

Baleen Sweep

Topic:	Catching Food
Method:	Students will catch small bits of food efficiently by simulating baleen
Time Frame/Age:	10-15 minutes/6 - 12 years old
Background:	Baleen whales the largest living animals on the planet feed on some of the smallest creatures in the ocean. To catch and efficiently sieve these small creatures from the ocean water, these whales have a great adaptation in the form of baleen
Materials:	Bucket of water, styrofoam pieces (represents krill), whisk broom, paper cups, chocolate bits
Procedure:	<ol style="list-style-type: none">1. Show the students a piece of baleen. Discuss with the students how baleen suspends from the top jaw of baleen whales. Baleen is used by whales to sieve food particles from ocean water.2. Fill a bucket with water. Dump a bunch of Styrofoam pieces into the water to represent krill or small fish that baleen whales feed upon.3. The bucket of water represents a whale coming up to the surface of the ocean with a mouth full of krill and ocean water.4. Next the whale closes its mouth, which is demonstrated by taking the whisk broom and placing it on one side of the bucket of water.5. The whale then uses its tongue to force out the ocean water. To represent this action, move the water bucket towards the whisk broom. This

squeezes the water through the broom and captures the krill between the broom and the plastic container.

6. Once the krill is separated from the ocean water, the whale takes its tongue to scrape the krill off the baleen and swallows a huge mouth full of food.

Alternative method:

A way to involve every student is to have them demonstrate this principal. This activity is best demonstrated outside.

1. Before you pass out materials, it is best to demonstrate this method in front of the children.
2. Each child will get a paper cup with water and chocolate bits.
3. Explain to the children, that the water represents ocean water and the chocolate bits represent krill.
4. What they will do is drink the water with the chocolate bits into their mouth. But they don't want to swallow the water. They need to separate the water from the chocolate bits.
5. Press your tongue forward to squirt the water through your teeth. Once the water is gone, you can now eat the chocolate bits.

Conclusion:

Baleen whales need to consume huge amounts of food and baleen is a wonderful adaptation that allows them to consume large amounts of food and to become some of the largest animals to have ever lived on the Earth.

Extension:

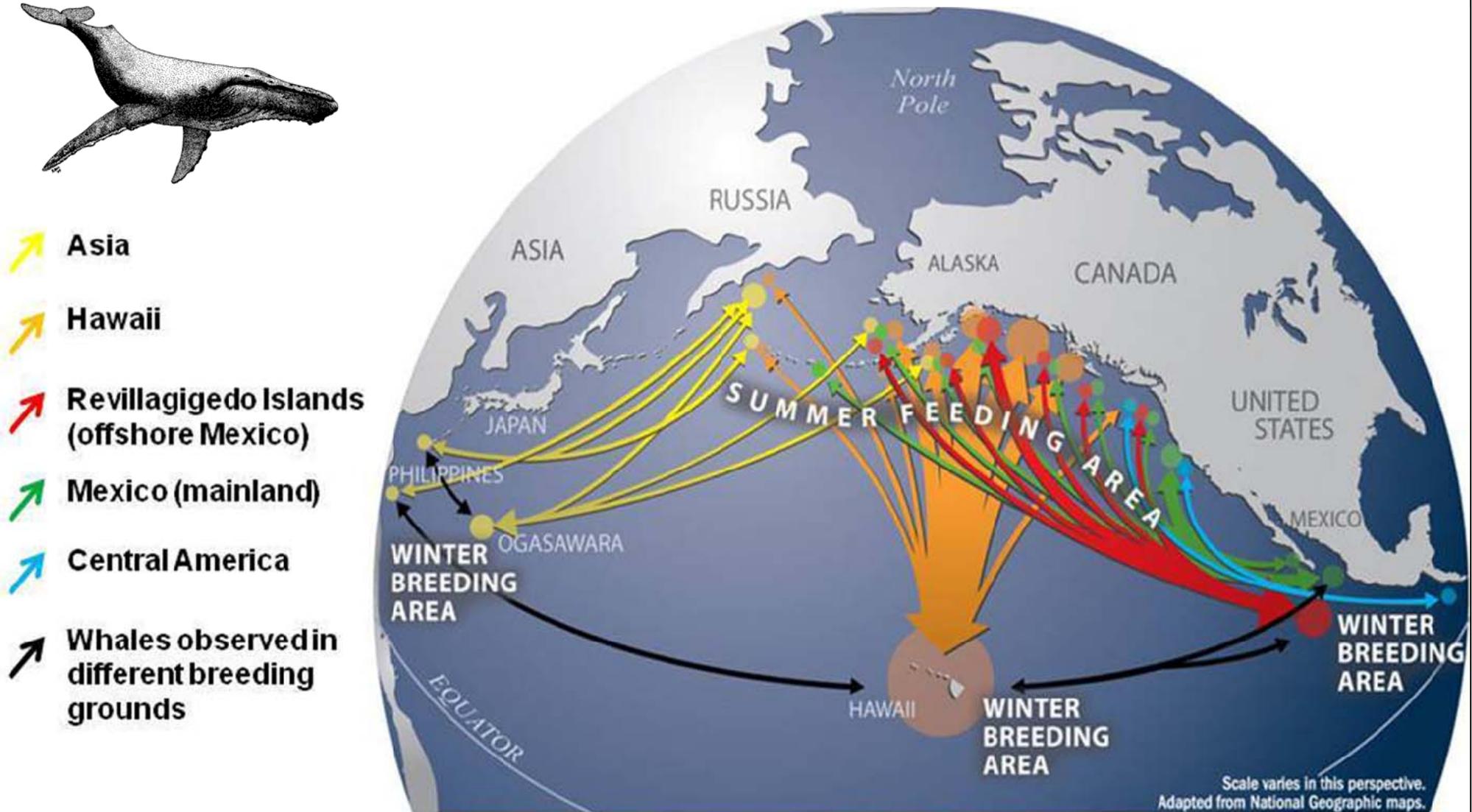
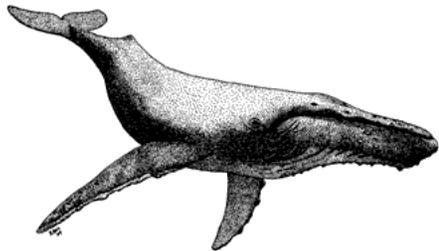
You could compare different feeding strategies to baleen. Students could try picking up the styrofoam pieces one at a time, like dolphins or birds do and see how fast it would take them to eat all the styrofoam pieces in the bucket. Which method is most efficient?

Humpback Whale Migration Routes



Most of Glacier Bay's whales winter in the warm waters of Hawaii and return to the food-rich waters of Alaska each spring.

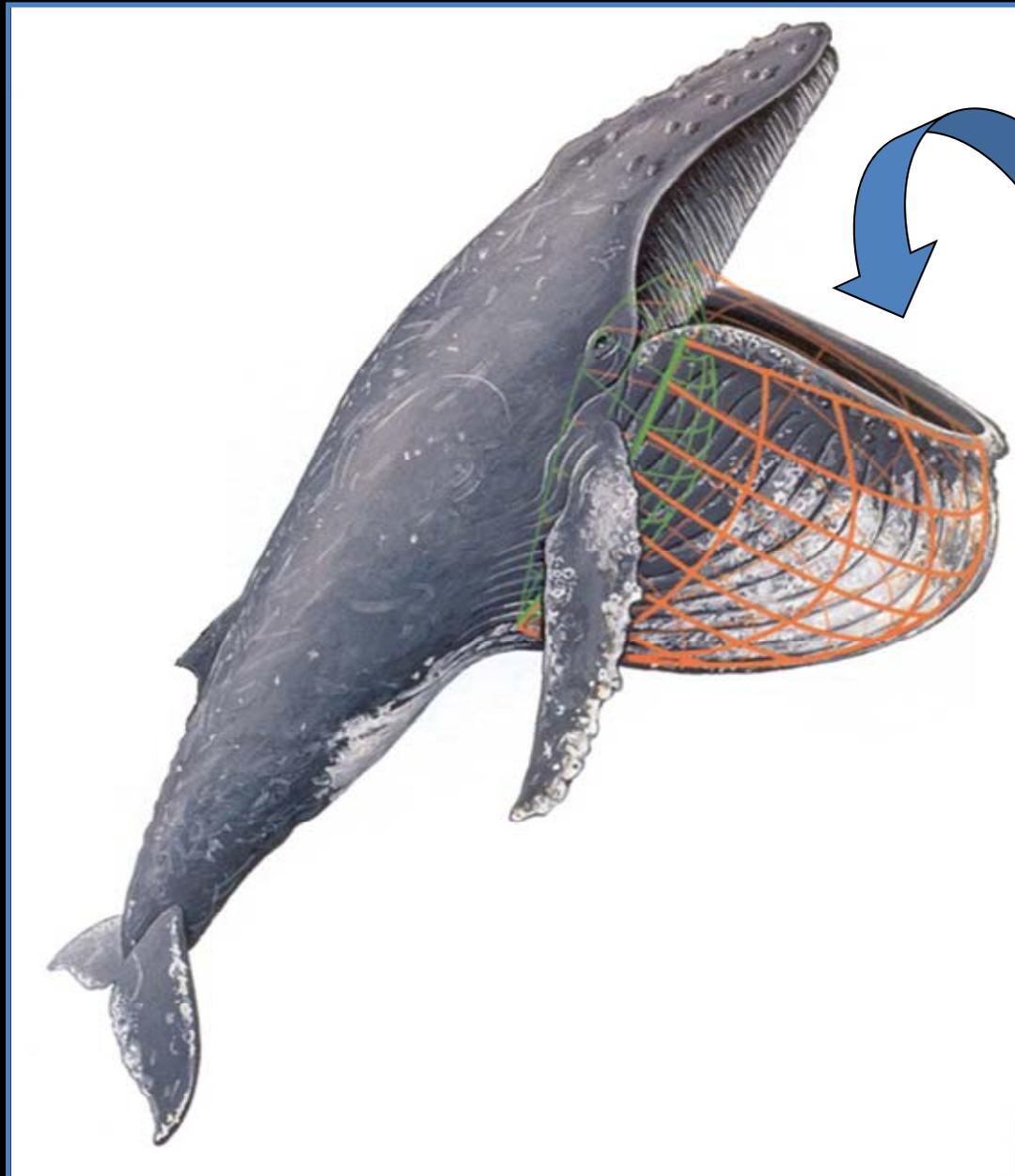
Fun Fact: The fastest documented migration between Alaska & Hawaii (2,800 miles) was 36 days!



Humpback Whale Ventral Pouch

A whale
consumes
0.4 tons of
food per day

(Witteveen 2003)



15,000 gallons
of
seawater and
prey

Image from National
Geographic January 2000,
developed by R.H.
Lambertson