



Thomas Haney Secondary School

Science 10

23000 116 Ave, Maple Ridge, B.C. V2X 0T8

Telephone: (604)463-2001

LG #13: How Does a DNA Sequence Become a Physical Feature?

(What I need to understand)

BIG IDEA: *How does DNA sequence determine the physical features of an organism?*

Learning Standards:	
<p>Fundamental Knowledge (what I need to know)</p> <ul style="list-style-type: none"> ☆ Explain the basic structure of DNA and how it is the basis of life and reproduction? ☆ How are genes linked to physical traits? ☆ What causes mutations to occur? AND what are the impacts? 	<p>Curricular Competencies (What I need to do)</p> <ul style="list-style-type: none"> • Create a model of DNA that explains its unique orientation and combination of chemical structure. • Define what DNA and explain how it is the instructions for the creation of physical feature (transcription). • Explain what DNA is and how it is connected to the physical features of an organism.

Assessment of Learning Standards:

Have an interview to show evidence of the **Learning Standards**, or elect to take a quiz

MASTERY (A)	
<p style="text-align: center;">ESSENTIALS (C/C+)</p> <p>I CAN:</p> <ul style="list-style-type: none"> ☆ Create a model representing DNA and be able to explain the structure. ☆ Explain the function of Transcription and Translation. ☆ Describe what a mutation and explain how it affects the end product of transcription and translation. 	<p style="text-align: center;">ADVANCED (B)</p> <p>I CAN:</p> <ul style="list-style-type: none"> ➤ Use an activity to demonstrate my understanding of how a gene relates to physical features and these can be changed due to mutations. ➤ Describe/Explain the process of Transcription & Translation.

MASTERY (A)

I CAN:

- ✓ **Demonstrate** my understanding of transcription and translation and **explain** how the processes create physical features in your body.

Reflection:

After finishing my learning activities what do I understand? How have I answered the BIG Question?

OPTION 1

Choose your own adventure:

- ☆ Pick up an Adventure proposal form from the Science Kiosk
- ☆ Create a plan, include what topics will be covered
- ☆ Get teacher approval for your plan before beginning
- ☆ Bring your approved plan and your evidence of learning to the LG interview

OPTION 2

- ☆ Create a visual representation of DNA (**Poster, Diagram, Brochure, Powerpoint, etc**) explaining its structure and function.
- ☆ **Reference** three (3) resources that explain the different types of mutations.
<http://learn.genetics.utah.edu/content/basics/> &
<https://www.genomebc.ca/types/case-studies/>
- ☆ **Write** a paragraph describing a the difference between transcription and translation.
 - **Complete** the “Snork DNA” worksheet.
 - **Complete** the “What is the Point (Mutations) worksheet”.
 - ✓ **Create** a small project that covers how transcription, translation, and mutations have an influence on the physical characteristics of an organism.

OPTION 3

- ☆ Create a visual representation of DNA (Poster, Diagram, Brochure, **Powerpoint, Prezi, etc**) explaining its structure and function.
- ☆ Go to:
<https://ghr.nlm.nih.gov/primer/mutationsanddisorders/genemutation>
Take notes and have a discussion about mutations with a grade 10 Science teacher.
- ☆ Find a good resource of Transcription and Translation and walk your teacher through the resource and explain each process.
 - **Watch:**
https://youtu.be/EcGM_cNzQmE
Be able to explain how DNA works.
 - Download and Complete one of the following case studies:
<https://www.genomebc.ca/types/case-studies/>
 - ✓ **Create** a physical hands on representation of the processes of transcription and translation AND explain how they affect