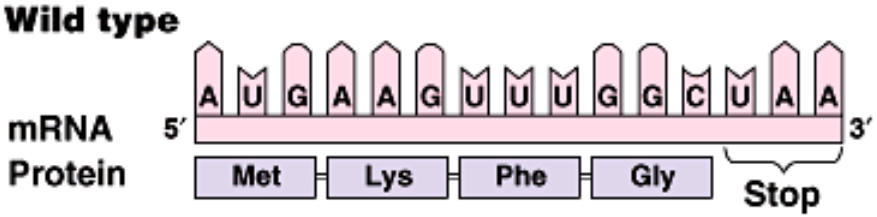
DNA Mutations

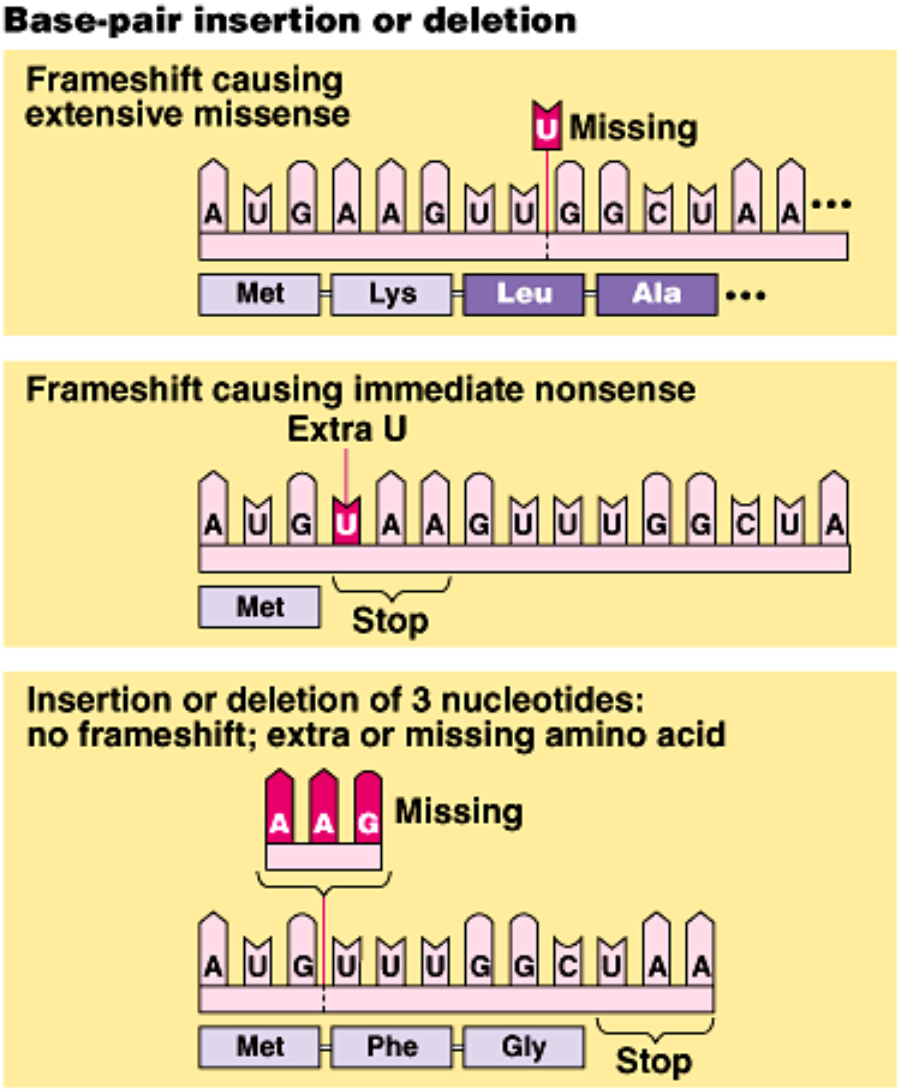
DNA Mutation

- Occurs on the gene level
- Not as dramatic as chromosomal mutations
- Can be silent (think wobble and third base pair)
- Can be negative (think disease)
- Can be positive (think evolution)

Base Pair Substitution

- A letter is substituted or switched with original code.
- Silent-if the nucleotide substitution is the last pair on a triplet (i.e. CCG to CCA) or if it codes for a similar a.a.
- Missense mutation- If a different amino acid is coded for (may or may not cause trouble)
- Nonsense mutation- if it codes for a STOP codon it will disrupt the entire polypeptide.





Base-Pair Insertion or Deletion

- The addition or deletion (between existing bases) of a nucleotide pair can shift the reading frame of the DNA (called a frameshift mutation). Usually more problematic than base-pair substitution.
- *ALWAYS causes missense
- *CAN cause nonsense if a STOP codon is created
- * mutagens are agents that cause DNA mutation (usually carcinogenic).