

Anatomy practice

[Science](#), [Genetics](#)



The uppermost strand in this structure is called the coding strand. The second strand that lies below the coding strand is called the template strand. In order for a RNA polymerase to go from the upper strand to the second strand it must go through the process called transcription. First, the RNA polymerase must attach on to one of the genes on the coding strand on DNA. Once the RNA polymerase attaches, it must then begin the process called initiation. This means that the RNA polymerase opens up both strands of DNA in order for mRNA synthesis to begin as it moves down the template strand. Once it starts moving down the template strand, that's when elongation occurs. This is when the RNA polymerase unwinds the DNA helix in front of it and rewinds the helix behind it matching each base with its correct partner. Once the RNA polymerase reaches a special base sequence called termination signal, transcription is then over. This is called termination. The row of "guitars" represents the sequence in the tRNA anticodons. The tan balls on the bottom of the "guitars" represent the amino acids in the polypeptide chain. The multi-color piano keys represent the different bases that are in DNA and RNA molecules. What is different in the second strand than the first upper strand is that the second strand is mRNA which contains the base Uracil while the first strand is DNA and contains Thymine instead of Uracil. The difference between the second strand and the "guitars" is that the second strand is mRNA which are codons while the "guitars" are tRNA and are anticodons. The difference in the sequence between the first strand and the "guitars" is that the first strand is triplets which contain Thymine and the "guitars" are anticodons and instead of Thymine, they contain Uracil. The process going from the second strand to

the “ guitars" is called translation. This is where the language of nucleic acids is translated into the language of proteins in which they are used to assemble polypeptide chains.