

Comparing Sea Otters and Seals

Topics

Sea Otters, Seals

Grades

K-2

Site

Indoors

Duration

20 minutes

Materials

- **Concept Cards** (one set for each student and one class set)
- Images of sea otters and seals (nonfiction books, magazine photographs, web cam projections)
- Chart paper or whiteboard
- Pocket chart

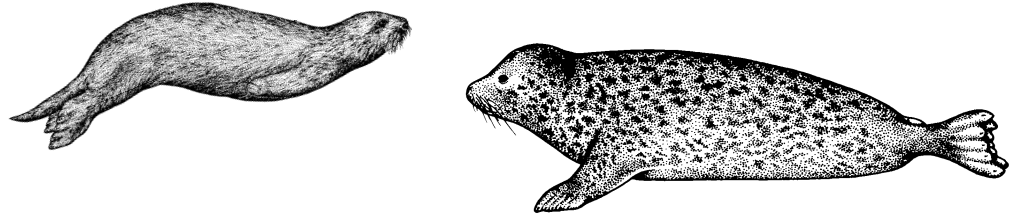
Vocabulary

adaptations, mammal, predator, prey

National Science Education Standards

Science as Inquiry (K-4)
Abilities necessary to do scientific inquiry

Life Science (K-4)
Characteristics of organisms
Organisms and environments



Overview

What makes sea otters and seals unique marine mammals? How are they alike and different? Students find out by comparing sea otter and seal characteristics using a Venn diagram. They then play a game to review similarities and differences between sea otters and seals.

Objectives

Students will be able to:

- Identify the body parts and behaviors of a sea otter.
- Identify the body parts and behaviors of a seal.
- Use a Venn diagram to illustrate similarities and differences between the two marine mammals.

Background

Sea otters and seals share many adaptations. Both are marine mammals that give birth to live young and produce milk. They have lungs to breathe and are able to hold their breath underwater for long periods of time. They have eyes, teeth, whiskers and flippers. They are both protected by the Marine Mammal Protection Act, which makes it illegal to harass or capture them. In addition, sea otters and seals live in the kelp forest habitat and try to avoid predators, such as the great white shark.

Seals have some physical characteristics and behaviors that are different than sea otters. They spend more time on land; they breed and give birth there. Sea otters can mate, reproduce and rear young in the sea. Seals have a small coat of fur but are insulated from cold water primarily by layers of blubber. Sea otters do not have blubber but have extremely thick fur. Sea otters rarely eat fish, which are a favorite food of most seals. Sea otters eat mainly invertebrates. Otters use their paws to wield "tools," like rocks, to crack open food. Seals do not have paws but do have both front and rear flippers. Another identifying feature of harbor seals is no visible earflaps. Sea otters do have external ears which fold down as they dive under water.



VOCABULARY

Adaptations: body parts and behaviors that help an animal survive

Mammal: an animal that breathes air, gives birth to live young and has fur

Predator: an animal that hunts another animal

Prey: an animal hunted by another animal



TEACHER TIP

Increase the size of the **Concept Cards** when you print out the class set or glue onto index cards to make them more visible to students.

Procedure

1. EXPLORE SEA OTTER BODY PARTS AND BEHAVIORS AS A CLASS.

Pass out sea otter images or use Monterey Bay Aquarium's web cam (www.montereybayaquarium.com) to observe sea otters in action. Direct students' observations with questions; like *What sea otter body parts do you see? What sea otter behaviors do you observe? How do the otters use their body parts? (to keep warm, clean their fur or eat)*

2. EXPLORE SEAL BODY PARTS AND BEHAVIORS AS A CLASS..

Pass out seal images or use a nonfiction book or Aquarium's web cam to observe seal body parts and behaviors. What body parts do students observe? What behaviors do seals display? How do seals use their body parts?

3. COMPARE AND CONTRAST SEA OTTER AND SEAL BODY PARTS AND BEHAVIORS.

Which physical features or body parts do sea otters and seals have in common? (*fur, eyes, nose, whiskers*) Which body parts are different? (*paws vs. flippers, very thick fur vs. blubber, seals have no ear flaps*) Which seal behaviors are the same as an otter's? Which are different? (*seals rest on land vs. otters wrap up in kelp, seals eat fish, otters use paws and tools to eat invertebrates*) You may choose to read books about seals and otters or share other information found on Monterey Bay Aquarium's website.

4. AS A CLASS, USE A VENN DIAGRAM TO REVIEW SEAL AND SEA OTTER CHARACTERISTICS.

Draw a Venn diagram on a white board or chart paper. Label one circle "sea otters" and the other circle "seals." Have the students name characteristics and discuss where to place them on the Venn diagram.

5. USE CONCEPT CARDS AS CLUES TO HELP STUDENTS DIFFERENTIATE SEA OTTERS FROM SEALS

Tell students that they will use the clues and pictures on **Concept Cards** to guess whether you are thinking of a seal or a sea otter. Each **Concept Card** describes an otter or seal behavior or body part (you may recognize this activity as *Concept Sort* or *Guess My Rule*). Show the students one card at a time and then place the card in a pocket chart. Have students guess which animal the card describes. If they don't guess correctly after the first card, use more cards until they can eliminate an animal. (Some cards depict behaviors or body parts that both seals and otters have; for example, 'eating.' Depending on the level of your students, you may choose to begin with these cards and then use the others depicting unique characteristics.) The first student to guess the correct animal can lead the class in the next round.

Practice Round: Sea Otter Example

- Place the 'resting' card in the pocket chart. Ask students if they can guess if you are thinking of a sea otter or seal by seeing this clue. Students may try to guess but they wouldn't know the answer yet because both animals rest. Talk about whether or not there is enough information to make an informed guess.
- Place the 'kelp forest' card in the pocket chart. Ask if students have guesses. Talk about educated guesses. Both animals live in kelp forests. Seals can also live in other parts of the ocean. Sea otter would be an educated guess but there are still unknowns.
- Place the 'paws' card in the pocket chart. Ask for guesses. Students should be able to

guess correctly now because only sea otters have paws. Seals have front flippers.

6. STUDENTS USE CONCEPT CARDS TO REVIEW OTTER AND SEAL CHARACTERISTICS

Give each student pair two sets of the **Concept Cards**. You may choose to have them cut the cards out (or do it yourself before class). Challenge students to play a version of *Concentration*—with one partner trying to make sea otter matches and one partner trying to make seal matches.

Extensions

- Learn more about sea otter and seal characteristics and then make additional concept cards.
- Create a set of concept cards for other animals.

Resources

Website

Monterey Bay Aquarium. www.montereybayaquarium.org

Find information about sea otters and harbor seals, including habitat, diet, size, range, conservation notes and cool facts on this website.

Books

Seals and Sea Lions. Gordon, David George. Monterey Bay Aquarium, 1995.

Sea Otters. Riedman, Marianne. Monterey Bay Aquarium, 1990.

The Sea Otters of California. Duden, Jane. Bridgestone Books, 1998.

Sterling: The Rescue of a Baby Harbor Seal. White, Sandra Verrill, and Michael Filisky. Crown Publishing, 1989.

Standards

California Science Standards

Grade K: 1a; 2a, b, c; 4a, b, d, e

Grade 1: 2a, c; 4b, e

Grade 2: 2a; 4c, d, g

California Mathematics Standards

Statistics, Data Analysis and Probability

Mathematical Reasoning



LEARNING TIPS

Learners have different modalities, or ways of learning. Incorporate kinesthetic learning by having students act out seal and sea otter behaviors. Add seal and sea otter props to address visual learners.

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AQUARIUM
IS TO INSPIRE
CONSERVATION OF THE
OCEANS.**



CONSERVATION TIPS

Visit Monterey Bay Aquarium's website and look up our Sea Otter Research and Conservation program (SORAC).

The Aquarium is researching wild otters and helping care for injured or orphaned pups.

Concept Cards

 <p>Resting</p>	 <p>Eating</p>	 <p>Swimming/ Diving</p>	 <p>Grooming fur</p>
 <p>On the beach</p>	 <p>Paws</p>	 <p>Blubber</p>	 <p>Flippers</p>
 <p>Shark predator</p>	 <p>Fish prey</p>	 <p>Kelp Forest</p>	 <p>No visible ears</p>
 <p>Crab prey</p>	 <p>Tail</p>	 <p>Milk for pups</p>	 <p>Whiskers</p>