



*Revised 4/17/20
Neal Smith National Wildlife Refuge*

Prairie Food Cupboard

5th Grade

60 Minutes

Fall

Summary

During a teacher-led discussion, students define food chain and food web. The field leader has a few students pretend that they are the sun, plant and insect and has them act out a food chain for the rest of the class. Next, students are given examples of plants and animals, and must use them to create a food web. Following, students split up into small groups with field leaders and dig in the soil, search through plants, and watch the sky to develop simple food webs based on their observations. Students reflect by comparing their predictions to their findings about food chains on the prairie.

Next Generation Science and Iowa Core Standards

Next Generation Science

- **5-LS2-1**
 - Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- **5-PS3-1**
 - Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

Literacy

Speaking and Listening

- **SL.5.1**
 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5



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topics and texts, building on others' ideas and expressing their own clearly.

- **SL.5.4**
 - Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

Materials and Resources

- White board & Dry erase marker
- Data sheets with clipboards or nature journals
- Example of journal entry (last page of this lesson)
- Pencils and Colored pencils
- Laminated plant and animal photos

Presentation

Explain to students that today, they will be learning about a food chain. Explain that naturalists describe the way food, or energy, moves through the environment using food chains. Write the words “food chain” on the white board.

Directions

1. Gauge students background knowledge by asking if students have ever heard of the word “food chain”. If any of the students can describe a food chain, call on them. If after 3 tries, no one can come up with a proper definition it means the students do not have it as stored knowledge. Go ahead and tell them the definition.
2. Explain that the word food chain represents how food energy moves through the environment. Provide them with several examples of how animals consume animals and/or plants (how the animals are “linked” together like a chain based on who eats what). Ask students if they have ever seen a robin eating a worm? That’s a simple food chain.



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3. Ask the students: where do you think the energy of all food chains begins? The sun's light! Plants can convert this energy into food through a process called photosynthesis Draw a sun on the board, then an arrow, and then a plant. Since plants make, or produce, their own food from sunlight, we call them producers. Producers are the largest group in an environment.
4. Have students act out a food chain. Assign students to stand in front of the class holding photos of animals found on the refuge. Start with the sun, then a plant, then ask the class which animals could eat the plant. Have students stand in a line, holding the pictures and demonstrating the chain. Continue until you run out of predators. All the animals that consumed the plants are called consumers. What happens if there are more consumers than producers? What happens if a plant or animal dies? Is the energy wasted? No! Things like worms, fungi and bacteria can use dead plants and animals for energy. We call these decomposers.
5. Food chains are a simple example food energy moving. Environments like the prairie, however, have many paths for food energy to move. For example, a mouse could eat many different insects, or different kind of seeds. It could also be eaten by a bird, coyote, or other predator. When food chains become complex like this, they are called food webs.
6. Have the students break into groups and practice making food webs. Give each group a stack of plant and animal photos. Answer any questions as the groups practice.
7. Tell them that now they will be naturalists and be able to record food webs outside. Pass out data sheets, pencils, and clipboards. Put students into groups of about four with an adult chaperone.
8. Provide an example of a completed data sheet on the board and review how students should complete their data sheet or have students create the data sheet in their journals.
9. Prepare students to go outside by reviewing with them how naturalists behave- calm and quiet, respectful, happy, fun, curious, asking questions, observant. Tell students that while they are outside you want them to be thinking in the



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back of their minds, “Why are food webs important?” “Why do we need to study this?”

- 10.** Once outside, have each group with their adult chaperone go to a specific area and search for examples of food webs. Rotate among groups ask questions such as, “Where are these producers getting their food from?” “What type of insects are you finding?” “Are all the insects eating the same thing?” “Could they possibly eat one another?” “What consumer would eat these insects?” “Where can we find decomposers?” Make sure students are filling out their data sheets.
- 11.** After about 20 minutes, ask students and adult chaperones to come together and head back into the building. Instruct students that while they are walking to go back inside, they should think about the discoveries they made and get ready to share them with the other naturalists.
- 12.** Once inside, walk around and remark on students completed data sheets. Ask students to describe examples of food webs they found outside.
- 13.** Ask students if any of them were able to think about why studying food webs is important to the prairie. Why should we notice or care about food webs? Well, first, humans are part of the food web! Secondly, it means that everything is connected. If we just pull one plant or one animal away from an ecosystem, we must think about how it might affect the rest of the prairie!
- 14.** Tell students that if they enjoyed looking for food webs here, then they should try it at home! Animals and plants are interacting with each other everywhere, and they should notice food webs anytime they are outside- spiders catching insects, insects chewing on leaves, butterflies sucking down nectar, etc.




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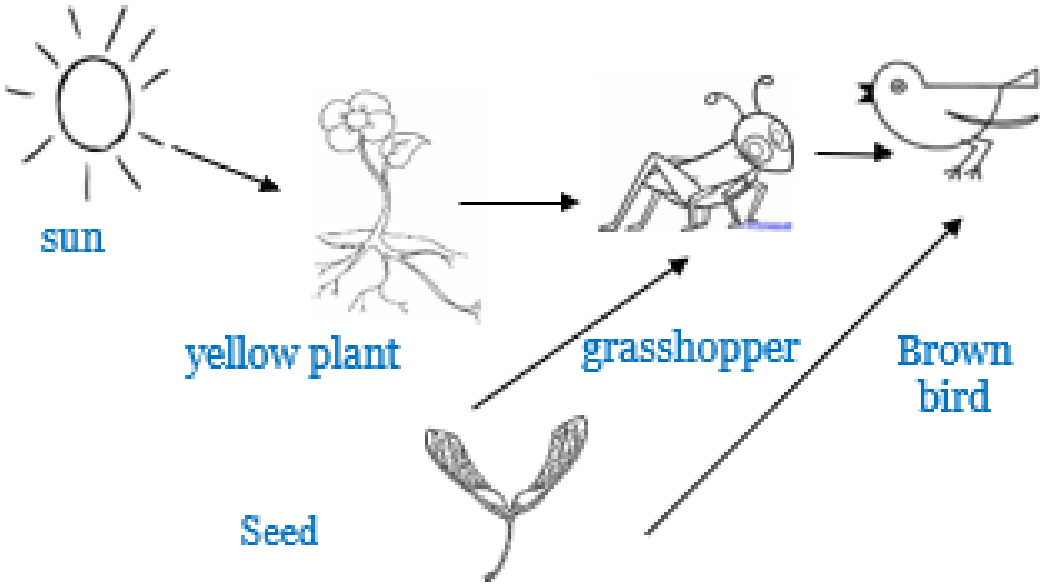
Resources

Journal Prompt

Date, Time, Location, Weather
Prairie Food Chain

Best Producer	Best Consumer
	
<p>My plant was short. It had one leaf. It was yellow.</p>	<p>I found a grasshopper. It was green and had six legs.</p>

Food Web



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graph LR; Sun[sun] --> Plant[yellow plant]; Plant --> Grasshopper[grasshopper]; Grasshopper --> Bird[Brown bird]; Seed[Seed] --> Grasshopper; Seed --> Bird;
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