

# Piping Plovers

## Sleeping Bear Dunes National Lakeshore – Pre-Program Lesson Plan



**Grade Levels:** 3-5

**Setting:** Classroom

**Classroom Equipment**

**Needs:**

- Documents Camera
- Projector
- Internet Access

**Duration:** 1 hour

**Standards Addressed:**

**3<sup>rd</sup> Grade**

LS1.B: Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles.

LS4.D: Populations live in a variety of habitats, and change in those habitats affects the organisms living there.

**4<sup>th</sup> Grade**

ESS2.E: Living things affect the physical characteristics of their regions.

**5<sup>th</sup> Grade**

LS2.A: Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life

**Materials Needed:**

Prezi, scissors, glue, chart paper, construction paper, post-its, markers

**Vocabulary:** piping plover, endangered, habitat, ecosystem, prey

**Introduction:** Welcome to the Sleeping Bear Dunes National Lakeshore. This pre-lesson will serve as an introduction to the Endangered Piping Plover and their role in the local ecosystem.

**Essential Question:** Why is it important to protect the piping plovers?

What impact do people have on the Piping Plovers survival?

**Enduring Understanding:** What factors impact the survival of Piping Plovers and what role do people play.

**Objectives:**

After completing this program students will be able to:

- Create food web including Piping Plovers
- Make claims about how the elimination of piping plovers would affect food webs and the local ecosystem
- List facts about Piping Plovers and their lives.

\*If you are unable to print these or other materials for this lesson, please contact the Education Technician at [slbe\\_education@nps.gov](mailto:slbe_education@nps.gov) and ask for a packet to be mailed to your school.\*

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### Introduction (15/20 minutes):

- 1) Show the short video <http://www.reshareworthy.com/piping-plovers/> . This is a short 30 second video that shows a piping plover with four of the hatchlings
- 2) Tell students today they are going to learn more about an endangered shorebird called the Piping Plover. One of the areas where these birds nest is the coast line of Lake Michigan in the Sleeping Bear Dunes National Lakeshore.
- 3) Show the class the Prezi which provides a general overview about Piping Plovers.
  - a. <https://prezi.com/view/KpuZhi5S23tuavY4jaFN/>
- 4) Discuss any questions that may arise about Piping Plover and their lives.
  - a. For any questions that are not answered in the presentation, encourage students to write down on post-its or in science notebooks. They may find these questions are answered tomorrow in the ranger presentation, or students may choose to ask these questions to the ranger. If students are planning to ask the questions to the ranger, make sure they have access to the questions during the ranger question and answer segment and are willing to speak in front of the camera.
  - b. **Teacher Note:** Students will be creating a food web including the Piping Plovers, you may wish to focus on the food slide of the Prezi and focus students attention on what plovers eat and which animal eat plovers.

### Main Activity: (35/40 minutes)

(Modification Grade 3 create a food chain, grades 4/5 create a food web)

- 1) Tell students Piping Plovers are an important part of the ecosystem in the Sleeping Bear Dunes. Today their job is to create a food web/chain including the Piping Plovers.
  - a. *Teacher note:* You may choose to project the Prezi slides on food for Piping Plovers
- 2) Project images of food webs
  - a. [https://www.glerl.noaa.gov/res/projects/food\\_web/food\\_web.html](https://www.glerl.noaa.gov/res/projects/food_web/food_web.html) - This website shows larger food webs.
  - b. [http://www.mtri.org/eurasian\\_watermilfoil\\_impacts.html](http://www.mtri.org/eurasian_watermilfoil_impacts.html) - Midway down the page this link shows a simpler food web.
  - c. Draw students attention to the overall structures of a food web, bigger predators are on the top, smaller animals like algae and small insects are on the bottom on the food webs.
  - d. **Teacher note:** This step may be skipped if students have already mastered the concept of what makes a food web.
- 3) Place students into partnership and pass each group the food web activity sheet, construction paper, glue and scissors.
- 4) Instruct each group they will be cutting out the animals and placing them into a food web.

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- a. **Teacher Note:** *You may choose to modify this and have students create a food chain using only the green algae, scud, piping plover and red fox.*
- 5) While students are working circulate the room and help address any misconceptions or guide students towards creating a food web.
- 6) Time permitting allow students to share their food webs when they are completed
  - a. **Teacher note:** *Students who finish quickly may add other animals of their choosing to the food web or sketch an example of an ecosystem including all of the animals in their food web.*

### Closure (5 minutes):

1. Revisit questions from the introduction segment. Were students able to answer any of the questions they originally had?
2. Remind students that Piping Plovers are an endangered species. Ask students to think about how the food web and ecosystem would be impacted if Piping Plovers became extinct. Give students 2 or 3 minutes to write down their ideas.
3. If time permits allow students to share some of the ways they think the food web and ecosystem would be impacted.

### Additional Tasks to Explore:

<http://www.miseagrant.umich.edu/lessons/lessons/by-broad-concept/life-science/food-chains-and-webs/> - This lesson focuses more in depth on the topic of food chains and webs.

<https://www.fws.gov/midwest/eastLansing/te/pipl/index.html> - This page shows general plover information and a short video about preservation on the Great Lakes.

[https://www.youtube.com/watch?v=1avB\\_tt7uEs](https://www.youtube.com/watch?v=1avB_tt7uEs) – This is a background video on endangered Piping Plovers set in Long Island.

<http://www.greatlakespipingplover.org/research-and-publications-> This website is dedicated to Piping Plover recovery in the Great Lakes region.

<https://www.nps.gov/slbe/learn/nature/pipingplover.htm> - This link contains general Piping Plover information with breeding timeline.

<https://www.youtube.com/watch?v=gBRcOLcEwF0> – This is a general Great Lakes video with reference to Sleeping Bear Dunes and Piping Plovers at ~ 2:04 second into the video.