

UNIT 2

Grade	10
Unit of Study	DNA & Protein Synthesis
Length of Unit	3 weeks
Sample Essential Questions	Sample Corresponding Big Ideas
How does the structure of DNA determine the unique traits of individuals? How does the process of Protein Synthesis determine an organism's traits? What effect can mutations have on the traits of an organism?	Nitrogen bases determine the differences between individuals. Protein Synthesis relies on the structure of DNA to produce proteins that determine traits. Mutations in the structure of DNA can change proteins produced if amino acids are affected.

Missouri Learning Standards	
<u>Biology Power Standards</u>	Supporting Standards
Power Standard 2: I can understand that there is a genetic basis for the transfer of biological characteristics from one generation to the next through reproductive processes.	LS1.A.1 & LS3.B.2

Unit 2 Sequence			
MLS	Topic(s)	Learning Targets	Academic Vocabulary
LS1.A.1	Structure of Function of DNA	I can use a model to recognize that DNA's structure is designed for the message of DNA to be used to determine traits	gene hydrogen bond nucleotide nitrogen base pentose sugar phosphate group double helix Chargaff's Rule complementary strand

Unit 2 Sequence Continued

MLS	Topic(s)	Learning Targets	Academic Vocabulary
LS3.B.2	Protein Synthesis	I can describe the steps taken to produce proteins using the message contained in DNA	Amino acids Transcription Translation Codon mRNA Codon Wheel Polypeptide
LS3.B.2	Mutations	I can describe how the different types of mutations can affect proteins that produce traits	Mutation Insertion Deletion Substitution Genetic Mutation Environmental Mutation

MLS	Learning Activities	
LS1.A.1	DNA Extraction Lab	Must Do ▾
LS1.A.1	Labubu Monster DNA	Must Do ▾
LS3.B.2	Animal Protein Synthesis Day 1 Transcription	Must Do ▾
LS3.B.2	Animal Protein Synthesis Day 2 Translation	Must Do ▾
LS3.B.2	Animal Mutations	Must Do ▾

Assessments		
MLS	Description or Location	Rubric/Location
LS1.A.1 LS3.B.2	Unit 2 Quest	Pear Assessment
LS1.A.1 LS3.B.2	Cayli Jones CER	Paper

Additional Resources

[Quizizz.com](https://www.quizizz.com), [Blooket.com](https://www.bloomet.com), [Quizlet.com](https://www.quizlet.com), [Openstax.org](https://openstax.org)