

*SeaKeepers K-12 Curriculum*  
**Shark Conservation**  
Part 2



# SeaKeepers K-12 Curriculum

## Lesson 8: Shark Conservation



**Grade Level: 4th**

**Estimated Time: 120 min**

### Lesson Overview:

Sharks play a vital role in ocean ecosystems. From their anatomy to their ecology, this two-part lesson plan is designed to demonstrate why we need sharks in our oceans, and inspire fascination of this dynamic group of fish.

Did you know that 50% of shark species are 3ft or less in length? While not all sharks fall into the category of 'top predator,' each species plays a vital role in its' ecosystem by removing sick fish, sequestering carbon, and regulating the food chain. Without sharks in the mix, ecosystems can fall out of balance and even collapse. Considering that humans remove between 78 - 100 million sharks from the ocean each year, we should be greatly concerned for the wellbeing of sharks.

Often times, sharks are portrayed as the villain of the ocean instead of being recognized for their ecological importance and interesting biology. Through this set of lesson plans, students will not only learn about how sharks regulate their ecosystems, but also the features that make them unique and cool.

Part two of this lesson plan series focuses on how sharks fit into the food web, and why their conservation is important.

### Lesson Breakdown:

- Presentation about food webs (PDF [here](#), 15 minutes)
- Food Chain Game (30 minutes)
- Food Chain Project (45 minutes)
- Post Project video & discussion (video [here](#), 25 minutes)

\*Email [Programming@Seakeeper.org](mailto:Programming@Seakeeper.org) for powerpoint file

### Educational Standards Addressed:

- Next Generation Science Standards: 4-LS1-2: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- Florida Specific: SC.4.L.17.4: Recognize ways plants and animals, including humans, can impact the environment; SC.4.L.17.3: Trace the flow of energy from the sun as it is transferred along the food chain through the producers to the consumers.

### Tips:

The goal of this lesson series is to cover a range of topics relating to sharks, so ideally this lesson would be paired with Shark Conservation: Part 1 and organized into a shark-themed half day.

*This lesson plan was developed by undergraduate students from Shoals Marine Laboratory studying shark biology: JC Dombrowski, Aiden Lane, Corinne Richard*



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## Lesson 8: Shark Conservation



**Grade Level: 4**

**Estimated Time: 120 min**

### Anticipated learning objectives:

- Understand how humans can impact marine ecosystems by changing shark populations
- Understand food chains and relationships between species
- Compare and contrast food web location of different species

### Preparation & Materials

A powerpoint presentation is included for the lesson, but feel free to use other materials you have to explain these concepts. For the activity, students will need:

- Access to books, pre-selected websites, or other information specific to ecology of different species of sharks. Recommended text: *Sharks of the World: A Complete Guide, 2021* by Ebert, Dando & Fowler.

### Activity instructions for teachers:

#### Activity 1: Food Chain Tag

1. Divide students into half sharks and half fish.
2. On a count of 3, fish run across a field or open space while the sharks try to 'tag' them. Once they make it to the other side of the field, they are 'safe.'
3. When a shark tags a fish, the two of them sit down together.
4. At the end of each round, any shark that has not tagged a fish turns into plankton, and sits out the next round before becoming a fish. Any fish that has not been tagged turns into a shark.

#### Activity 2: Food Chain Project

1. Break students into groups of 2, and assign each group a shark species to learn about. A suggested list of shark species is provided in this lesson plan.
2. Each group should use the provided resources to learn about their shark species, and create a food chain of at least 4 levels, including the shark.
3. When completed, students share their food chains with the class. Be sure to note whenever a shark is not at the top of the food chain - many of them will not, and this is an important concept!
4. To wrap up this activity, ask the students what would happen if a shark on top of the food chain was removed? Follow up by asking what would happen if a shark on the 3rd tier of the food chain was removed?
5. Finish the lesson by watching the video "What if there were no sharks?" by Be Smart on youtube, link [here](#). Lead to the final discussion of how shark populations are declining globally, and what could happen to different ecosystems without sharks.

If you'd like to provide feedback on this lesson plan, click [here](#)! We'll use your comments to improve existing and future SeaKeepers lessons.

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### **Examples of shark species for food chain project**

- Great hammerhead shark
- Tiger shark
- Great white shark
- Bull shark
- Shortfin mako shark
- Wobbegong shark
- Common Thresher shark
- Greenland shark
- Smalltooth sawfish
- Cookie cutter shark
- Lemon shark
- Frilled shark
- Goblin shark
- Blacktip reef shark
- Porbeagle shark
- Atlantic Angel shark
- Bluntnose sixgill shark
- Sandbar shark
- Dusky shark
- Oceanic whitetip shark
- Salmon shark
- Ninja lantern shark
- Spiny dogfish
- Leopard shark