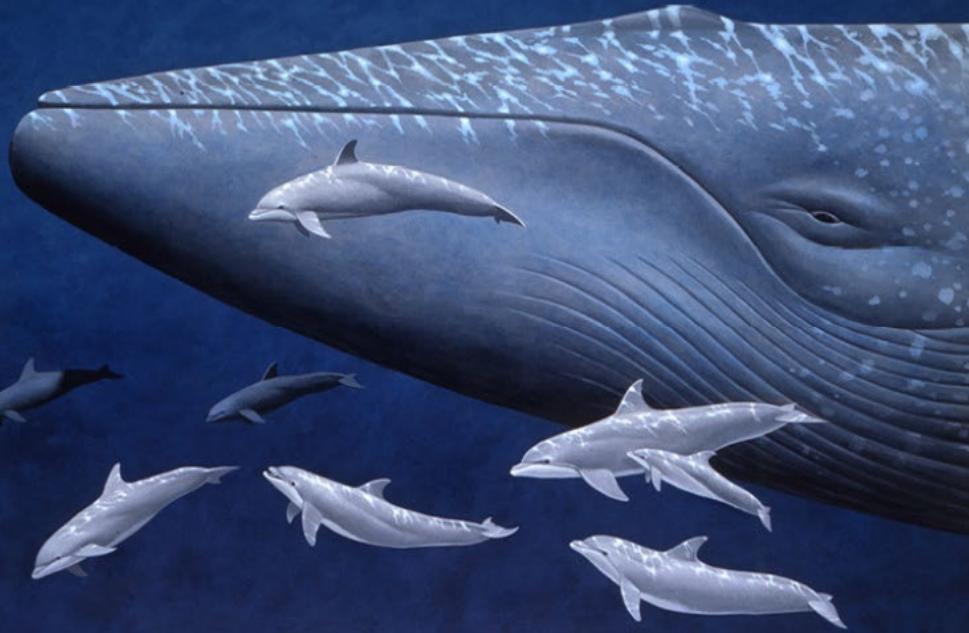


Getting Started



NEW BEDFORD WHALING MUSEUM
WHALES
GIANTS OF THE OCEAN



Getting Started

Welcome to **Whales - Giants of the Ocean!**

This curriculum consists of twelve lessons that feature whales, dolphins and porpoises as the connecting thread for teaching several life science concepts. Each lesson has a Facilitator's Guide, printable resources, and links to additional resources. Several lessons have slide presentations and/or videos that provide visual instruction and demonstrations of activities. We have also provided supplemental materials, such as an Anticipation Guide, assessments and recommended resources.

This slide presentation gives you a brief overview of the **Whales - Giants of the Ocean** curriculum. Each slide summarizes a different lesson and the guiding question(s) for that lesson. The final slide shows the supplemental materials

By clicking the title of each slide you can link directly to that lesson. Our Education web page also has all of the links and resources needed to teach one, several, or all of the lessons.

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WHALES GIANTS OF THE OCEAN

www.whalingmuseum.org



Lesson 1 KWL - Whales and Ocean

Begin the curriculum by finding out your students' current level of knowledge of whales and the ocean, and by compiling some of their questions. End the curriculum by having them write about new understandings of whales and where they live.

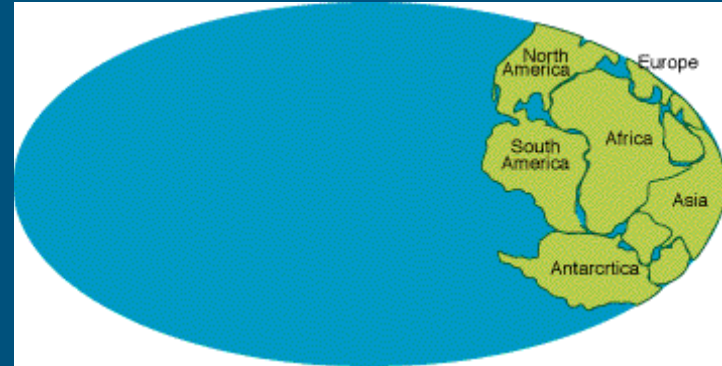
Guiding Questions: What do you **Know** about whales and oceans? What do you **Want** to know? What did you **Learn**?



Lesson 2 How Much Water is on Earth?

The majority of the surface of our planet is covered by ocean water. In this lesson, students will estimate how much water covers the planet Earth and then compare their results to estimates made by scientists.

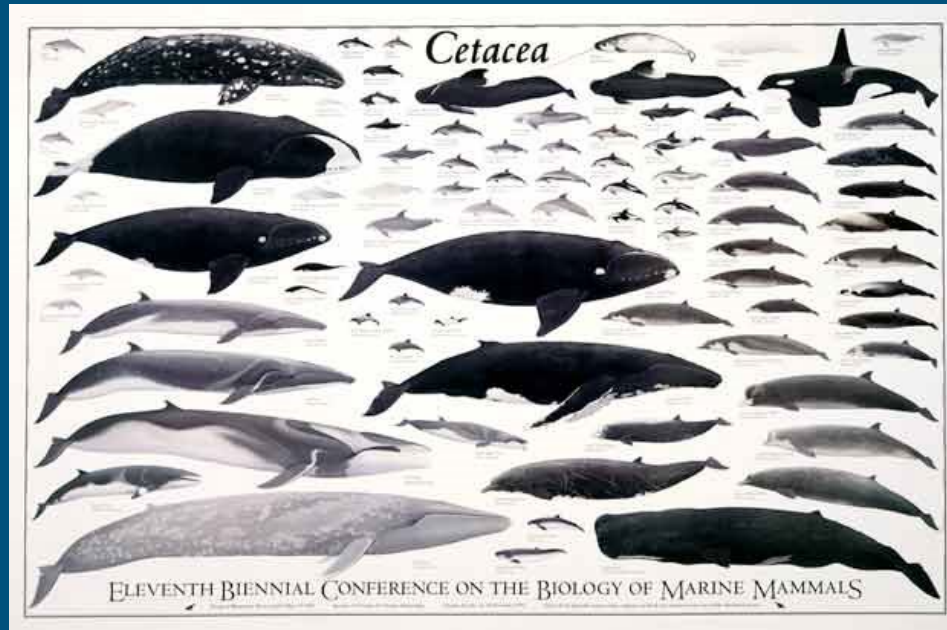
Guiding Question: How much of Earth's surface is covered by water?



Lesson 3 What Are Cetaceans?

This lesson is a slide presentation that will enable you to explain the shared features of whales, dolphins and porpoises. It serves as the transition from Lesson 2 to Lesson 3.1.

Guiding Question: What characteristics do all species of cetacean share?



Lesson 3.1 Animal Classification

Classification is the arrangement of objects, ideas, or information into groups, the members of which have one or more characteristics in common. Classification makes things easier to find, identify, and study.

Guiding Question: How can characteristics be used to group animals into similar categories?

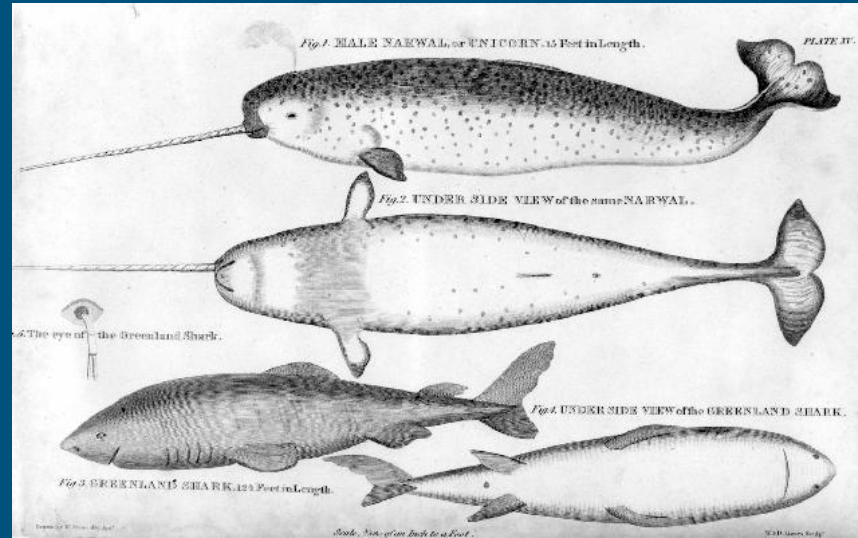


image from
Snakeworld.org

Lesson 3.2 Whales vs. Fish

Whales and fish are both aquatic animals that share a few common characteristics. But, there are important differences that distinguish them. This activity uses these commonalities and differences to further practice the process of classification. It serves as an extension of Lesson 3.1 Animal Classification.

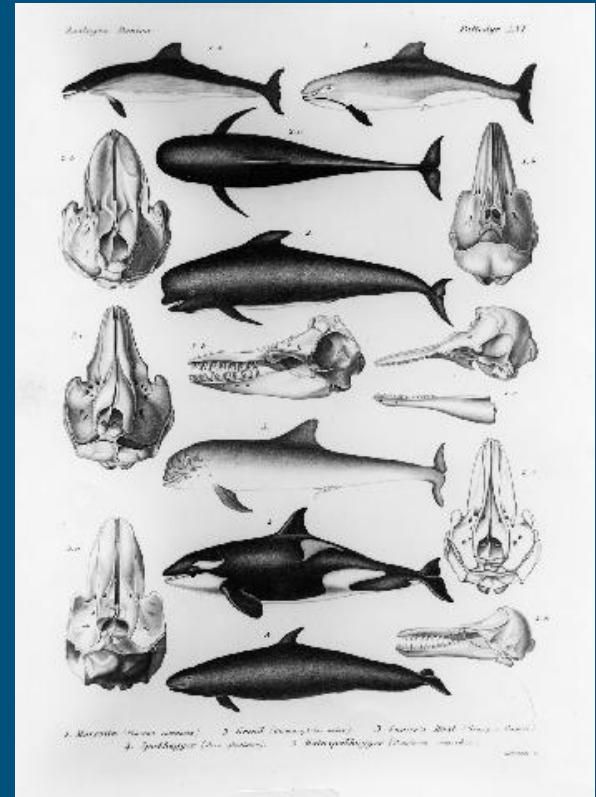
Guiding Questions: How are whales and fish similar; how are whales and fish different?



Lesson 4 How Big Are Whales?

Whales, dolphins, and porpoises can be as short as 5 feet (1.5 meters) or as long as 100 feet (30.5 meters). In this lesson, students will learn about and try to replicate the size of some of the larger species. They will also compare those animals to familiar objects.

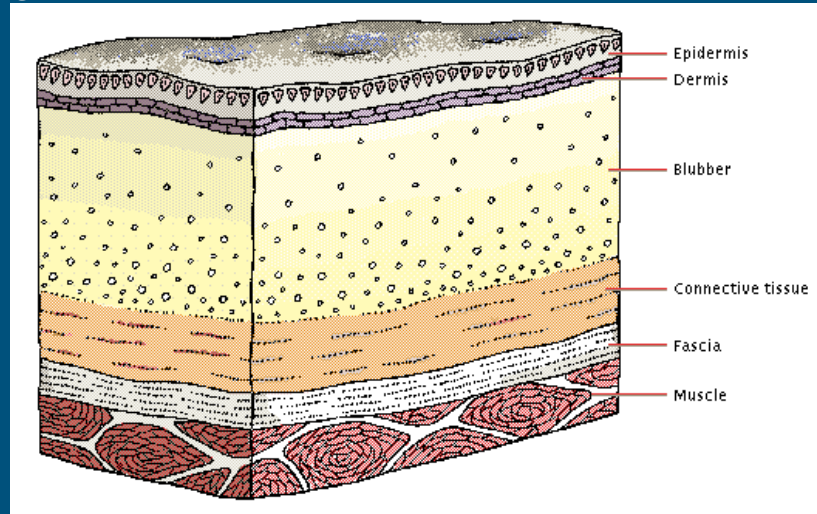
Guiding Questions: How big are whales? How does the size of different whales compare with the size of common objects?



Lesson 6 Whale Adaptations - Blubber

All cetaceans have a layer of blubber under their skin. The thickness of the blubber has a direct impact on where the species can live. Tropical species might only have an inch of blubber; arctic species might have 12 or more inches of blubber.

Guiding Question: What special structure or adaptation do cetaceans and other marine mammals have that makes it possible for them stay warm when they are always in the water, including water that is close to freezing temperature?



Lesson 7 Whale Adaptations - Feeding

Students will explore how the mouth parts of toothed and baleen whales are suited for the type of food they eat. Students will assess which feeding method is most successful for gathering a specific type of prey.

Guiding Questions: How are the feeding habits of toothed and baleen whales different? What special adaptations do toothed and baleen whales have to eat effectively?

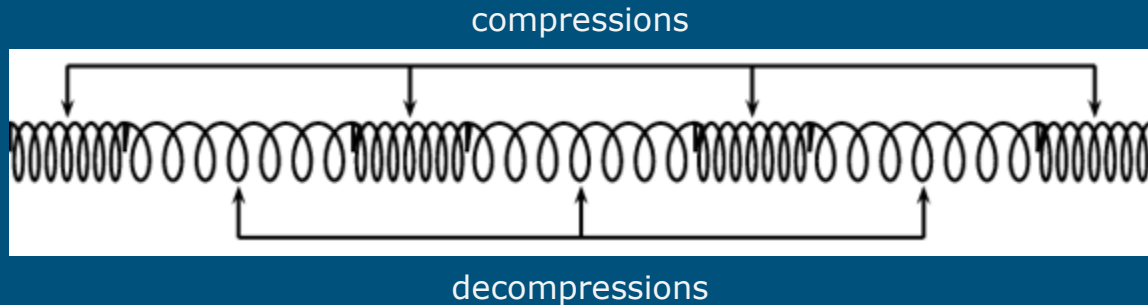


Photo: WDC
Karolina Jasinska

Lesson 8.1 Sound Waves

Through in-class activities, students will learn that sound is a form of energy, how to visualize a sound wave, and how sound waves travel.

Guiding Questions: How is sound created? What types of media can sound travel through? How do echoes work?



Lesson 8.2 Echolocation: Where's That Sound?

In this lesson, students will mimic the process of how certain animals use sound waves to "see" underwater or in the dark. This process, called *echolocation*, is how they find their food and navigate.

Guiding Question: How do whales use sound to communicate, navigate, and find food?

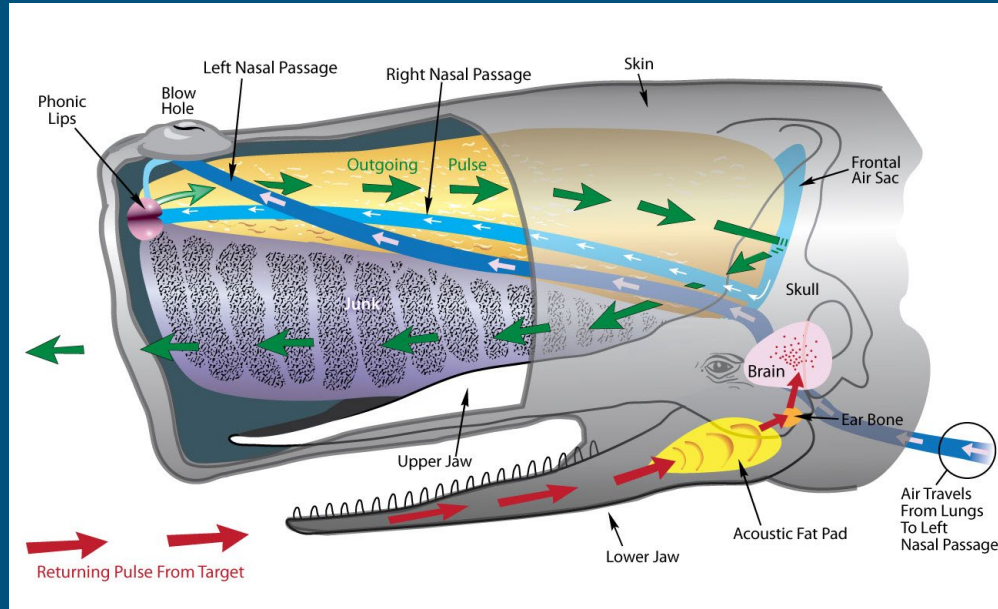


Illustration by Dave Blanchette,
property of NBWM

Lesson 8.3 What Sounds Do Whales Make?

The ocean is a noisy place. Natural events, like lightning, and many ocean animals, like whales, make sounds. This activity will introduce students to the variety of sounds made by these marine mammals.

Guiding Questions: Does each species of cetacean create its own sound? Do the two major groups, baleen whales and toothed whales, have distinctly different sounds?

NEW BEDFORD WHALING MUSEUM Woods Hole Oceanographic Institution
Watkins Marine Mammal Sound Database
BEST OF CUTS ALL CUTS MASTER TAPES ABOUT
The William A. Watkins Collection of Marine Mammal Sound Recordings consists of recordings of various marine mammal species collected over a span of seven decades in a wide range of geographic areas by Watkins and many others. [MORE]
Search the database by name:
Common name: Scientific name:
Atlantic Spotted Dolphin Bearded Seal Beluga, White Whale Bottlenose Dolphin
Bowhead Whale Clymene Dolphin Common Dolphin False Killer Whale
Fin, Finback Whale Fraser's Dolphin Grampus, Risso's Dolphin Harp Seal
Humpback Whale Killer Whale Leopard Seal Long-Finned Pilot Whale
Melon Headed Whale Minke Whale Narwhal Northern Right Whale
Pantropical Spotted Dolphin Ross Seal Rough-Toothed Dolphin Short-Finned (Pacific) Pilot Whale

Wrapping Up

The [Supplemental Materials](#) page includes an Anticipation Guide, formative assessment, True or False activity, list of recommended resources, and ideas and rubric for capstone projects.

Please send along requests or recommendations for additional materials to education@whalingmuseum.org



Photo by WDC