

Endangered Species Curriculum – Early Elementary School

Stage 1 – Desired Outcome

Established GOALS:

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- Students will describe an outside place that is their special place.
- Students will explore how plants and animals are adapted to live in certain places.
- Students will draw environments given clues about what is there.
- Students will place animals and plants that are endangered in a place they could live.
- Students will use their drawings and/or photos from the Internet to create a “missing species” report, which is like a “missing persons” report and/or a “missing species” poster, which is like a “missing person/pet” poster.

Common Core Standards by grade:

[Grade K](#)

[Grade 1](#)

[Grade 2](#)

[Next Gen Standards](#)

National Arts Standards

UNDERSTANDINGS

U

Big Idea: Students will explore how plants and animals need special places to live. Plants and animals can become extinct if the place they live is changed too much.

Understandings: Students will explore different places that animals can live. They will learn about an endangered animal whose home is changing.

Misunderstandings: Many people think that losing species relates to the idea of survival of the fittest- a 19th century concept that says those species which are eliminated in the struggle for existence are unfit- and that if species can't adapt to the changing environment humans don't have an obligation to do what we can to save them.

Sometimes ecosystem problems are caused by businesses that want to make more money quickly. We can learn about these problems and write letters to educate businesses. We can also be more thoughtful of our material consumption and spend money in stores that are helping solve environmental problems.

ESSENTIAL QUESTIONS:

Q

Questions that foster inquiry:

- What does it mean for a species to be extinct?
- Why are so many plants and animals going extinct?
- What do plants or animals need to live?
- What changes are you willing to make in order to save a species? (Examples: Would you be willing to buy fewer toys? Donate your old clothing and toys instead of throwing them in the trash? Make greater efforts to recycle at home and at school?)

<p>Knowledge: K Students will know that many species of plants and animals are going extinct. We can save many of these species, but it will require changes in our own behaviors. We will need to educate ourselves and make sure our voices are heard.</p>	<p>Skills: S Students will be able to talk about the importance of the ecosystem or place an animal or plant lives. In their description they will be able to include living parts (plants, animals, decomposers) and nonliving parts (sunlight, air, water, and soil). Students will be able to draw an ecosystem.</p>
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Stage 2 – Assessment Evidence

<p>Performance Tasks: T</p> <p>Students describe a place outdoors they like to visit.</p> <p>Students draw places that plants or animals can live. They decide which of the endangered species on the list could live there.</p> <p>Students demonstrate their understanding of the problem of endangered species by creating a “missing species” report. The reports may be used in a number of ways to draw attention to the problem and its possible solutions For suggestions on follow-up activities and ways of using these reports please see the OE section.</p> <p>Students demonstrate their understanding of the problem of endangered species by creating a “missing species” poster. The posters may be displayed in a number of ways to draw attention to the problem and its possible solutions. For suggestions on follow-up activities and ways of using these posters please see the OE section.</p>	<p>Other Evidence: OE</p> <p>Students can present their reports and/or posters to the class.</p> <p>Students can display their Missing Species Reports and/or posters in their school as an art installation.</p> <p>Students and teachers can organize a display of the reports and posters at their local library or a community center.</p> <p>Students and teachers can email their Missing Species Reports to their Congressional Representatives and Senators and also to the Endangered Species Coalition to support advocacy for endangered species.</p> <p>Students may hang their posters around their neighborhood as if they were looking for a lost pet.</p> <p>Students and teachers can organize with other classes in their community to select one day of action where they hang their posters around town as a guerrilla art installation</p> <p>Teachers can schedule a class trip to their local US Fish and Wildlife Service office and also file the reports with them</p>
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Stage 3 – Learning Plan

Learning Activities:

- **Engage:** On the day that you begin the unit, ask students to share a short description of an outdoor place they like to go. Then, select a description of wilderness and read it to your students. Suggestions for possible readings are listed here:
<http://www.endangered.org/campaigns/endangered-species-day/readinglis/>

Draw a line down the middle of your board. Label one side ALIVE and the other side NOT ALIVE.

Ask the students what words they remember from the passage. Was it alive (an animal sound, a tree) or Not Alive (the wind, the stream)? Put the words on the board.

Explain that in order to describe a place we need to think about the living and nonliving parts. Animals and plants that live in a place need the living and the nonliving parts to survive.

Now you are ready to start learning about endangered species. First you can show your students how species are connected to ecosystems. Show your students one, two or all of the following short videos.

Endangered Species:

<http://www.pbslearningmedia.org/resource/idptv11.sci.life.eco.d4kend/endangered-species/>

TED Talk by Louie Schwartzberg: The Hidden Beauty of Pollination:

https://www.youtube.com/watch?v=eqsXc_aefKI

How Whales Change the Climate:

<https://www.youtube.com/watch?v=M18HxXve3CM>

After students have viewed the video(s), ask them, "What could happen if we don't do what we can to save all the different pollinators from extinction?"

What would it mean for the whale populations to go extinct. If the whales are gone, who suffers?

We just learned about how pollinators affect our food supplies and the environment and how whales affect climate. Do you think we understand everything about the species that have already gone extinct recently? Do you think we understand everything about the species that are currently endangered?

Hand out the [Ecosystem Worksheet](#). Ask students to use their five senses to think about the different elements of an ecosystem including sunlight, water, soil and air. Ask students to draw while you describe a place to them. Read the words aloud and give them two to five minutes to draw each place. Make sure they include as many elements of the environment as they can in each drawing. Useful descriptions of different ecosystems can be found at <http://www.ucmp.berkeley.edu/glossary/gloss5/biome/index.html>

Now read them the description of the 10 endangered species. Ask them which of the places each animal might live. Sometimes an animal might live in two places, like salmon that live in the oceans sometimes, and spawn in fresh water.

- **Explore** –Use the information provided by the Endangered Species Coalition web site at

<http://www.endangered.org/campaigns/vanishing-wildlife/> to introduce your students to some or all of the ten species listed. If you want to learn about endangered species in your state you may visit: <http://www.fws.gov/endangered/>

Your class may choose to study just one of the species in the Endangered Species List, or you may want to form a few groups and let students choose which of those species they are most interested in.

Refer to the [Reading List](#) to help explain what plants or animals need to live in an ecosystem. There are additional sources for information on the different species in the additional resources page.

- **Explain** – After you show the students the animal/plant and read about it from the web site, ask them to answer these questions:
 1. What does this animal need to live?
 2. Why is this animal endangered?
 3. What does it need to survive?
 4. What can we do to help the animal?
- **Elaborate** – Students fill out a missing species report. They can fill in the missing species report form using what they have learned from class discussion and additional in/out of class research (online, talking to parents, books or videos). They can draw a picture of the species on the form, cut out a picture from a magazine or print a picture from an online source and use a glue stick to attach it to the form.

Students and teachers can email the report forms to their Congressional Representative (find the contact information here: <http://www.house.gov/representatives/find/> or <http://www.senate.gov/senators/contact/> You can also email the reports to the Endangered Species Coalition for their records missingspeciesreports@endangered.org

Students can make a missing species poster. Students illustrate the poster using what they learned about ecosystems. Young students may use the posters with line drawings and fill in the drawings based on images from the gallery provided on The Endangered Species Coalition website, other internet sites or the other missing species posters. Alternatively, each species has a poster with its information and a blank space where students can use crayons, pastels, oil pastels, or color pencils to draw their own image.

Students can share their work with other classes in their school or in a library or community center by creating an art installation of their posters and /or reports. Signage can encourage visitors to tear off the contact information for Congressional Representatives on the bottom of each poster and call to voice their thoughts.

The class can hang their original artwork posters and also copies of the pre-designed posters around their neighborhoods as if they were missing pet posters. The Endangered Species Coalition website has a link to a grant application to cover the costs of color copies.

Teachers and students can coordinate with other classes and schools to schedule a Day of Action (we recommend coordinating around Endangered Species Day-May 20, 2016) and create a guerilla art installation of posters around their neighborhood, town or city. The more posters the better!

Teachers can schedule a field trip to their local US Fish and Wildlife Service office to file the reports with them as well. (this is a good PR opportunity- see Media Advisory and Event Advisory templates). Find your local office here: <http://www.fws.gov/offices/index.html>

- **Evaluate** – Students share their reports with classmates and talk about why they included the information they chose. They show their posters to classmates and explain what they chose to include in the picture. Did they show living and nonliving parts of the place the animal lives?

Grade K Common Core Standards and National Arts Standards

Reading Informational Text Standards

Key Ideas and Details:

[CCSS.ELA-Literacy.RI.K.1](#)

With prompting and support, ask and answer questions about key details in a text.

[CCSS.ELA-Literacy.RI.K.2](#)

With prompting and support, identify the main topic and retell key details of a text.

Writing Standards

Text Types and Purposes:

[CCSS.ELA-Literacy.W.K.1](#)

Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is...*).

[CCSS.ELA-Literacy.W.K.2](#)

Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

Research to Build and Present Knowledge:

[CCSS.ELA-Literacy.W.K.8](#)

With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

National Arts Standards: Visual Arts

Visual Arts / Creating:

Anchor Standard: Generate and conceptualize artistic ideas and work.

VA:Cr1.1.K

Engage in exploration and imaginative play with materials.

Grade 1 Common Core Standards and National Arts Standards

Reading Informational Text Standards

Key Ideas and Details:

[CCSS.ELA-Literacy.RI.1.2](#)

Identify the main topic and retell key details of a text.

Integration of Knowledge and Ideas:

[CCSS.ELA-Literacy.RI.1.7](#)

Use the illustrations and details in a text to describe its key ideas.

Writing Standards

Text Types and Purposes:

[CCSS.ELA-Literacy.W.1.1](#)

Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

[CCSS.ELA-Literacy.W.1.2](#)

Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

Research to Build and Present Knowledge:

[CCSS.ELA-Literacy.W.1.7](#)

Participate in shared research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence of instructions).

[CCSS.ELA-Literacy.W.1.8](#)

With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

National Arts Standards: Visual Arts

Visual Arts / Creating:

Anchor Standard: Generate and conceptualize artistic ideas and work.

VA:Cr1.2.1

Use observation and investigation in preparation for making a work of art.

Grade 2 Common Core Standards

Reading Informational Text Standards

Key Ideas and Details:

[CCSS.ELA-Literacy.RI.2.1](#)

Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text.

Integration of Knowledge and Ideas:

[CCSS.ELA-Literacy.RI.2.7](#)

Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.

[CCSS.ELA-Literacy.RI.2.8](#)

Describe how reasons support specific points the author makes in a text.

Writing Standards

Text Types and Purposes:

[CCSS.ELA-Literacy.W.2.1](#)

Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., *because*, *and*, *also*) to connect opinion and reasons, and provide a concluding statement or section.

[CCSS.ELA-Literacy.W.2.2](#)

Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

National Arts Standards: Visual Arts

Visual Arts / Creating:

Anchor Standard: Generate and conceptualize artistic ideas and work.

VA:Cr1.2.2

Make art or design with various material and tools to explore personal interests, questions and curiosity.

NextGen Standards

These NextGen Standards are not specifically addressed in this project, but the activity can be the basis for studying these concepts.

Grade 3 Disciplinary Core Ideas

LS2.D: Social Interactions and Group Behavior

- Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (*Note: Moved from K–2*). (3-LS2-1)

Grade 4 Disciplinary Core Ideas

ESS3.A: Natural Resources

- Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not. (4-ESS3-1)

LS1.A: Structure and Function

- Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)

Grade 5 Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems

- The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. 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. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)

ECOSYSTEM WORKSHEET – Draw these

Name _____

Ocean (Salt water): algae (phytoplankton), sea stars, fish, lobster, jellyfish, kelp, what else?

River or pond (Fresh Water): Cattails, crayfish, snails, turtles, frogs, beavers, what else?

Forests: Pine trees, grasses, mushrooms, owls, raccoons, porcupines, what else?

Prairie: Grass, wildflowers, prairie dogs, rabbits, grasshoppers, mice, what else?

READING LIST

Ocean Sunlight: How Tiny Plants Feed the Seas by Molly Bang (A must read!)

Review

Praise for LIVING SUNLIGHT: HOW PLANTS BRING THE EARTH TO LIFE:

* "If a good picture book does what it sets out to do, a great one sets out to do something huge and succeeds. . . . An outstanding book to read and absorb."--BOOKLIST, starred review

- "Chisholm, a professor of ecology, expands on the theme [photosynthesis], while the intense greens of Bang's gouaches bring it vibrantly to life."--THE NEW YORK TIMES BOOK REVIEW

- "LIVING SUNLIGHT is less a tutorial on photosynthesis than a magnificent celebration of life."--NATURAL HISTORY

Come Back, Salmon: How a Group of Dedicated Kids Adopted Pigeon Creek and Brought it Back to Life by Molly Cone

From School Library Journal

Grade 4-6-- The story of how an elementary school in Washington state ``adopted" a polluted stream that had once been a spawning ground for salmon. The children launched a major community effort to clean it up and, with the aid of grants, stocked an aquarium with salmon eggs from a state hatchery. The entire school was involved in caring for the eggs as they hatched, grew, and were eventually released into the now clean stream. It would be hard not to get caught up in the excitement and anxiety of the students as they wait for the fish to return to Pigeon Creek to spawn. Cone includes facts on the life cycle of the salmon in her clear, lively text, while Wheelwright's excellent illustrations and full-color photographs add to the overall quality of the presentation.

- *Tina Smith Entwistle, Oakley Park Elem . School, Walled Lake, MI*

Frogs by Gail Gibbons

From School Library Journal

PreSchool-Grade 2-This book once again demonstrates Gibbons's ability to present factual information in an appealing format for very young audiences. Here, she takes readers through the life cycle of frogs, beginning with the eggs or spawn and describing the stages from tadpole to adulthood. Clear, full-color illustrations present their anatomy, daily activities, and the different types. Scientific terms are presented phonetically. A double-page spread explains the difference between a frog and a toad, and the last page provides a few odd and interesting facts about these amphibians, such as "An African bullfrog can be as large as a football." An attractive offering.

Helen Rosenberg, Chicago Public Library, IL

Monarch Butterfly by Gail Gibbons

From School Library Journal

Grade 2-4-- Young naturalists will be captivated by this succinctly written, well-organized, brightly illustrated introduction to monarch butterflies. Focusing on a single monarch, the text describes each stage of its metamorphosis, basic physical and behavioral characteristics, diet, and migratory instincts. It then discusses the migration patterns of the species in general, mentions the celebrations held in their honor along the migration route, and ends with simple instructions for raising a butterfly in a jar...The last page consists of additional miscellaneous facts. --Karey Wehner, San Francisco Public Library

Near One Cattail: Turtles, Logs And Leaping Frogs by Anthony Fredericks

Review

. . . Tony has done it again: he's delivered the perfect book for every classroom library. --*Patricia Broderick, Editorial Director, Teaching K-8 Magazine, October 2004*

One Small Place in a Tree (Outstanding Science Trade Books for Students K-12) by Barbara Brenner

From [Booklist](#)

Reviewed with Barbara Brenner's *One Small Place by the Sea*.

Gr. 2-4. These companion books offer a glimpse of nature in action by zeroing in on "one small place" teeming with living things. *By the Sea* takes an up-close look at a tide pool, briefly describing the timing of the tides and how the changes affect tide pool inhabitants, while giving a more in-depth explanation of the complex interdependence of the plants and animals in their unique environment. In *One Small Place*, a bear uses a tree as a scratching post, thus beginning the chain of events that leads to a large hole that becomes home to a variety of forest animals. Brenner makes the science enjoyable and understandable, and Leonard's highly detailed, realistic illustrations provide great visual aid. These attractive volumes will nicely complement a science unit on ecology. *Lauren Peterson*

Over in the Ocean: In a Coral Reef

Review

Eye-popping artwork is the star of the show in Berkes's lively, oceanic counting book... --Kirkus Reviews, Sept 1, 2004

Berkes adapts the classic song "Over in the Meadow" to bring both a counting element and a musical element to the coral reef habitat. She has produced a book guaranteed to engage children while it educates them about marine life. The coral reef is teeming with pufferfish that "puff," gruntfish that "grunt" and seahorses that "flutter." The babies follow the behavior of their mothers - except in a true-to-life twist at the end. Includes plenty of age-appropriate background information about each of the animals. The book's illustrations are composed of photographs of reliefs shaped and sculpted from polymer clay - a wonderful, friendly, pliable and colorful medium. --*Arizona Networking News*

A River Ran Wild by Lynne Cherry

From School Library Journal

Grade 1-4-- In the 15th century, when native people first settled on the banks of the river now called the Nashua, it was a fertile and beautiful place. By the 1960s, the river valley had been ravaged by many years of serious pollution, and fish, birds, and other animals were no longer seen in the area. Through the efforts of Marion Stoddart and the Nashua River Watershed Association, laws were passed that resulted in the restoration of this river and the protection of all rivers. The current concern over the environment will make this a sought-after title, since it is brief enough to read aloud to groups of children. With assistance from informed adult readers, it makes an important contribution to literature on water pollution. --Ellen Fader, Westport Public Library, CT

What If There Were No Bees?: A Book About the Grassland Ecosystem (Food Chain Reactions) by Suzanne Slade

Review

This bug's eye view of life as a grasslands honeybee illustrates the paramount role they play in an ecosystem, as pollinators of wildflowers and crops and sources of food for creatures higher up in the food chain. Radiant illustrations are paired with simple, perceptive sentences to underscore the impact of the loss of keystone species. Each book includes a clearly labeled, well-illustrated food chain that shows the relationships between different plant and animal --Series Made Simple; School Library Journal --