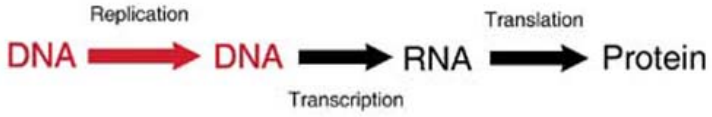
# Module 10 / Intro to DNA Replication



As discussed at the beginning of this unit, modern molecular biology has developed a Central Dogma that describes a series of processes starting with DNA and ending with the production of a protein using the genetic code. This Central Dogma is diagrammed in the figure below. The initiation of this process is DNA Replication, highlighted in red, which describes the copying of the information existing in DNA to new DNA. One of the most important processes that a cell performs before it can divide is to faithfully replicate its chromosome. While there are differences between prokaryotes and eukaryotes, there are great similarities in the mechanism by which they replicate their DNA. This unit will describe this mechanism of DNA replication




In addition, an understanding of the enzymes that are involved in faithfully copying the DNA has also lead to their use in applications that have advanced our knowledge of genomes, the information they contain and how they are used. The polymerase chain reaction (PCR) and DNA sequencing using dideoxynucleotides have revolutionized our ability to work with small amounts of DNA and generate immense amounts of sequence information in a very short time. The understanding of the basic principles involved in DNA replication have also lead to our understanding of such topics as DNA repair and chromosome extension.