# Notes Outline: Genetics

*Protein Synthesis*

**RNA: the *Other* nucleic acid….**

- _____ _____

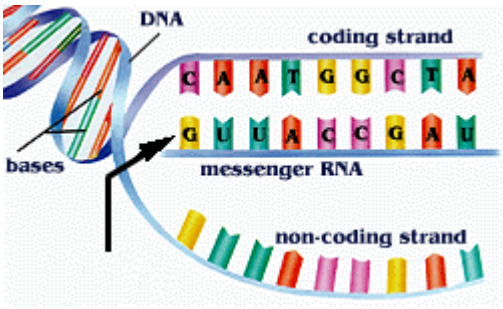
  - _____bases (  )
  - Subunit: _____ (sugar, phosphate & nitrogenous base)
  - _____ stranded
  - Not confined to the _____ of the cell
  - Used to ultimately make _____

- ***3 Types of RNA***

  1. _____ *RNA (  )*

     *a.* Makes a _____ of a _____ of _____ & takes that copy out of the _____ and to the _____

     *b.* Involved in the process of _____

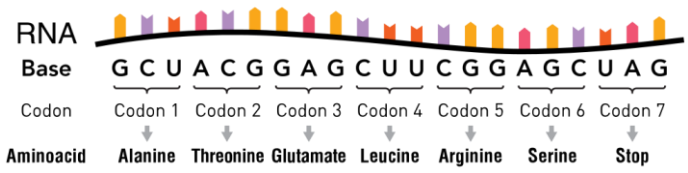



  2. _____ *RNA (  )*

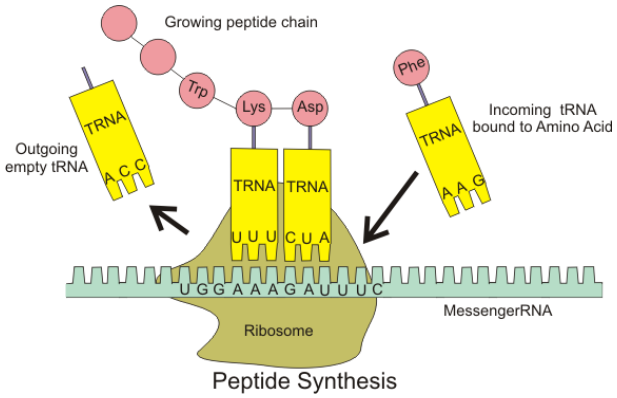
     a. Reads the _____

     b. Puts _____ _____ in the correct order (process of _____)

        i. _____: a set of ___ _____ on the _____ molecule that code for 1 of the 20 amino acids



ii. Each tRNA molecule has an _____ (set of 3 bases) and an _____ _____




iii. You can use the chart to determine which amino acid is represented by a particular mRNA codon

Second base of codon

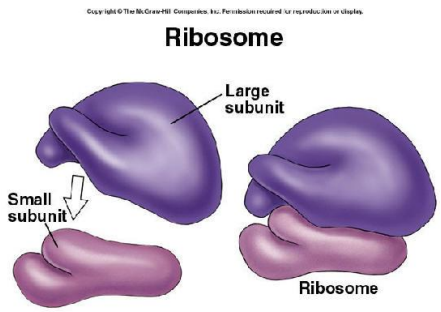
| First base of codon | U | | C | | A | | G | | Third base of codon |
|---|---|---|---|---|---|---|---|---|---|
| U | UUU | Phenylalanine phe | UCU | Serine ser | UAU | Tyrosine tyr | UGU | Cysteine cys | U |
| | UUC | | UCC | | UAC | | UGC | | C |
| | UUA | Leucine leu | UCA | | UAA | STOP codon | UGA | STOP codon | A |
| | UUG | | UCG | | UAG | | UGG | Tryptonphan trp | G |
| C | CUU | Leucine leu | CCU | Proline pro | CAU | Histidine his | CGU | Arginine arg | U |
| | CUC | | CCC | | CAC | | CGC | | C |
| | CUA | | CCA | | CAA | Glutamine gin | CGA | | A |
| | CUG | | CCG | | CAG | | CGG | | G |
| A | AUU | Isoleucine ile | ACU | Threonine thr | AAU | Asparagine asn | AGU | Serine ser | U |
| | AUC | | ACC | | AAC | | AGC | | C |
| | AUA | | ACA | | AAA | Lysine lys | AGA | Arginine arg | A |
| | AUG | Methionine met (start codon) | ACG | | AAG | | AGG | | G |
| G | GUU | Valine val | GCU | Alanine ala | GAU | Aspartic acid asp | GGU | Glycine gly | U |
| | GUC | | GCC | | GAC | | GGC | | C |
| | GUA | | GCA | | GAA | Glutamic acid glu | GGA | | A |
| | GUG | | GCG | | GAG | | GGG | | G |



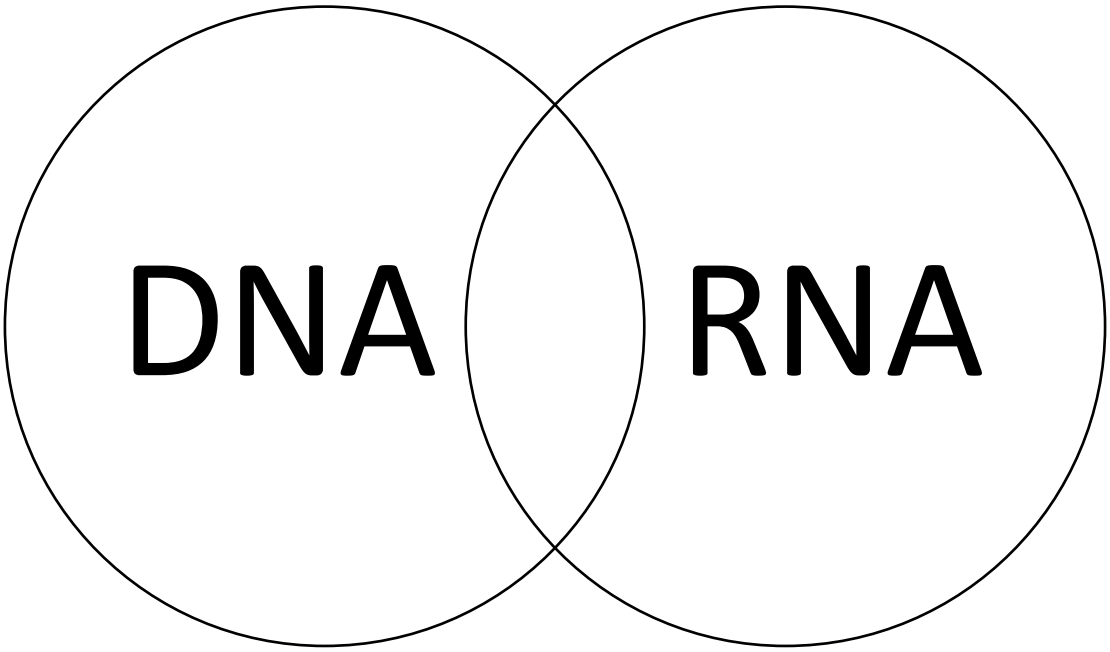
*3.* _____ *RNA (  )*

a. _____ the amino acids together to form _____

b. Make _____ (have a _____ and _____ subunit)



**Comparison of DNA & RNA**

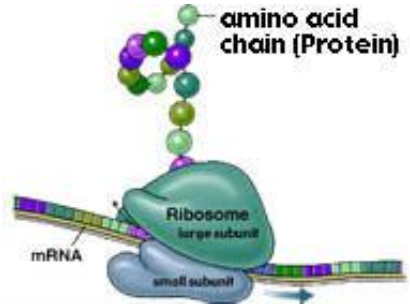


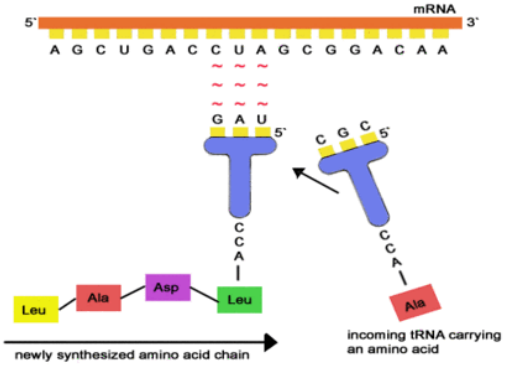

**Protein Synthesis**

- ***The _____ by which _____ are made.***

- **Overview of the Steps of Protein Synthesis:**

1. _____ makes a _____ of a segment of _____
2. mRNA leaves the _____ and brings the message to a _____
3. mRNA _____ are "_____" by _____ molecules (anticodons)
4. tRNA puts the _____ _____ in the correct order
5. _____ binds the amino acids together with a _____ bond & the amino acids _____ from the tRNA molecule to form a _____.




- ***2 Processes to KNOW***

1. **_____:** process of _____ making an _____ of _____

2. **_____:** process where _____ translates the _____ message into the _____ of proteins (_____ _____).