

NOAA Teacher at Sea

Lesson Plan

by

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NOAA Teacher at Sea 2014

Oregon II

Activity Title: Fun with the Food Chain

Subject: This lesson addresses aspects of the food chain as appropriate for young children.

Grade Levels: Kindergarten-1st grade (Adjust as appropriate depending on the age of students.) This could also be appropriate for older students if adjusted.

Average Learning Time: Approximately one week of 60 minute lessons. (Adjust as needed.)

Lesson Summary: Students will gain an understanding of the food chain and particularly the food chain of the ocean. Students will gain an understanding of the important work that NOAA scientists do that directly helps keep us safe and protects our ocean. Students will get to participate in a mock fisheries research experience by sorting ocean life, conducting measurements, and recording their findings.

Overall Concept (Big Idea/Essential Question): What is the food chain and how is the ocean an important part of the food chain? How do NOAA scientists help keep our seafood safe through their oceanic research?

Specific Concepts (Key Concepts):

- We are all a part of the food chain.
- Living creatures must eat and that often requires animals eating other animals in order to survive.
- The ocean plays an extremely valuable role in our lives.
- The work NOAA scientists do is very important for our safety since we eat food from the ocean. They work to ensure what we eat is safe and that the ocean is protected.

Focus Questions:

1. What is the food chain?
2. Why is the ocean an important part of the food chain?
3. How do the jobs of scientists who work for NOAA affect our daily lives?

Objectives/Learning Goals:

- Students will understand the food chain and predators/prey.
- Students will understand why the ocean is such an important part of the food chain.
- Students will understand that there are many different types of scientists and that some scientists work to ensure the safety of our ocean and the food people eat that comes from the ocean.
- Students will simulate work that NOAA Teachers at Sea do on a fisheries research ship.

Background Information: Students will need to understand that the meat they eat comes from animals. This is often a misconception. They need to understand that seafood comes from the ocean and that scientists research seafood and work to protect the oceans and people so that each are safe and carefully protected. They need to understand that people and animals eat plants and other animals in order to stay alive. Show students pictures of various Teachers at Sea so they can see some of the work being done through NOAA.

Common Misconceptions/Preconceptions: Students often do not understand the role the ocean plays in our lives and how important it is. At such a young age, many children do not even consider where their food comes from. They also typically do not think *they* are a part of the food chain! Students also typically think of animated movies or cartoons when thinking about ocean life. (*Finding Nemo*, *Spongebob Square Pants*) Students also tend to have misconceptions about scientists, who they are, and what they do.

Materials: Computer, an interactive white board if possible or a way to project the websites onto a large screen, science notebooks, cd player, song "Decomposers" by Musically Aligned, long tables, picture cards of various types of ocean life, large paper for a class graphic organizer

Technical Requirements: Computer access, an interactive whiteboard would be beneficial, access to <http://www.readinga-z.com/books/leveled-books/book/?id=253>. The online book is *The Food Chain* by Cheryl Ryan and is a level F. (This is approximately a first grade reading level.) I was able to access this book without paying the site's fee. Access to NOAA's Teacher at Sea site, Brainpop, and You Tube are also needed. <http://teacheratsea.noaa.gov/> and <https://www.youtube.com>.

Teacher Preparation: Create a graphic organizer of your choice, make sure to have access to necessary websites, and be very familiar with the content. Teachers will need to set up a “mock” research area with a long table(s), create cards with pictures of various ocean life on them.

Keywords: Ocean, Food Chain, Decomposers, Predator, Prey, Scientists

Pre-assessment Strategy/Anticipatory Set: Complete a KWL chart with students. (Many other graphic organizers would be sufficient also.) Ask students what they know about the food chain and what they want to know. Also ask them which foods come from the ocean and why they think the ocean is important in regards to food. This can also serve as a post-assessment because they can complete the “L” portion and recall what they learned from the lesson.

Lesson Procedure:

1. Complete the beginning of the KWL chart with students to find out what they know about the food chain and the role the ocean plays in it. Find out what they want to learn.
2. If students are given challenging vocabulary words, they can most certainly learn them and typically very much enjoy the challenge. Introduce the vocabulary words listed to them and explain that they will hear the words many times. If students have science notebooks, have them write the vocabulary words in their notebooks. If a word wall is utilized, add them to that also so students can frequently refer back to them and spell them correctly in their writing.
3. Show students an apple. Cut it in half. Throughout the day, have students observe the changes in the apple. They can even draw the changes in their science notebooks. Explain that they may say the apple is rotting but a scientific word for that is decomposing. Over time, allow it to continue to decompose and eventually put it outside and watch what happens. Explain that decomposers are part of the food chain and are very important to it. Sing the song “Decomposers in the Food Chain” with students. It is a very upbeat song that uses appropriate vocabulary and is a fun way for children to engage in this lesson.
4. Using the *Reading A-Z* website, access the book *The Food Chain* and read it to children each day throughout the week. Also read a higher level book from this site to students. The book is *The Amazing Undersea Food Web*.
5. Throughout the week, show students any or all of the following videos on You Tube:
NOAA Fisheries: <https://www.youtube.com/user/usnoaafisheriesgov>
The Ocean Food Chain Video- <https://www.youtube.com/watch?v=4HrleZtIH6g>
Learn All About the Food Chain- <https://www.youtube.com/watch?v=262OK5G-yBg>
The Marine Food Chain- <https://www.youtube.com/watch?v=ljZLYw5G8s4>
Brainpop: <https://www.brainpop.com/science/ecologyandbehavior/foodchains/>
Brainpop: <https://www.brainpop.com/science/earthsystem/oceans/preview.weml>
6. Share pictures with students of teachers from NOAA working on a fisheries research ship using the NOAA website and from my NOAA Teacher at Sea trip. Initiate discussions with students

about the scientists, the work they are doing, etc. Set up a mock fisheries research area for students. This would entail using a long table(s), having either real computers or “pretend” computers at the end of the table, and lots of cards for students that have pictures of various ocean life. All cards will be in one basket and students will pretend to pull the cards out of the trawl and they will be required to sort the cards into separate baskets according to the various species. For example, they may have pictures of flounder, squid, shrimp, etc. and they will sort them accordingly. They will use rulers or nonstandard measurement items to measure the ocean life displayed on the cards. They will pretend to enter the information on the cards or they can write the information in their notebooks. This may last for several days so students can play different roles. As they work, talk to them about what different ocean life may eat. For example, a sea turtle may eat seaweed, fish, crabs, or jellyfish. Ask them about predator/prey roles as they work. Have students compare and contrast various types of ocean life as they work.

7. As students learn more about the food chain and participate in the activities, remind them frequently that they are being scientists. Students often have the misconception that scientists are white males who wear lab coats and work in a laboratory. We want them to see there are many types of scientists and that NOAA scientists perform extremely important roles in the food chain. They help make sure the food we eat from the ocean is safe! That is a direct link to our well-being and it is imperative for students to understand that, as well as to understand that these are jobs they can do one day.
8. Throughout the week, read other books of your choice about the food chain and constantly use the vocabulary words listed. Encourage students to use them in their conversations also.
9. Complete the KWL chart and have students write about what they learned. Optional: Have students complete a written assessment that would require them to explain the food chain, match vocabulary words and definitions, etc.
10. If possible, Skype with a NOAA scientist! Have students interview family members and ask them about why the safety of the seafood we eat is so important.

Assessment and Evaluation: Changes in the conversations students have can serve as one informal means of assessment. They should be much more knowledgeable about the food chain and the role the ocean plays in it. Completing the KWL chart will also serve as an assessment. Asking students to write about what they learned can not only integrate writing but serve as another assessment.

Standards:

North Carolina Standard Course of Study-

K.L.1.1 Compare different types of the same animal to determine individual differences within a particular type of animal. (This can be various types of ocean life for the purposes of this lesson.)

K.L.1.2 Compare characteristics of living and nonliving things.

1.L.1.1 Recognize that plants and animals need food and that these may be found in their environment. (This standard also address air, water, light, space, and shelter that are needed.)

1.L.1.2 Give examples of how the needs of plants and animals can be met by their environments. (The food chain enables animals to meet their needs in order to stay alive.)

Ocean Literacy Principle 7: The ocean and humans are inextricably interconnected.

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