

Chap 17: Gene to Protein (Transcription/Translation/Mutation)

Diagram and **Describe** the central dogma of biology.

List the number of amino acids that exist on planet Earth naturally.

Describe how many bases are read per codon.

Explain whether or not both strands of DNA get transcribed simultaneously.

Explain how multiple codons can code for the same amino acid.

Define a *reading frame*.

Diagram and **Explain** the processes and enzymes that creates RNA.

Describe a promoter region.

Explain what a terminator sequence in prokaryotes does.

List the 3 steps of Transcription and **Describe** what happens in each.

Explain how eukaryotic RNA is modified.

Explain when and where RNA modification happens.

Differentiate between introns and exons.

Explain how alternative splicing helps eukaryotic organisms be more efficient.

Define anticodon and **Diagram** its location.

Explain the importance of aminoacyl-tRNA synthetases.

List and **Describe** the purposes of the 3 kinds of RNA used in transcription and translation.

Define the *Wobble* effect.

Describe a polyribosome and **Explain** its purpose.

Describe the process that creates a protein that is to be secreted from a cell.

Compare and **Contrast** *point mutations, substitution/deletion mutations* and *frameshift mutations*.

Differentiate between *silent mutations* and *missense mutations*.

Explain how a frameshift mutation is almost always worse than a substitution mutation.