| Indiana DunesEducation | National Park ServiceU.S. Department of the InteriorIndiana Dunes National LakeshoreEducation Department | National Park Service Logo |
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Habitats Hike

**Summary:**

Discover why Indiana Dunes has one of the largest diversity of plant species in the National Park System. Explore many habitats, such as open dunes, forested dunes,wetlands or oak savannas that support rare species and this abundance of life.

**Objectives:** students will be able to

1. Describe 3 different habitats from general physical characteristics such as light, temperature and moisture and why this matters regarding what flora and fauna are found there.
2. Explain why the loss of habitat is endagering some plants and animals.
3. Observe and describe the diversity of living things in the habitats.
4. Have the opportunity to describe, draw or wite about the solitude and beauty of ….the habitats.

 

**What to expect on during your trip:**

This outdoor program will lead you on a trail through three to four different habitats. Offered at Kemil Beach or the Douglas Center.

 **Setting:**

The Dune Ridge Trail meanders through fore dunes, a wetland and the beach is accessible. The Miller Woods trail takes you through a rare fire-dependent oak savannah.

**Grade:**

4th – 12th grade.

**Ratio of students to ranger:**

No more than 30 to 1 is requested. We will accommodate larger groups within reason with the teacher’s assistance.

**Safety Issues:**

Exposure to weather, poison ivy and ticks. The hike is easy to moderate at Miller Woods and moderate to strenuous at Dune Ridge.

**Background Information:**

People and other animals share some basic needs.

The environment in which an animal lives is called “habitat”. An animals’ habitat includes food, water, shelter, and space.

If any of these components are missing or altered there may be an impact on the local animal population. Other factors, which can have an impact, are disease, predation, pollution, accidents, and climatic conditions.

**Prerequisite Classroom Activities:**

Prior to your visit to the Indiana Dunes National Lakeshore we suggest that you read over the following activities and incorporate them into your classroom teaching before or after your visit.

Materials:

Paper for recording habitat components, cards for identifying habitat needs and habitat at home.

Activities:

1. Split class into groups and have them identify habitat needs (food, water, shelter, space, and arrangement) for any five wild animals

2. Have each student describe his or her habitat at home.

3. Play charades with students acting out habitat components from activity number one. When all five components are identified, see who can guess the animal.

**Vocabulary:**

***Habitat***: The place or region tha a plant or animal normaly lives.

***Community:*** All the plants and animals living in a particular area.

***Species***: Any group of plants or animals that posess similar anatomical characteristics and have the ability to interbreed.

***Diversity***:Showing a difference, not being the same, having variety***.***

***Percolation****:*Usually a liquid passing through a porous substance or substrate

**Indiana Content Standards:**

The Habitat Hike program can assist teachers in meeting the following Indiana standards

**First Grade**

Science

Life Science

**SCI.1.3.1 2010**

Classify living organisms according to variations in specific physical features (e.g., body coverings, appendages) and describe how those features may provide an advantage for survival in different environments.

**SCI.1.3.3 2010**

Observe and explain that plants and animals have basic needs for growth and survival: plants need to take in water and need light, and animals need to take in water and food and have a way to dispose of waste.

**SCI.1.3.4 2010**

Describe how animals’ habitats, including plants, meet their needs for food, water, shelter and an environment in which they can live.

**SCI.1.3.5 2010**

Observe and describe ways in which animals and plants depend on one another for survival.

**Fourth Grade**

Science

Life Science

**SCI.4.3.1 2010**

Observe and describe how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.

**SCI.4.3.3 2010**

Design investigations to explore how organisms meet some of their needs by responding to stimuli from their environments.

**SCI.4.3.4 2010**

Describe a way that a given plant or animal might adapt to a change arising from a human or non-human impact on its environment.

**Fifth Grade**

Science

Life Science

**SCI.5.3.1 2010**

Observe and classify common Indiana organisms as producers, consumers, decomposers, predator and prey based on their relationships and interactions with other organisms in their ecosystem.

**SCI.5.3.2 2010**

Investigate the action of different decomposers and compare their role in an ecosystem with that of producers and consumers.

**Sixth Grade**

Science

**SCI.6.3.1 2010**

Describe specific relationships (i.e., predator and prey, consumer and producer, and parasite and host) between organisms and determine whether these relationships are competitive or mutually beneficial.

**SCI.6.3.2 2010**

Describe how changes caused by organisms in the habitat where they live can be beneficial or detrimental to themselves or to native plants and animals.

**SCI.6.3.3 2010**

Describe how certain biotic and abiotic factors—such as predators, quantity of light and water, range of temperatures and soil composition—can limit the number of organisms an ecosystem can support.

**SCI.6.3.4 2010**

Recognize that plants use energy from the sun to make sugar (i.e., glucose) by the process of photosynthesis.

**SCI.6.3.5 2010**

Describe how all animals, including humans, meet their energy needs by consuming other organisms, breaking down their structures, and using the materials to grow and function.

**Eighth Grade**

Science

Earth and Space Science

**SCI.8.2.6 2010**

Identify, explain and discuss some effects human activities (e.g., air, soil, light, noise and water pollution) have on the biosphere.

**SCI.8.2.7 2010**

Recognize that some of Earth’s resources are finite and describe how recycling, reducing consumption and the development of alternatives can reduce the rate of their depletion.

**SCI.8.2.8 2010**

Explain that human activities, beginning with the earliest herding and agricultural activities, have drastically changed the environment and have affected the capacity of the environment to support native species. Explain current efforts to reduce and eliminate these impacts and encourage sustainability.

English- WRITING: Applications (Different Types of Writing and Their Characteristics)

# EL.8.5.5 2006

• identify the sequence of activities needed to design a system, operate a tool, or explain the bylaws of an organization's constitution or guidelines.
• include all the factors and variables that need to be considered.
• use formatting techniques, including headings and changing the fonts (typeface) to aid comprehension.
Example: Write a report of a science experiment that was conducted in class, describing both the process and the scientific conclusions. Describe the steps clearly, using precise scientific vocabulary, so that another reader could follow exactly what the experiment involved and could understand the reasoning behind the conclusion. Add graphics and text design to make the content clearer and easier to follow.

**High School**

Earth Science

## The Earth

**SCI.ES.3.1 2010**

Understand that the Earth system contains fixed amounts of each stable chemical element and that each element moves among reservoirs in the solid earth, oceans, atmosphere and living organisms as part of biogeochemical cycles (i.e., nitrogen, water, carbon, oxygen and phosphorus cycles), which are driven by energy from within the earth and from the sun.

**SCI.ES.3.2 2010**

Demonstrate the possible effects of atmospheric changes brought about by natural and human-made processes.

Biology

Matter Cycles and Energy Transfer

SCI.B.3.1 2010:

Describe how some organisms capture the sun’s energy through the process of photosynthesis by converting carbon dioxide and water into high-energy compounds and releasing oxygen.

**SCI.B.3.4 2010**

Describe how matter cycles through an ecosystem by way of food chains and food webs and how organisms convert that matter into a variety of organic molecules to be used in part in their own cellular structures.

**SCI.B.3.5 2010**

Describe how energy from the sun flows through an ecosystem by way of food chains and food webs and how only a small portion of that energy is used by individual organisms while the majority is lost as heat.

Interdependence

**SCI.B.4.1 2010**

Explain that the amount of life environments can support is limited by the available energy, water, oxygen and minerals and by the ability of ecosystems to recycle the remains of dead organisms.

**SCI.B.4.2 2010**

Describe how human activities and natural phenomena can change the flow and of matter and energy in an ecosystem and how those changes impact other species.

**SCI.B.4.3 2010**

Describe the consequences of introducing non-native species into an ecosystem and identify the impact it may have on that ecosystem.

**SCI.B.4.4 2010**

Describe how climate, the pattern of matter and energy flow, the birth and death of new organisms, and the interaction between those organisms contribute to the long-term stability of an ecosystem

 **Extension or Follow-up Activity**

 Class reflection paper or writing sample:

Ask each student to write a short essay, letter or story about what they learned on their field trip to Indiana Dunes National Lakeshore. Rangers love receiving mail from their students. Send the ranger the packet of essays from your class (or a copy of them), and your ranger will send your class a certificate from the dunes. Send your essays to:

Indiana Dunes National Lakeshore

1100 N. Mineral Springs Road

Porter, IN 46304

Attn: Your ranger’s name or just Education Department

If you are using this essay as a class assignment for a grade, we would like to suggest that each essay contain the following elements. Use the rubric below to score them.

\* The name of the park and the location of their field trip—for example: Douglas Center, Indiana Dunes National Lakeshore

\* Three facts they learned on the field trip about the habitats of the dunes.

\* A brief explanation of why Indiana Dunes is unique and therefore a national park.

\* At least two things the student can do to help take care of his or her national park.

\* Fill in the blank of this statement and provide an explanation:

I would like to learn more about \_\_\_\_\_\_\_\_\_\_ at Indiana Dunes.

\*\*\* For advanced groups, add the following element:

Tell the park rangers if you would like to bring your families and friends to the dunes and if so what would you do here and where would you go.

**Assessment:**

**Grading for Class reflection writing assignment:**

1. **Writing and organization**- ***4 points*** the writing sample is very well written and organized by the elements provided. It has a strong introduction, middle and conclusion. ***3 points*** the writing sample is well written and organized by the elements provided. It includes an introduction, middle and conclusion. ***2 points*** the writing sample is choppy and is not well organized. It lacks an introduction or conclusion. ***1 point***the writing sample is very short and unorganized.
2. **Grammar & Spelling-** ***4 points*** Mistakes in spelling and grammar are minor or non-existent. ***3 points*** Mistakes in spelling and grammar are minimal—about 4-5. ***2 points*** mistakes in spelling and grammar are numerous—5-10. ***1 point*** mistakes in spelling and grammar are more than 10.
3. **Facts and content**- ***4 points*** the writing sample demonstrates the student’s learning on the dunes program and includes three or more facts provided by the park staff. ***3 points*** the writing sample demonstrates the student’s learning and includes only two facts provided by the park staff. ***2 points*** the writing sample does not demonstrate much learning and only includes one fact provided by the park staff.***1 point*** the writing sample does not demonstrate any learning and does not include any facts provided by the park staff.
4. **National Park Service theme** - ***4 points*** the writing sample clearly demonstrates the student’s understanding of the role of the NPS in preserving the dunes by explaining why Indiana Dunes is such a unique treasure.***3 points*** the writing sample mentions the NPS and its role in preserving the Indiana Dunes. ***2 points*** the writing sample mentions the NPS and Indiana Dunes. ***1 point*** the writing sample does not mention anything about the NPS or its role at Indiana Dunes.
5. **Stewardship-** ***4 points*** the writing sample lists three things the student can do to assist in taking care of the Indiana Dunes. ***3 points*** the writing sample lists two things the student can do to assist in taking care of the Indiana Dunes. ***2 points*** the writing sample lists one thing the student can do to assist in taking care of the Indiana Dunes. ***1 point*** the writing sample does not list anything about what the student can do to take care of the Indiana Dunes.