

TREES AND THE FOOD CHAIN

TREES IN OUR COMMUNITY Grades: K-8

Overview: (communicated by teacher)

We may not think about it on a daily basis, but trees play a vital role in our ecosystem's food chain. Because trees are autotrophs (producers), their role is crucial in feeding all other heterotrophs including decomposers, herbivores, and eventually, carnivores. Without producers, there would be no essential energy to flow through the food chain and provide to consumers. In this activity, students will explore nature and consider how important trees really are, while learning more about the food chain and how it works.

What is a Food Chain:

Show example images of a food chain to students. Explain that a food chain is a natural part of life and all living things (plants and animals) have their place in the food chain. It shows how energy and nutrients flow through an ecosystem as one organism eats another.

Method:

1. Food Chain Introduction:

Before heading outdoors, introduce the food chain to your class by explaining the different hierarchical roles of organisms (producers, consumers, decomposers) and how all parts are interdependent. Ask students to provide examples of each role and brainstorm how the food chain can be disrupted (drought, overhunting, habitat destruction, etc).

2. Outdoor Exploration

Take students outside to investigate their school campus. Begin by finding a producer and then look for signs of decomposers or herbivore consumers that use the producer for energy. Students will continue their search for carnivores that may feed on herbivores and record their notes and observations along the way.

3. Student Sharing

After the investigation, allow students to share what they discovered. They can explain which organisms they found and identify their position in the food chain. Encourage them to point out examples on a visible food chain hierarchy if available.

4. Create and Reflect on a Food Chain:

Have students complete the notes on page 4 by creating and labeling a food chain based on their outdoor observations. If certain roles were not directly observed, they can infer what native predators might complete the chain. Finally, students will answer reflection questions and consider how the depletion of a resource affects the overall system.

At a glance

Skills:

Critical Thinking
Teamwork
Discussion
Urban Forestry

Lesson Delivery:

(Best/Suggested
method in bold)

- **Whole group**
- **Small group**
- Independent work

Location:

(Best/Suggested
location in bold)

- **Outdoor**
- **Indoors**

Materials:

Necessary

- Pencil/Pen
- Paper/Journal

Optional

- Color Pencils
- Markers



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Modifications & Extensions

K-2*

Modification: Use a visual scavenger hunt instead of a bingo board.

Replace text with pictures of animals, plants, and insects. Provide checkboxes for students to mark when they see something like a bird in a tree, a bug on a flower, or mushrooms on a log.

3-5*

Modification: Guided Food Web Exploration

Instead of focusing solely on a linear food chain, provide a graphic organizer with interconnecting arrows to show how multiple organisms interact (a food web). Students can fill in missing connections using their observations or guided prompts.

6-8*

Modification: Food Chain Disruption Simulation

After completing their food chains, introduce an event (e.g., a drought, introduction of an invasive species, pollution). Have students adjust their chains to reflect the changes, then discuss or write about the potential long-term effects on the ecosystem.

Extension: Create a “Who’s Helping Who?” drawing book.

After the walk, students draw two organisms they saw and explain (or dictate) whether they think they are helping, harming, or not affecting each other—and why.

Extension: Human Impact Discussion & Solution Design

After students complete their food chains, introduce real-world issues like habitat destruction or climate change affecting local food webs. In small groups, have them brainstorm and sketch a solution to help protect a food chain they observed (e.g., planting trees for herbivores, reducing pollution in water sources).

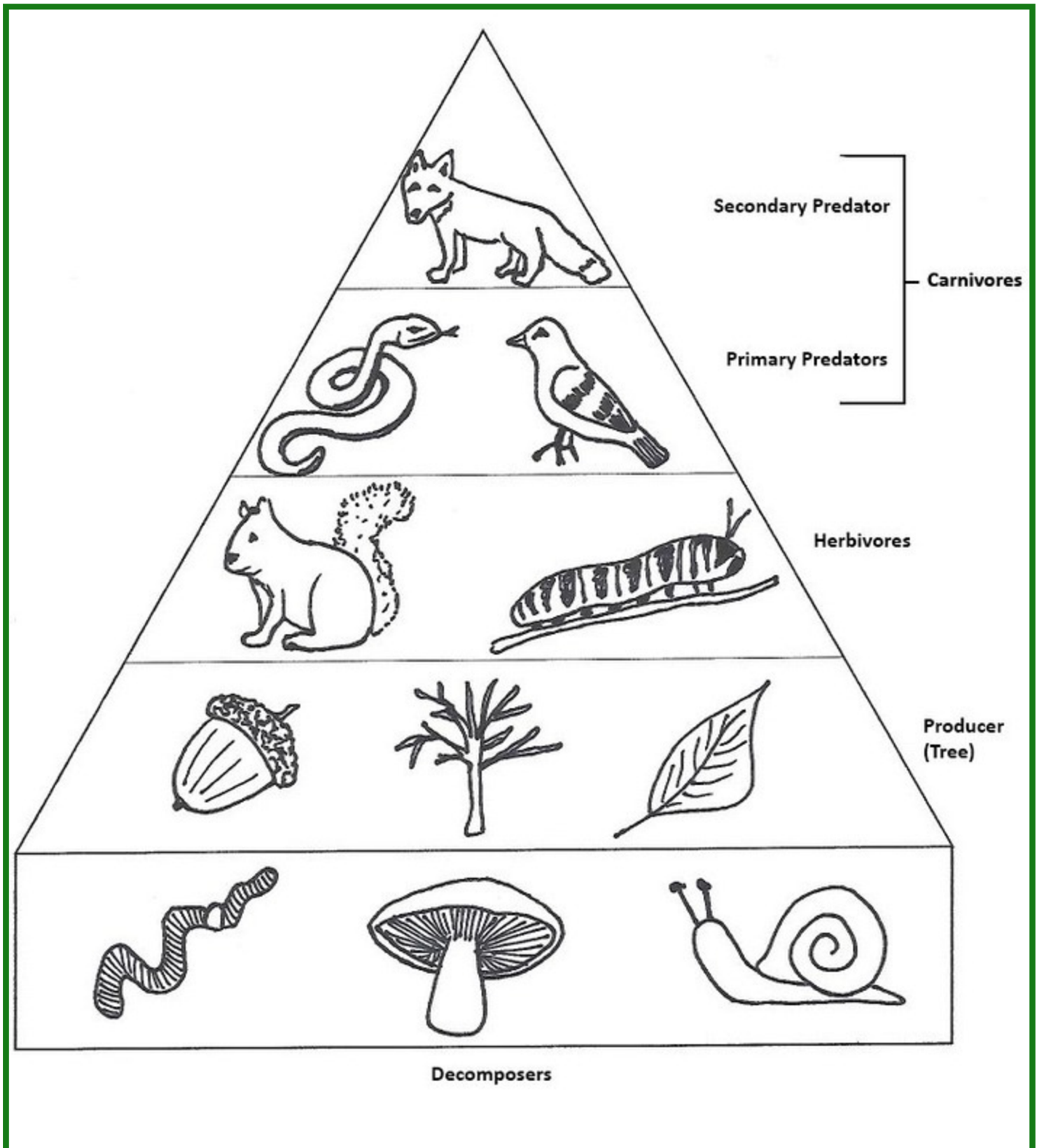
Extension: Data Collection & Analysis

Students can document their findings using a digital tool (like Google Sheets) to track organisms they observe and their roles in the food chain. Back in the classroom, they can analyze trends, such as which levels had the most or least organisms, and hypothesize why.

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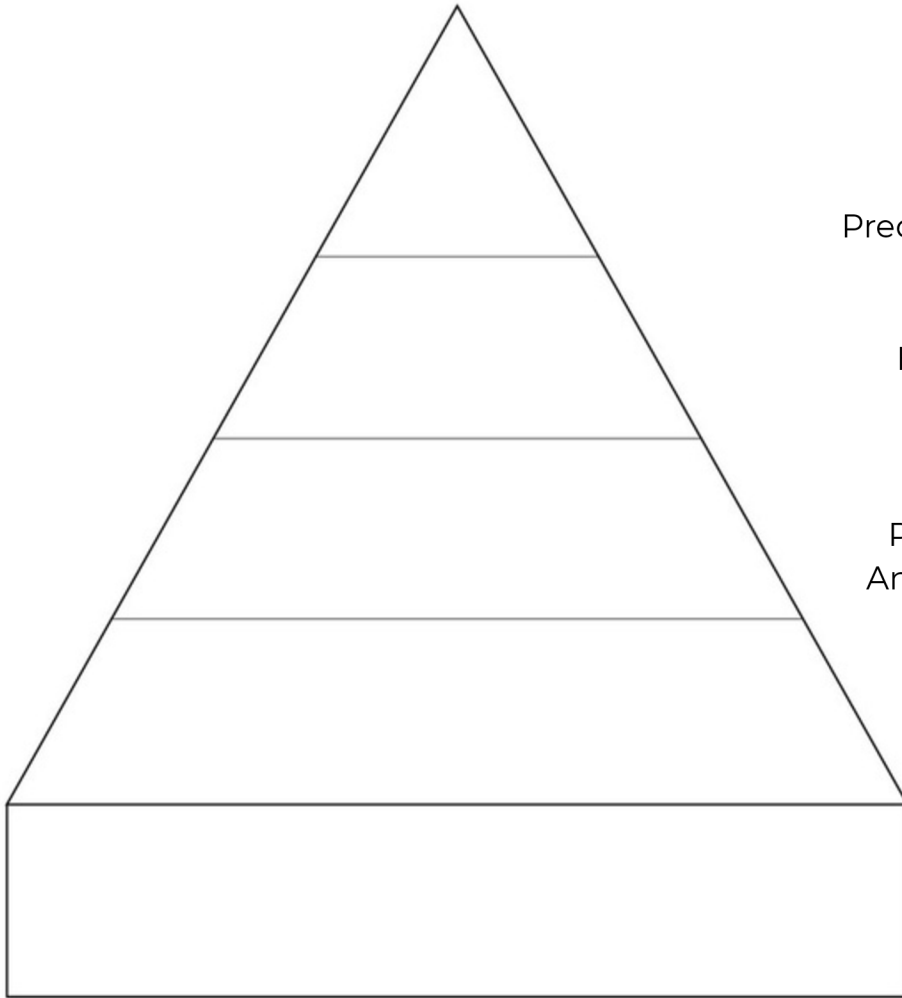
Example of a food chain, using a tree as the autotroph (producer).



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**Draw an example of a food chain, using a tree as your autotroph (producer).
Label the different levels and then answer the questions below.**



Word Bank:

Predators: Harris's Hawk, Coopers Hawk,
Bobcat, Coyote, Ocelot

Herbivores: Cottontail Rabbit, Sphinx
Moth, Great Kiskadee, Buff bellied
Hummingbird

Producers: Ebony tree, Wild Olive aka
Anaquita, Anaqua aka Sandpaper tree,
Mesquite or Mulberry tree.
Prickly Pear Cacti

Decomposers:
Mushrooms, fungi, worms

1. List several detrivores (decomposers) that help tree matter decompose.
2. List some herbivores (animals that eat only plants) that enjoy eating parts of the tree.
What part of the tree do they consume?
3. What could happen to the food chain if a tree species was completely removed from the ecosystem?



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ELAR and Science TEKS Alignment

Module	Lesson	Science TEKS Alignment
4: Trees In Your Community	10.1 Trees and the Food Chain	K.1A, K.2A, K.5A, K.9A, K.2D 1.1A, 1.2A, 1.5A, 1.9A, 1.2D 2.1A, 2.2A, 2.5A, 2.9A, 2.2D 3.1A, 3.5A, 3.9A, 3.10A, 3.1F 4.1A, 4.5A, 4.11A, 4.12A, 4.1F 5.1A, 5.5A, 5.10A, 5.12A, 5.1F 6.1A, 6.5A, 6.9A, 6.10A, 6.1F 7.1A, 7.5A, 7.9A, 7.10A, 7.1F 8.1A, 8.5A, 8.11A, 8.12A, 8.1F
		ELAR TEKS Alignment
4: Trees In Your Community	10.1 Trees and the Food Chain	K.1A, K.2A, K.5A, K.6A, K.7A 1.1A, 1.2A, 1.5A, 1.6A, 1.7A 2.1A, 2.2A, 2.5A, 2.6A, 2.7A 3.1A, 3.2A, 3.6A, 3.7A, 3.10A 4.1A, 4.2A, 4.5A, 4.6A, 4.7A 5.1A, 5.2A, 5.5A, 5.6A, 5.7A 6.1A, 6.2A, 6.5A, 6.7A, 6.6A 7.1A, 7.2A, 7.7A, 7.6A, 7.5A 8.1A, 8.2A, 8.5A, 8.7A, 8.6A