

Unit Title: Principles of Ecology & Populations

Grade Level: *Grade 10*

Subject Area: *Biology*

Duration/Length/Number of class periods:

Description: The unit introduces students to the flow of energy through trophic levels, cycles of matter, how organisms interact with one another and what factors influence the growth of populations.

Established Goals (National, State, Local):

Mn State Standard

Life Science: 9.4.2.1.1 Describe factors that affect the carrying capacity of an ecosystem and relate these to population growth.

Life Science: 9.4.2.1.2 Explain how ecosystems can change as a result of the introduction of one or more new species. *For example:* The effect of migration, localized evolution or disease organism.

What Enduring Understandings are desired?

Organisms and their environments are interconnected. Changes in one part of the system will affect other parts of the system.

What Essential Questions will be considered?

How can change in one part of an ecosystem affect change in other parts of the ecosystem?

Students will know / be able to:

- Trace the flow of energy through the trophic levels of an ecosystem
- Explain why the cycles of matter are important to all living things
- Give examples of ways that organisms interact with one another in ecosystems
- Describe how many factors influence the growth of a population

Description <i>Units must include at least one of each formative, summative, introductory activity and learning activity. Check the appropriate box; one per row.</i>	Formative	Summative	Introductory Activity	Learning Activity	Student Technology Used	Teacher Technology Used	ISTE Standards
13 days for Chapter 13 Principles of Ecology							
Day 1- Introductory video Chapter 13- If Humans Disappeared			X			X	1,7
Guided Notes Chapter 13 & WiQ 13.1(exit ticket via schoology)	X			X			1
Day 2- Stranger Days & whiteboard discussion	X				X		1,7
Day 3- Vocab Practice with Frayer Model-Whiteboards & watch video on 13.2				X	X		1,3
Day 4- WiQ 13.2 & 13.3 guided notes, The New Top Dog Article (Kami) & whiteboard discussions				X	X		1
Day 5- 13.4 Food Web simulator					X		1,3
Day 6-9 Choice Project- Edpuzzle Create a 3 minute video pertaining to information specific to an ecology topic and incorporate 5 questions embedded in video. OR use a previous ecology project from 2017	X			X	X		1,3,4,5,6,7
Day 10- Guest speaker- Someone from Ducks Unlimited or DNR explaining what professions out after high school/college and what you can do in this field of study.				X			1,7
Day 11- Guest speaker discussion 13.6 & gallery walk of project			X	X			1,7
Day 12- Review Chapter 13				X			
Day 13- Summative		X					

Materials, tools and resources - Schoology, Holt McDougal, Edpuzzle
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Additional credit given to Derick Doberstein & Kenneth Worel