



JCCB EE Programs matched with Iowa Core Curriculum

3rd – 5th Grade

Nature's Engineer

3rd Grade

Method:

We look at adaptations of beavers and investigate how they can change the surrounding environment for other animals and humans.

Objectives: At the end of this activity the students should be able to:

1. Describe how beavers alter a habitat to benefit other wildlife within that habitat
2. Understand how the change in habitat can affect people
3. Describe adaptations of beavers and explain why the adaptations are necessary for survival

Iowa CORE:

- Science
 - Science As Inquiry
 - Ask questions about objects, organisms, and events in the environment
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats

How Grandmother Spider Stole the Sun

3rd Grade

Method:

Students will listen to the story "How Grandmother Spider Stole the Sun", from the book *Keepers of the Earth*, they will be guided through a discussion of the life history of turkey vultures and examine some natural history artifacts related to vultures.

Objectives: At the end of this activity the students should be able to:

1. Explain what a turkey vultures role is in an ecosystem and their importance in the food web
2. Describe traits of a turkey vulture

Iowa CORE:

- Science
 - Life Science
 - Understand and apply knowledge of organisms and their environments
 - Structures, characteristics and adaptations
 - Relationships among living and non-living factors in ecosystems
- Reading Standards for Literature
 - Key ideas and details
 - Ask and answer questions to demonstrate understanding of a text

- Recount stories from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text
- Describe characters in a story and explain how their actions contribute to the sequence of events

Environmental Education Skills

- Explain that living things need some source of energy to live and grow and that matter is recycled
- Give examples of how experiences and places may be interpreted differently by people with different cultural backgrounds at different times or with different frames of reference

Nature Did It First

3rd Grade

Method:

Students will examine similar functions of man-made tools with animal and plant adaptations. Many natural artifacts are passed around during this program.

Objectives: At the end of this activity the students should be able to:

1. Relate function to form found in various plant and animal adaptations
2. Make comparisons of various adaptations seen in nature to tools and objects that humans have invented or utilized

Iowa CORE:

- Science
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats
 - Behavioral Sciences
 - Understand the process of how humans develop, learn, adapt to the environment, and internalize their culture

Bison

3rd Grade

Method:

Students will match modern examples of foods, tools and other materials to their counterparts that Native Americans made from bison. They will participate in a discussion of the natural history of bison and their niche on the prairie.

Objectives: At the end of this activity the students should be able to:

1. Relate the importance of bison to the Native American Plains cultural groups
2. Name resources that are used to make some of the foods, tools, and other materials that we use today
3. Discuss how in-efficient use of resources can lead to the decline of those resources

Iowa CORE:

- Science
 - Life Science
 - Understand and apply knowledge of characteristics of living things
- Social Studies
 - Economics
 - Understand the role of scarcity and economic trade-offs and how economic conditions impact people's lives

- Understand that the basic nature of economics is an exchange of resources
- Understand the universal economic concept of needs and wants
- History
 - Understand relationships between geography and historical events

Environmental Education

- Understand how people are connected at many levels – including the global level – by actions and common responsibilities that concern the environment
- Identify ways people depend on, change and are affected by the environment
- Demonstrate an understanding of resources and describe various sources and origins of resources they use in their lives.

A Feather in Her Hat

3rd Grade

Method:

Students will listen to the story “She’s Wearing a Dead Bird on Her Head”. Then they will be guided through discussions of how the persons involved addressed an issue that they were concerned and relate their actions to actions a person might take today about an issue of concern. Students will be guided through a discussion of how unregulated use of wildlife species can lead to a loss of biodiversity.

Objectives: At the end of this activity the students should be able to:

1. Describe the circumstances that lead to the beginning of the Audubon Society in America
2. Describe steps they could take to make changes relative to an issue of concern
3. Relate why some species are more likely to become endangered than other species
4. Relate why there are laws that regulate the hunting and collecting of materials from animals and plants

Iowa CORE:

- Science
 - Life Science
 - Understand and apply knowledge of environmental stewardship
- Reading Standards for Literature
 - Key ideas and details
 - Ask and answer questions to demonstrate understanding of a text
 - Determine the central message, lesson or moral and explain how it is conveyed through key details in text
- Social Studies
 - Behavioral Sciences
 - Understand the influences on individual and group behavior and group decision making
 - Understand current social issues to determine how the individual formulates opinions and responds to issues
 - History
 - Understand historical patterns, periods of time, and the relationships among these elements
 - Understand the role of individuals and groups within a society as promoters of change or the status quo
 - Political Science/Civic Literacy
 - Understand the rights and responsibilities of each citizen and demonstrate the value of lifelong civic action
 - Understand the differences among local, state, and national government

Environmental Education Skills

- Humans and their societies
 - Identify ways that people act as individuals and as group members, and give examples of ways groups influence individual actions
 - Understand how people are connected at many levels – including the global level – by actions and common responsibilities that concern the environment
- Environment and Society
 - Identify ways people depend on, change, and are affected by the environment

Monarchs

3rd Grade

Method:

Students listen to a description of the monarch butterfly life history, and then assist with the capture and tagging of monarchs.

Objectives: At the end of this activity students should be able to:

1. Describe the life cycle of the monarch butterfly as it relates to their migration to Mexico
2. Identify habitat needs for monarch butterflies and their caterpillars
3. Demonstrate how to capture and handle butterflies without causing harm to the butterflies
4. Describe the process of tagging monarchs and recording information from the tagging process
5. Describe how tagging helps scientists gather information about monarch populations and seasonal movements

Iowa CORE:

- Science
 - Science as Inquiry
 - Identify and generate questions that can be answered through scientific investigations
 - Recognize that scientists perform different types of investigations
 - Use evidence to develop reasonable explanations
 - Follow appropriate procedures
 - Life Science
 - Understand and apply knowledge of organisms and their environments
 - Structures, characteristics, and adaptations of organisms
 - How individual organisms are influenced by internal and external factors
 - Relationships among living and non-living factors in ecosystems
 - Understand and apply knowledge of environmental stewardship
- Social Studies
 - Economics
 - Understand the role of scarcity and economic trade-offs and how economic conditions impact people's lives
 - Geography
 - Understand how physical processes and human actions modify the environment
- 21st Century Skills
 - Communicate and work productively with others

Environmental Education Skills

- Humans and their societies

- Understand how people are connected at many levels – including the global level – by actions and common responsibilities that concern the environment
- Environment and Society
 - Identify ways people depend on, change, and are affected by the environment
 - Demonstrate an understanding of resources
- Skills for analyzing and investigating environmental issues
 - Speculate about and explore the social, economic, and environmental consequences of issues and proposed solutions to them
- Decision making and citizenship skills
 - Consider whether they believe action is needed in particular situations and whether they think they should be involved

A Country So Full of Game

4th Grade

Method:

Following a discussion of wildlife that were noted by early explorers and settlers in Iowa, students will compare the sizes of extirpated species to those with similar niches that are still found in Iowa. Maps as well as furs and other natural history items will be used during the discussion.

Objectives: At the end of this activity the students should be able to:

1. Explain what threatened, endangered, and extirpated mean
2. Describe how early settlers affected wildlife populations and understand why wildlife management is important
3. Describe why some wildlife have adapted to the change in Iowa's landscape and other animals did not adapt

Iowa CORE:

- Science
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats
 - Understand and demonstrate knowledge of how individual organisms are influenced by internal and external factors
 - Understand and demonstrate knowledge of environmental stewardship
 - Behavioral Sciences
 - Understand the process of how humans develop, learn, adapt to the environment, and internalize their culture
- Geography
 - Understand the use of geographic tools to locate and analyze information about people, places, and environments

Predators: They're Part of the Picture

4th Grade

Method:

A slide show and discussion will examine the role predators play in natural communities, as well as attitudes toward some of these predators. Some predator artifacts are used to help the students understand how adaptations help predators "do their jobs".

Objectives: At the end of this activity the students should be able to:

1. Explain the relationship between predator and prey

2. Explain the important role predators play in our ecosystem
3. List several predators in Iowa

Iowa CORE:

- Science
 - Science As Inquiry
 - Use evidence to develop reasonable explanations
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats

The Better to Eat With

4th Grade

Method:

After examining the beaks of several different types of birds, the students will try to “eat like a bird” at several “feeding stations”. From these attempts they will work as a team to decide which bird beak their common household tool represents. They will present their decision to the rest of the class and state the reasons for their choice.

Objectives: At the end of this activity the students should be able to:

1. Describe the difference in beaks of several different birds and why they are different
2. Explain why adaptations are necessary for animals

Iowa CORE:

- Science
 - Science As Inquiry
 - Generate questions that can be answered through scientific investigations
 - Use appropriate tools and techniques to gather, process, and analyze data
 - Plan and conduct scientific investigations
 - Use evidence to develop reasonable explanations
 - Communicate scientific procedures and explanations
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats

Who-o Goes There?

4th Grade

Method:

Students will learn about the adaptations that enable owls to be excellent nighttime hunters during a presentation with hands-on owl effects.

Objectives: At the end of this activity the students should be able to:

1. Describe several adaptations of owls
2. List at least 4 owls that live in Iowa
3. Explain why owls are an important part of our ecosystem

Iowa CORE:

- Science
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of

organisms that allow them to function and survive within their habitats

Who-o Goes There? + Owl pellet dissection

4th – 12th grade

Method:

Students will learn about the adaptations that enable owls to be excellent nighttime hunters during a presentation with hands-on owl effects. Students will also dissect an owl pellet and analyze the contents to determine what the owl ate. Cost: \$1.00 per pellet (2 students can share 1 pellet).

Objectives: At the end of this activity the students should be able to:

1. Describe several adaptations of owls
2. List at least 4 owls that live in Iowa
3. Explain why owls are an important part of our ecosystem

Iowa CORE:

- Science
 - Life Science
 - Understand and apply knowledge of organisms and their environments, including:
 - Structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats
 - How individual organisms are influenced by internal and external factors
 - The relationships among living and non-living factors in terrestrial and aquatic ecosystems
 - Science as Inquiry
 - Generate questions that can be answered through scientific investigations
 - Plan and conduct scientific investigations
 - Use evidence to develop reasonable explanations
 - Follow appropriate safety procedures when conducting investigations

Oh Deer

4th Grade

Method:

Students portray deer and habitat components in a physically active game to illustrate how availability of food, water, shelter and space in an animal's habitat affect the species population.

Objectives: At the end of this activity, the students should be able to:

1. Identify and describe food, water, and shelter as 3 essential components to habitat
2. Describe factors that influence carrying capacity
3. Define limiting factors and give examples
4. Recognize that some fluctuations in wildlife populations are natural as ecological systems undergo constant change

Iowa CORE:

- Science
 - Science As Inquiry
 - Use evidence to develop reasonable explanations
 - Life Science
 - Understand and demonstrate knowledge of structures, characteristics, and adaptations of organisms that allow them to function and survive within their habitats.
 - Understand and demonstrate knowledge of how individual organisms are influenced by

internal and external factors

- Understand and demonstrate knowledge of environmental stewardship
- Understand and demonstrate knowledge of the social and personal implications of environmental issues

- Math

- Students can interpret data presented in a variety of ways
 - Students can use tables and graphs to locate and read information.

Pillbugs

5th Grade

Method:

Students will use the scientific method to make and record observations of pillbugs for both physical attributes and behavior. They will answer a series of questions that they brainstorm as well as questions that are provided.

Objectives: At the end of this activity, the students should be able to:

1. Demonstrate one method of conducting scientific investigations to answer questions
2. Relate information that they have gathered as a result of a scientific investigation

Iowa CORE:

- Science
 - Science as Inquiry
 - Generate questions that can be answered through scientific investigations
 - Design and conduct different kinds of scientific investigations
 - Understand that different kinds of questions suggest different kinds of scientific investigations
 - Select and use appropriate tools and techniques to gather, analyze and interpret data
 - Incorporate mathematics in scientific inquiry
 - Use evidence to develop descriptions, explanations, and models
 - Think critically and logically to make the relationships between evidence and explanations
 - Life Science
 - Understand and demonstrate knowledge of the complementary nature of structure and function and the commonalities among diverse organisms
- Reading Standards for Informational Text
 - Read on-level text, both silently and orally, at an appropriate rate with accuracy and fluency to support comprehension

Artifacts

5th Grade

Method:

Students will make observations and measurements of “mystery” items brought into the room. They will use this information to develop a hypothesis about what the object is/how it is used. This will allow the students to understand the methods archaeologists use when researching artifacts. The students will also observe artifacts from native Iowa cultures and will learn the proper way to record found artifacts.

Objectives: At the end of this activity the students should be able to:

1. Explain what artifacts are
2. Explain how artifacts can give us information about past cultures

Iowa CORE:

- Science

- Science As Inquiry
 - Plan and conduct scientific investigations
 - Use evidence to develop reasonable explanations
- Behavioral Sciences
 - Understand the changing nature of society
- Social Studies
 - History
 - Understand historical patterns, periods of time, and the relationships among these elements
 - Understand cause and effect relationships and other historical thinking skills in order to interpret events and issues
- 21st Century Skills
 - Employability Skills
 - Communicate and work productively with others emphasizing collaboration and cultural awareness to produce quality work

Make Your Own Paper

5th Grade

Method:

Students will estimate and measure the volume of several objects in their classroom to understand the volume of paper recycled in the United States. They will also use information from a chart to develop a line graph to show changes in the amount of paper that has been recycled over a three year period. They will then make their own recycled paper using pulp from one of three mixtures. After their paper has dried they will compare the different results and record their findings. (texture, color, suitability for different purposes)

Objectives: At the end of this activity, the students should be able to:

1. Estimate and then measure the volume of several objects
2. Show in a line graph form the results of paper recycling efforts on the volume of paper recycled
3. Follow the steps required to produce their own piece of recycled paper and compare/name two differences in the physical attributes of the paper that results from the various mixtures

Iowa CORE:

- Science
 - Science as Inquiry
 - Generate questions that can be answered through scientific investigations
 - Use evidence to develop reasonable explanations
 - Life Science
 - Understand and demonstrate knowledge of environmental stewardship
- Math
 - Understand and apply a variety of math concepts
 - Understand and apply concepts of measurement
 - Understand and apply methods of estimation
 - Interpret data presented in a variety of ways
- Employability Skills
 - Communicate and work productively with others to produce quality work
 - Adjust to various roles and responsibilities and understand the need to be flexible to change
 - Demonstrate productivity and accountability by producing quality work

Environmental Education Skills

- Environment and Society
 - Demonstrate an understanding of resources and describe various sources and origins of resources they use in their lives
- Decision making and citizenship skills
 - Consider whether they believe action is needed in particular situations and whether they think they should be involved
 - Learn the basics of individual and collective action
 - Evaluate the results of actions
- Personal and civic responsibility
 - Understand that they have responsibility for the effects of their actions

Wetland Wonders

5th Grade

Method:

Students will work in teams to match “Mystery Metaphor” objects to statements about basic ecological activities that characterize wetlands. Teams will report their findings to the class.

Objectives: At the end of this activity students should be able to:

1. Describe the characteristics of wetlands
2. Demonstrate their understanding of the importance of wetlands to wildlife and humans

Iowa CORE:

- Science
 - Life Science
 - Understand and demonstrate knowledge of the relationships among living and non-living factors in terrestrial and aquatic ecosystems
 - Understand and demonstrate knowledge of personal health and wellness issues
- Reading Standards for Informational Text
 - Research-based comprehension strategies – making connections, making inferences, summarizing