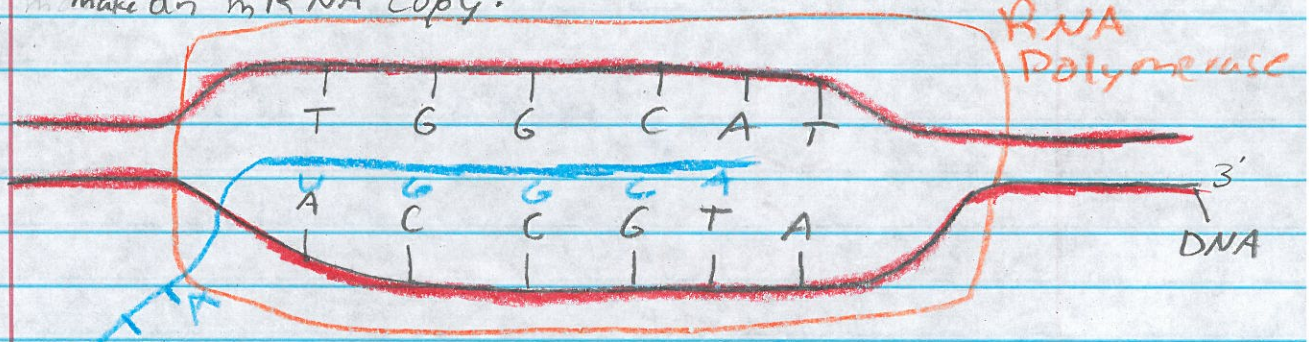
Protein Synthesis

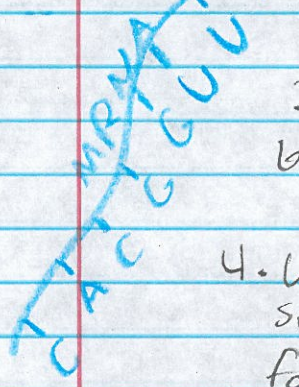
- 2 main steps, transcription and translation

Transcription

- Genes are read and transcribed into mRNA
- Genes have three regions
  - Promoter: Signals RNA Polymerase to begin reading. Turns genes on and off.
  - Coding Region: contains instruction for protein
  - Termination Sequence: Signals end of gene
- RNA Polymerase - reads DNA and uses it to transcribe mRNA

1. RNA Polymerase unwinds DNA
2. Once it reaches the coding region, it reads 1 strand to make an mRNA copy.





3. RNA Polymerase adds the appropriate bases to make mRNA.

4. When RNA Polymerase reaches the termination sequence it stops transcribing. mRNA then folds back on itself.

Translation

1. mRNA leaves nucleus for the cytoplasm.
   - mRNA will be read by a ribosome which will assemble the correct amino acids.
   - The ribosome reads bases 3 @ a time. The groups of 3 are called codons