Title: Ohio Food Chain

Subject: Science

Standard: Life Science

Grade: 2 **Date:** May 2005

Vision We want our students to be problem solvers, inquisitive, cooperative in group decisions, and actively involved and engaged.	**Lesson Summary** Students will brainstorm and categorize animals that live in Ohio, and use pictures of animals to develop food chains. They discuss basic needs and are introduced to food webs.
Goal(s) of This Lesson We want our students to: 1. Become familiar with Ohio animals, ecosystems, and habitats. 2. Be able to explain basic needs of plants and animals. 3. Develop and explain basic food chain. 4. Identify a food web	**Prior Knowledge / Pre-Assessment** Students were familiar with some Ohio animals and knew about the basic needs of plants and animals for survival.
Team Members Georgia Arcuri, Parknoll Moira Lusky, Big Creek Carolyn Miller, Smith Michelle Zajac, Big Creek	**Reflections / Insights** Students really enjoyed the lesson due to the variety of activities and movement, as well as the subject matter. The overhead of the food web was ideal for demonstrating the interdependence of plants and animals.

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Relationship to the Curriculum

Ohio Academic Content Standards		
Subject	**Benchmark**	**Indicators**
Science	**Life Sciences** B. Explain how organisms function and interact with their physical environment. C. Describe similarities and differences that exist among individuals of the same kind of plants and animals.	5. Explain that food is a basic need of plants and animals and is important because it is a source of energy. 7. Compare the habitats of many different kinds of Ohio plants and animals and some of the ways animals depend on plants and each other.
Math		
Technology	**Technology and Information Literacy** B. Use a simple research process model which includes deciding what to use, finding resources, using information and checking work to generate a product.	1. Discuss the question assigned by the teacher and where the information might be found. 3. Select needed information from teacher selected websites, electronic encyclopedias, and other electronic collections. 4. Record and organize information to generate a product.
English Language Arts	**Acquisition of Vocabulary** **Reading Process** **Reading Applications**	3. Classify words into categories. 5. Create and use graphic organizers such as Venn Diagrams and webs to demonstrate comprehension. 1. Use the table of contents, glossary, captions and illustrations to identify information and to comprehend text.

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Materials and Resources

Teacher materials:
"Background Information" on the sun and its energy (page 8)

Sentence strips of vocabulary words (see lesson item #6)

Overhead of Food Web (page 10)

4 Cards, each one with a picture: bobcat, rabbit, plant, sun (page 9)

Schonberg, Marcia. Ohio Plants and Animals, Heinemann Library, 2003, page 14 [included in the print copy in your school binder]

Lauber, Patricia. Who Eats What? HarperCollins Publishers, 1995.

One per student: picture of Ohio animals [in binder]
food chain worksheet (page 11)

Unit Suggestions

1. Pre-lesson on the basic needs of plants and animals
2. Lesson to introduce students to different habitats
3. This lesson on 'Ohio Food Chain"

Notes:

- Prepare the 4 cards in advance
- Different colors of vis-a-vis pens are needed for the food web
- Run off student materials
- Read over the "Background Information"

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Lesson Plan

Suggested Time Frame and Steps	Teacher Direction, Support and Key Questions	Student Learning Activities	Anticipated Student Questions and Responses	Evaluation / Assessment
45-60 minutes	1. Teacher asks the following: ***How are plants, animals, and humans connected?***	1. Students orally brainstorm and list answers on paper/board.	1. Food, shelter, air, water, clothing, sun	1. Observation of student responses and participation
	2. Children brainstorm Ohio animals and animals not found in Ohio.	2. Students name animals and teacher places them in a T-Chart under Ohio or Not Ohio categories.		2. Correct sorting of animals.
	3. ***How do plants and animals depend on one another for survival?*** Guided questions: *-Have you ever seen animals in your yard eating?* *-Have you ever been fishing?* *-Why don't plants overgrow?*	3. Students will orally brainstorm and explain relationship.	3. Animals eat both plants and insects. We eat meat and salad.	3. Observation of student progress.
	4. Read aloud parts of the book Who Eats What? and discuss as you read. (only pages 4-10, 12-13)	4. Students answer guided questions.	4. I notice that the food chain always starts with the sun and has both plants and animals.	4. Students' participation in guided questions.

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Lesson Plan

Suggested Time Frame and Steps	Teacher Direction, Support and Key Questions	Student Learning Activities	Anticipated Student Questions and Responses	Evaluation / Assessment
	5. Hand out 4 cards: sun, bobcat, rabbit, grass Ask 4 students to determine how they would depend on each other. 6. Discuss how they just created a food chain. Ask, ***Why did we include the sun? Why is the sun at the beginning?*** Teacher reads the "Background Information" sheet with discussion of the vocabulary -energy -food chain -producers -consumers -food web -ecosystem -photosynthesis -chlorophyll	5. Students arrange themselves into a basic food chain.	5. I knew where to stand because I would eat _____. 6. Plants need the sun to live.	5. Correct arrangement of food chain.

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	7. Give each student a handout with Ohio animals, grass and sun as well as a blank food chain. Explain that the animals are not true to size and give some examples. (ex. the mouse compared to the wood duck and the grasshopper.) Think about the size of the animal as you know it. 8. Read page 14 of Ohio Plants and Animals. 9. Use overhead of Web of Life to create a food web as a class, showing the relationship between food chains. Use different colored markers for each individual chain.	7. Students work with a partner to create an Ohio food chain by writing the names of the items from their animal handout onto the food chain worksheet. If some finish before others, students can draw their own pictures of the chosen animals. 9. Students will be called on to connect various living things on the overhead.	7. How do I know what an animal eats? 9. I know that frogs eat grasshoppers so I will connect them.	7. Student completion of individual Ohio food chain. 9. Students complete the web as a class.

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Differentiated Instructional Support	**Extensions**
Children were able to participate in all the activities without modifications because of the pictures provided, oral responses, and partner work.	• Children can create their own food chain from any Ohio habitat • Teacher reads the rest of the book, Who Eats What? • At home, students talk about where all of their dinner came from with their families. • WebQuest: http://wneo.org/WebQuests/TeacherWebQuests/ohioanimals/default.html
Technology Connections	**Literature Links**
• Website: http://www.dnr.ohio.gov/wildlife/Kids Division of Wildlife, Ohio Department of Natural Resources Wildkids • http://www.ohiohistorycentral.org/ohc/nature/animals/index.shtml • http://resource-center.cmnh.org/teaching_kits.htm (teaching kit on Ohio Animals K-2)	Stall, Chris. *Animal Tracks of the Great Lakes States* Platt, Carolyn V. *Creature of Change: An Album of Ohio Animals*

Note: Please see printed copies in your school's library for handouts and samples of student work.

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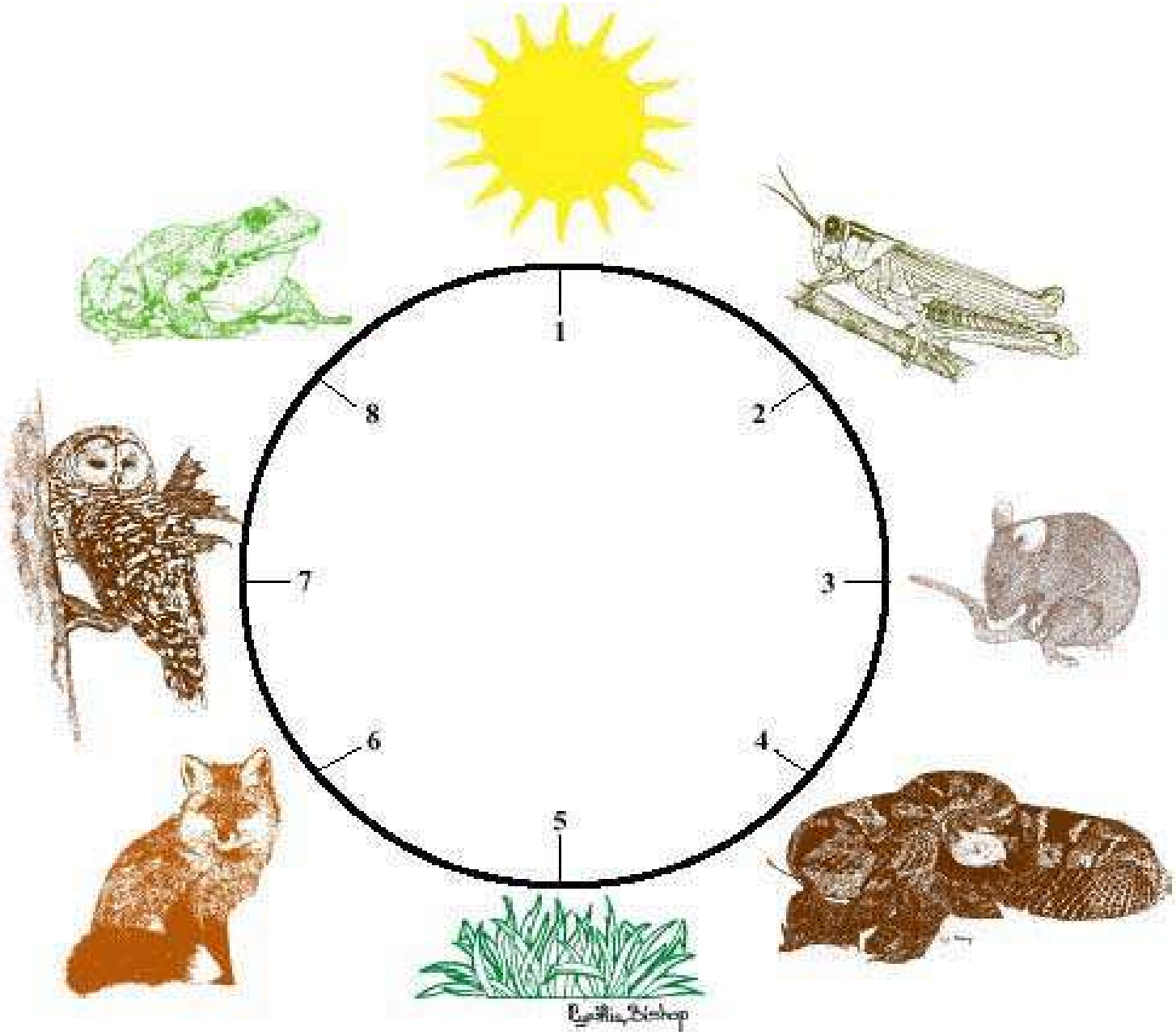
BACKGROUND INFORMATION: (Vocabulary words are underlined)

All energy originates with the sun. Plants harness the sun's **energy** and allow it to move up through the food chain. A **food chain** is a simplified view of what animals in a community eat. In every food chain there are large numbers of green plants (**producers**) at the bottom, a smaller number of first level **consumers** (plant-eaters) in the middle, and a few second level consumers (flesh-eaters) at the top. All food chains are interrelated and are collectively known as a **food web**. Food webs are part of ecosystems. An **ecosystem** is a group of living things and their non-living surroundings (example: meadow, forest or pond ecosystem). All living and non-living parts of ecosystems interact and affect one another. Green plants carry on the process of **photosynthesis**, which means "putting together with light." Green plants harness the sun's energy to combine water and carbon dioxide, producing sugar (food) and oxygen. The sunlight needed for this process is absorbed by the green pigment in leaves (**chlorophyll**). Without plants, (i.e., without food, shelter, oxygen), animal life could not exist.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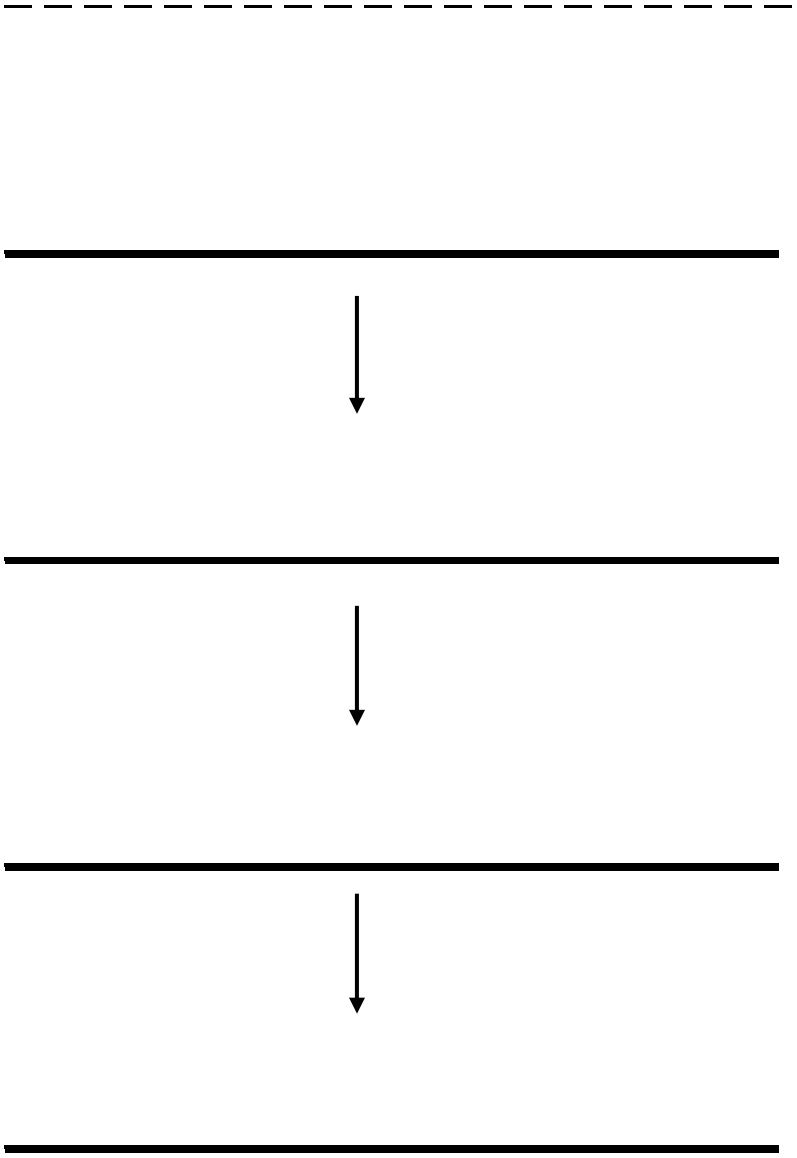

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