Virtual Shark Talk

Teacher's Guide

Topic: Sharks

Grade level: K-12

Partially Aligned Standards

Next Generation Science Standards (NGSS) Performance Expectations:

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Meet the sharks of the Oregon Coast Aquarium. Explore shark super senses, learn how aquarists care for these toothy fish, and ask an expert all of your burning shark questions.

Program at a glance

Participants will learn how sharks use their senses to survive. They'll also get a peek behind the scenes to see how Oregon Coast Aquarium feeds, cleans, and provides medical care in our Open Seas exhibit.

Objectives

Students will be able to:

- Compare human senses and shark senses
- Describe the role sharks play in their ecosystem
- Discuss ways humans can help sharks

Skills

Students will gain expertise in:

- Communicating scientific information
- Asking and refining questions

Program features:

- Engaging presentation about sharks and shark senses
- Behind the scenes videos
- Live Q&A with an Aquarium educator

NGSS Performance Expectations (cont'd):

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.

MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

Ocean Literacy Principles:

Principle #5. The ocean supports a great diversity of life and ecosystems.

d. Ocean biology provides many unique examples of life cycles, adaptations, and important relationships among organisms that do not occur on land.

Extension activities

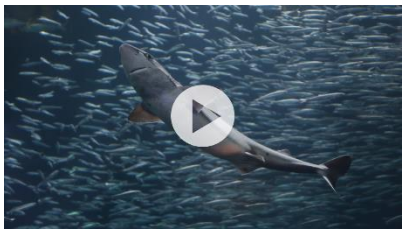
Use these prompts to facilitate further discovery before or after your Aquarium program.

In the Classroom

- Brainstorm questions about sharks. What do you already know about sharks? What do you want to learn? Ask an Aquarium educator during the program or research unanswered questions on your own.
- Explore how sharks eat. Sharks have different kinds of teeth depending on what they eat. Compare and contrast shark teeth. What do you think they eat? Why? Use the photos in this packet or find more examples of shark teeth online.

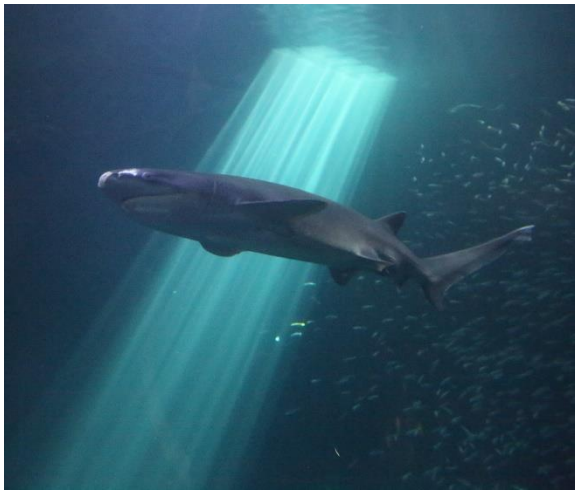
At Oregon Coast Aquarium

- Visit the Open Seas exhibit or check out the Shark Cam on the Aquarium's website. Can you identify our four shark species?
    - Broadnose sevengill shark
    - Tope shark
    - Leopard shark
    - Spiny dogfish

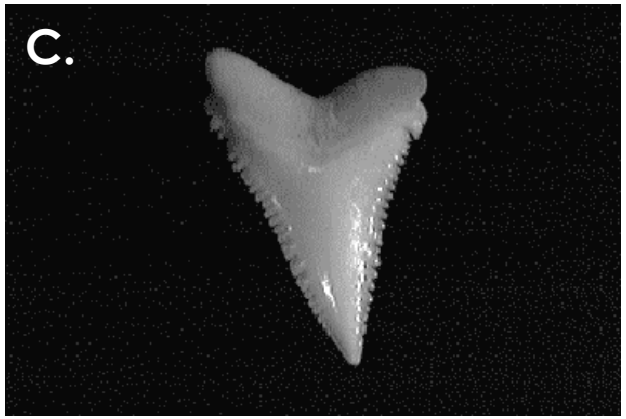


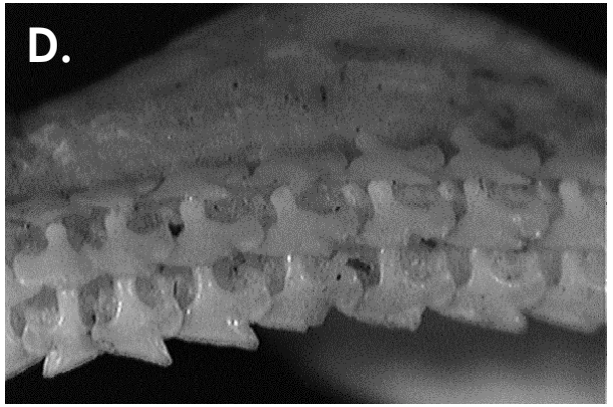
Get Outside

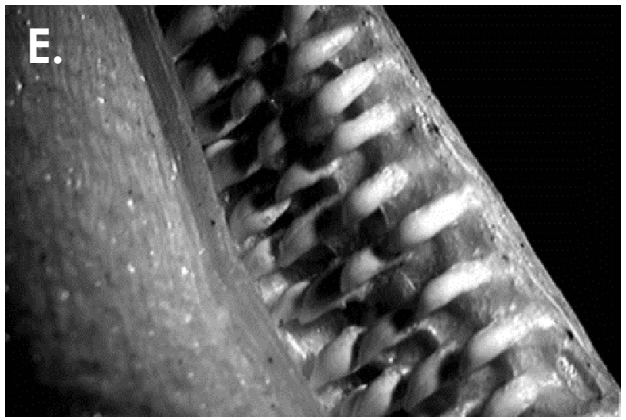
- Go on a shark-themed scavenger hunt. Easy and hard scavenger hunts are included.
- Use your senses to explore the outdoors and reflect on the following prompts in a nature journal.
    - I see…
    - I hear…
    - I feel…
    - I smell…
    - I taste…

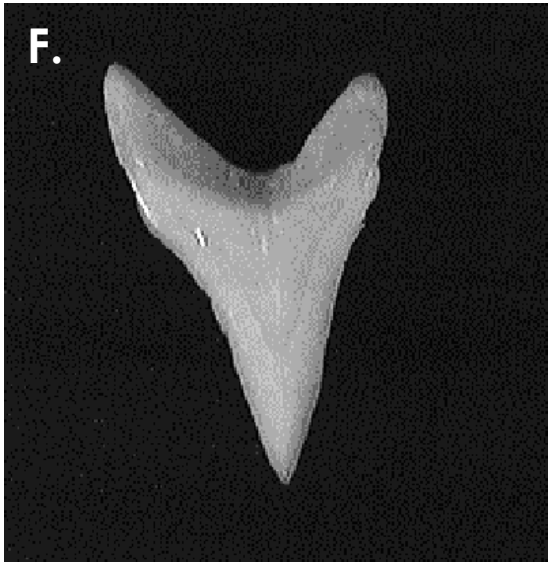


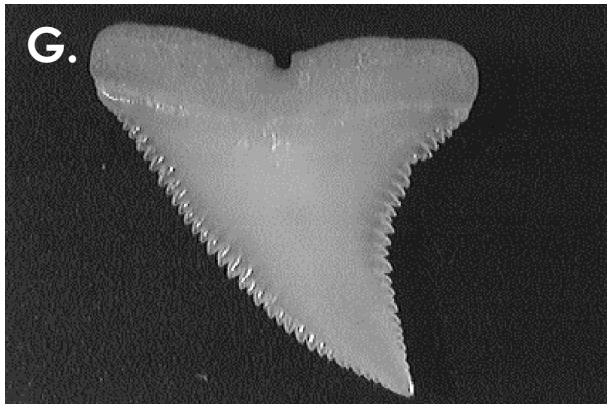
Shark Teeth & Jaws



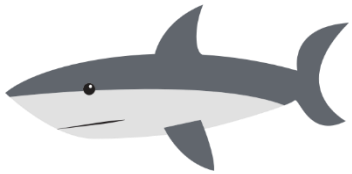








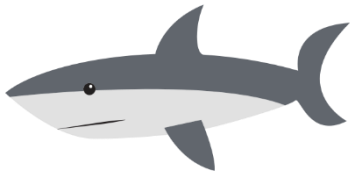
A. **Shortfin mako shark:** This speedy shark has long, smooth, hooked teeth. The shortfin mako is the fastest shark and it hunts fast prey like tuna, swordfish, and squid.
B. **Tope shark:** Tope shark teeth have a sharp point and several large serrations. They are not picky and eat a variety of fish and invertebrates.
C. **Great white shark:** Great white sharks have triangular teeth with serrated edges. These sharks eat large fish and marine mammals.
D. **Spiny dogfish:** These small sharks have small teeth with sharp points. A row of spiny dogfish teeth line up to form a long, sharp cutting edge. They mostly eat small fish.
E. **Basking shark:** These giant sharks have tiny teeth, but they don't use their teeth to eat. They swim near the surface and filter zooplankton from the water with specialized gills.
F. **Common thresher shark:** This shark has small, smooth teeth. They use their large tail to stun schools of fish.
G. **Blue shark:** Blue shark teeth are triangular and curved. They eat fish and squid. Blue sharks are more active at night.



Shark Scavenger Hunt

- ☐ Find something gray
- ☐ Find something wet
- ☐ Find something rough
- ☐ Find something smooth
- ☐ Find something an animal would eat
- ☐ Find something loud
- ☐ Find something quiet
- ☐ Find a plant that smells
- ☐ Find a smell you like
- ☐ Pretend to swim like a shark

OREGON COAST AQUARIUM



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Shark Scavenger Hunt

- [ ] Tell a friend or family member about sharks
- [ ] Find a land predator
- [ ] Find an animal that uses its sense of smell
- [ ] Find an object that feels smooth in one direction and rough in another
- [ ] Find an animal with an aerodynamic or hydrodynamic body shape
- [ ] Find an animal that uses the earth's magnetic field to navigate (e.g. a pigeon)
- [ ] Find a plant that inspires biomimicry (e.g. spiky plants inspired the design of Velcro)
- [ ] Taste a new food
- [ ] Listen for and identify an animal sound
- [ ] Find something with a strong smell
- [ ] Find something sharp (be safe)
- [ ] Sing "Baby Shark"
- [ ] Figure out which direction is north

OREGON COAST AQUARIUM

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