

Unit Title: Ecology

Grade Level: 7

Subject Area: Science

Duration/Length/Number of class periods: 15-45-minute class periods

Description:

This unit will be taught through an [Ecology Digital Notebook \(EDN\)](#)- This digital notebook will contain most of the activities for the unit. Each activity will refer to a page in the notebook. The notebook is composed of videos, graphic organizers, drag and drop activities, collaborative activities, and personal reflections. The unit will also include a schoology assessment with interactive activities, and a summative one-pager assignment.

***Please note: if you plan on using this notebook, it is best to make each page a .png file and use it as the background of the slide. This way, the students won't be able to move elements on the page. I left most pages editable, but this will be problematic for students. [This video will help.](#)*

Established Goals (National, State, Local):

Minnesota Standards

7.4.2.1.1

Identify a variety of populations and communities in an ecosystem and describe the relationships among the populations and communities in a stable ecosystem.

7.4.2.1.2

Compare and contrast the roles of organisms within the following relationships: predator/prey, parasite/host, and producer/consumer/decomposer.

7.4.2.1.3

Explain how the number of populations an ecosystem can support depends on the biotic resources available as well as abiotic factors such as amount of light and

7.4.2.2.1

Recognize that producers use the energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis. This food can be used immediately, stored for later use, or used by other organisms.

7.4.2.2.2

Describe the roles and relationships among producers, consumers, and decomposers in changing energy from one form to another in a food web within an ecosystem.

7.4.2.2.3 Explain that the total amount of matter in an ecosystem remains the same as it is transferred between organisms and their physical environment, even though its form and location change. For example: Construct a food web to trace the flow of matter in an ecosystem.

What [Enduring Understandings](#) are desired?

Students will understand that all living things and nonliving things on earth are interconnected. Students will understand that the source of all energy on earth is the sun.

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

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

How does energy move through an ecosystem?

Where does the energy come from in an ecosystem?

Students will know / be able to:

Students will be able to identify producers, consumers, and decomposers.

Students will be able to construct a food web from real life examples found in the environment.

Students must understand that producers provide energy for consumers, and that they receive energy from the sun.

	Description	Formative	Summative	Introductory Activity	Learning Activity	Student Technology Used	Teacher Technology Used	ISTE Standards
Day 1- EDN Pages 6-7	Page 6 defines ecology and ecosystem. There is an audio clip for auditory learners.			X	X	Google Slides, YouTube	Google Slides, YouTube	VI,A
	Page 7 is a video explaining the difference between biotic and abiotic factors. Students fill out a graphic organizer while they watch the video.			X	X	Google Slides, YouTube	Google Slides, YouTube	VI,A
Day 2-EDN Pages 8-9	Page 8 is a video with many examples of living and nonliving things. Students must categorize each item as living or nonliving in the graphic organizer.	X			X	Google Slides, YouTube	Google Slides, YouTube	VI,A

	Page 9 is a video of a song that lists the characteristics of life. Students will record each one in their notebook.	X		X	X	Google Slides, YouTube	Google Slides, YouTube	VI,A
Day 3-EDN Pages 10-11	Page 10 is a refresher from the last lesson. Students identify 2 biotic and 2 abiotic things in their home or in class, and then must explain why they are biotic or abiotic.	X			X	Google Slides	Google Slides	VI,A
	Page 11 is a survival scenario. Students must read the scenario and drag 6 objects from the right that they would use to survive. In the box below, they must explain how they would use each item to survive.	X		X		Google Slides	Google Slides	I,A IV, D
Day 4- EDN Pages 12-13	Page 12 students pick 3 an animal that would live in a mountain ecosystem and they pick 3 survival tools from the previous page.			X		Google Slides, web browser	Google Slides	I,A IV,D
	Page 13 Students compare how they would use the 3 survival tools they picked to how their animal accomplishes those same things.	X			X	Google Slides	Google Slides	IV,D
Day 5- EDN Pages 14-15	Page 14 students will complete a turn and talk with a partner and discuss what both humans and animals need to survive, and where do animals get the things they need to survive. They will work together to fill out their turn and talk page.	X			X	Google Slides	Google Slides	II,A
	Page 15 introduces a new vocabulary term (habitat), and then has students reflect on what they have learned so far by having them fill out the “big idea” box.	X			X	Google Slides	Google Slides	VI,B
Day 6- EDN Pages 16-17	Page 16 is instructions for students to log in to Brainpop and watch a video about ecology.				X	Google Slides, Brainpop	Google Slides, Brainpop	VI,D
	Page 17 are guided notes that coincide with the Brainpop video. Students will watch the video in split screen with their guided notes.	X			X	Google Slides, Brainpop	Google Slides, Brainpop	VI,B
Day 7- EDN Pages 18-19	Page 18 will coincide with a teacher presentation . The students will follow along in their notebook and work with partners to fill out page 18. Students will label each kind of organism as either a producer, consumer, or decomposer and explain what each type is.				X	Google Slides	Google Slides	VI,B
	Page 19 students will have to restate what each type of organism eats and classify what each animal is by dragging it into the correct box.	X				Google Slides	Google Slides	VI,B
	Page 20 coincides with the teacher's presentation and explains what a food chain is. Students must come up with the definition	X			X	Google Slides	Google Slides	VI,A

Day 8- EDN Pages 20-21	of a food chain and explain what the original source of all energy is (the sun).							
	<u>Page 21</u> also coincides with a teacher presentation, and students must be able to define what a food web is.	X				Google Slides	Google Slides	VI,A
Day 9- EDN Pages 22-24	<u>Page 22</u> is an opportunity for students to examine how well they have done so far in the notebook. They will look at their grade in Schoology, and then fill in the grade reflection. They will examine one thing they did well, one thing they can improve on, and a next step to improvement.	X				Google Slides, Schoology	Google Slides, Schoology	V,B V,C
	<u>Page 23</u> is a food web. Students will drag and drop the animals in the correct places to show the feeding relationships and energy flow.	X		X	X	Google Slides	Google Slides	I,C
	<u>Page 24</u> is an advanced option. Students can choose to complete page 24 instead of page 23 if they want to be challenged.							
Day 10- EDN Pages 25-26	<u>Page 25</u> coincides with a teacher presentation. Students will learn what an energy pyramid is and be able to define it. They will also learn what a primary, secondary, and tertiary consumer is and be able to define them as well.	X		X	X	Google Slides	Google Slides	I,C
	<u>Page 26</u> is a review page to help students chunk the material they have learned in week 2.				X	Google Slides	Google Slides	VI,A
Day 11 & 12	Students will complete a schoology ecology assessment .	X			X	Schoology	Schoology	I,C
Day 13, 14, & 15- EDN Page 27 and ecology one-pager	Page 27 students will demonstrate the difference between population and community and clear up some misconceptions about consumers.				X	Google Slides	Google Slides	VI,A
	Ecology one-pager can be completed on paper, in google slides, in Pic Collage, Notability, or any other app that the students choose. Here is the rubric . Adapted Ecology one-pager		X			Any app the students choose	Schoology	I,B III,C VI, B

Materials, tools and resources:

Each student will need a device to engage in this unit. My school has 1:1 iPads.

Students will be completing an Ecology Digital Notebook in google slides.

Schoology is used to manage and monitor digital notebooks.

Slip-n-slide (add-on) is used to add new pages to the notebook.

The notebooks link to other websites, such as Brainpop and YouTube.

Students will complete an assessment in Schoology.

Students will use an app of their choice (Notability, Pic Collage, etc.) to complete their ecology one-pager.

Unit Plan Author Lucy Mehlan, Roseville Area Middle School, lucy.mehlan@isd623.org

