

Food Web

Based on the Montana quarter reverse



OBJECTIVE

Students will identify producers and consumers including scavengers and decomposers and the role they play in the food web.



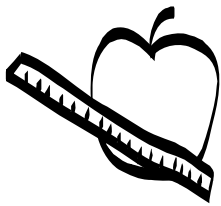
MATERIALS

- 1 overhead projector (optional)
- 1 overhead transparency (or photocopy) of the “Montana Quarter Reverse” page
- “Food Web Research” worksheet
- “Food Web Poster Rubric”
- “Pyramid” worksheet
- 1 class map of the United States
- 1 copy of a text that gives information about food chains and food webs, such as:
 - *Food Chains and You* by Bobbie Kalman
 - *Who Eats What?: Food Chains and Food Webs* by Patricia Lauber
 - *Forest Food Chains* by Bobbie Kalman
- 1 copy of a text that gives information about scavengers and decomposers, such as:
 - *Scavengers and Decomposers: The Cleanup Crew* by Pat Hughey
 - *The Wonders of Fungi* by Lucy Kavalier
 - *The Amazing Earthworm* by Lilo Hess
- Computers with Internet access
- Chart paper
- Markers
- Drawing paper



PREPARATIONS

- Make an overhead transparency (or photocopy) of the “Montana Quarter Reverse” page.
- Make copies of each of the following:
 - “Food Web Research” worksheet (1 per student)
 - “Food Web Poster Rubric” (1 per student)
- Locate a text that gives information about food chains and food webs (see examples under “Materials”).
- Locate a text that gives information about scavengers and decomposers (see examples under “Materials”).



Food Web

- Arrange to use the school computer lab for one session.
- Bookmark Internet sites that contain information about animals found in Montana.
- Depending on the season, prepare for an outside activity.



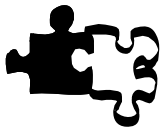
GROUPINGS

- Whole group
- Small groups
- Individual work



CLASS TIME

Four 45- to 60-minute sessions



CONNECTIONS

- Science
- Social Studies
- Art



TERMS AND CONCEPTS

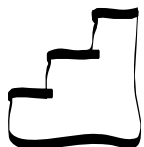
- Quarter
- Reverse (back)
- Scavengers
- Food Web
- Obverse (front)
- Decomposers
- Food Chain
- Food Pyramid



BACKGROUND KNOWLEDGE

Students should have a basic knowledge of:

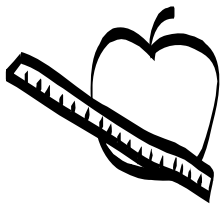
- Energy in a life process
- Habitat
- Producers
- Consumers



STEPS

Session 1

1. Describe the 50 State Quarters® Program for background information, if necessary, using the example of your own state, if available. Then display the transparency or photocopy



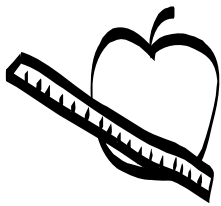
Food Web

of the “Montana Quarter Reverse” page. Tell the students that the back of the coin is called the reverse, and “obverse” is another name for the front of a coin. Locate Montana on a classroom map. Note its position in relation to your school’s location.

2. With the students, examine the coin design. Have the students identify the images and writing included in this design, including the skull.
3. Ask the students what the skull is from and how the skull got this way.
4. Introduce the terms “producer,” “consumer,” and “decomposer” by writing the words on chart paper. Check student knowledge for definitions and write their responses on the chart paper.
5. Introduce the students to the selected text about the food chain and food web. As a group, preview the text. Read the text aloud to the students. Attend to unfamiliar vocabulary and concepts.
6. During the reading, have the students list some examples of producers, consumers, and decomposers that were named in the text. List examples under the headings on the chart paper.
7. Distribute the “Pyramid” worksheet. Make a diagram of the possible food chain that the skull on the coin may be part of. Have the students copy and illustrate the food chain on the “Pyramid” worksheet. Show the students an example of a food chain pyramid on chart paper showing the flow of energy through the pyramid. Using the food chain for the skull, have the students change the food chain to the pyramid.
8. Collect the “Pyramid” worksheets.

Sessions 2 and 3

1. Review the food chain from the previous session. Review the definition of “consumers.” Introduce the term “scavengers” and define it as an example of a consumer that eats only dead animals. “Introduce the students to the selected text about the scavengers and decomposers. As a group, preview the text. Read the text aloud to the students. Attend to unfamiliar vocabulary and concepts.
2. Have the students participate in a scavenger hunt. (This may be done in the classroom if outside activities are not possible.) Make a list of items for the students to collect (for example, a twig and a leaf.) Divide the students into small groups. Take the students outside and have them search the school yard. After returning to the classroom, discuss what the students on the scavenger hunt have in common with animal scavengers.
3. Illustrate the example of a food chain with the flow of energy through the chain. Refer back to the food chain from the previous session. Illustrate the idea of a food web, which consists of several food chains that overlap. Focus on the role that scavengers and decomposers have in the food web.

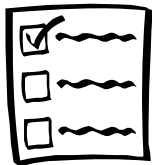


Food Web

4. Distribute the “Food Web Research” worksheets. Explain to the students that they will be researching the plant and animal life found in Montana. Tell the students that they will need to choose at least two animals that are found in Montana and list what types of things they eat and what types of things eat them. They need to also find information on different scavengers and decomposers that could be part of the food web.
5. Take the students to the computer lab and allow them time to research.
6. Collect the “Food Web Research” worksheets.

Session 4

1. Distribute “Food Web Research” worksheets from the previous session. Distribute the “Food Web Poster Rubric” and review the rubric with the students. Explain to the students that they will be creating a poster of a food web to include the animals they researched. Explain to the students the need to label the diagram and show the flow of energy through the web or pyramid. Remind the students to add some scavengers and decomposers to their web.
2. Allow the students time to complete their poster.
3. Display the students’ posters in the classroom. Have the students do a gallery walk to view the posters.



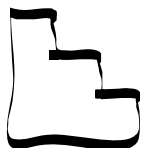
ASSESSMENT

Use the “Food Web Poster Rubric” to evaluate whether the students have met the lesson objectives.



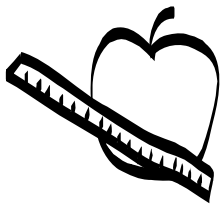
ENRICHMENT/EXTENSIONS

- Have students design the web using visual learning software.
- Have students create a giant wall mural food web using all the animals that were researched by the class.
- Have students create a personal food web with animals and plants they eat.
- Have students act out a food web.
- Use marine food chains to help the students better understand the concept of food chains.



DIFFERENTIATED LEARNING OPTIONS

- Allow students to work in pairs on the poster.
- Have pictures already run off for the students to use for their food web.
- Have magazines or clipart available for students to use for their food web.



Food Web



CONNECTION TO WWW.USMINT.GOV/KIDS

Have students learn more about bison and the food chain they are part of using the 2005 American Bison Nickel at <http://www.usmint.gov/kids/components/nickelLessonPlans/pdf/2005-1Nickel4.pdf>.



Name _____

Food Web Research

Directions:

1. Research animals found in Montana. Choose two animals other than the golden eagle.
2. Research these two animals. Identify at least two plants or animals that each animal eats. Then identify at least two animals that eat that animal.

Name of animal researched:

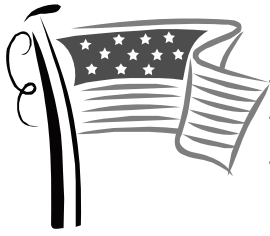
Name of animal researched:

This animal eats the following animals or plants:

This animal eats the following animals or plants:

The following consumers eat this animal:

The following consumers eat this animal:



Name _____

Food Web Poster Rubric

CATEGORY	4	3	2	1	SELF	TEACHER
USE OF CLASS TIME	Used class time well. Focused on getting the project done. Never distracted others.	Used class time well. Usually focused on getting the project done and seldom distracted others.	Used some class time well. often focused on getting the project done but occasionally distracted others.	Seldom used class time to focus on the project. Often distracted others.		
GRAPHICS	All graphics are related to the topic and excellent in quality.	All graphics are related to the topic and good in quality.	Most graphics relate to the topic and generally good in quality.	Graphics do not always relate to the topic or are of poor quality.		
LABELS	All important items are clearly labeled.	Almost all important items are clearly labeled.	Several important items are clearly labeled.	Labels are too small or too few.		
REQUIRED ELEMENTS	All are included, plus additional information.	All are included.	Most are included.	Few are included.		
CONTENT ACCURACY	All required and additional information is accurate.	All information displayed is accurate.	Most information displayed is accurate.	Some information displayed is accurate.		
MECHANICS	All capitalization and punctuation are correct.	Most capitalization and punctuation is correct.	There a few errors in capitalization or punctuation.	There are numerous errors in capitalization or punctuation.		
GRAMMAR	There are no grammatical mistakes.	There are few grammatical mistakes.	There are a few grammatical mistakes.	There are many grammatical mistakes.		
TOTALS						

TEACHER COMMENTS

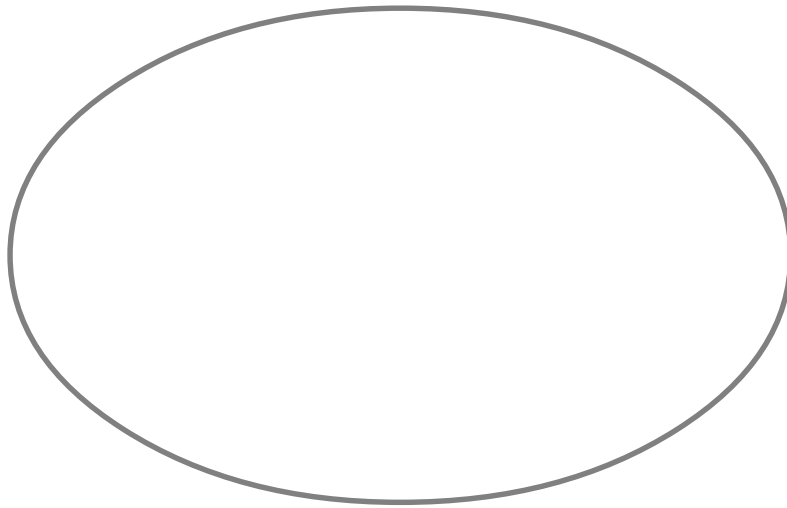


Name _____

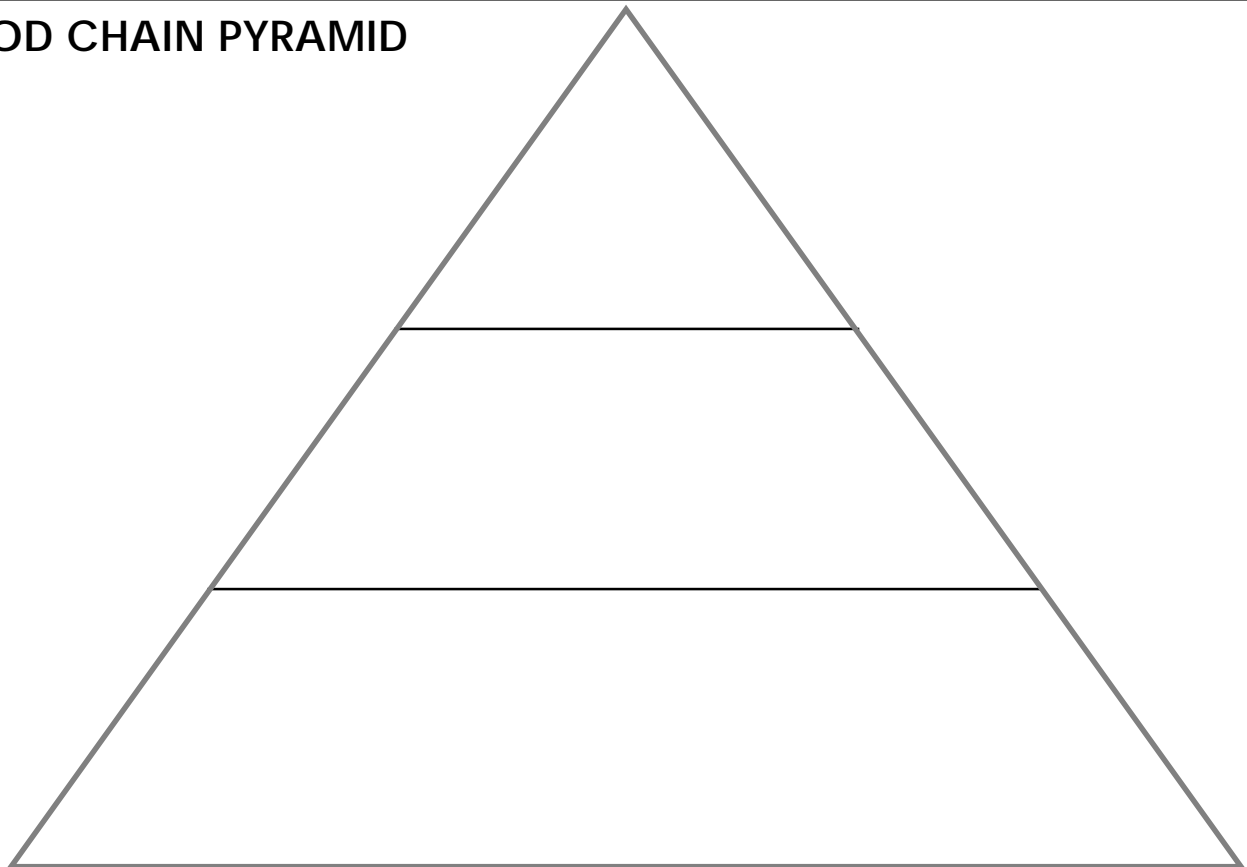
Pyramid

Directions: Draw the food chain for the skull in the "Food Chain" space. Then use the food chain to make a food chain pyramid with the skull in the center of the pyramid.

FOOD CHAIN



FOOD CHAIN PYRAMID





Montana Quarter Reverse

