AP BIOLOGY

Protein Synthesis & Gene Expression

Essential Question

How does gene regulation relate to the continuity of life?

How is a species’ genetic information diversified from generation to generation?

Understandings

*Students will understand that:*

Knowledge:

*Students will know:*

Skills:

*Students will be able to:*

Curriculum Standards - 2019 College Board Course & Exam Description

Explain how shared, conserved, fundamental processes and features support the concept of common ancestry for all organisms.

Describe the mechanisms by which genetic information flows from DNA to RNA to protein.

Describe how the phenotype of an organism is determined by its genotype.

Describe the types of interactions that regulate gene expression.

Explain how the location of regulatory sequences relates to their function.

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Describe the types of interactions that regulate gene expression.

Explain how the location of regulatory sequences relates to their function.

Explain how the binding of transcription factors to promoter regions affects gene expression and/or the phenotype of the organism.

Explain the connection between the regulation of gene expression and phenotypic differences in cells and organisms.

Describe the various types of mutation.

Explain how changes in genotype may result in changes in phenotype.

Explain how alterations in DNA sequences contribute to variation that can be subject to natural selection.

Mission Integration

(*Note: could be combined with performance task/design thinking culminating assessment)*

Performance Task or Design Thinking Culminating Assessment

Other Evidence (formative assessments, summative assessments)

*what homework and other out of class experiences are needed to equip students?*

Topic Overview

*Order of topics presented (Calendar)*

Learning Plan

*Learning Activities - What experiential or inductive learning will help students to explore the big ideas and questions to achieve desired understandings? for their expected performances?*

Resources