

FEEDING

6. Fine toothed comb

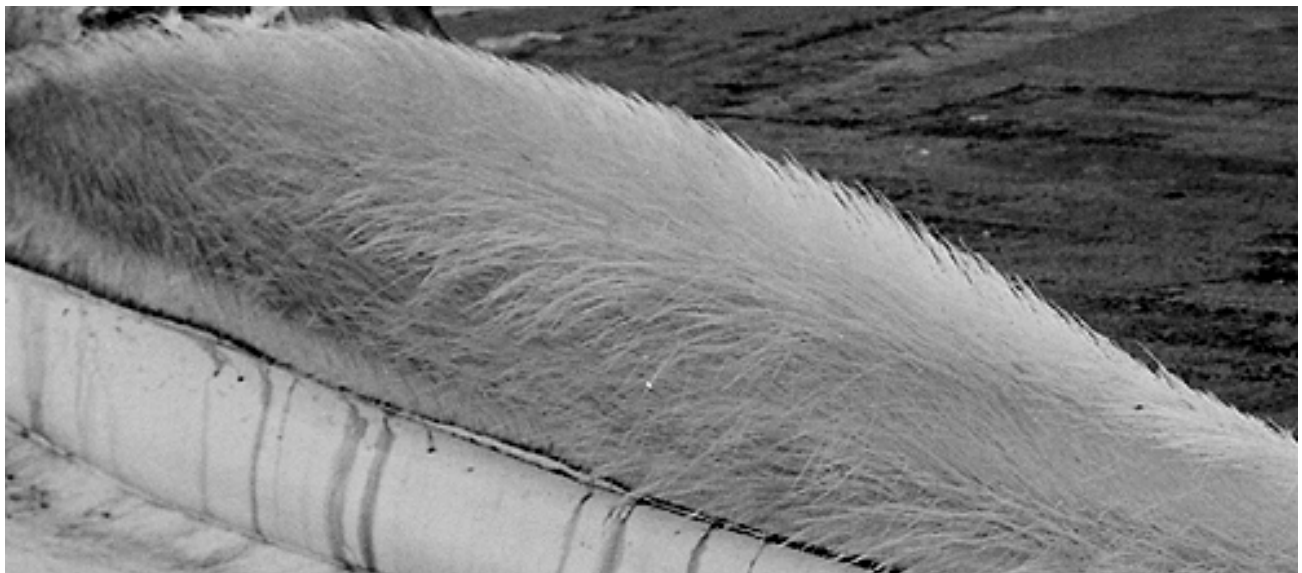
Objective: Students will understand the differences between feeding in toothed whales and baleen whales.

Level: K-3

Background: Different species of whales use different techniques to hunt and eat different types of prey. There are two basic types of feeding strategies:

- Toothed whales such as Killer and Sperm Whales hunt large prey such as fish and squid, which they seize with their teeth. Of the 78 species of cetaceans in the world, 67 have teeth.
- Baleen whales have no teeth. They feed on small organisms in the water such as crustaceans (krill and copepods) or small fish such as herring and sardines which they filter out of the water with sieve-like baleen plates. Only 11 species of cetaceans are baleen whales, including Humpbacks, Greys and Blues.

Baleen whales have two feeding strategies: gulping and skimming. A gulper (called a rorqual), feeds by gulping a huge amount of water containing plankton or small fish into its pleated throat, which bulges out to hold an incredible volume. After taking in this great mouthful - or throatful - the whale raises its tongue and forces the water out through sieve-like baleen plates that hang down from its upper jaw. The food is caught in the baleen and, once the water is removed, the whale licks the baleen clean and swallows the food. Some whales may also raise their heads out of the water and let gravity do the work of straining the water through the baleen. Other baleen whales are skimmers. They swim close to the surface with their mouths open and sift plankton from the water that enters their mouth with their baleen.



The Grey Whale feeds on the bottom and is not considered a gulper or a skimmer. Pressing one side of its head (usually the right side) against the bottom, a Grey Whale sucks up a large

amount of mud and sand. Using its tongue, it pushes the mud, water and food through its baleen plates. The mud and water pass through, and the food, mostly small crustaceans, is trapped in the baleen. Grey Whales leave characteristic pits in the bottom of the ocean where they have been feeding. They tend to feed closer to shore and in shallower water than other baleen whales.

Toothed whales hunt larger animals, such as fish and squid, which they capture with their teeth. Sperm Whales will dive deeper than two kilometres below the surface for up to 90 minutes to catch their favourite food, giant squid. Sailors have told many stories of battles between Sperm Whales and giant squid. These "battles" are usually just the writhing of the squid in a vain attempt to escape the jaws of the whale.

There are three types of Killer Whales in British Columbia: residents, transients and offshore. Residents tend to stay in the same general area; transients travel more widely, moving up and down the coast and passing through areas inhabited by resident pods; and offshore Killer Whales inhabit the open ocean, far from shore. Residents live in pods of 6 to 50, while transients form smaller pods of up to 5 whales. Resident Killer Whales eat fish, while transients feed on marine mammals such as seals, sea lions and even other whales.

Materials: tub of water, carrot slices, parsley flakes, combs, tongs, cups, water, sprinkles.

Procedure:

- 1) Using the background information above, introduce the two types of whales.
- 2) Divide class into groups.
- 3) Give each group a container, a comb, and a pair of tongs. Explain that the comb represents baleen and the tongs represent teeth.
- 4) Fill containers halfway with water.
- 5) Sprinkle parsley flakes in each container. The parsley flakes represent krill. Ask students to experiment with the tongs and comb. Which collects parsley flakes better?
- 6) Next, drop a few carrot pieces into the container. The carrot represents fish and other larger animals. Killer whales use teeth to catch fish and other prey. Have students experiment with the comb and tongs. Which collects carrots better?
- 7) Have students pretend they are whales. Give each student a cup with a small amount of water. Add "krill" (cake decoration sprinkles). Tell them to strain the "krill" from the water, just like a whale. Fill your mouth with water, close your teeth together, and squirt the water through your teeth into the cup (back into the ocean). The "krill" will remain on the back of your teeth. Students can use their tongues to lick off the "krill" from their teeth and swallow it.
- 8) Use the following food items and have students determine if they would need baleen or teeth to eat them: cake sprinkles, vegetables, spaghetti, alphabet soup, bread, noodles, peanut butter sandwich, hot dogs, whole fruit, sunflower seeds.