**DNA and Protein Synthesis Review**

**DNA**

1. What is DNA?
   1. What does DNA stand for?
   2. What 3 things make up a nucleotide?
   3. What are the 4 bases of DNA?
   4. How do the bases pair up?
   5. What is DNA Replication?
   6. Write the complementary strand of DNA below

TAC ACG GGC CCT CGT TCG AAG TTT

**RNA**

1. What is RNA?
   1. What does RNA stand for?
   2. What are the 4 bases of RNA
   3. How do the 4 bases pair up?
   4. What is mRNA and what role does it play?
   5. What is tRNA and what role does it play
   6. What are 3 differences between DNA and RNA?

**Protein Synthesis**

1. What is Protein Synthesis?
   1. What makes a protein?
   2. What are 3 ways proteins are used in the body?
   3. What is transcription?
      1. Describe what happens during the process of Transcription
      2. In what organelle does transcription take place?
   4. What is Translation?
      1. Describe the process of Translation?
      2. In what organelle does Translation take place?
   5. Transcribe the below DNA strand into RNA, then use the Codon chart to find the correct Amino Acid sequence.

**TAC CCC GTA GGG ACC GTT GAT TTT ATG**

1. What is the definition of a mutation?
   1. What is a point mutation?
      1. What is a substitution mutation? Give an example
   2. What is a frameshift mutation?
      1. What are the 2 types of frameshift mutations
      2. Give examples
   3. What is Sickle Cell Anemia

**Vocabulary you should know!**

1. DNA Replication

2. DNA Polymerase

3. Protein Synthesis

4. Codon

5. Base Pair

6. mRNA

7. tRNA

8. Nucleotide

9. Mutation

10. Point Mutation

11. Frameshift Mutation

12. Transcription

13. Translation

14. Ribosome

15. Amino Acid