

Unit Title: Ecology

Grade Level: 10th

Subject Area: Biology

Duration/Length/Number of class periods: 5 Class Periods

Description:

Students will learn about matter and energy and the interdependence in nature

Established Goals (National, State, Local): 9E.4.2.2.1 (NGSS) Apply place-based evidence, including those from Earth Communicating evaluating and about and communicate the methods that are used Impacts and Minnesota American Indian Tribes and communities and other and reasons, communicating by various cultures, especially those of Minnesota Sustainability in cultures, to construct an explanation of how a warming climate Space arguments and information American Indian Tribes and communities, to develop Earth's Systems impacts the hydrosphere, geosphere, biosphere, or Science ideas to others explanations of phenomena and design solutions to problems.

What Enduring Understandings

Human Impact on Ecosystems

What Essential Questions

What's my ecological footprint and how could it be reduced?

Students will be able to:

- I can Breakdown the Earth's Biosphere into Biomes, Ecosystems, Communities, Populations and Individual Species
- I can apply what I've have learned about the interaction between living and nonliving things within an ecosystem to build a food chain

<ul style="list-style-type: none"> I can trace the energy flow among living things through trophic levels within ecosystems. I can describe the human impact on ecosystems to create an online food web as well as determine their ecological footprint. I can create a data storyline by using Alteriz/Tableau to map out a city's population 							
	Formative	Summative	Introductory Activity	Learning Activity	Student Technology Used	Teacher Technology Used	ISTE Standards
Day 1: <ul style="list-style-type: none"> Post warm up question about ecosystem types using Flipgrid Post video on the introduction to ecology with post video questions. https://youtu.be/OfV3VNgipvw 	X		X		X		1d,7
Day 2: <ul style="list-style-type: none"> Interactive video on energy flow within ecosystems: Producers, Consumers (herbivores, Carnivores, scavengers) and decomposers. https://youtu.be/InAKICtJIA4 Follow up discussion questions! 	X					X	1c,3
Day 3: Review of topics covered day 1 and 2 using Kahoot					X		3a
Day 4: <ul style="list-style-type: none"> Quiz on energy flow within ecosystems using google form. Students will be assigned the quiz once they have completed all previous assignments and the review. 		X				X	3,2b
Day 5 through 8 Students will watch a video on predator/prey relationships and create a food web showing the energy flow through trophic levels showing primary- consumers-> secondary consumers->tertiary consumers and scavengers and decomposers	X					X	3a,4,6
Day 9:	X						3d

Students will research populations and limiting factors and present using Flipgrid							4,5b,c
Day 10: - 12 Students will choose a city in in Minnesota and use the Tableau app in Xcel to map out the population in that area.		X				X	
Day 13 Students will watch a video on human impact on ecosystems. https://youtu.be/guh7i7tHeZk	X						X 3c
Day 14,15,16 Students will watch video on ecological footprints and review previous topics on ecology https://youtu.be/fACkb2u1ULY		X					X 1,3,6,7
Day 17: Students will create their own ecological footprint		X				X	4,5,6

Materials, tools and resources: YouTube, Flipgrid, Tableau, Xcel, Google Classroom and other apps and Websites for Distance Learning
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Additional credit given to: