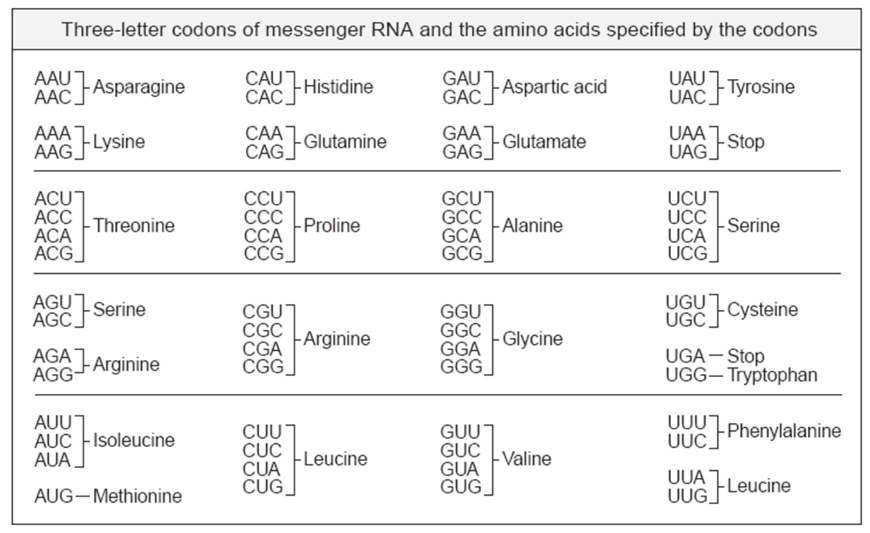
**Mutations – Notes Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Definition:** A \_\_\_\_\_\_\_\_\_\_\_\_\_ in the sequence of bases within the DNA.

**2 types:**

1. **Frameshift:** One or more nucleotides is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**from the DNA

**Example:** TAC GGT TAG, insert C into the 4th spot:

TAC CGG TTA G

The original DNA coded for which amino acids?

* DNA: TAC GGT TAG
* mRNA:
* amino acids:

The mutated DNA now codes for which amino acids?

* DNA: TAC CGG TTA G
* mRNA:
* animo acids:

1. **Point Mutations**: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**within the sequence

Example: TAC CCA,GAC replace 2nd A with a C

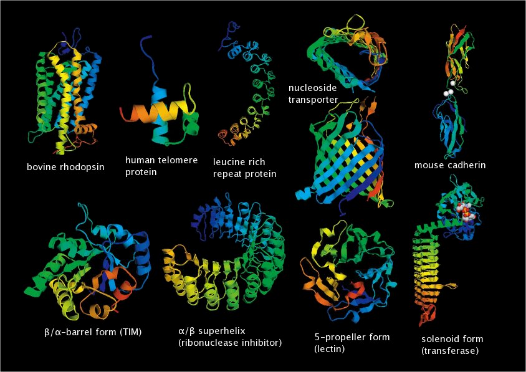
TAC CCC,GAC

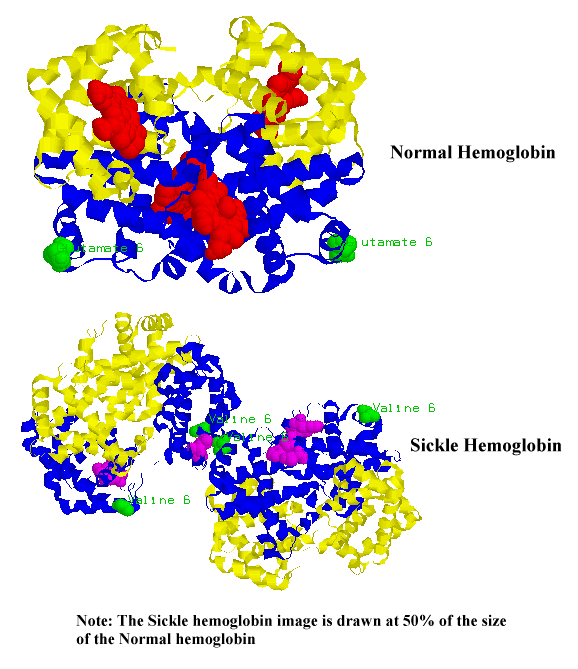
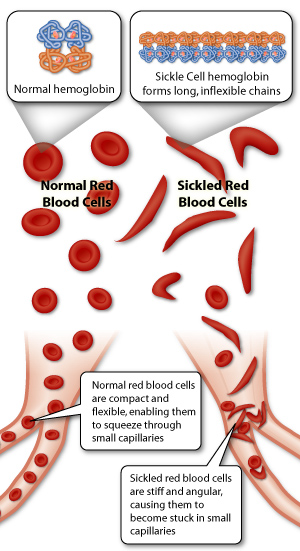
The original DNA coded for which amino acids?

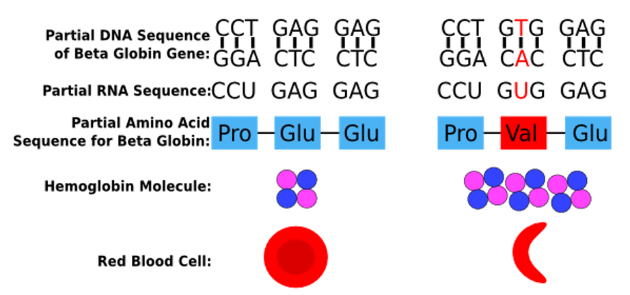
* + - DNA TAC CCA,GAC
    - mRNA:
    - amino acids:

The mutated DNA now codes for which amino acids?

* + - DNA: TAC CCC,GAC
    - mRNA:
    - animo acids:

 **Questions:**

1. *What effect does changing the amino acids have on the protein product?*
   * Changes **\_\_\_\_\_\_\_\_\_\_\_\_\_**. Since shape determines **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, it alters how the protein will function.
   * Example **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   * What type of mutation is it? **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



1. *Which has the potential for the most damage, frameshift mutations or point mutations? And why?*

**Mutagens**

* + Definition:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** influences that cause mutations
  + Brainstorm a list:
  + Here are some examples: