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Lesson Plan

Learning Segment Focus: 8th Grade Science

Lesson 3 of 3 Topic: Mutations **Date:** 4/13/21 **Grade:** 8th grade

Student Outcomes

Specific learning **objectives** for this lesson.	The students will be able to identify the class of mutations and the type of mutations involved in our genes.
Justify how learning tasks are appropriate using examples of **students' prior academic learning**.	Students will already have background knowledge about transcribing DNA to RNA. They already understand the different types of mutations and different examples of each. We have already completed an activity where the students were given different sequences and they had to figure out which mutation affected the sequence, or they had to make the new sequence.
Justify how learning tasks are appropriate using examples of **students' personal, cultural, linguistic, or community assets**.	A lot of people in our world do not understand the behind the scenes when it comes to different diseases that others must deal with. This will allow the students to have a better perspective on how people with these diseases were born like this because of mutations on their genes. This will educate them on how to deal with others who possible have diseases.

State Academic Content Standards

List the **state academic content standards** with which this lesson is aligned. Include abbreviation, number & text of the standard(s).	**8-LS3-1**: Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

Key Vocabulary

What **vocabulary terms/content specific terminology** must be addressed for students to master the content?	**DNA, RNA, nucleotides, point mutation, chromosomal mutation, missense mutation, frameshift addition and subtraction mutation, nonsense mutation, silent mutation, amino acids, proteins, diseases, transcription, and codon.**

Academic Language Support

What are the **Academic Language Function(s)** (the content and language focus of the learning task represented by the active verbs within the learning objectives/outcomes) and explain how they are utilized in the lesson plan? What planned **Academic Language Supports** will you use to assist students in their understanding of key academic language to express and develop their content learning and to provide varying supports for students at different levels of Academic Language development? How do these supports address all three **Academic Language Demands (vocabulary, syntax, and discourse)?**	The student will have access to an online tool called Padlet. They will be using this tool to choose what class of mutation they want to research. If they are still confused on what the different classes and types of mutation there are, then having access to materials using padlet will help them. They are to research a class of mutation and pick a disease. They are to create a newsletter discussing this disease which means they are to do research. This gives the students opportunity to reread material that the don't understand, go over vocabulary words, and the content discussing transcribing DNA to RNA. This will help any student on any level because they have access to extra material along with the reintroduction of past material.

Materials

Materials needed by the teacher for this lesson. (such as books, writing materials, computers, models, colored paper, etc.)	- Ipad - Computer - Paper - Pencil - Handout (instructions for research)
Materials needed by **students** for this lesson. (computers, journals, textbook, etc.)	- Ipad or computer - Paper

	- Pencil - Worksheet - Handout

Lesson Timeline with Instructional Strategies & Learning Tasks

Amount of Time	Teaching & Learning Activities (This should be a BULLETED LIST)	Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)
10 minutes	**Introduction**: - Explain Activity	The students will be given instructions to make a newsletter to show awareness to a specific disease. They will pick a class of mutation they want to discuss, but they have to pick a specific disease under that mutation. We will go over the mutations again. They will be given access to Padlet for more information on the mutations, but they are to do their own research for their disease.
45 minutes	**Instruction:** - Research disease - Make newsletter	"You have to pick one of the three classes of mutations that we have learned already, then pick a disease that falls under that mutation. In your newsletter, you are to discuss that the disease is, what type of mutation it is (explain it), the class of mutation (explain it), and show the specific mutation on our genes. For the first 35 minutes, they will do research on their disease and start brainstorming ideas of they want to put on the newsletter. "Remember, you have to have at least three good sources for your project. I have put on padlet a website you can go to if you are still confused on class and type of mutation, and it has examples of diseases. Once they have finished up their ideas, they can move on to creating their newsletter. They will be using office word to create it. They must include graphics and make it look organized.
5 minutes	**Closure:** - Discuss newletter	They will need to have their newsletter done by Friday. They will be given class time one day during the week to create their newsletter. I will remind them the information that they are to put on it. On Friday, they will present their newsletter to the class.

Technology Integration

Provide your **rationale** for your technology choices that accurately reflects those choices within your teaching context. **Identify** what technology(s) you are using as part of your lesson plan. **Describe** how the use of technology aligns to your learning objectives,	The student will have access to an online tool called Padlet. They will be using this tool to choose what class of mutation they want to research. Padlet will give them access to websites that they can visit if they need help with their research. It will help them also find a disease that they might want to research as well. It will have

content standards, and central focus. **Explain** how technology-based instructional strategies are essential to students accomplishing the learning objectives (beyond what could be accomplished without using the technology). **Specify** how the technology selections meet or exceed the needs/strengths of all students**. Justify the "fit"** of chosen technologies, showing how the content, instructional strategies, and technology "fit" together.	past assignments if the students need to go back to old material for extra help and I also have a video on their discussing mutations. Having them create a newsletter on office word gives them time to find information about a disease, but also bring awareness to others. I will show them an example I made, but I will have already shown them the different types of things they can do to create their newsletter.

Accommodations/Modifications

How might I **modify** instruction for: *Remediation?* *Intervention?* *IEP/504?* *LEP/ESL?* (All students who have plans mandated by federal and state law.)	For the students who need remediation, the worksheet that was given to them on Monday is for the people who need a little bit more practice on that topic. Being able to research these mutations and learn more about them, I believe, gives them their intervention if they are struggling. I have many students with IEPs/504s, so giving them this time to research does allow them more time to understand these mutations.

Differentiation

How might you provide a variety of techniques (enhanced scaffolding, explicit instruction, contextualized materials, highlighters/color coding, etc.) **to ensure all student needs are met?** (All students who are not on specific plans mandated by federal and state law.)	Going into prior knowledge is a way to ensure that the students need are met. Reviewing allows them to understand new information when it all becomes connected. I will be showing the students the newsletter I have made if they need something to reference back to.

Assessments: Formative and/or Summative

Describe the **tools/procedures** that will be used in this lesson to monitor students' learning of the lesson objective(s) (include type of assessment & what is assessed).	☐ **Formative** /☐ ~~Summative~~	As a formative assessment, I will be using what is called interview assessment at the beginning of this less. This will allow me to engage with the students and see where they are at in understanding the material before continuing with the project.
	☐ **Formative** /☐ ~~Summative~~	Another formative assessment is by going around the room and observing the student's research. I will be going around and asking questions to students to engage with them and see where they are on understanding what they are finding.
	☐ ~~Formative~~ /☐ **Summative**	For a summative assessment, I will have the students create a newsletter and present to the class. They will be discussing the different things that are on their newsletter, so I will be able to see what they do know and have learned.

Research/Theory

Explain **connections to theories and/or researc**h (as well as experts in the field or national organization positions) that support the approach you chose and justify your	**Piaget:** This theorist uses the developmental approach. Humans are to develop in various stages, so it was easy to use this model. We introduced the concept of DNA to RNA strands and mutations in the classroom when taking notes. We have also done other handouts before this project (classwork) to solidify that

choices using **principles of the connected theories and/or research.**	they do know the material. Once they have mastered the material, they can use this knowledge and use it to create a newsletter.

Lesson Reflection/Evaluation

What went **well**? What **changes** should be made? How will I **use assessment data** for next steps?	*TO BE FILLED IN AFTER TEACHING* (I am not sure if I need to write this out)

Include supporting material such as slides, pictures, copy of textbook, and handouts for any activities students will be using as part of your lesson.

*adapted from: http://webcache.googleusercontent.com/search?q=cache:EsQcNWuG1ZoJ:web.mnstate.edu/harms/StudentTeachers/edTPA-LessonPlan.doc+&cd=2&hl=en&ct=clnk&gl=us; http://www.moreheadstate.edu/getmedia/cd3fd026-939f-4a47-a938-29c06d74ca01/Lesson-Plan-and-Reflections.aspx; http://www.mcneese.edu/f/c/9cb690d2/Lesson%20Plan%20Rubric%20Aligned%20with%20InTASC.docx;https://www.uwsp.edu/education/Documents/edTPA/Resource12.pdf; https://www.uwsp.edu/education/Documents/edTPA/Resource11.pdf; https://www.uwsp.edu/education/Documents/edTPA/Resource11a.pdf; https://www.uwsp.edu/education/Documents/edTPA/LessonPlanTemplateSOE.docx; https://www.uwsp.edu/education/Documents/edTPA/SpecEdLessonPlanGuide.docx; https://www.uwsp.edu/education/Documents/edTPA/SpecEdLessonPlanTemplate.docx