

Technology Integration Workshop 2016

Unit Title: Natural Systems

Grade Level: Grade 7

Subject Area: Science: Life Science

Duration/Length/Number of class periods: 6-8 Weeks (4 class periods; 55 min per period)

Description: During the course of this unit, students will explore natural systems, identify parts of an ecosystem and trace the flow of energy in an ecosystem. Students will use their understanding of the ecosystem to describe where energy is stored in a food web. Students will analyze the interactions between biotic and abiotic factors. They will explore how these interactions affect number of organisms in a Minnesota ecosystem.

Established Goals (National, State, Local):

Minnesota State Science Standards

7.4.2.2.3	Identify the parts of an ecosystem Trace the flow of matter in an ecosystem
7.4.2.2.2	Describe where energy is changed and stored in a food web.
7.4.2.1.3	Analyze the effect of biotic and abiotic factors on the number of organisms in a Minnesota ecosystem
7.4.4.1.2	Analyze the impact of human activities on an ecosystem.

What Enduring Understandings are desired?

All biotic and abiotic factors in an ecosystem must interact in a way that maintain balance in the environment. It is through the balance of an ecosystem that energy is changed and stored in a food web. Other times, the balance of the ecosystem is negatively disrupted by human activities which in turn affects the ecosystem.

What [Essential Questions](#) will be considered?

1. In what ways are organisms in an ecosystem interconnected?
2. What impacts, both positive and negative, have humans had on our environment
3. Where does the energy for life come from?
4. How is matter recycled within an ecosystem?

Students will know / be able to:

Define biotic and abiotic factors

Classify individuals, populations, communities, and ecosystems

Illustrate the feeding relationships between organisms by using a food web

Summarize the effects of human activities on the Mono lake ecosystem

Description	Fo rm ati ve	Su m ma tiv e	Intro duc tor y Acti vity	Lea rnin g Acti vity	Stu dent Tec hno logy Use d	Teac her Tech nolog y Used	ISTE Stan dard s
Student will come in and answer the “ Question of the Day ” question on the overhead, then share their answer with an elbow partner.	X		X			X	2a
Students will use “ Sorting Out Life ”cards to identify biotic and abiotic factors in an ecosystem	X			X	X		4a
Students will identify parts of an ecosystem by watching a video of three different ecosystems: Sahara Desert video , Mono Lake video , and Rainforest video				X		X	4d
Students will create their own Food Chain/Food Web using ipad, laptop or any other tech device and present to the class.	X			X	X		1a,b
Students will describe how individuals, populations and communities impact an ecosystem after watching the Jane Goodall video				X	X	X	3c
Students will perform an end of the unit lab and written exam online using an ipad.		X			X		4d

Materials, tools and resources[Mono lake video](#)[Jane Goodall video](#)

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Additional credit given to : Foss Populations and Ecosystems, National Geographic and easyscienceforkids

