

Living Coast Discovery Center Virtual Field Trip Resource Packet

Food Chain Hunt

In this packet you will find lessons and resources related to your Living Coast virtual field trip. The first two activities are intended to bookend your virtual trip, followed by additional resources.

Here is the link to our virtual field trip playlist:

<https://youtu.be/TTey7tyaMGg>

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Food Chain Introduction

Lesson Objectives:

- Students will be able to describe a food chain and how different producers and consumers are interconnected in an ecosystem
- Students will be able to define producer, consumer, carnivore, herbivore, omnivore and decomposer

Standards:

- **4-LS1-1** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- **4-LS1-2** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
- **5-LS2-1** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Materials:

- Whiteboard (for teacher)
- Computers to access <http://plattebasintimelapse.com/ed/chapter/activities-food-chain-food-web/>

Outline:

Begin the lesson with the question: "What did you eat for dinner last night?" Break responses down into individual ingredients (separate lasagna into pasta, beef, tomatoes, and cheese) and write them on the board.

Once you have a broad sampling, begin categorizing the ingredients into producers, and consumers. Use questions such as:

- Which of these foods come from plants?
- Which of these foods don't come from plants? (If mushrooms are on the board, remember that technically mushrooms are fungi not plants!)

At this point, introduce the idea of producers as plants, or more scientifically, as organisms that make their own food through photosynthesis. Introduce the idea of consumers as animals, or more scientifically, as organisms that eat producers or other consumers.

Break down the consumer category further into herbivore, carnivore, omnivore, and decomposer. Use questions such as:

- Of the consumers, which are animals that eat plants?
- Which are animals that eat other animals?
- Which eat both?
- Are there any decomposers? (Mushrooms, crab, shrimp, and lobster are likely to be the only decomposers.)

Introduce the vocabulary words herbivore, carnivore, omnivore, and decomposer at this point and give the formal definitions.

Have students go to <http://plattebasintimelapse.com/ed/chapter/activities-food-chain-food-web/> to complete an online activity with an introduction to simple food chains and food webs.

Sweetwater Marsh Food Web

Lesson Objectives:

- Students will be able to describe a food chain and how different producers and consumers are interconnected in an ecosystem
- Students will be able to explain how an animal missing in their food chain will affect the health of an ecosystem

Standards:

- **4-LS1-1** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- **4-LS1-2** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
- **5-LS2-1** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Materials:

- Sweetwater marsh animal list
- Paper and pencil

Outline:

Have students construct two food chains, using the animal list to assist. Food chains can be as simple as written on a sheet of paper showing the energy flowing from producers up to tertiary consumer(s). Or you can encourage students to look up the animals that they use in their web and cutout or draw pictures to include. Challenge them by having students one aquatic and one terrestrial food web.

Extension:

Present students with a natural disaster or human impact situation (ex. An earthquake could destroy burrows, habitat loss would get rid of trees/bushes). Brainstorm how it might affect the ecosystem. Have them look back at their food webs and discuss how their webs would change.

What Eats What?

Sweetwater Marsh

Invertebrates

Animal	Food
Anemone	Small fish, crabs, shrimp
Bent-nose clam	Detritus
Blue mud shrimp	Detritus and plankton
Yellow shore crab	Detritus, algae
Innkeeper Worm	Detritus
Fiddler Crab	Detritus
Ghost Shrimp	Detritus and plankton
Horn Snail	Algae and detritus
Jack knife clam	Plankton and detritus
Moon snail	Clams (as a parasite)
Octopus	Shrimp, lobsters, crabs, small fish
Scallop	Plankton
Sea Slug	Anemones, worms, crabs, shrimp, clams
Spiny lobster	Snails, sand dollars, shellfish, detritus
Swimming crab	Sand crabs
Butterfly	Nectar from flowers
Cricket	Flies, leaves
Dragonfly	Insects
Flies	Fruit
Harlequin bug	Leaves
Mosquito	Nectar from flower, blood of mammals or birds
Spider	Other insects

Fish

Animal	Food
Arrow Goby	Worms, clams, small crabs
Bat ray	Clams, crabs, innkeeper worms
Leopard shark	Large crabs, shrimp, fish, worms, clams, octopus
Mudsucker	Worms, clams, crabs, fish
Perch	Shrimp, crabs, worms
Pipefish	Shrimp, crabs, crayfish
Round stingray	Flatfish, crabs, shrimp, worms
Scorpion fish	Crabs, fish, octopus, shrimp, pebbles

Amphibians and Reptiles

Animal	Food
Fence lizard	Insects
California legless lizard	insects
Alligator lizard	Insects
Gopher snake	Mice, squirrels, rabbits, bird eggs
King snake	Mice, squirrels, rabbits, rattlesnakes
Western rattlesnake	Mice, squirrels, rabbits

Mammals

Animal	Food
Coyote	Rabbits, mice, birds, berries, other small animals
Mouse	Seeds and young plants
Opossum	Anything!
Raccoon	Insects, bird eggs, fruit, berries, nuts, shellfish, mice, lizards
Sea lion	Fish, crabs, scallops
Squirrel	Plants, seeds, insects

Birds

Animal	Food
Blackbirds	Seeds, berries, worms, insects
Clapper rail	Snails, insects, small fish, shrimp, earthworms
Mourning dove	Seeds
Ducks	Eelgrass, algae, fish, crabs, clams
Egret	Fish, clams, crabs, scallops
Great blue heron	Fish, lizards, gophers, clams, crabs, snakes, octopus
Hummingbirds	Nectar from flowers
Kestrel	Large insects, mice, lizards
Marsh hawk	Rabbits, mice, squirrels, smaller birds
Mocking bird	Insects, spiders, snails, berries
Osprey	Fish
Pelican	Fish

Red tail hawk	Rabbits, mice, squirrels, lizards, snakes, small birds
Seagulls	Anything!
Sparrow	Seeds
Swallows	Insects
Terns	Fish

Producers

Producer	Product
Algae	Algae
Bladder pod	Leaves
Boxthorn	Berries, seeds
Bush sunflower	Seeds
Detritus	Detritus
Lemonade berry	Leaves, berries
Marsh lavender	Flowers, seeds
Monkey flower	Flowers
Pickleweed	Leaves, seeds
Plankton	Plankton
Saltbush	Leaves, seeds
Toyon berry	Berries

Food Chain Vocab List

Abiotic Nonliving material

Adaptation The process by which plants and animals change their structure, form or behavior to increase their chances of survival in a given habitat.

Camouflage The appearance of an animal that enables it to hide or blend in with its surroundings.

Consumer An animal that eats plants or other animals for food.

Community A group of plants and animals living in the same area and depending on one another for survival.

Competition When two or more organisms attempt to use the same limited resources. Organisms often compete for food and space.

Decomposer Organisms such as bacteria that obtain energy by breaking down dead plants and animals into abiotic material.

Ecology The study of how organisms interact with living and nonliving parts of their environment.

Ecosystem A unit consisting of a community interacting with its physical environment.

Environment The combination of all factors that affect and influence the growth, development and reproduction of organisms – water, air, vegetation, animals, human elements, climate and location.

Food Chain The transfer of food energy for the source in plants through a series of animals, with repeated eating and being eaten

Food Web An interlocking pattern of food chains.

Habitat The place in which a plant or animal lives.

Niche The specific role played by an organism in a community.

Organism A single living plant or animal.

Predator An animal that eats other animals; a carnivore,

Prey An animal eaten by another animal,

Producer An organism that uses sunlight to convert carbon dioxide, water, and nutrients into food,

Scavenger An animal that eats the remains and wastes of plants and other animals.



Encyclopedia Articles

Encyclopedia Britannica articles related to food chains and ecology.

ecology

Children's Encyclopedia

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 Video/Animation



Learn how groups of plants and animals live together in ecosystems.
Encyclopædia Britannica, Inc.

Ecology is the study of the relationships between [living things](#) and their surroundings, or [environment](#). Scientists who work in ecology are called ecologists. Ecologists examine how living things depend on one another for survival. They also study how living things use such natural resources as air, soil, and water to stay alive.

More Information:

- › [Journals And Magazines](#)
- › [The Web's Best Sites](#)



An ecologist studies pitcher plants as they grow in a nature preserve in North Carolina.
Lynda Richardson/Corbis

Some ecologists work in laboratories. Laboratory experiments allow ecologists to study things under controlled conditions. For instance, they can experiment to see how plants react to different amounts of light or water. Such studies are harder in a natural setting because weather and other natural conditions cannot be controlled.

However, many ecologists do work in natural, outdoor settings. They look at all the different factors that affect [ecosystems](#), or communities of living things. Studies in the outdoors are useful because they show what is actually happening in the environment.

Ecology is important because it shows how changes in the environment affect the survival of living things. For example, when pollution kills certain living things, the animals that feed on them also may die. The work of ecologists has convinced many people to protect the environment and all the ecosystems that it supports.

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"ecology." *Britannica Junior Encyclopedia. Britannica Online for Kids.*
Encyclopædia Britannica, Inc., 2015. Web. 22 July 2015.
<<http://kids.britannica.com/elementary/article-9353082/ecology>>.

food chain

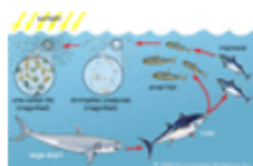
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A food chain in the ocean begins with tiny one-celled organisms called diatoms. They make their own ...

Encyclopædia Britannica, Inc.

The term food chain describes the order in which organisms, or **living things**, depend on each other for food. Every **ecosystem**, or community of living things, has one or more food chains.

More Information:

- > [Journals And Magazines](#)
- > [The Web's Best Sites](#)

Most food chains start with organisms that make their own food, such as plants. Scientists call them producers. Organisms that eat other living things are known as consumers. A squirrel that feeds on plants is called a primary consumer. A hawk that eats the squirrel and other primary consumers is called a secondary consumer.

Decomposers are often the final link in a food chain. Decomposers are bacteria and other organisms that cause decay. When plants and animals die, decomposers break down their tissues. This adds nutrients to the soil so that new plants may grow. Then the food chain begins again.



The diagram shows how a single food chain is linked within a group of food chains called a food web.

Encyclopædia Britannica, Inc.

A food web is a group of food chains within an ecosystem. Most living things eat more than one type of animal or plant. So their food chains overlap and connect. For example, the hawk that ate the squirrel also may eat fish. This makes the hawk a part of two food chains, or a food web.

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"food chain." *Britannica Junior Encyclopedia. Britannica Online for Kids.* Encyclopædia Britannica, Inc., 2015. Web. 22 July 2015. <<http://kids.britannica.com/elementary/article-9353141/food-chain>>.

plankton

Children's Encyclopedia

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An almost transparent zooplankton is seen in an enlarged view.
Robert Arnold—Taxi/Getty Images

Countless tiny living things float and drift in the world's oceans and other bodies of water. These living things, or organisms, are known as **plankton**. They include plants, animals, and other kinds of organisms. **Plankton** have an important place in the **food chain** that supports fish and other sea creatures—and the people who eat them.

More Information:

> [Journals And Magazines](#)

Types of Plankton

Plankton that is made up of plants or plantlike organisms is called **phytoplankton**. These organisms are often no larger than a single cell. For example, a single-celled type of **algae**, called a diatom, is a common form of **phytoplankton**. **Phytoplankton** floats near the surface of the water. Like other plants it uses sunlight to produce energy and then releases the gas oxygen. This process is called **photosynthesis**.

Plankton that is made up of animals or animal-like organisms is called **zooplankton**. Some of these organisms, such as miniature **crustaceans** and **protozoans**, are very small. Others, such as jellyfish, are larger. Some fishes and shellfish begin their lives as eggs or tiny larvae. These eggs and larvae are also **zooplankton**.

Besides **phytoplankton** and **zooplankton**, bacteria and fungi float in the world's waters. These living things may also be considered **plankton**.

Importance

Plankton is very important to life on Earth. **Phytoplankton** produces much of the oxygen that people and animals need to survive. **Plankton** is also a major source of food. **Zooplankton** feeds on **phytoplankton**. In turn, fish and other larger animals eat the **zooplankton**. Many types of whale feed on **zooplankton**. The huge whales catch the tiny **plankton** by using a series of filters, called baleen, in their mouths.

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Wildlife Conservation



A sandhill crane chick stands in a marsh in the Yukon Flats National Wildlife Refuge in Alaska. The ...
U.S. Fish and Wildlife Service


The preservation of wildlife greatly depends upon water and soil conservation. The native [plants](#) and [animals](#) constitute the wildlife of a region and are a product of the land resources and habitat conditions. But, like humans, wild animals must have food, water, and shelter. Destroying the forests, marshes, ponds, and grasslands alters their food and water supplies and the places in which they live, hibernate, and reproduce.

More Information:

- > [Journals And Magazines](#)
- > [The Web's Best Sites](#)
- > [Additional Readings](#)

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Encyclopædia Britannica, Inc., 2015. Web. 23 July 2015.
<<http://kids.britannica.com/comptons/article-199117/conservation>>.

Useful Links

Food Chain Introduction Videos

To videos about food chains from PBS

<https://www.pbslearningmedia.org/resource/idptv11.sci.life.oate.d4kfch/food-chain/>

<https://www.pbslearningmedia.org/resource/thnkgard.sci.ess.chain/think-garden-whats-a-food-chain/support-materials/>

Website Resource

Website with ecosystem-specific printables

<https://www.exploringnature.org/db/view/Food-Web-Activities>

Mountain Scramble

More complex ecosystem game that gets into population numbers and balance.

https://pbskids.org/plumlanding/games/ecosystem/mountain_scramble.html

Decomposers and Scavengers

Extension videos about decomposers and scavengers and their importance to the ecosystem.

<https://www.pbs.org/video/natureworks-decomposers-and-scavengers/>

Food Chain Art Project

Art project to make a visual representation of a simple food chain

<https://www.youtube.com/watch?v=85780-m9B9s>