Gene Expression
Checklist

Use this alongside our Walkthrough Guides to tick off the concepts you're confident with to plan your study and find areas of improvement!

Evolution and the Gene Pool

- ◯ I can define **DNA**
- ◯ I can define **chromosome**
- ◯ I can define a **gene**
- ◯ I can define an **allele**
- ◯ I can explain the difference between **genotype** and **phenotype**
- ◯ I can explain the connection between DNA and proteins
- ◯ I can draw and describe the structure of DNA using the term **double helix**
- ◯ I can explain **DNA triplets**

RNA

- ◯ I can define **RNA**
- ◯ I can explain **mRNA**
- ◯ I can explain the differences between DNA and RNA
- ◯ I can define **transcription**
- ◯ I can define **translation**

Transcription

- ◯ I can explain why DNA is unzipped
- ◯ I can explain the **complementary base pair rule**
- ◯ I can explain the **template strand**
- ◯ I can explain how the **coding strand** is formed
- ◯ I can explain **codons**
- ◯ I can explain how mRNA leaves the nucleus of the cell

Translation and Protein Synthesis

- ◯ I can explain what proteins are made of
- ◯ I can explain the connection between codons and amino acids
- ◯ I can use the codon chart to determine the amino acid that will be made
- ◯ I can explain where translation occurs
- ◯ I can explain the purpose of **tRNA**
- ◯ I can explain how translation begins
- ◯ I can explain how translation results in a chain of amino acids
- ◯ I can explain how translation ends
- ◯ I can explain how folding affects protein structure and function

Mutations

- ◯ I can define **mutation**
- ◯ I can explain how a mutation can be beneficial
- ◯ I can explain a **substitution** mutation
- ◯ I can explain an **insertion** mutation
- ◯ I can explain a **deletion** mutation
- ◯ I can explain how mutations can result in a **frame shift**
- ◯ I can explain why some mutations can have no effect

Enzymes and Metabolic Pathways

- ◯ I can define **enzymes**
- ◯ I can define the term **substrate**
- ◯ I can define the term **metabolic pathway**
- ◯ I can explain how metabolic pathways function
- ◯ I can relate enzyme rate of reactions to overall process functioning
- ◯ I can explain the effect of disrupting a step in a metabolic pathway
- ◯ I can explain what happens when a metabolic pathway doesn't function properly
- ◯ I can explain how DNA and environment result in the phenotype of an organism

