

LET'S EXPLORE THE GREAT BIG BLUE

An Exploration of Aquatic Food Webs and Food Chains

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An Exploration of Aquatic Food Webs and Food Chains
Lesson 2 of 6

Skill Level

Beginner (4th/5th Graders)

Educational Standards Supported

4.LS2.2, 4.LS2.3

Learner Outcomes

The learner will be able to:

- Demonstrate understanding of the food chain and food web within the aquatic food chain
- Demonstrate the understanding of the flow of energy within different diets of aquatic species

Tag(s)

4-H Science

Time Needed

30-45 minutes

Materials Needed

- LCD Projector/Computer
- Nearpod Lesson
- Pictures of sea creatures that have been laminated with a magnet on the back
- String
- Tape
- Pizza pans

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Introduction to Content

A food chain is singular movement of who eats whom, while a food web has multiple species. A food web includes numerous food chains. Aquatic creatures are like humans, with specified diets (herbivore, omnivore, carnivore). Within these food chains and food webs there are different classifications, such as producers, decomposers and consumers. This lesson will allow youth to understand how energy flows in the web of life within our ocean environments.

Introduction to Methodology

Students will participate in a Nearpod lesson and discussion.

Terms/Concepts

Producers — Organisms that produce their own food, such as algae

Consumers — Animals, such as carnivores and omnivores, that eat producers

Decomposers — Turn organic waste into organic materials, and include fungi and bacteria

Carnivore — Organisms that only eat meat

Herbivores — Organisms that only eat plants

Omnivores — Organisms that eat both plants and animals

Food Web — A model that shows the feeding relationships between organisms in an ecosystem

Food Chain- A series of organisms in which each organism uses the next organism as a food source, showing how energy flows through an ecosystem



Setting the Stage/Opening Question

Say, “Food chains and food webs play an important role in our ecosystems. Today, you will participate in an interactive lesson and do a hands-on activity.”

Open the Nearpod lesson and share the code if students have their own laptop. If not, use Teacher mode and let the youth answer the questions as you go through it.

https://nearpod.com/login/?referrer=https%3A%2F%2Fnp1.nearpod.com%2FsharePresentation.php%3Fcode%3D325d61194c3c9e4c5e3ec058e2bd20e4-1%26oc%3Duser-created%26utm_source%3Dlink

Experience

Review these points by going through some examples of food chains.

The Nearpod has two examples that include a “drag and drop” and a “draw it” activity.

Say, “Are you ready for a deeper dive?”

Place everyone in small groups. Each group will need pictures of sea creatures, string and tape. They will place sea creatures on their pizza pans and use the string to resemble arrows. This will demonstrate the flow of energy between species to create a food web. The tape is used to help the string stay in place.

Give groups enough time to complete their food web. Give groups enough time to share their food web with the rest of the class.

The Nearpod lesson ends with a short video explaining what would happen if you removed the shark from the aquatic ecosystem.

Share/Process

Say, “Food chains and food webs play an important role in our ecosystems. If we remove just one species, it could have a negative impact to that ecosystem.”

Ask students, “What surprised you today?”

Ask students, “What is something you think you will research further after today’s lesson?”

Strategies to Increase Student Engagement

Be sure to walk around and listen to student interaction. Make sure students understand the major concepts of the lesson.

Start a discussion about food webs/chains outside the ocean.

End the lesson with a discussion asking what would happen. Let the students answer you or ask them to share with a student sitting next to them.

Generalize

Ask, “Why is studying food webs important to us?”

Ask, “What would happen to our food webs and food chains if all species were carnivores?”

Ask, “What would happen to our food webs and food chains if all species were herbivores?”

Apply

Ask, “If the sun quit shining, what would happen to our food chains and food webs?”

Ask, “What aquatic species do you know of that has gone extinct? How does that play a role in our food webs?”

Notes

Supplemental Information

Educational Standards Met

Life Sciences

4.LS2.2 Develop models of terrestrial and aquatic food chains to describe the movement of energy among producers, herbivores, carnivores, omnivores, and decomposers

4.LS2.3 Using information about the roles of organisms (producers, consumers, decomposers), evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable

References

education.nationalgeographic.org/resource/resource-library-food-chains-and-webs

www.fisheries.noaa.gov/species/hawaiian-monk-seal

oceaninfo.com/animals/sea-sheep

<https://www.floridamuseum.ufl.edu/discover-fish/species-profiles/sheephead/>

fisheries.noaa.gov/species/fin-whale

a-z-animals.com/animals/gulper-eel

a-z-animals.com/animals/sea-slug

TIPPS *Life Skills*

4th Grade

Heart – Actively listening to what others are saying, be able to restate or summarize what has been said.

5th Grade

Head – Communicate information learned from a specific project area

Heart – Understand one's ability, strengths, and limitations.

Hands – Define issues of a given problem or situation.

Hands – As part of a group, identify and agree on a common task or goal.



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W1316B 08/2025 25-0351

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