



LESSON OBJECTIVE

- Practice critical thinking skills in a real-world setting
- Determine types of fish bought and if they're contributing to the issue of overfishing

GRADE

- 8th

STANDARDS

- Science
- ELA

TIME REQUIRED

- 60-90 min + 15 min of research at the grocery store

VOCABULARY

- Sustainable
- Overexploitation

MATERIALS

- Provided sheet
- Computer for research and writing

RECOMMENDED ASSESSMENT

- Grade paper for clarity, thoughtfulness, and extent of research

Introduction

Practice your students' research skills while they learn about sustainable seafood. Students will use the provided list and search for additional resources to determine if their local grocery store is stocking fish that are caught in environmentally friendly ways and then write an essay on their findings.

State Standards

MS. ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

8.RL.1, 8.W.1, 8.W.3.2, 8.W.5, 8.W.6.1, 8.W.6.2: Reading, researching, writing, and using good grammar

Lesson Plan

Background Knowledge –

Students should be familiar with the relevant definitions:

- *Sustainable*: conserving an ecological balance by avoiding depletion of natural resources
- *Overexploitation*: the action of making excessive use of a resource

Activity –

1. Open the lesson by discussing sustainable seafood and what that means. Unfortunately, not all fish you find in grocery stores are taken from the oceans in a responsible manner. Some fish that are caught and sold come from declining populations. Ask:

- Do you know what qualifies as sustainable seafood?
- Why it is important to know where your seafood is coming from?
- Does your grocery store carry sustainable seafood?
- What changes can your grocery store make to improve their options of seafood?
- What impacts does overfishing have on ecosystems?

2. Encourage students to use the provided list. Have students select one local grocery store near their homes to find which fish their store stocks and determine if they are coming from responsible sources. Students who are not able to visit a store may still be able to find this information online by visiting a grocery store website for a store that has pick up options. If this seems daunting, try limiting students to just the frozen fish section of the store and ignore the fresh options and the canned/packaged fish.

3. Once students have recorded their findings from the grocery store, have them write a paper assessing the stock in the seafood section, what changes must be made to improve the situation, any negative impacts the sources have on ecosystems, and what environmental efforts are being created to address this issue.
4. Discuss as a class: What hurdles exist that prevent people from buying sustainable seafood? (Knowledge, cost, feelings about the environment, other constraints?) What can be done to help people make the switch to more sustainable seafood?

Discover Further

Extending the Lesson –

- Have students share what they learned with the class and how it connects to the other topics studied in class thus far.
- Turn your essay into action: make it into a letter to the grocery store explaining why they should carry more sustainable seafood options.

Learn More –

Although marine animals at our zoo always receive what they need to live long, healthy lives, their wild counterparts face new pressures each year. The animals face limitations of space, food, and water supply due to climate change, pollution, and overexploitation. You can do your part by going to the zoo to visit, disposing of trash properly, ditching the disposables, choosing sustainable seafood, and spreading awareness to your friends and family.

If you would like to learn more about sustainable seafood sources, visit the Monterey Bay Aquarium Seafood Watch website, <http://www.seafoowatch.org/>. Be on the lookout for other aquatic animals at the zoo and ask zookeepers or instructors questions to learn more about them! Share your lessons with the Fort Wayne Children's Zoo: tag #fwkidszoo to express how you used these supplemental activities.



Name: _____

Use this chart along with your research to write an essay assessing your local grocery store’s stock of seafood. What does your store have in stock? What are they stocking that is good for the environment? What changes must be made to improve the situation? What negative impacts do the sources have on ecosystems? What environmental efforts are being created to address this issue?

<p align="center"><u>BEST CHOICES</u></p> <p align="center">Buy first; these fish are abundant, well managed, and caught or farmed in environmentally friendly ways.</p>	<p align="center"><u>GOOD ALTERNATIVES</u></p> <p align="center">Buy, but be aware there are concerns with how they’re caught, farmed, or managed. Some harvesting information is lacking.</p>	<p align="center"><u>AVOID</u></p> <p align="center">Take a pass on these for now; these fish come from sources that are overfished, lack strong management, or are caught or farmed in ways that harm the environment.</p>
<ol style="list-style-type: none"> 1. Arctic Char (farmed) 2. Barramundi (US & Vietnam farmed) 3. Bass (US hooks and lines, farmed) 4. Catfish (US) 5. Clams, Cockles, Mussels 6. Cod: Pacific (AK) 7. Crab: King, Snow & Tanner (AK) 8. Oysters (farmed & Canada) 9. Perch: Yellow (Lake Erie trap nets, except Ohio) 10. Prawn (Canada & US) 11. Salmon (New Zealand) 12. Scallops (farmed) 13. Shrimp (US farmed) 14. Smelt: Rainbow (Lakes Erie, Huron, Superior, except gillnets) Squid (US) 15. Tilapia (Canada, Ecuador, Peru & US) 16. Trout: Lake (Lake Superior, MI) 17. Trout (US farmed) 18. Tuna: Albacore (trolls, pole and lines) 19. Tuna: Skipjack (Pacific trolls, pole and lines) 20. Whitefish: Lake (Lake Michigan, WI) 	<ol style="list-style-type: none"> 1. Cod: Atlantic (handlines, pole and lines) 2. Cod: Pacific (Canada & US) 3. Lobster: Spiny (Bahamas & US) 4. Mahi Mahi (Ecuador & US longlines) 5. Octopus (Canada, Portugal & Spain pots and traps, HI) 6. Oysters (US wild) 7. Salmon: Atlantic (BS & ME farmed) 8. Salmon (CA, OR & WA) 9. Shrimp (Canada & US wild, Ecuador & Honduras farmed) 10. Squid (Chile, Mexico, & Peru) 11. Swordfish (US) 12. Tilapia (Colombia, Honduras, Indonesia, Mexico & Taiwan) 13. Trout: Lake (Lakes Huron, Michigan, & Superior, Canada, MI & WI) 14. Trout (Canada & Chile farmed) 15. Tuna: Albacore (US longlines) 16. Tuna: Skipjack (free school, imported trolls, pole and lines, US longlines) 17. Tuna: Yellowfin (free school, trolls, pole and lines, US longlines) 	<ol style="list-style-type: none"> 1. Basa/Pangasius/Swai 2. Cod: Atlantic (gillnet, longline, trawl) 3. Cod: Pacific (Japan & Russia) 4. Crab (Argentina, Asia & Russia) 5. Lobster: Spiny (Belize, Brazil, Honduras & Nicaragua) 6. Mahi Mahi (imported) 7. Octopus (other imported sources) 8. Orange Roughly Salmon (Canada, Atlantic, Chile, Norway, & Scotland) 9. Sharks 10. Shrimp (other imported sources) 11. Squid (Argentina, China, India & Thailand) 12. Swordfish (imported longlines) 13. Tilapia (China) 14. Tuna: Albacore (imported except trolls, pole and lines) 15. Tuna: Bluefin 16. Tuna: Skipjack (imported purse seines) 17. Tuna: Yellowfin (longlines except US) 18. Whitefish: Lake (Lake Superior, WI & Lake Winnipeg)