(7) Transcription and Translation

Objectives:

1. Compare and contrast:
    a. Transcription and DNA replication
    b. DNA and RNA
    c. DNA polymerase and RNA polymerase
2. Transcription: Details of process including start and stop sites, components, and application
3. Coupling of transcription and translation
4. Difference between prokaryotic and eukaryotic RNA: including methods of RNA processing and coupling of transcription and translation
5. Translation: 4 components, details of process, and inhibitors of translation, and application

- Fig. 7-1: Flow of genetic information
- **transcription** - DNA → RNA
- **translation** - RNA → protein

I. How transcription differs from DNA replication:

1. Uses RNA polymerase
2. RNA strands do not remain hydrogen bonded to the DNA template after being transcribed
3. Only one strand of the DNA molecule is transcribed for a specific gene
4. RNAs are only copied from regions of the DNA that contain genes

DNA polymerase vs. RNA poly

NA nucleotide.

16. What are the four steps of transcription?