



Activity 2-2 The Spice of Life

AT A GLANCE

Explore beliefs and values about why biodiversity is important and why it should be protected.

OBJECTIVES

Explain personal beliefs and values about protecting biodiversity. List several reasons why people believe it is important to protect biodiversity.

SUBJECTS

English language arts, science, social science

SKILLS

organizing (prioritizing), analyzing (discussing), presenting (articulating), citizenship (debating, evaluating a position, taking a position, defending a position)

LINKS TO ILLINOIS BIODIVERSITY BASICS CONCEPTUAL FRAMEWORK

values and beliefs

VOCABULARY

ecological processes, economics, extinct, pollination

TIME

one class period

MATERIALS

poster-sized paper; markers

CORRELATION TO ILLINOIS LEARNING STANDARDS

English language arts 4.B.2a, 4.B.2b

science 13.B.2f, 13.B.3d

social science 17.C.2c

People's feelings about biodiversity issues, including the importance people place on wild species and spaces and whether they think biodiversity should be protected, do not depend on just their knowledge of these issues and the sciences that relate to them (ecology, biology, sociology, political science, economics and so on). People's feelings also depend on personal belief systems and values. This activity is designed to give your students a chance to examine their values and to sharpen their own thinking by sharing their opinions and feelings with their peers. The students first discuss their points of view in small groups and then talk about biodiversity conservation as a whole group. A series of questions is provided to get the students thinking about a range of biodiversity-related concerns, as well as additional guiding questions to help direct the discussions. You may want to add your own questions to these lists and think about other ways to engage your group.

BEFORE YOU BEGIN

Write each of the "Why Care About Biodiversity?" statements (page 71) on six separate pieces of poster-sized paper. You can adapt, shorten, add or combine as needed. Write the word "Other" on a seventh piece of poster-sized paper. Make sure that the students can read the statements from all areas of the room.

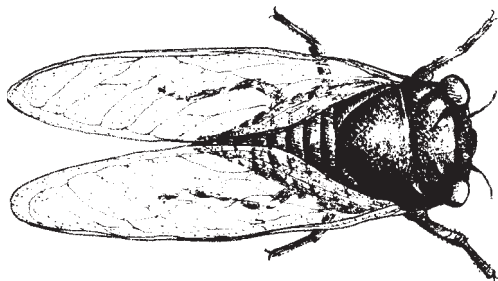
WHAT TO DO

1. Discuss the meaning of biodiversity with your students.

Biodiversity is the variety of life on earth. It includes the sheer variety of species on earth, the earth's many ecosystems and genetic diversity, which refers to the variety of genes within a species.

2. Ask your students whether protecting biodiversity is important and why they feel the way they do.

Explain that many people feel that it's important to protect biodiversity and that they have diverse reasons for thinking so. Ask your students how they feel. What reasons can they give to protect biodiversity? These may be reasons they have read, reasons they have heard others express or their own,





Activity 2-2

The Spice of Life (continued)

personal views. Write their ideas on a piece of poster-sized paper or a chalkboard. (It may also help to give them a few minutes to write their ideas before talking.)

3. Put up the “Why Care About Biodiversity?” statements and read each one out loud.

Using a different location for each one, tape the seven statements you copied earlier around the room. Place each one high enough for everyone to see. Explain that the statements represent many of the key reasons people have given for why it is important to protect biodiversity. As a group, go over each of the statements. Compare the ideas represented in the statements with the lists that the students generated.

4. Students choose a statement to stand near.

Ask your students to carefully consider all of the statements. Have each student pick one of the statements and then go and stand near it. Explain that the statement each student chooses should be one that he/she feels strongly about—either because he/she thinks it is an important reason to protect biodiversity, or because he/she disagrees with it. If they don’t see a sign that reflects their viewpoint, they can stand at the sign marked “Other.” Explain that there is no correct answer and that it’s OK to stand either alone or with a group.

5. Discuss the choices that students made.

After everyone has made a selection, have the students at each statement discuss among themselves why they chose that particular statement. Remind them that each person will have personal reasons for making the choice he or she made and that they should explore some of those reasons. Give the students about five minutes to discuss their thoughts before asking one person from each group to summarize the discussion. You may want to record each group’s points on the piece of poster-sized paper.

6. Open the discussion to the entire class.

After all the groups have given their summaries, use the “Valuing Biodiversity” questions (page 70) to spur a group discussion of some of the arguments that biologists, conservationists, ecologists, economists and others have put forth for protecting biodiversity. Read one of the numbered questions and have the students react to it. You can use the guiding questions to challenge the students’ thinking and to help direct their discussion as needed. You do not need to ask the class all the guiding questions, and the students do not need to discuss each of the numbered questions in turn. The discussion may naturally flow from one topic to another. However, during the course of the discussion, make sure that the students confront the issues highlighted by each numbered question and that they explain why they feel the way they do. Have them give examples whenever they can and be sure to challenge their ideas—especially when the students reach answers quickly or all of them seem to be agreeing with each other. Allow enough time for the students to fully discuss their points of view. Also give them an opportunity to research issues that come up.

WRAPPING IT UP

Assessment

1. Have the students write a personal statement about the importance of protecting biodiversity. Explain that there is no right or wrong answer to this assignment—and that they don’t even have to think protecting biodiversity is important at all. However, they should carefully consider everything they’ve learned about biodiversity as well as all of the points made during their discussion in order to make a well-reasoned and well-supported statement. Encourage the students to consider medical, economic and ecological implications of biodiversity protection, as well as recreational considerations, artistic inspiration and any obligations of present generations to future ones. Tell them to use examples to illustrate their points.



Activity 2-2 The Spice of Life (continued)

2. Have the students use the following statement as a journal starter: “Some ideas or thoughts I had before the activity are different now. They include . . .”
3. Have the students write a dialogue between two people who have different viewpoints on protecting biodiversity.

Portfolio

The student’s biodiversity protection statement (created in the assessment) can be included in the portfolio.

Extension

Have each student or small group of students choose one of the “Why Care About Biodiversity?” statements to use as a theme for a collage. Have the students make a display of the collages.

Resources

- Kellert, Stephen. 1997. *The value of life: biological diversity and human society*. Island Press, Washington, D. C. 263 pp.
- Lean, Geoffrey and Don Hinrichsen. 1996. *World Wildlife Fund atlas of the environment*. Prentice Hall Press, New York. 192 pp.
- Takacs, David. 1996. *The idea of biodiversity: philosophies of paradise*. Johns Hopkins University Press, Baltimore, Maryland. 393 pp.
- Wilson, Edward O. 1992. *The diversity of life*. Belknap Press, Cambridge, Massachusetts. 424 pp.

“The twentieth century has been extra-ordinarily successful for the human species—perhaps too successful. As our population has grown from 1 billion to 6 billion and the economy has exploded to more than 20 times its size in 1900, we have overwhelmed the natural systems from which we emerged and created the dangerous illusion that we no longer depend on a healthy environment. As a result, humanity now faces a challenge that rivals any in history; restoring balance with nature while expanding economic opportunities for the billions of people whose basic needs—for food and clean water, for example—are still not being met.”

—Lester Brown, President, World Watch Institute



Educator Page

Valuing Biodiversity

1. It is important to conserve the diversity of life for medical and economic reasons.

Guiding Questions

- Do people actually need wild plants and animals for either medicinal or economic reasons?
- Can't people synthesize in a laboratory all the medicines they need?
- If genetic material is what's important, wouldn't it be sufficient if people froze wild plant and animal tissue samples, didn't worry about the actual organisms and then used the samples when needed?
- If a plant or animal species is not known to have any medical or economic benefit to people, is it then OK to let the species die out?

2. It's important to protect the diversity of life because biodiversity helps maintain important ecological processes that help support life on earth.

Guiding Questions

- What sorts of ecological processes does biodiversity help maintain?
- People have developed an amazing array of technologies to deal with particular problems—everything from water treatment plants that purify sewage water to scrubbers that can take pollutants from factory smokestacks out of the air. Isn't it fair to assume that people will be able to develop technologies that can perform essential ecological processes in place of biodiversity?
- Are there any down sides to technological solutions?

3. Our lives would not be as rich if we lost species such as river otters, fireflies, red-tailed hawks, treefrogs, Illinois mud turtles and bobcats.

Guiding Questions

- Is there anything about these species that makes them special?

- Would you feel the same way if the species we lost were venomous snakes, biting insects and other species that may be harmful to people?
- Are there species that you think are more important to protect than others? Which ones? Why?

4. All species have a right to exist.

Guiding Questions

- Do people have the right to use any of the world's resources as they see fit? Why or why not?
- Does the right to exist apply to ugly, obscure species that are of no use to people?
- Some species have been around for millions of years—and have survived incredible periods of destruction and change on the planet. Should that influence whether we decide to protect a species?
- Do people have any responsibilities to other living things?
- Do people have the right to drive species to extinction?

5. No generation has the right to destroy the environment and resources that future generations will depend on.

Guiding Questions

- Why should people today do without things they want, when we don't even know what future generations will need or want?
- How do you feel about the state of the world? Do you feel that past generations have left you with the environment and resources you need to live?
- There used to be millions of passenger pigeons in the United States. Today these birds are extinct. Has your life been affected in any way by the lack of passenger pigeons in the world? Will future generations really care about species that disappeared before they were born?



Educator Page

Valuing Biodiversity (continued)

6. Diversity of life is important for inspiring inventors and artists and for spurring curiosity and imagination.

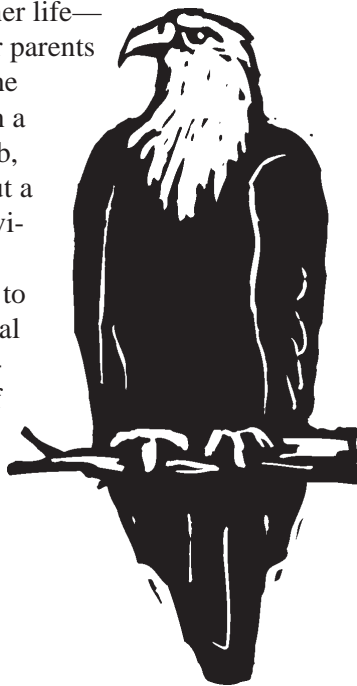
Guiding Questions

- What human pursuits look to nature for inspiration?
- What inventions, stories or works of art can you think of that were inspired by living things? Could these have been produced without the inspiration of nature?
- Isn't it reasonable to assume that all the photographs and films that have been made of wild plants and animals can provide inspiration to future writers and artists?

7. Diversity of life is important for recreational activities.

Guiding Questions

- What kinds of recreational activities rely on wild spaces or species?
- Can well-tended golf courses and manicured parks provide the outdoor green space people need?
- Is it right to save an area so people can hike and fish if it means that other people lose their jobs?
- Does the fact that someone has done a particular job all his or her life—and that perhaps his or her parents or grandparents also did the same job—give the person a right to keep doing that job, even if it means wiping out a species or harming the environment?
- Should people be allowed to take part in any recreational activity (such as some off-road vehicle races) even if it harms the environment? How do we balance the rights of individuals and the rights of society as a whole?



Why Care about Biodiversity?

It is important to conserve the diversity of life for medical and economic reasons. Plants and animals could provide us with additional foods, medicines and other products that will save lives and benefit society.

It is important to protect the diversity of life because biodiversity helps maintain important ecological processes such as oxygen production, pollination and flood control that, in turn, help support all life on earth.

Our lives would not be as rich if we lost species such as river otters, fireflies, red-tailed hawks, treefrogs, Illinois mud turtles and bobcats and the habitats where they live. The rich diversity of life also allows for important recreational activities such as hiking, fishing, camping and birding.

It is important to protect the diversity of life because no generation has the right to destroy the environment and resources on which future generations depend. It is our responsibility to take care of the diversity of life.

It is important to protect the diversity of life because biodiversity provides inspiration and provokes curiosity and imagination. Diversity of life often inspires the creation of art, music and poetry, as well as many technological advances, such as flight.

It is important to conserve the diversity of life because all species have a right to exist.