Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**"CENTRAL DOGMA OF GENETICS"**

(DNA Processes Made Simple by Miss Vercelli)

**Step 1: DNA Replication**

* **What happens?** DNA is copied.
  + Base pairs:
    - A  T
    - T  A
    - G  C
    - C  G
* DNA Strand: A T C G T A C C G T T T T A A C G
* Complementary Strand: T A G C A T G G C A A A A T T G C
* **You try:**
* DNA Strand: T G C C C G T A T A G C C G G T T
* Complementary Strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 2: Transcription**

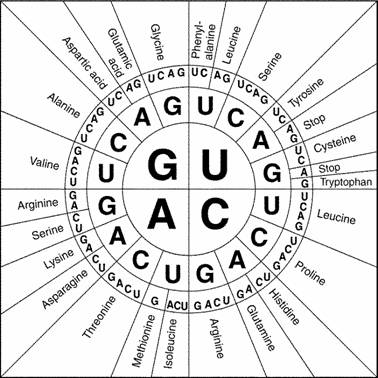
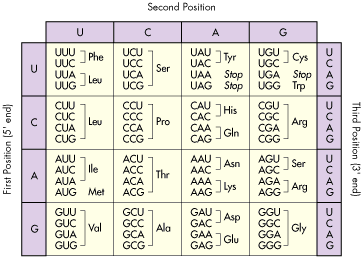
* **What happens?** DNA gets changed to RNA
  + In RNA, Thymine (T) is replaced by Uracil (U)
    - A  **U**
    - T  A
    - G  C
    - C  G
* DNA Strand: A T C G T A C C G T T T T A A C G
* RNA Strand: U A G CA U GG C A AA A UU G C
* **You try:**
* DNA Strand: T A T T G T C C G A T G G C A A T
* RNA Strand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

RNA is read in codons (3 letters at a time)

* RNA Strand: U A G C A U G G C A A A A U U G C U
* RNA Strand in codons: UAG – CAU – GGC – AAA – AUU – GCU
* **You try:**
* RNA Strand: A U C C U U A G C U C A G U C G C A
* RNA Strand in codons:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 3: Translation**

* **What happens?** RNA codons get changed to an amino acid chain.
  + Need to use “RNA codon to amino acid chart” to translate.



* RNA codons: UAG – CAU – GGC – AAA – AUU – GCU
* Amino acids: stop – His – Gly – Lys - Ile - Ala
* **You try:**
* RNA codons: UUU – GCG – AGU – UAA – ACC – GGC – CCC
* Amino acids: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 4: Protein Synthesis**

Amino acid chain Protein Gene Trait