Unit 2: Ecology (total time 3 weeks)

2A: Ecology Pacing: Sept 21-25

Formative Assessment: Sept. 25

Standards: SEV1.a

SEV1. Obtain, evaluate, and communicate information to investigate the flow of energy and cycling of matter within an ecosystem.

a. Develop and use a model to compare and analyze the levels of biological organization including organisms, populations, communities, ecosystems, and biosphere.

Learning Goals:

1. I can define abiotic and biotic and give examples.
2. I can differentiate between an organism's habitat and their niche.
3. I can categorize a description into the proper organization (organism, population, etc.)
4. I can develop and use a model to compare and analyze the levels of biological organization including organisms, populations, communities, ecosystems, and biosphere.

Essential Questions:

1. Explain the difference between abiotic factors and biotic factors.
2. Give an example of a biotic factor.
3. Give an example of an abiotic factor.
4. Give an example of a biotic factor interacting with an abiotic factor.
5. Explain the difference between habitat and niche.
6. Explain why field mice in Miami would not be part of the same population as field mice in Nebraska.
7. Explain how one bird may not be a part of a population but still be part of a community.

Unit 2: The Organization of Life: Sept. 28- Oct. 2

Formative Assessment: Oct. 2

SEV1. Obtain, evaluate, and communicate information to investigate the flow of energy and cycling of matter within an ecosystem.

b. Develop and use a model based on the Laws of Thermodynamics to predict energy transfers throughout an ecosystem (food chains, food webs, and trophic levels).

Notes:

Evolution and Ecology PPT

Chapter 4 Guided Notes

Chapter 4 - The Organization of Life - Section 1

Chapter 4 - The Organization of Life - Section 2

Chapter 4 - The Organization of Life - Section 3

Class Activities:

Ecosystem Song: https://www.youtube.com/watch?v=K3G3CdlZMf0&list=RD-WkZvhBlcLI&index=3

Eco Song 2: https://www.youtube.com/watch?v=JtbbjuhjmNY&list=RD-WkZvhBlcLI&index=4

Videos:

Biotic and abiotic factors: https://www.youtube.com/watch?v=rNfmew9C508

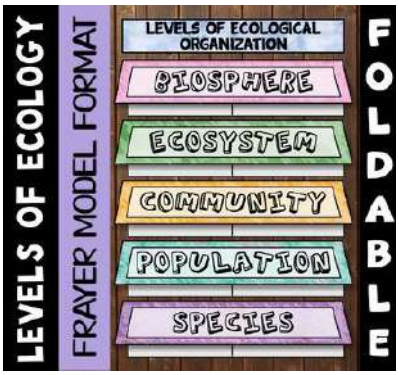
Levels of Ecology: https://www.youtube.com/watch?v=lnAKICtJIA4&t=2s

Investigation Labs:

https://newera.enschool.org/ourpages/auto/2017/9/25/62695333/NaturalSelectionTeddyGrahamLab%209-26-17.pdf

ADI Simulation Lab Predator/Prey interaction with wolves and sheep.

Ecosystem Foldable:



Unit Review: https://quizlet.com/55299434/unit-2-levels-of-organization-habitat-205-flash-cards/

Levels of Organization Worksheet:

https://www.menifee.k12.ky.us/userfiles/24/Classes/350/Levels%20of%20organization-%20Organizer.doc

Biogeochemical Cycles: Oct. 5 - 9

SEV1c - I can analyze and interpret data to construct an argument of the necessity of biogeochemical cycles (hydrologic, nitrogen, phosphorus, oxygen, and carbon) to support a sustainable ecosystem.

Learning Targets:

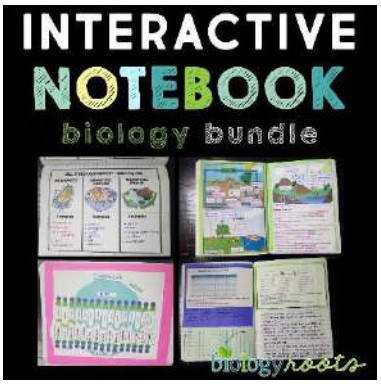
1. *I can define biogeochemical cycle and explain how it.*
2. *I can explain eutrophication and how it ties to the biogeochemical cycles.*
3. *I can define sustainability.*
4. *I can compare/contrast the carbon and nitrogen cycles.*
5. *I can predict the effects of anthropogenic activities on the carbon, oxygen, nitrogen, and phosphorus cycles.*
6. *I can create a model of the hydrologic cycle.*
7. *I can create a model of the carbon cycle.*
8. *I can create a model of the nitrogen cycle.*
9. *I can analyze and interpret drought data and construct an argument for the necessity of the hydrologic cycle to change the drought condition and sustain an ecosystem.*

Activities:

Water Cycle Song: https://www.youtube.com/watch?v=yNW1evt93e4

Biogeochemical Cycles Foldable: *Formative Assessment: Oct. 9*

Coloring Cycles Pages: https://www.biologyjunction.com/Biogeochemical_Cycles.pdf or you can also use this link: https://scienceoreilly.weebly.com/uploads/1/0/9/4/109495113/biogeochemical_cycles.pdf



Once it is done take an excellent picture and send it in through e-mail.

Videos:

https://www.youtube.com/watch?v=Bn41lXKyVWQ

https://www.youtube.com/watch?v=2D7hZpIYlCA

Summative Assessment: Bloom's Ball Ecological Project. Directions will be provided by the instructor. *Oct. 12*

https://www.smore.com/3uqe-bloom-ball

Get involve in your future!