

# FOOD WEB MISSION

Explore Food Webs in Your Neighborhood

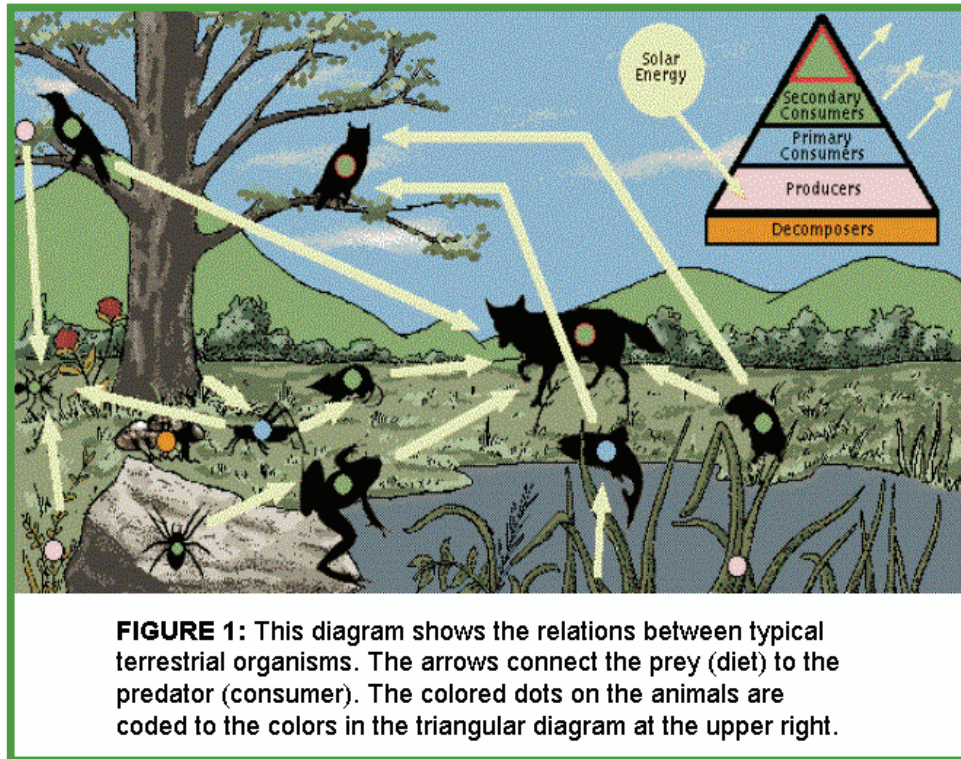


Image Courtesy USGS

## Mission Overview

This activity is a great way to get outside with family and friends to explore the natural world. Use the background information and the mission tasks to learn about organisms in your neighborhood. Let your discoveries ignite conversations about food webs and energy transfer. Share the photos you take with [greatnatureproject.org](http://greatnatureproject.org). If you find organisms that you cannot identify, select identification help when you upload the photos so that other nature enthusiasts can help you and learn more about what you saw. Children under the age of 13 should submit observations with adult supervision in order to protect their privacy.

## Background Information

All living things are connected by food webs. Each organism—no matter how small or big—has a role in one or more food webs. Exploring the connections in a food web shows how each species affects, and is affected by, other species. Plants and other **primary producers**, such as algae, grow using a process called photosynthesis; they convert energy from the sun into chemical energy. Organisms that eat plants (herbivores, or **primary consumers**) use the energy created by plants to survive and grow. **Secondary consumers** eat animals that eat other animals. When organisms die, **decomposers** get their energy for growth from breaking down the dead material. Many species can occupy more than one role in the food web, like animals that eat plants as well as other animals.

 [Learn more about food webs at NatGeoEd.org](http://NatGeoEd.org)

# Your **mission** now is to find a food web in your neighborhood by taking photos of organisms!

## HOW TO PARTICIPATE

- 1 Go outside and search for the organisms described in each task. You may not be able to find them all in one excursion.
- 2 Upload your photos to the Great Nature Project on [greatnatureproject.org](http://greatnatureproject.org) or using the [iNaturalist.org](http://iNaturalist.org) mobile app.
- 3 Be sure to use the “look up” button (or magnifying glass icon in the app) to search for the appropriate group of organisms (such as “millipedes” or “ferns”). Then others in the community can help suggest identifications for what you saw.
- 4 Use the questions and discussion ideas to dive deeper into this learning adventure. Kids ages five to 11 will find varying level of success for tasks 1-5. Older kids and families can challenge themselves to complete all tasks.



(left) National Geographic Creative/Diane Ackerman;  
(middle) National Geographic Creative/Paul Zahl;  
(right) National Geographic Creative/Carolyn Barnwell

# CHECKLIST



## **Task 1: Take a picture of a plant (primary producer).**

*Ask: Where do plants get their energy?*  
(Answer: They create it from the sun's energy using photosynthesis.)

## **Task 2: Take a picture of an animal that eats plants (herbivore/primary consumer).**

*Ask: What kinds of plants do you think the animal eats? Why?*  
(Answers will vary.)

## **Task 3: Take a picture of an animal that eats animals (secondary consumer).**

*Ask: What kinds of animals do you think the animal eats? Why?*  
(Answers will vary.)



**Discussion idea:** Very few organisms are strictly carnivores. Terrestrial carnivores include felines (cats), and aquatic carnivores include many tertiary consumers (apex predators) like sharks and barracudas.

## **Task 4: Take a picture of an organism that consumes dead things or waste (decomposer/detritivore).**

*Ask: Can you think of examples of dead things that a decomposer may eat?*  
(Answer: Decomposers eat all dead organisms, including primary producers and consumers, and their waste products.)

## **Task 5: Take a picture of an animal that eats both plants and other animals (omnivore).**

*Ask: Do you think the animal eats more plants or more animals? Why?*  
(Answers will vary.)

## **Task 6: Take a picture of an animal eating a plant.**

*Ask: What part of a plant is the animal eating? Is this the only plant it can eat? What other kinds of plants could it eat?*  
(Answers will vary.)

## **Task 7: Take a picture of an animal eating another animal.**

*Ask: What kind of animal is it eating? Is this the only kind of animal it can eat? What other kinds of animals can it eat?*  
(Answers will vary.)

## **Task 8: Take a picture of a non-plant primary producer (e.g. algae, cyanobacteria, lichen).**

*Ask: Where does this organism get its energy? How is it similar to plants? How is it different?*  
(Answer: Most terrestrial primary producers get their energy from the sun through photosynthesis.)

*Ask: What energy sources exist other than the sun, and which organisms use them?*  
(Answer: There are few organisms, like deep-water tube worms and some anaerobic bacteria, on our planet that get their energy through chemosynthesis. Go to [NatGeoEd.org](https://www.natgeoed.org) to learn more about these specialized organisms.)



**Discussion idea:** The primary difference between plants and algae is in their roots and holdfasts. Plant roots are used to transport water and nutrients. Algae holdfasts are simply used to hold onto a substrate. Holdfasts do not transport water or nutrients.

# COMPLETING YOUR MISSION



Be sure to submit your photos to [greatnatureproject.org](http://greatnatureproject.org) along with any notes. Remember, it's fine if you don't know what you saw. Record as much as you know (e.g. "bird" or "plant") and then others in the Great Nature Project can help suggest identifications.

As you are walking home after your mission, think about humans as part of a food web.

## Discuss the following:

- What types of organisms do *you* eat?
- Are you an herbivore, an omnivore, or a carnivore?
- How are you connected to the rest of the food web?
- How would that change if you were a wild animal living in your current habitat?



## Art Project Extension

Create an art project that depicts a food web in your neighborhood. Encourage younger kids to include at least four organisms in a drawing or collage. Older kids should try to include at least seven organisms. Make sure you show the connections between organisms.

**!** *Challenge: Can you add yourself to the food web?*

