**DNA to Protein Synthesis (15 terms) Keystone Vocabulary**

**anticodon -** sequence of 3 nitrogen bases in tRNA that codes for one amino acid

**codon -** sequence of 3 nitrogen bases in mRNA that codes for one amino acid

**frame shift mutation –** when 1 or more nucleotides is added or removed (in an amount not divisible by

3), reading of nitrogen bases is moved over, results in entirely different amino acid sequence

**gene expression –** process in which nucleotide sequence of a gene is used to make a protein or RNA

**gene recombination –** natural process where DNA is broken and then joined to a different molecule,

 result of crossing over

**mRNA –** messenger RNA, carries the genetic code from the nucleus to the ribosome to make proteins

**mutation –** permanent change of genetic material that can be passed on

**point mutation** – single nitrogen base is replaced with another nitrogen base

 (silent – no change in amino acid, missense – changes amino acid,

nonsense - inserts a stop codon)

**protein synthesis –** process where amino acids are arranged through transcription and translation to

make a protein (polypeptide chain)

**replication –** process where DNA is copied to make 2 DNA molecules identical to the original DNA

molecule

**translation –** process where mRNA on a ribosome is decoded to produce a protein

**transcription –** process in which mRNA is made using a DNA strand as a template

**translocation –** process where a piece of chromosome breaks off and attached to another chromosome

**tRNA** – transfer RNA, carries 1 amino acid to the ribosome for protein synthesis

**triplet –** sequence of 3 nitrogen bases in DNA that codes for one amino acid

**Genetic Engineering (6 Terms) Keystone Vocabulary**

**biotechnology –** procedure that uses a biological system or living organism to develop or modify a

product or process for specific use

**cloning –** process in which a cell, cell product or organism is copied from an original source

**gene splicing -** DNA is intentionally broken and recombined using lab techniques, type of

recombination

**gene therapy –** intentionally altering a gene within cells and tissues for the purpose of treating a disease

**genetic engineering –** technology that alters the genetic material in a cell resulting in an outcome that

would not occur naturally

**genetically modified organism –** organism whose genetic material has been altered thorough some

 genetic engineering technology