

SHARK SENSES / LESSON OVERVIEW

Objectives

The students will:

- identify the various sensory organs of a shark;
- understand the mechanics of a shark's sight, hearing, touch, electroreception, and chemoreception;
- understand how a shark's senses help it to understand its environment;
- use creative writing and OCEARCH data to form hypotheses for the movement of OCEARCH sharks.

Lesson Summary

Part 1. Photoreception (20 – 30 minutes)

- Shark eyes consist of a lens, retina, an iris, pupil, rods, cones and cornea. Explain how each structure works.
- Optional Activity: How does a tapetum lucidum work? (5 – 10 minutes)

Part 2. Mechanoreception (20 – 30 minutes)

- Explain the lateral line of sharks.
- Learn how sharks can hear sound frequencies lower than humans due to the properties of water.

Part 3. Chemoreception (20 – 30 minutes)

- Explain how sharks use chemoreception to smell.

Part 4. Electroreception (20 – 30 minutes)

- Sharks have an additional sense that enables them to detect electrical signals.
- Optional Activity: Electroreception (30 minutes)

Activity. Sensory Stories (30 – 45 minutes or take-home)

In this activity, students will write their own story. The story will be created using a combination of creative writing techniques, OCEARCH shark data, and the students' own research. These elements will be brought together to explain the movements of the chosen shark based on what the shark might be sensing and the mechanics of that shark's sensory systems.

Materials: Computer with internet access, paper and writing utensil, handout (provided).