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

**DNA, RNA, and Snorks**

Introduction: In this simulation, you will examine the DNA sequence of a fictitious organism - the Snork. Snorks were discovered on the planet Dee Enae in a distant solar system. Snorks only have one chromosome with eight genes on it, remember number of chromosomes does not necessarily indicate complexity. Your job is to analyze the genes of its DNA and determine what traits the organism has and then sketch the organism (Let your creativity shine, if you are not creative fake it till you make it).

Step 1 in Protein Synthesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 The purpose of this step is to create a single strand of \_\_\_\_\_\_\_\_\_\_ from the DNA template.

 This process occurs in the \_\_\_\_\_\_\_\_\_\_ of a cell.

*Simulate the first step of protein synthesis directly below your provided DNA strands.*

Step 2 in Protein Synthesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The purpose of this step is to use the \_\_\_\_\_\_ created in the nucleus as a code for creation of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This \_\_\_\_\_\_\_\_\_\_\_\_\_\_ will be created using the monomer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 This process occurs at the \_\_\_\_\_\_\_\_\_\_\_\_\_ in a cell.

*Use the codon chart provided to identify the order or amino acids. Once you have the order of amino acids, you will ask your teacher for the expression sheet which will describe the organism’s phenotypic traits.*

Summary Questions:

1) List the two parts of protein synthesis in order?

2) The start codon is always \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) A protein can also be called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chain.

4) Transcribe the following strand:

 TACGGCAATTATACT

 \_\_\_\_\_\_ - \_\_\_\_\_\_\_ - \_\_\_\_\_\_\_ - \_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_

 Now translate it into a protein: Why are there less amino acids then codons?

 What type of bond, represented by the lines between your amino acids, hold the amino acids together?

Understanding Diagrams: Label all the letters in the given diagram A-H, then use all these letters to help you describe the process of transcription and translation.



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Expression of a Protein: Snork Phenotypes Class Set – Do Not Remove*

For simplicity, the gene sequences are much smaller than -real- gene sequences found in living organisms. Each gene has two versions that result in a different trait being expressed in the snork.

|  |  |  |
| --- | --- | --- |
| Genes | Amino Acid Sequence | Description |
| Gene 1 - body covering | val - ser - leu | hairless |
|   | val - ser - lys | hairy |
| Gene 2 - body style | tyr - pro - glu - glu - lys | plump |
|   | val - pro - thr - glu - lys | skinny |
| Gene 3 - legs | leu - leu - leu - pro | 3 legged |
|   | leu - leu - ser - ala | 2 legged |
| Gene 4 - head shape | ala - val - val | round head |
|   | val - ala - ala | square head |
| Gene 5 - tails | his - ile | tail |
|   | his - his | no tail |
| Gene 6 - body pigment | ser - pro - val | blue pigment (hair/skin) |
|   | val - phe - tyr | red pigment (hair/skin) |
| Gene 7 - eyes | asp - ile - leu - leu - pro - thre | small slanted eyes |
|   | asp - ile - pro - pro - pro - thre | large round eyes |
| Gene 8 - mouth | val - asp - asp - ala | circular mouth |
|   | asp - asp - asp - ala | rectangular mouth |
| Gene 9 - ears | phe - ser - gly | pointed standing-up ears |
|   | phe - phe - gly | rounded floppy ears |
| Gene 10 - arms | arg - tyr - cys - lys | long spaghetti like arms |
|   | arg - arg - asp - thre | short stumpy arms |

***SNICKER SNORK Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

DNA Triplet Sequence: TAC CAG TCG TTT ATT CGC

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC ATG GGG GTT GTC TTT ATC AAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GAG AAT TCA CGC ATT GGA CGA

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CGA CAA CAC ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GTA GTA ATC CCT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAA AAA ATG ACT GCG

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTA TAG AAT GAC GGG TGG ACT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTA TTG TTA CGG ATT TAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AAA AGA CCG ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TCC ATG ACG TTC ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***SNUFFLE SNORK Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

DNA Triplet Sequence: TAC CAT AGA TTT ATT CGC

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAA GGA TGA GTT TTC ATC AAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GAA GAG GAG GGG ATT GGA CGA

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAA CGC CGA ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GTA GTG ATC CCT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAT AAA ATA ACT GCG

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTA TAA GAA GAC GGG TGT ACT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTA TTA TTA CGT ATT TAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AAG AGC CCG ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TCC TCT TTA TGT ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***SNAPPLE SNORK Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

DNA Triplet Sequence: TAC CAG TCG TTT ATT CGC

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC ATG GGG GTT GTC TTT ATC AAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GAG AAT TCA CGC ATT GGA CGA

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAA CGC CGA ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GTG TAA ATC CCT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AGA GGG CAT ACT GCG

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTA TAA GAG GAG GGG TGG ACT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAA TTA TTA CGT ATT TAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AAG AAA GTA ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GCA GCC TTG TGG ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***SNOOPY SNORK Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

DNA Triplet Sequence: TAC CAT AGG GAG ATT CGC

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC ATG GGG GTT GTC TTT ATC AAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AAT GAG GAC GGG ATT GGA CGA

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC CAC CGT CGA ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC GTA TAA ATC CCT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AGA GGG CAT ACT GCG

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTG TAA GAA GAC GGG TGT ACT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TTA TTG TTA CGG ATT TAT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC AAA AGA GTG ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Triplet Sequence: TAC TCT ATA ACA TTT ATT

mRNA Codons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Amino Acid Sequences: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phenotype: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Each of the following DNA samples was taken from volunteer snorks. The DNA was then transcribed to its complimentary RNA strand. Your job is to analyze the RNA sample and determine the phenotype (how the organism looks) based on the sequence.The genes are in order from gene 1 to gene 9. Your teacher may assign you one or all of the samples to analyze. Use the codon chart in your text or print one from the web: [codon chart](https://www.biologycorner.com/resources/codon.gif)

**Snicker Snork**

**CAG TCG TTT**

| GUC AGC AAA | UAC CCC GAA GAG AAA | CUC UUA AGU GCG | GCU GUU GUG |

| CAU CAU | GUU UUU UAC | GAU AUC UUA CUG CCC ACC |

| GAC GAC GAU GCC | UUU UCU GGG | AGA UAU UGU |

**Snuffle Snork**

| GUA UCU AAA | GUU CCU ACU GAA AAG | CUU CUC CUC CCC | GUU GCG GCU |

| CAU CAC | GUA UUU UAU | GAU AUU CUU CUG CCC ACA |

| GUU GAC GAC GCA | UUC UCG GGU | AGA UAU UGU |

**Snapple Snork**

| GUC AGC CUU | GUU CCC ACA GAA AAA | CUC UUA AGU GCG | GUU GCG GCU |

| CAC AUU | UCU CCC GUA | GAU AUU CCC CCC CCC ACC |

|GAU GAC GAC GCA | UUC UUU GGG | CGC CGG GAC |

**Snoopy Snork**

| GUA UCC CUC | UAC CCC GAG GAA AAA | UUA UUA CUG CCC | GCU GUU GUA |

| CAU AUU | UCU CCC GUA | GAU AUU CUU CUG CCC ACA |

| GUU GAU GAU GCC | UUU UCU GGU | CGC CGU GAC |