Unit: DNA and Human Heredity (Ch. 12-14)

"I can…"

_____ *review* experiments leading up to the discovery of the double helix.

_____ *create* a model that accurately depicts the structure of DNA.

_____ *develop* a flowchart illustrating the steps of DNA replication.

_____ *explain* how and why nucleotides of DNA serve as the template for mRNA (transcription).

_____ *use* the universal genetic code to translate mRNA into a chain of amino acids (translation).

_____ *identify* the types of mutations that occur in a strand of DNA.

_____ *compile* a list of causes (intrinsic and extrinsic) of genetic mutations.

_____ *predict* the changes in the genetic code of a strand of DNA resulting from point mutations (substitutions) and frameshift mutations (deletions, insertions, and translocations).

_____ *apply* the principles of transcription and translation to normal and mutated DNA strands to compare and contrast the resulting sequences of amino acids.

_____ *interpret* karyotypes to identify common genetic mutations

_____ *evaluate* the impacts of mutations in sex cells versus body cells.

Essential Vocabulary/Concepts:

adenine
anticodon
codon
cytosine
deoxyribose
DNA
DNA polymerase
double helix
guanine
mRNA (messenger)
mutation
nitrogenous base
nucleotide
phosphate
polypeptide chain
protein
protein synthesis
replication
ribose
ribosome
RNA
rRNA (ribosomal)
thymine
transcription
transformation
translation
tRNA (transfer)
uracil
hydrogen bonds
autosomes
chromosomal mutation
deletion
duplication
frameshift mutation
gene mutation
inversion
karyotype
mutation
nondisjunction
point mutation
sex chromosomes
substitution

translocation

trisomy

Key Scientists

Watson & Crick