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

**DNA & RNA Study Guide**

What does DNA stand for?

What makes up a nucleotide?

What are the four bases of DNA? What are the base pairing rules?

Give the compliment strand for the following **DNA** strand:

A T C T A G T A C T A G

What are three differences & three similarities between RNA & DNA?

What sugar is found in DNA? What sugar is found in RNA?

Transcribe the following DNA strand into an **mRNA** strand:

A T C T A G T A C T A G

What are the three types of RNA and their functions?

Explain the process of DNA replication.

Why does DNA need to replicate?

What is a codon and where can it be found?

What are the two major types of mutations?

Fill in the table:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **DNA Replication** | **Transcription** | **Translation** |
| What is made? |  |  |  |
| What molecules are used? |  |  |  |
| Where in the cell does it take place? |  |  |  |
| What are the base pairing rules? |  |  |  |

Be able to use the Codon Wheel to create a protein by determining what amino acid is being coded for and what the tRNA anticodons would be.

Example: mRNA: AUGCAGGCCGGAUGA



|  |  |
| --- | --- |
| **mRNA** | **AUG CAG GCC GGA CAU GCA UGA** |
| **Protein** |  |
| **tRNA** |  |

According to the Codon Wheel, what codons specify Leucine? Make sure you list ALL of them.