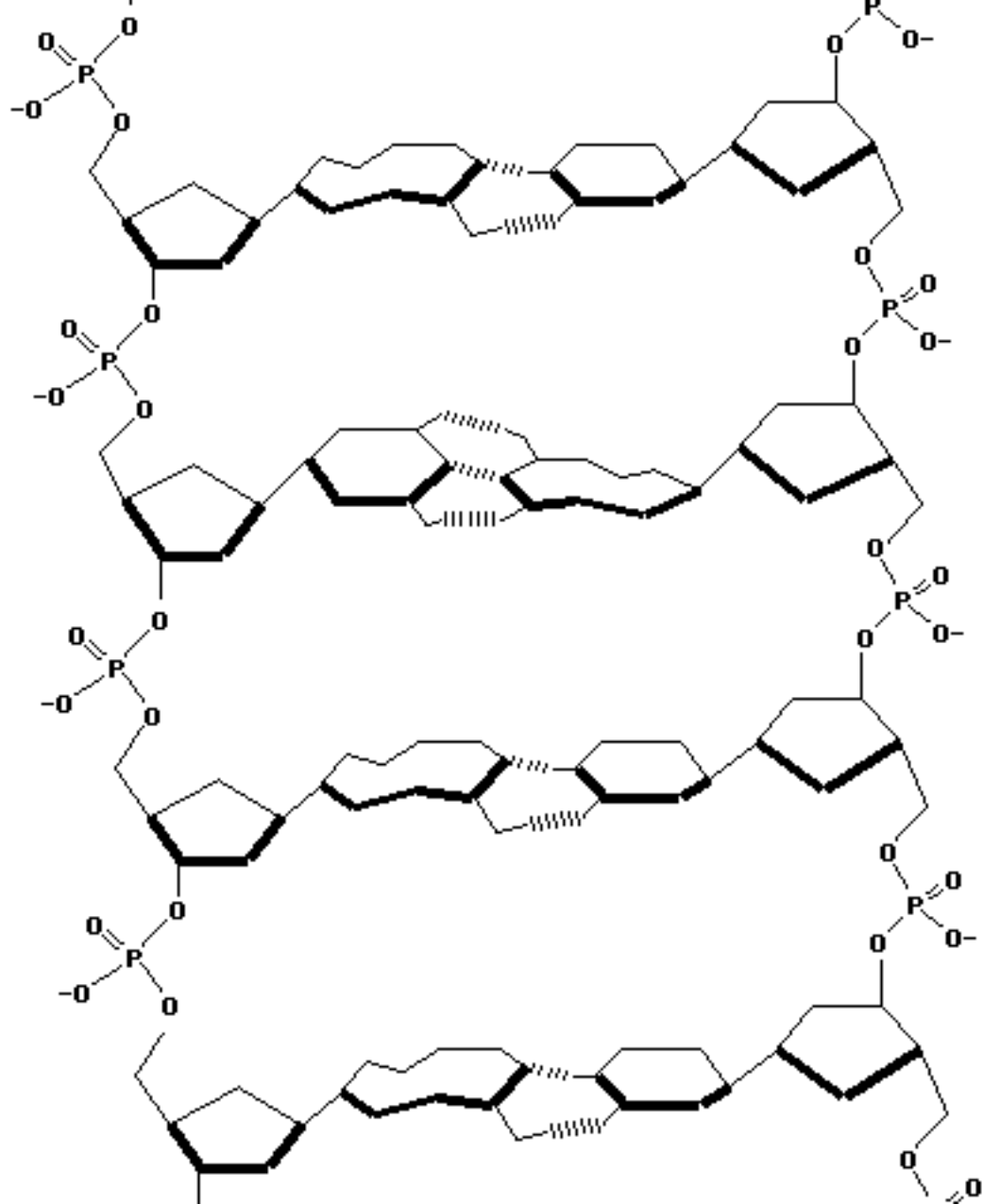




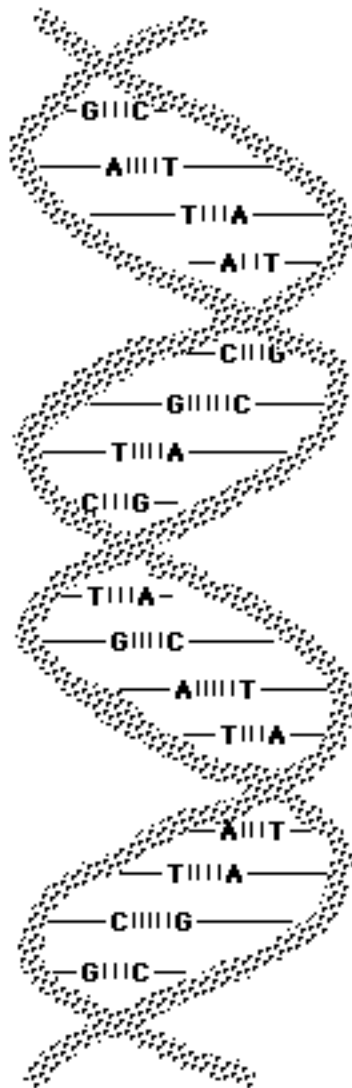


Hydrogen
Bonds





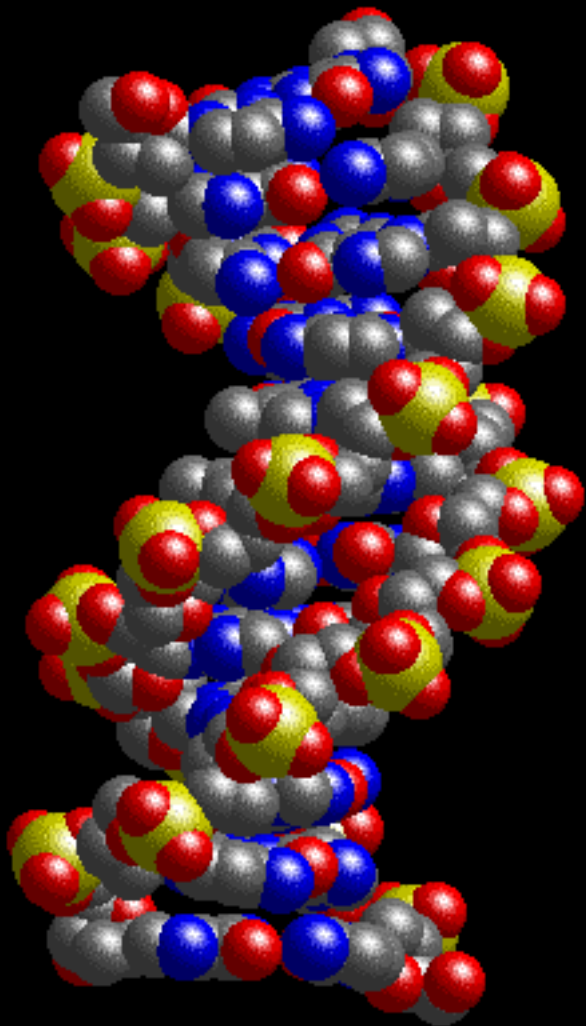
The Double Helix



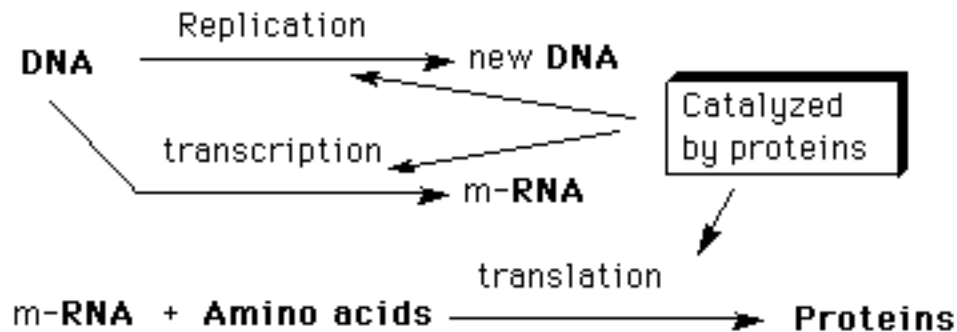
In DNA:

G = C and A = T

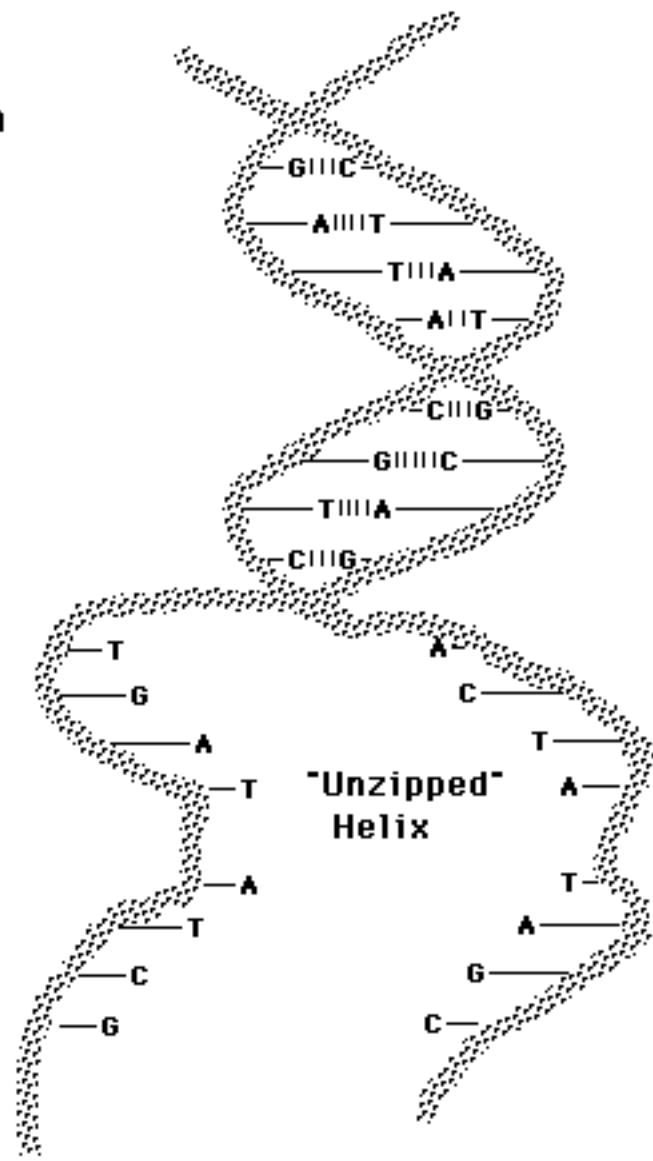




The central dogma of Molecular biology



DNA Replication

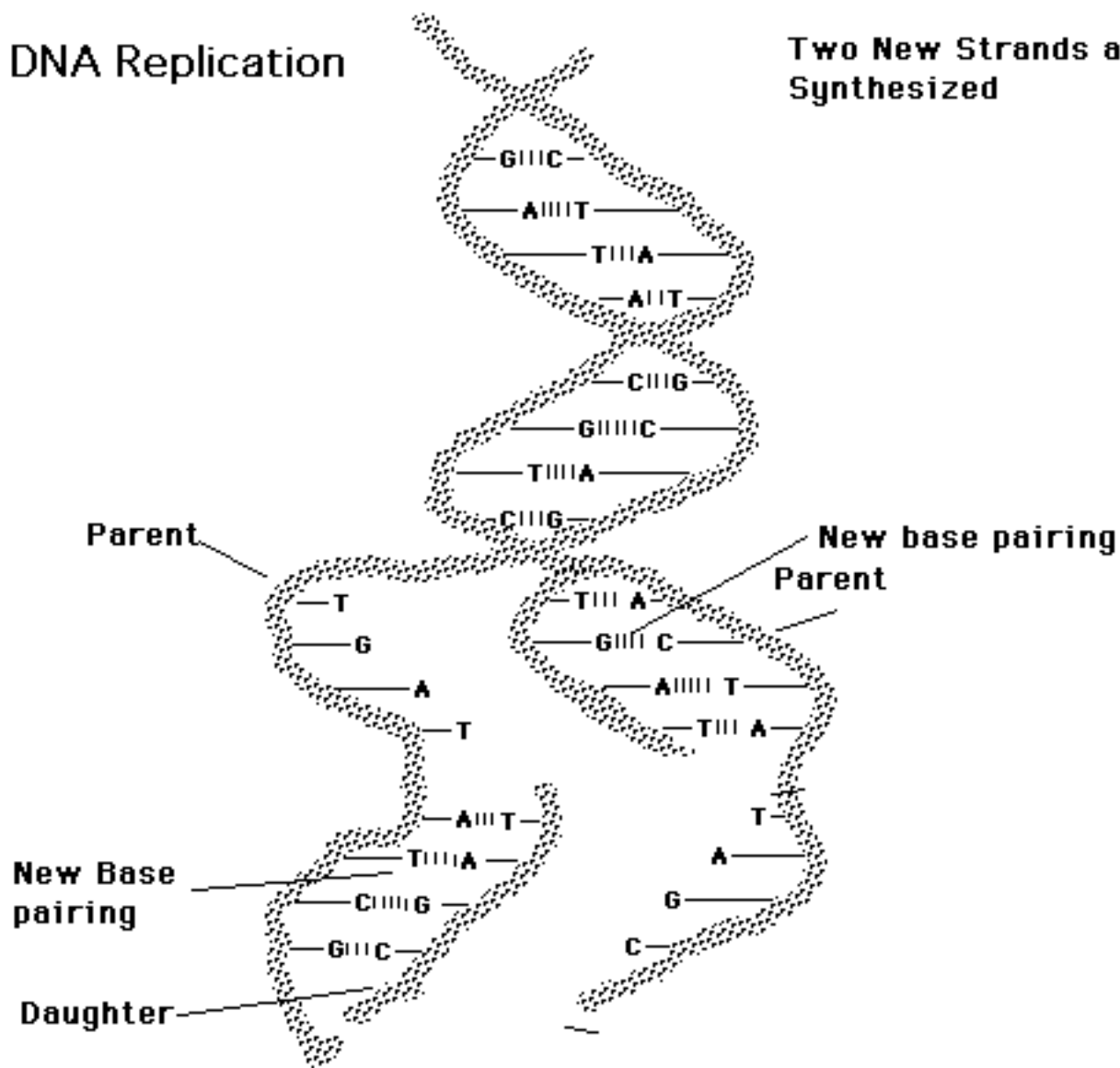


Complex process catalysed by
many enzymes



DNA Replication

Two New Strands are Synthesized



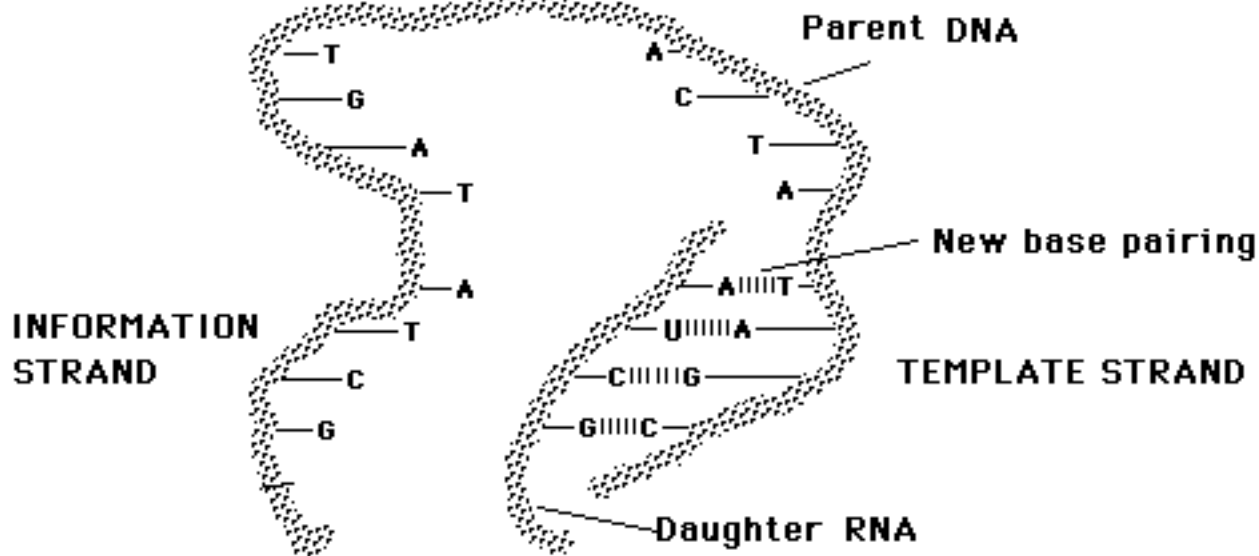
Three types of RNA

1. Messenger RNA (m-RNA)
2. Transfer RNA (t-RNA)
3. Ribosomal RNA (r-RNA)

mRNA Synthesis

Transcription

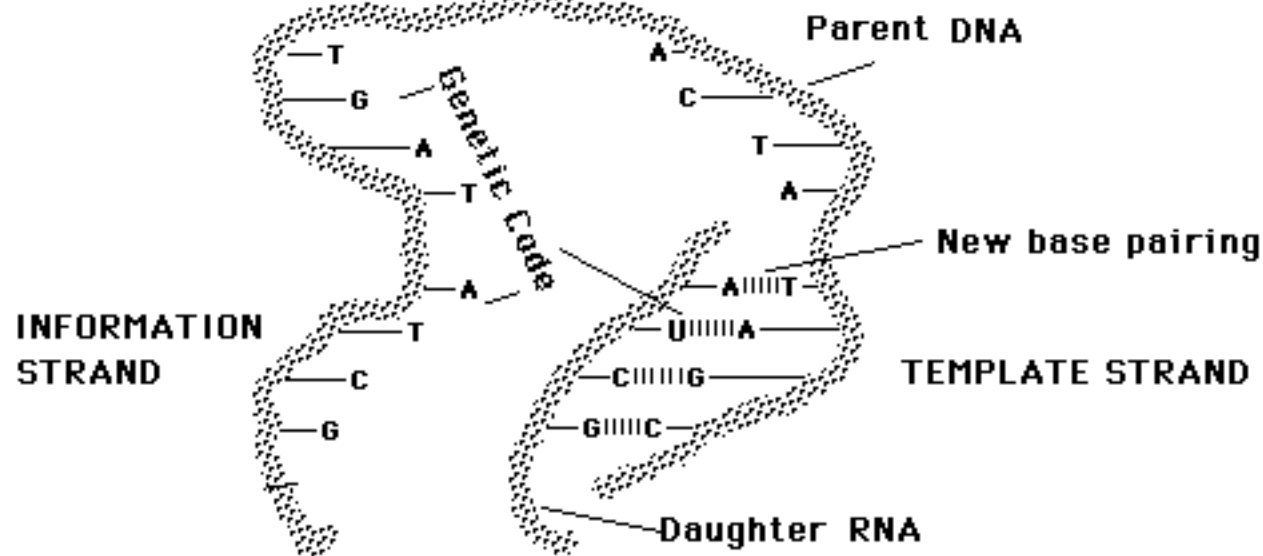
One Strand is Synthesized



mRNA Synthesis

Transcription

**One Strand is
Synthesized**



The genetic code is a triplet code

Triplets of bases specify an amino acid

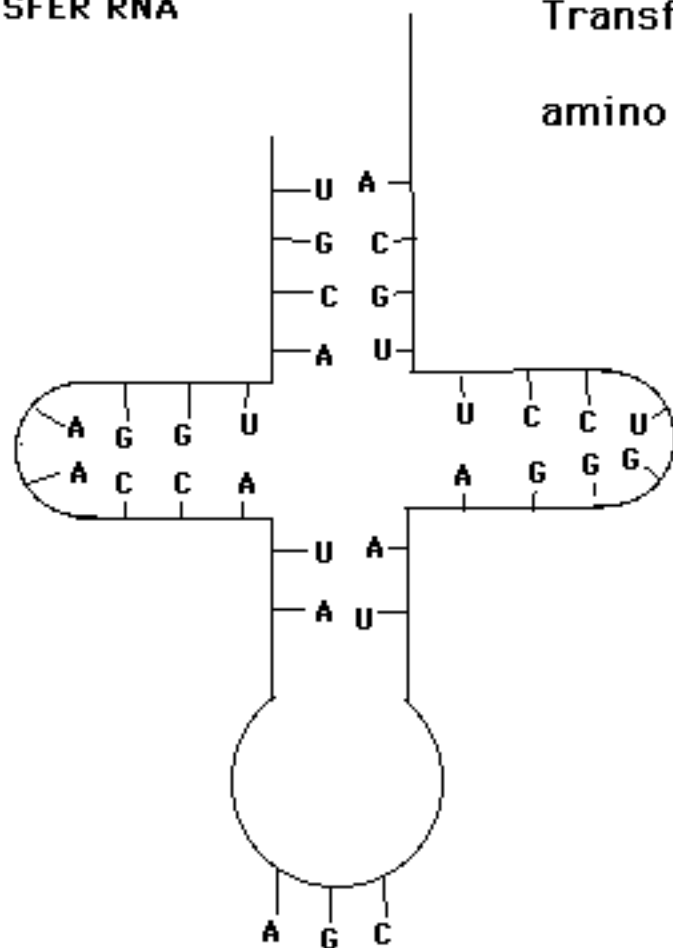
These triplets are called codons

The genetic code is expressed in terms
of the mRNA bases:

For Example UUU codes for the amino acid
phenylalanine

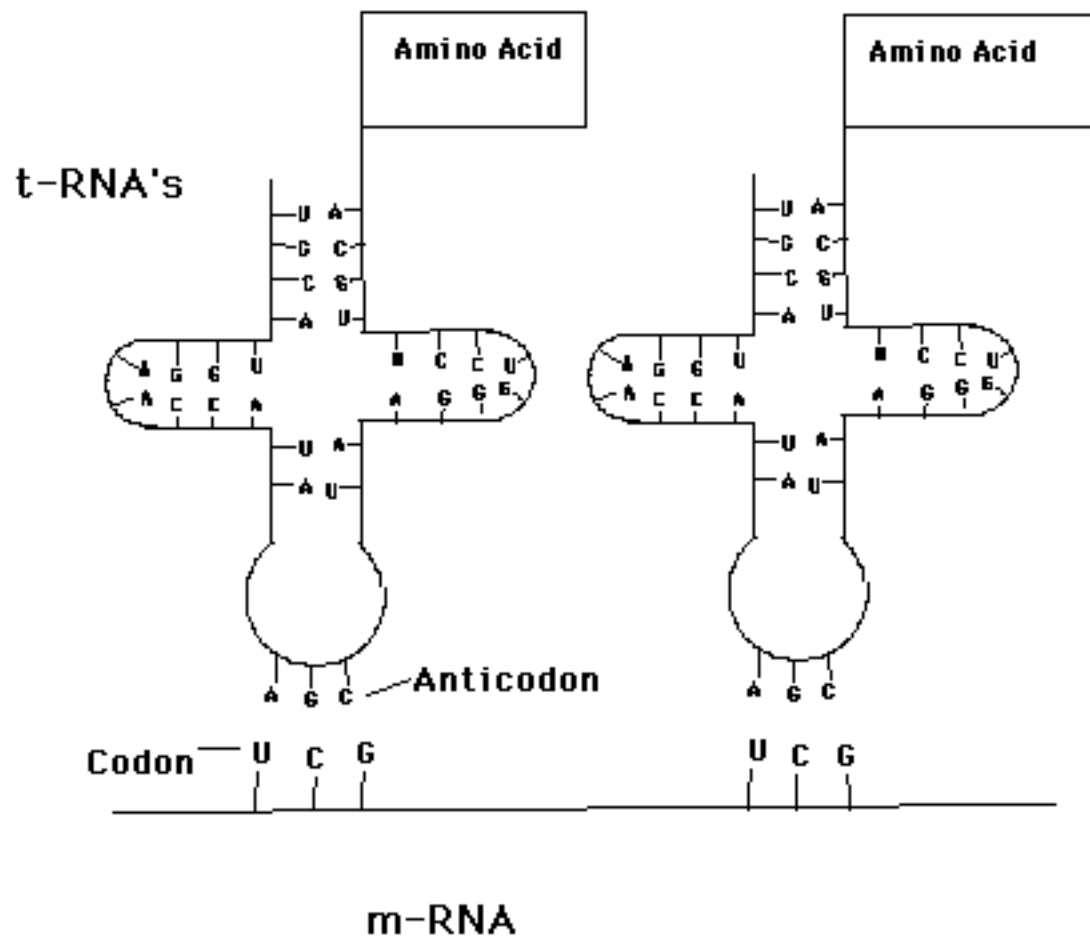
TRANSFER RNA

Transfer RNA brings the individual amino acids to the mRNA template



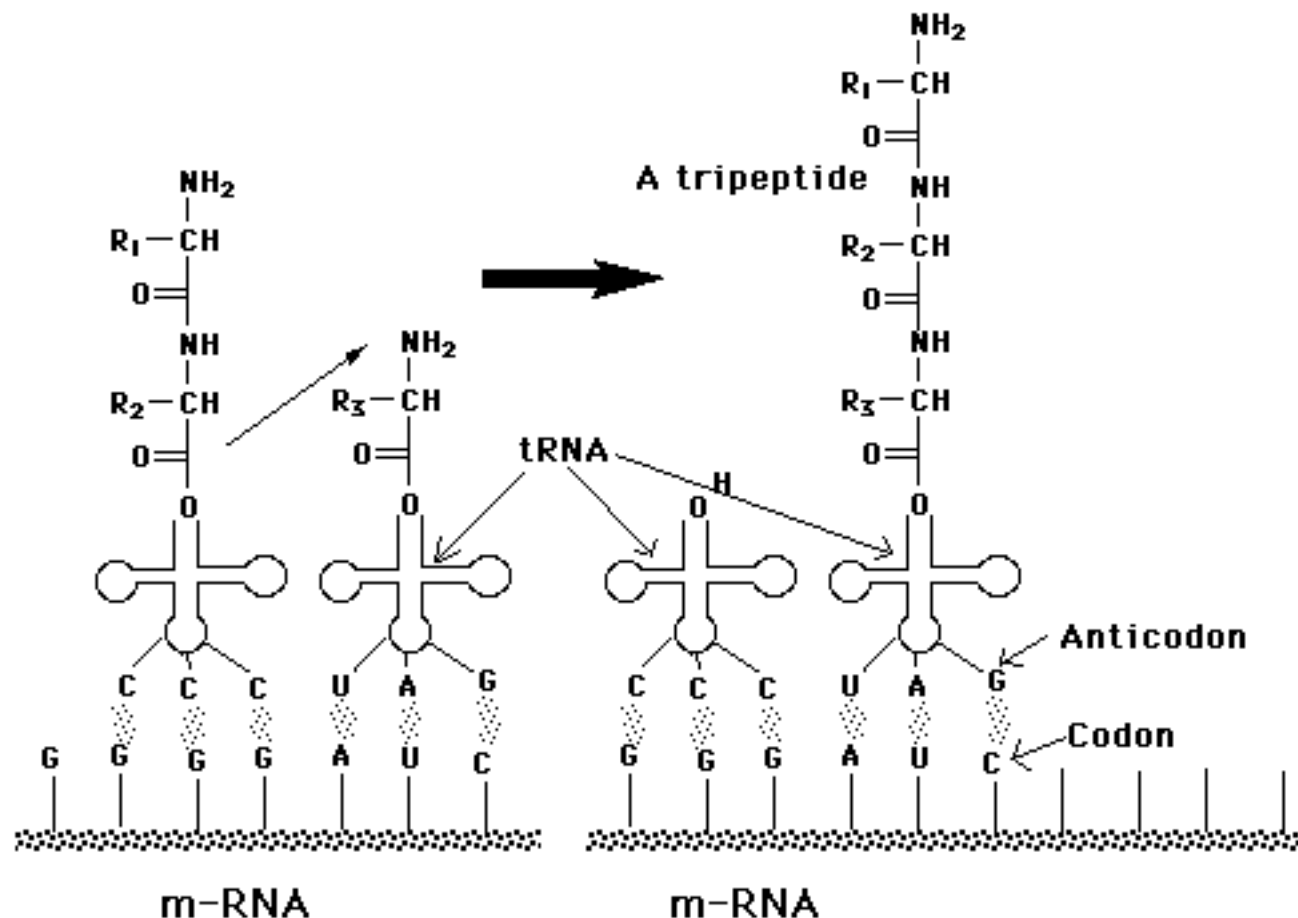
ANTICODON binds to the codon on the mRNA

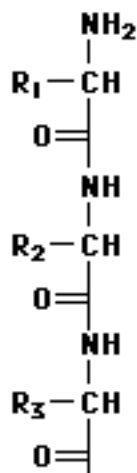




Protein Synthesis
Transcription

The First Steps of Protein Synthesis on an mRNA Template

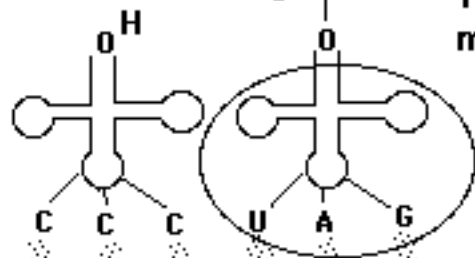




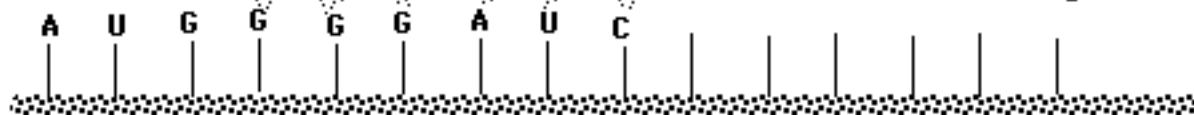
A tripeptide

**Proteins are synthesized
in the ribosomes**

**The mRNA brings the genetic
message to the ribosomes**



**Ribosomes consist of
rRNA complexed with
proteins - They are the
site of protein synthesis**



m-RNA