

Name
TA

Science 10
2026-2027



Learning Guide # 13: How Does a DNA Sequence Become A Physical Characteristic?

BIG IDEA: RNA, DNA, Mutations, Transcription and Translation.

Fundamental Knowledge (I know)

- ☐ Why DNA is the preferred (stable) medium for storing information rather than RNA.
- ☐ The difference between Transcription and Translation and can describe/explain each.
- ☐ How and can explain how the DNA "Code" can be interpreted and turned into a proteins and physical traits.
- ☐ The different types of mutations and can explain the impacts of each.

Curricular Competencies (I can)

	Proficiency Scale Teacher and Student self assessment (Circle one)	Evidence (How do you know?)
I can: Make observations aimed at identifying their own questions about the natural world.	Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding	
 Connect scientific explorations to careers in science.	Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding	

Student Signature:

Teacher Signature:

Date:

Instructions To help guide your learning, make your way through the activities in Option 1, Option 2, or Option 3. You may “mix and match” between the different Option columns.

TOPIC	OPTION 1 (Worksheet)	OPTION 2 (Textbook/Digital)	OPTION 3
DNA Structure and Function	Watch this video AND Create a visual representation of DNA (Poster, Diagram, Brochure) explaining its structure and function.	Watch this video AND Create a digital representation of DNA (Powerpoint, Prezi, etc.) explaining its structure and function.	Choose your own adventure! Pick up a planning sheet from the Science Kiosk. Create a plan! Make sure you read through the first page of this LG, as you will need to design ways to learn/practice and show your understanding of the topic(s) and skill(s) (competencies.) You will need to have a teacher approve your plan before beginning the LG.
Transcription and Translation	Watch the following: Video and Video AND Write a paragraph describing the difference between transcription and translation. AND Complete the “Snork DNA” worksheet.	Find a good resource describing Transcription and Translation and walk your teacher through the resource and explain each process. AND Complete the “Snork DNA” worksheet.	
Mutations	Using this video and class resources, take notes on mutations. You should know what a point/substitution mutation is (including silent mutations), and how insertion/deletion mutations lead to a frameshift mutation. You should also give examples of how mutations can be neutral, positive or negative. Complete the “What is the Point (Mutations) worksheet”.		
Lab	The “Bee” Lab		
Self Assessment	Reflect on the Fundamental Knowledge and Curricular Competencies. Use the rubric and make goals to improve for your next learning guide.		
Interview or Quiz	See your teacher for an interview or to have a quiz slip signed for the test center. Bring your work and staple it to your quiz when complete.		

Resources can be found at www.THSSscience.com or the Science Kiosk

User: **THSS**

Password: **science**