

Threatened, Endangered & Extinct Lesson Plan

Keywords: habitat, ecosystem, food, water, shelter, space, basic needs, threatened, endangered, extinct

Grade level: 3rd & 4th Grades

Setting: classroom

Subjects covered: Science

Goals:

The student will differentiate between wants and needs.

The student will understand and cite examples of basic needs within familiar ecosystems.

The student will understand that if basic needs aren't met, organisms may become threatened, endangered, or extinct.

Materials:

**Threatened, Endangered & Extinct* flier (from Environment & Ecology Series) - (1 per student or pair of students)

*worksheet - What are basic needs? (1 per student)

*worksheet – Can you solve these basic needs riddles? (1 per student – optional)

*chart paper, markers (optional)

*website – PA Game Commission (www.pgc.state.pa.us/pgc/cwp/view.asp?a=458&q=150321)

State Standards Addressed: E & E Standards: 4.7.4.A, 4.7.B, 4.7.C

Background Information

All living organisms have basic needs. Air and sunlight are part of all ecosystems. (There are a few living exceptions (anaerobic bacteria), all living things need oxygen, which is a component of air.) Although researched resources varied on the exact number of basic needs, the four highlighted in this lesson: *food, water, shelter and space*, reflect fourth grade Environment & Ecology Standards.

FOOD - Food is necessary to provide an animal with energy to carry out daily functions. The diets of animals depend on the seasons of the year, their size, age, sex, and behavior. Food availability is naturally effected by weather events such as drought, floods, or tornadoes. Man also effects many food sources of animals.

WATER - Water is critical to living things. Water is necessary for internal health, plant growth, and bathing. Some water provides shelter for living things. Ponds, streams, and birdbaths are sources of water for some, and other living things are able to obtain all the water they need from their food supply. Too little or too much water can directly effect the health of living things.

SHELTER - Animals seek shelter for security, a place to feed, a place to rest and sleep, and a place to raise and care for young. Shelters may come in many forms: vegetation, rock piles, chimneys, fence posts, trees, cliffs, holes in the ground, or billboards. Sometimes animals seek shelter in more than one place, depending on the activity: feeding, resting, storing food, etc.

SPACE - Animals must travel to meet their needs, socialize, and reproduce. This area is known as its home range, or space. Usually, small animals have small home ranges, and large animals have larger ones. Migratory animals may have several spaces necessary to survive. Animals often defend and protect their space to raise young. This is called a territory. Animals must maintain a healthy population within their space. Overcrowding will decrease food supply, and small populations can effect socialization.

THREATENED – Species that may become endangered within a foreseeable future throughout their range unless the steps are taken to prevent decreasing

ENDANGERED – Species that are in serious danger of extinction and have already been reduced to critically low numbers or have experienced drastic habitat

EXTINCT - Species that no longer exist across their former range.

Preparation:

1. Read background information and preview/read *Threatened, Endangered, & Extinct* flier
2. Title chart paper - Basic Needs (optional)
3. Make copies of “What are basic needs?” and “Can you solve these basic needs riddles?”- optional
4. Prepare overhead transparency, or copy “Threatened, Endangered, or Extinct Poem” on chart pap
5. Reserve computer lab time to research *Threatened, Endangered & Extinct* in PART TWO

Lesson Steps: PART ONE – BASIC NEEDS

1. Initiate discussion of lesson by focusing how living things are able to survive in a habitat/ecosystem because their **basic needs** are met.
2. Partner students and have them brainstorm a list of everything they need to survive.
3. Ask for volunteers to share, and write down an adequate number of responses on a list on the white board, or on post-its. These responses will be sorted into **wants** and **needs**.
4. Discuss the difference between “wants” (extras in life, not necessary for survival) and “needs” (necessary for survival). Create a t-chart on the white board and sort class responses. Possible wants/needs:

wants	needs
own bedroom	home (shelter)
video games	exercise/play (space)
Gatorade, Pepsi	water
pizza, Big Mac, Whopper	food
	air

5. If necessary to develop further understanding, partner students and have them discuss a pet’s wants/needs. Repeat activity for pets.

wants	needs
big fluffy bed	home (shelter)
farm field, woods	yard to exercise/play (space)
water	water
steak bones, dog treats	dog food

6. Ask:
- Which needs are you able to get easily?
 - Which needs take effort?
 - Does everyone in our class get what they need the same way?
 - Are some needs met the same for everyone?
7. Continue discussion. “Think about home and school.”
- Are your needs met differently?
 - Can you think of a time when your need wasn’t met? What did you do?
 - What would you do if you could no longer get something you needed?
- “Think about plants and animals in different ecosystems and biomes.”
- What needs are plants and animals easily able to get in an ecosystem?
 - What needs may be difficult to meet?
 - What would a plant/animal do if needs couldn’t be met in an ecosystem?
8. Ask for volunteers to assist in categorizing basic needs of living (humans, animals, birds, plants) organisms. Teacher may create a poster to hang in classroom during discussion, or have students who finish “What are basic needs?” early create a colorful classroom display. Categories should reflect the following:

Basic Needs

food - a variety of nutritious food necessary for energy and health

water - necessary for health

shelter - a place to sleep, rest, live

space - area encompassing school, church, entertainment, athletic activities, area to search for a mate, play (may be in square miles)

9. Distribute copies of *Threatened, Endangered & Extinct*. Ask for volunteers to read section about basic needs. Discuss.
10. Review/discuss directions for worksheet - “What are basic needs?” Assign for independent seatwork.
11. Optional homework: worksheet “Can you solve these basic needs riddles?”

Lesson Steps: PART TWO – THREATENED, ENDANGERED & EXTINCT

1. Initiate a discussion about what would happen if an organism’s basic needs weren’t met for a period of time.
2. Write words threatened, endangered, and extinct on white board. Discuss their meaning. Ask if students are aware of specific examples.
3. Show /read to class Threatened, Endangered & Extinct Poem that is attached.
4. Ask students what they learned about the great egret. Write brainstormed list on white board. List may include:

<ul style="list-style-type: none"> *endangered throughout USA *white *about 40 inches tall * eats frogs, minnows, small water animals *55 inch wingspan 	<ul style="list-style-type: none"> *yellow bill *black legs and feet *shallow river, stream, pond *nest in trees near river, shrubby growth *hunted for feathers, habitat loss, polluted water
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5. Write the following categories on the board: Physical Characteristics, Habitat, Reason why Endangered, Food. Ask for volunteers to place generated items in proper categories.
6. Introduce the names of the following threatened, endangered, or extinct organisms on the board. Students will become excited after hearing the unique names of some birds and animals. Explain that these are all threatened, endangered, or extinct species found in PA. Discuss familiarity of animals with kids.
7. Take class to computer lab, (or print out copies of species) and launch PA Game Commission website (www.pgc.state.pa.us/pgc/cwp/view.asp?a=458&q=150321). Allow free exploration of site.
8. Ask students to select a specie, and take notes in the following categories: Physical Characteristics, Habitat, Reason why Endangered, Food.
9. Students can take notes back to class to create a short poem about their specie. The poem must contain information from each category. Students can publish their poem by sharing their poem with the class and drawing an illustration.

Resource: *Threatened, Endangered & Extinct* flier (from Environment & Ecology Series)

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What are basic needs?



All ecosystems have **sunlight** and **air** to provide life to organisms.

Other basic needs that organisms require are **food**, **water**, **shelter**, and **space**.

Give examples of how the following organisms find basic needs in their ecosystem.

organism	food	water	shelter	space
you				
dog 				
sunflower 				
fox 				

1. A farmer accidentally destroyed a fox's den when he plowed the land to make a new farm field. How could the fox adapt to survive?

2. What if an organism is unable adapt or find basic needs within its ecosystem?

Can you solve these basic needs riddles?



Ecosystems have **sunlight** and **air** to provide life to organisms.

Other basic needs that organisms require are _____, _____, _____, and _____.

Choose from the word bank below to solve each riddle.

food	water	shelter	space	Who am I?
I am a plant eater. I love to eat clover, dandelions, and garden plants.	I will drink from puddles or other places where water collects.	I like thick brush where I can lay down and hide.	I'm usually alone, but relatives are close by.	
I wait patiently to reach out and grab tasty insects.	Insects that I eat provide me with water.	I like greenish-brown stick like plants that look like me.	I'm usually alone after I hatch from an egg with hundreds of brothers and sisters.	
I make my own food using energy from the sun.	I get water from the soil.	I don't need a lot of shelter, and I like sunny areas.	I need space on the ground to spread out and my seeds need a lot of space to fly in the wind.	
Leaves and stems are some of my favorite food.	I get water from plants that I eat.	I carry my house on my back. I like to hide under leaves. I don't like the bright sun.	I don't need a lot of space. I usually live where my food is.	
My favorite food is worms, but I'll eat grubs, spiders, berries, and seeds.	I drink from puddles, bird baths, or where water collects.	I build my nest on a sturdy branch in a leafy tree so it is hidden.	I like open spaces with trees where I can find food and raise my young.	
I like to eat frogs, salamanders, and insects. I swallow them whole.	I drink from puddles or where water collects on the ground.	I like cool places under rocks or logs.	During warm months I like to stay in the same area.	

garter snake American robin cottontail
 rabbit snail dandelion praying mantis

Threatened, Endangered, Extinct Poem

The poem created below is an example that was created from information taken from the PA Game Commission website. Student generated poems do not have to follow this rhyming format.

The Great Egret

Walking quietly along the forest path, in the crisp, autumn air,
I looked toward the shallow river and guess what I saw there?
A tall, majestic bird, with black legs and black feet,
Looking in shallow water for frogs and minnows to eat.

I started paging through my field guide, looking for the bird of white,
I found it on page seventy-three, oh what a beautiful sight!
I noted that its wingspan reached 55 inches wide,
And 40 inches tall is measured from top to ground along its side.

I looked back toward the bird creeping silently with the flow,
Its yellow beak finding food, oh what a show!
My curious eyes found a nest way up in the trees,
I bet it just flew down in the refreshing autumn breeze.

I looked back at the guide and discovered that I was lucky
As it turns out, the great egret is an endangered specie
The birds were once hunted for their feathers of so white,
Polluted water and habitat loss contributed to their plight.

I hope people appreciate the beauty of this bird,
And continue to take steps to help it so it can be part of our world!