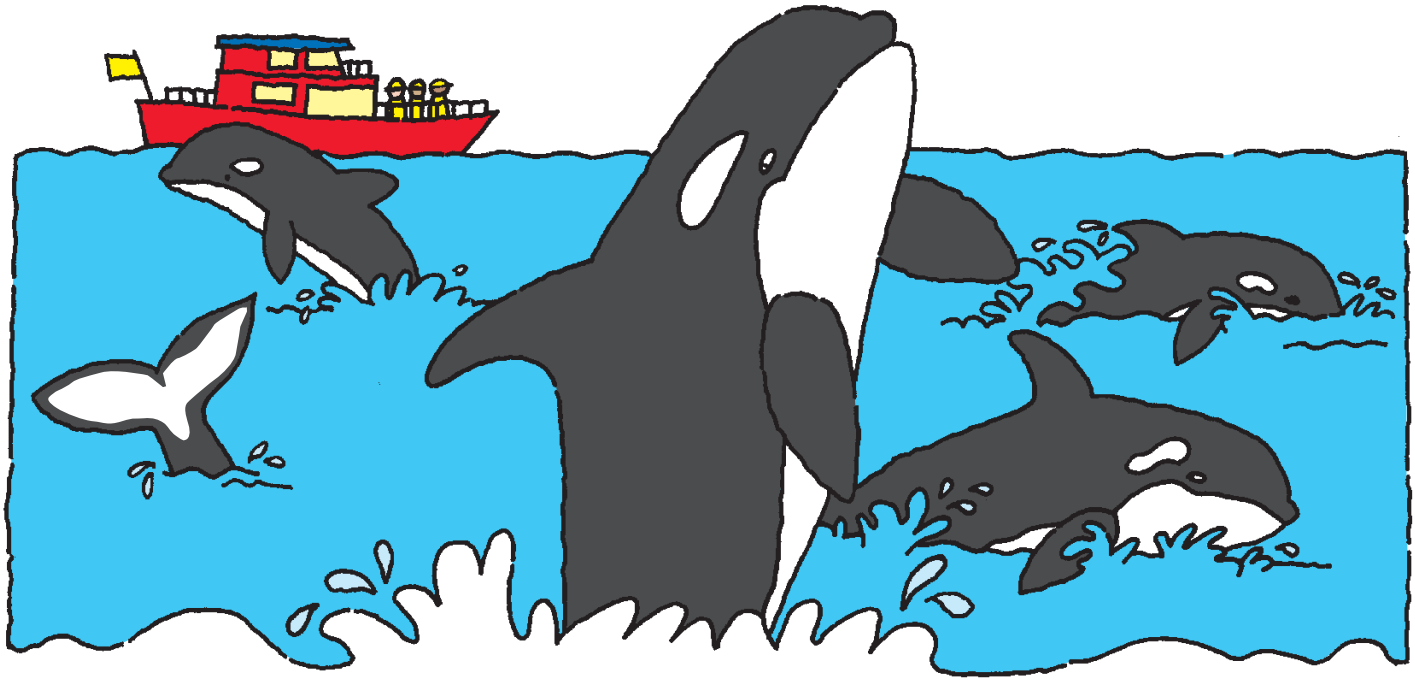


a WHALE of a time

It's the week of the ocean...a great time to celebrate the ocean's mightiest inhabitant—the majestic whale!

Freeform Whale

Kids are absolutely fascinated with whales! Begin a study of these amazing giants of the sea by finding out what students already know about whales. Make the discussion fun by drawing a large whale shape on the chalkboard and write words or phrases that children associate with whales inside the shape. When each child has offered their whale connection and after all ideas have been exhausted, take a closer look at your subject. Talk about which concepts are facts or myths and about all the other things children would like to learn about whales. Then have a whale of a time making plans for learning everything you can about our wonderful whales.

World of Whales

Whales are one of the most spectacular creatures to live on Earth. They can be found in all the oceans of the world, from the tropics to the icy waters of the poles, and in five of the world's largest rivers. Since whales spend their entire lives in the water feeding, resting, mating, and giving birth, children often mistakenly believe they are fish. Whales are not fish...they're mammals! Whales have lungs and breathe air through a blowhole on top of their head, have young that are born alive, are nourished with their mother's milk, and have hair at some stage of their lives. Like all mammals, whales are warm-blooded animals and are able to maintain their body heat in the cold waters where they live because they have a layer of blubber. Whales belong to the animal order Cetacea, which also includes dolphins and porpoises. There are more than 75 different species of whales, divided into two groups...toothed whales (66 species) and baleen whales (10 species). Toothed whales feed on fish, squid, octopus, and seal. They chase their prey through the water and swallow them in one big gulp. The toothed whales have only one blowhole and come in many shapes and sizes. In fact, over half of the toothed whales are less than 10 feet long. Baleen whales, on the other hand, have two blowholes on the top of their head, are usually quite large, and have no teeth. Instead of teeth they have horny plates of baleen hanging in their mouth. The baleen acts as a giant strainer for their food, that consists of krill and floating plants and tiny animals called plankton. Invite your kids to create informative whale cards to help them become familiar with some of the different kinds of whales. Duplicate a set of cards on tagboard for each student and ask them to cut them out.

As kids read about each kind of whale, have them color the whale according to the directions on the card.

Whale of a Game

Turn your whale cards into a matching puzzle game that children can play during their free time or as part of a learning center. To make the game cards, cut each whale card along the wavy line and place all the pieces inside a zippered plastic bag. Include instructions to play "Match the Whale!"

Match the Whale Instructions

1. Place the whale pictures and whale names on your desk or on the floor. Make sure they are mixed up.
2. Match the whale picture and facts with the whale name by fitting the cards together like a puzzle.

Whale Research

Check out Whales at the Enchanted Learning website at ***www.enchanted learning.com*** and find amazing information for young children to learn all about whales. Take advantage of such an extensive site to give your older students practice in Internet research. Duplicate a Whale Reporter's Notebook reproducible sheet for each student, provide a list of different whale species, and ask children to choose one for a research topic. Using the Zoom School/Whales website and additional whale books and references, have kids answer the questions about their chosen whale on the notebook page. Encourage children to share their information with their classmates to help in learning about the many different kinds of whales living around the world.

Thar She Blows

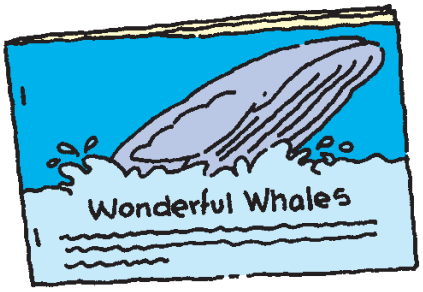
Whales are the only mammals that have adapted to life in the open sea. They have blowholes through which they breathe, but they must surface periodically to supply their lungs with air. The whale's blowhole is covered with a muscular flap that is shut tight when the whale is underwater. As the whale surfaces, the flap is opened and the whale breathes out rapidly, sending a fine mist or spray of air and water high into the air. The spray shoots up in the air and can be seen for miles. A blue whale can spout as high as 30 feet! After expelling the air, the whale breathes in deeply to get enough air to stay under water for a period of time and submerges. Different whales stay underwater for different lengths of time. Right whales may stay under water from 5 to 15 minutes, and, believe it or not, sperm whales can stay down for over an hour before resurfacing. Thar she blows!

Whale Songs

Scientists have learned that whales have "voices" and communicate through a sequence of clicks, grunts, squeaks, moans, chirps, gurgles, whistles, and other sounds. They don't know for sure about the meaning of these sounds, but they believe that the sounds might be a way for the whales to communicate with each other, locate food, or navigate through the dark ocean. Males sing their songs especially during mating season when they want to attract females or warn other males to stay away. A humpback whale's song can last from 35 minutes to days in length, with the only break coming when the whale resurfaces for air. It is interesting to note that a recording of the humpback whale's song was sent into space in 1977 when Voyager I and Voyager II carried a recording called "The Sounds of the Earth." Kids can listen to the sounds of whales at ***http://newbrunswick.net/new-brunswick/whales/avi.html*** or the Whale Acoustics Project at ***http://newport.pmel.noaa.gov/whales/whale-calls.html.*** Or check for the Audio CD, ***Songs of the Humpback Whale*** (Living Music) where you can hear the beautiful songs of the Humpback Whale. After listening to the whales, read aloud a wondrous story called ***The Whales' Song*** by Dylan Sheldon (Puffin) or share Dianne Hofmeyr's ***Do the Whales Still Sing?*** (Dial).

Wonderful Whales

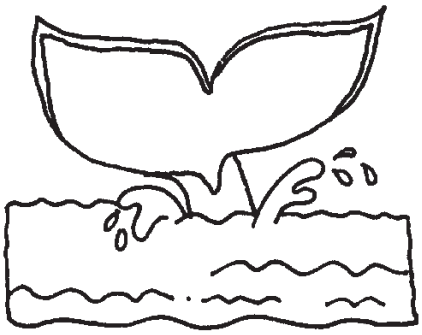
Have children learn more about whales by making their own special take-home booklets. Duplicate the booklet pages for kids to color, cut out, assemble, and staple together. Ask them to read the booklet silently and then read each page aloud together. After discussing the important information about whales, have students answer the questions on the last page to test reading comprehension.



Endangered Whales

Many scientists believe that the whale evolved from primitive mammals that once lived in the shallow waters along the coasts more than 60 million years ago. These mammals spent their days searching for food and moved into the deeper waters until they

gradually adapted to a life in the sea. In spite of this long legacy, the whale's biggest threat for existence has been human beings. For the past 2000 years, people have hunted whales all over the world for their meat, oil, and bones. Because of these hunting practices, certain whale species are near extinction. Twenty-one species are now on the endangered list. Whaling has decreased today because of laws that protect them, but scientists worry that some species are facing extinction. Although the International Whaling Commission declared a moratorium on commercial whaling in 1986, there are still exceptions made for scientific research and aboriginal subsistence. Sadly, the northern right whale and the blue whale have been hunted so much that there are few left today. Some whales may soon be lost forever.



Adopt a Whale

Today people enjoy watching whales instead of hunting them. In some places whale watching has become a big industry with people taking part in expeditions to watch whales and see their interesting behavior. Each whale is special. Along with the size and shape of different whales' bodies and each whale's unique markings and colorings, every whale has a distinctive tail shape, size, and fluke pattern... no two are alike. Flukes are the whale's flat horizontal tail fins. The whale's fluke pattern acts much like our fingerprints for identification. This is the way that scientists identify the whales they are studying. Children may like to adopt a whale to study as a classroom project. The following websites give information about how your class can take part in a program to get information about a special whale, name the whale, get an adoption certificate, or receive photos and newsletters. Check out the many different programs available and find one that suits your students.

www.acsonline.org/howtohelp/index.html
American Cetacean Society Adopt a Whale or Dolphin program

www.whalecenter.org/adopt.htm
Whale Center of New England

www.pacificwhale.org/adopt
Pacific Whale Foundation Adopt-A-Whale

www.wdcs.org/dan/publishing.nsf/allweb/83DFD5318F92FB0A802568DB002E2A66
Whale and Dolphin Conservation Society

Whale Fun

Take your study of whales across the curriculum with activities that kids will enjoy.

Flipping Over Whales

Get moving and help kids have fun acting like whales as they mimic some unusual whale antics. Many whales are known for their wonderful water aerobics. Surprisingly, it is the larger whales such as the humpback whale and sperm whale that are found to be the most spectacular acrobats. Check music, nature, or novelty stores for CD's or tapes and select some "whale moving" music—something that reminds you of the sea. Play these "sounds of the sea" for background music and have children scatter around the room so that they will have space to imitate these interesting whale movement

• Swimming
All whales are incredible swimmers that move by pumping their powerful tails up and down. They swim underwater, but also come to the surface to jump and splash. Invite kids to do some powerful whale swimming.

• Diving
Some whales dive deep into the water and stay below anywhere from 30 minutes to over an hour without coming up for a breath! Have children swim, dive, and come up again as they "swim" around the room.

• Breaching
When a whale breaches, it leaps high up out of the water and then splashes back down. Some whales even twirl around while out of the water. Suggest that students try leaping up out of the water and then diving down again just like whales breaching.

• Spyhopping
When skyhopping, a whale pokes its head out of the water and takes a look around. Sometimes a whale will look for as long as 30 minutes. Have kids swim and then peek their head up just like they are looking out of the water.

• Lobtailing
In this movement the whale does a kind of headstand and lifts its tail out of the water. It is believed that the whale is marking its territory and may swish or slap its tail onto the water as a kind of warning. This slapping sound can be heard for great distances. Have children try to balance on their hands and then bring their "tail" feet down, slapping the water.

• Sailing
Some whales use their tails like sails in the wind. They lift their flukes (tail) out of the water and turn them at a right angle to catch the wind. Ask children to lift their arms above their heads,

as if they were flukes, turn slightly, and "sail" about the room.

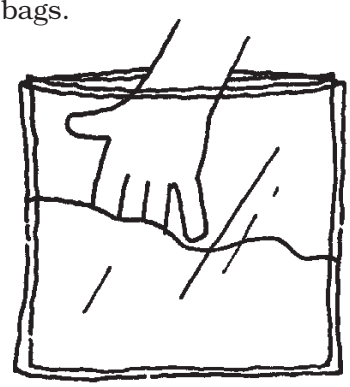
• Logging
Logging is another name for floating. When logging, the whale rests near the surface of the water and floats with its tail hanging downward. Invite kids to take a rest from their activity and float, moving slowly to the music.

Oh Blubber!

Move on to a science experiment as children learn about blubber, the thick layer of fat found beneath a whale's thin skin. Whales are mammals, warm-blooded animals. But how do these creatures stay warm in the cold waters around Antarctica and the Arctic? Whales have adapted to their aquatic existence because of their layer of blubber. Blubber can make up as much as 27% to 45% of the whale's body. This layer varies in thickness with each species of whale. It can be 20 inches thick in a bowhead whale, but only about 5 inches thick in blue whales. Blubber acts as a food reserve, helps keep the whale afloat, and insulates and preserves the whale's body heat. Demonstrate how this insulating layer works to keep a whale warm by having children make a blubber glove using shortening to represent blubber. You will need three zippered plastic sandwich bags, a spoon, solid vegetable shortening, duct tape, and a chest filled with ice and water.

Get Ready:

1. Place a large spoonful of shortening into a plastic bag so that the shortening is about 1-inch thick.
2. Turn a second bag inside out and slip it inside the first bag.
3. Zip the edges of the two bags together so that the shortening is encased between the two bags and makes a "blubber glove."
4. Use duct tape to seal the edges to make sure the shortening stays safely inside the bags.



Experiment:
(Have students take turns to complete this experiment.)

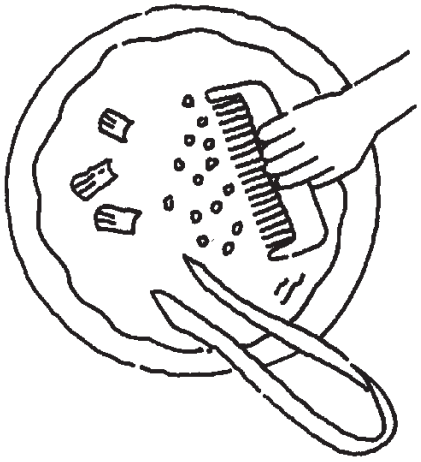
1. Place one hand inside the "blubber glove."
2. Place the other hand into an empty bag.
3. Dip each hand into the chest of ice water.

How does each hand feel? Do they feel different? What do you think the shortening does?

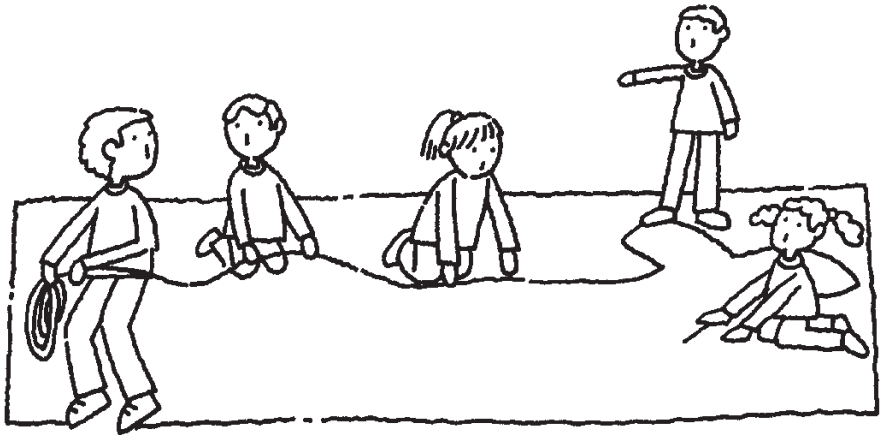
Extension:
Repeat this experiment using other materials such as shredded paper or batting in place of the shortening in the insulating bag. Compare these materials with the shortening to determine which is a better insulator.

Catch Some Food

Scientists have divided whales into two distinct groups... toothed whales and baleen whales. Try this interesting experiment to help children understand how each of these groups catches food. Begin by explaining that baleen whales—usually large whales such as the gray whale, blue whale, and humpback whale—have baleen plates that hang from their upper jaws. Baleen looks like a giant comb and is made of the same material that forms our fingernails and hair. It is stiff, but still flexible. Baleen whales filter or strain krill or tiny plants and animals known as plankton from seawater for their food. Toothed whales—usually smaller whales like the killer whale, beluga whale, and sperm whale—have teeth on their lower jaw or on both their lower and upper jaw. They hunt for their food and use their teeth to help them catch and hold larger prey such as fish, penguins, seals, crabs, squid, and even other whales. Toothed whales swallow their food whole or in large pieces. After talking about the baleen and toothed whales and what each group eats, explain that students are going to try to "catch" food just as whales do. They will use a comb to represent baleen, tongs to represent teeth, and a pan of water to represent the ocean. Demonstrate how baleen works by sprinkling some parsley flakes (representing krill or plankton) on top of the water. Have children try to catch this food using the comb and the tongs. Kids will find that a comb makes it easy to catch this tiny food while it is quite difficult using the tongs. Next drop some celery pieces (representing large prey) into the water and again try to catch something to eat. This time the tongs work best.



Kids will soon understand that a whale's mouth is adapted to the kind of food it eats. Baleen whales eat the tiny food and toothed whales eat larger prey.



Rope a Whale

Bring measurement and math into your study of whales as kids "rope a whale." Everyone knows that whales are huge... especially the blue whale! Blue whales are the largest animals that have ever lived and can reach a length of 100 feet and weigh up to 220 tons. That's as much as 30 elephants weigh and about as long as three school buses. Share some other amazing trivia about this giant as you explain that the blue whale has arteries as big as drain pipes, a heart as big as a small car, and a tongue so big that 50 people can stand on it. Then help children visualize the blue whale's enormous size by mapping it with a long rope. Head out to the playground with 200 feet of rope. You may have to tie many lengths of rope together until you have 200 feet. Print a picture of a blue whale from the Enchanted Learning website for each child to view and note its shape and size. Have kids work together to stretch the rope out on the ground to determine the whale's length (it may help to place a piece of tape on the rope at the 100-foot mark). Next ask students to work in small groups (tail, upper body, lower body, head) to arrange the rope into the shape of a blue whale. When everyone is satisfied with the shape of your enormous creature, use chalk to draw the whale's shape on the playground surface. Add details such as fins, flippers, blowholes, throat grooves, eyes, mouth, and small white patches. Kids may like to lay head to foot inside the whale shape to see how many children it takes to match the length of a giant blue whale. Impressive!

Sing a Song of the Sea

Have some fun with music as you sing a song about whales. Invite kids to use actions as they sing, repeating the song and changing the movements (spy-hopping, lobtailing, diving, etc.) to imitate the acrobatic behavior of whales.

Take Me Out to the Ocean

(sing to the tune of "Take Me Out to the Ball Game")

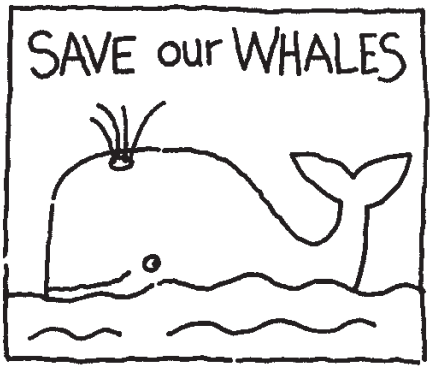
Take me out to the ocean.
Take me out to the sea.
I might get lucky and chance to see
A pod of whales playing very near me.
They breach, breach, breach in the water,
They twirl around with such glee.
There's 1, 2, 3 whales in this pod,
In the deep, blue sea!

Rainbow Whale

Give kids a chance to get creative with some whimsical art related to whales. Children have always enjoyed Marcus Pfister's ***The Rainbow Fish*** (North South Books), the story of a fish with beautifully colored scales. Challenge your students' imaginations and ask them to think of a magical marine mammal called a rainbow whale. Cut out whale shapes from large rolls of heavy-duty aluminum foil and provide each child with a foil whale. You will also need Elmer's® glue (that has been watered down), paintbrushes, colored tissue paper strips, and markers. To make a rainbow whale:

1. Paint the body of the whale lightly with glue and then press the colored strips to the whale in a rainbow pattern. Allow to dry.
3. Draw the whale's eye, blowhole, and other details.

Cover a bulletin board with blue paper, attach the rainbow whales to the board, and add the title "Make a Wish on Our Rainbow Whales." Older children may like to continue this creative project by writing a story about their rainbow whale.



Celebrate Whales

Whales are beautiful creatures, fascinating to watch and enchanting to hear. But whales are in trouble and their future depends on us. Since whales migrate, they belong to all of us, and people from around the world must cooperate to save them from extinction. Many positive things have been happening to solve some of the problems... laws are in effect to prevent the hunting of whales, regulations control pollution near coasts, and recycling is helping to keep

our oceans clean. Talk about whale extinction and what we can do. Invite students to create posters to bring attention to the need to "Save Our Whales."

Plankton Soup

Toothed whales use their teeth to catch small fish, squid, and marine animals. Their teeth are not used for chewing because they swallow their prey whole. Baleen whales have no teeth, but possess a special filter called baleen that strains food out of the water. The whales swim around with their mouth open and suck in the seawater. The baleen plates in their jaw act as a filter to extract small fish, krill, and plankton. Humpback whales have a most unusual eating style as they dive beneath a school of fish and slowly spiral upward blowing bubbles. The bubbles force the fish to congregate and make it easier for the whale to consume them. It's called bubble-netting. Humpback whales can catch and eat about 4000 to 5500 pounds of plankton, krill, and small fish each day! A gray whale may eat up to 8000 pounds and a blue whale up to 9000 pounds of krill each day of their feeding season! This brings a whole new meaning to "feeding frenzy." Amazingly, these whales eat little or no food while traveling or during their breeding seasons, when they live off their blubber. Have some fun by serving kids chicken noodle or vegetable soup heated in a crock pot in the classroom. Present it as plankton soup...slurping allowed!

Whale Websites

There are so many wonderful websites to use in your study of whales. Check out some of these interesting sites that feature information and activities galore.

http://enchantedlearning.com
Click on whales and find a very comprehensive website on whales for kids. It includes information sheets, quizzes, whale printouts, craft ideas, and so much more. Don't miss it!

www.seaworld.org
Basic information about baleen whales, orcas, beluga whales, and more can be found on this Sea World site. Be sure to check out the Teacher Guide on Killer Whales for Grades K-3.

www.mbayaq.org
The home of the Monterey Bay Aquarium online features a FAQ page about whales and dolphins.

http://curry.edschool.Virginia.EDU/go/Whales
This tremendous teacher resource includes whale lesson plans, book reviews, student activities, whale projects, and links.

http://members.aol.com/LWMema3/index.html
Discover this marine mammals site with links to other good sites.

http://whale.wheelock.edu
Wheelock College in Boston sponsors WhaleNet. It offers loads of information about whales and marine research. Check here to find out how to obtain plans to make Lucy, an inflatable whale.

www.uvm.edu/whale/Introduction.html
Learn all about Charlotte, the Vermont whale whose bones were unearthed in 1849 during the construction of the first railroad between Rutland and Burlington, Vermont.

www.nfld.com/nfld/other/whales/whales.html
Kids can find whale pictures, audio clips of killer whales, humpback whales, and fin whales.

www.ohwy.com/or/k/keiko.htm
Read more about Keiko the whale, star of the movie "Free Willy."

www.whaletimes.org
Go to the Kid's Page of "Whale Times" for facts and fun about whales.

www.geocities.com/RainForest/Jungle/1953/index.html
Learn all about grey whales with your host, Winston. Also, find a tutorial called Grey Whales 101.

Whale Books

There are so many great storybooks and factual books about whales. Gather an assortment of these books so that children can read about whales.

Amos and Boris
by William Steig
(Farrar, Straus & Giroux)

Baby Beluga
by Raffi
(Crown)

Big Blue Whale
by Nicola Davies
(Candlewick)

A Garden of Whales
by Maggie Steincrohn Davis
(Firefly)

Humphrey the Lost Whale
by Wendy Tokuda and Richard Hall
(Scott Foresman)

Baby Whales Drink Milk
(Let's-Read-And-Find-Out Science)
by Barbara Juster Esbensen
(HarperTrophy)

Moby Dick
by Allan Drummond, Herman Melville
(Farrar Straus & Giroux)

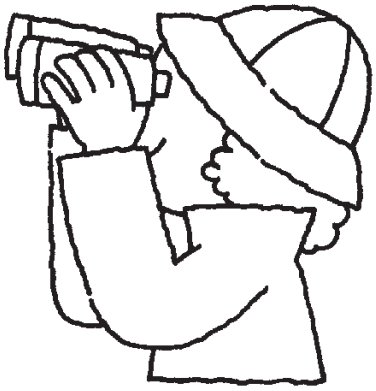
Dear Mr. Blueberry
by Simon James
(Aladdin)

Whales
by Gail Gibbons
(Holiday House)

A Symphony of Whales
by Steve Schuch
(Harcourt)

Going on a Whale Watch
by Bruce McMillan
(Scholastic)

WHALE Reporter's Notebook



Reporter's name _____ Date _____

Name of whale_____

Kind of whale: toothed baleen

What color is the whale?

gray
black
white
blue
other _____

Does the whale have patches? yes no

The whale has how many blowholes? one two

Does the whale have flippers? yes no

Does the whale have fins? yes no

Does the whale have throat grooves? yes no

The length of the whale is:

0 - 10 feet
11 - 30 feet
31 - 50 feet
51 - 80 feet
81 - 100 feet

The whale weighs: (1 ton = 2000 pounds)

100 - 999 pounds
1000 - 2000 pounds
1 - 99 tons
100 - 150 tons

The whale lives near:

North America
South America
Antarctica
Africa
Europe
Australia
Asia

The whale lives to be:

0 - 10 years old
11 - 30 years old
31 - 40 years old
41 - 60 years old
61 - 75 years old
76 - 100 years old

The whale communicates with:

whistles
pulses
barks
chirps
trills
twitters
thuds
squeaks
grunts
clicks

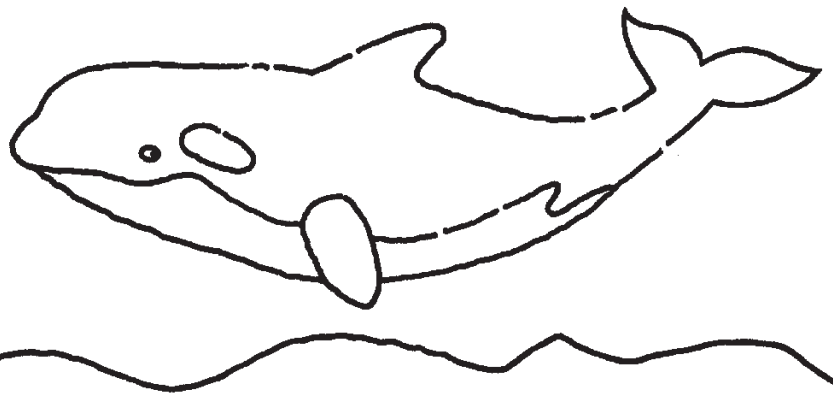
The whale eats:

krill
plankton
small fish
shrimp
octopus
squid
turtle
penguin
gull
seal

This whale is:

not endangered
endangered
near extinction

Draw a picture of your whale on the back of this paper.



Color black with white & gray patches.

Orca or **Killer Whale**

toothed whale

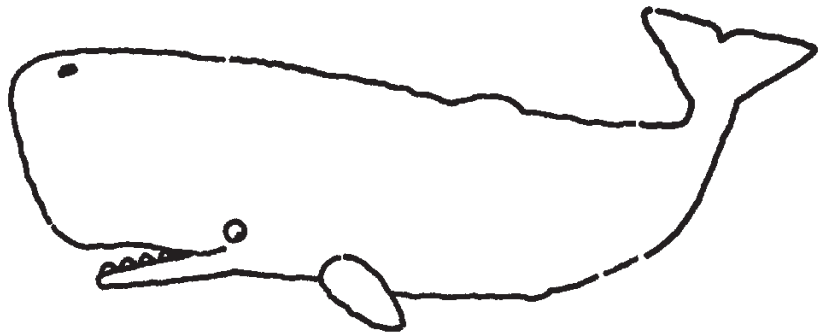
A killer whale is often called the "wolf of the sea." It lives in all the oceans of the world and uses its sharp teeth to catch fish, squid, sharks, and sea mammals.

Color grayish-white.

Beluga Whale

toothed whale

A beluga whale turns a beautiful white color when it is grown. It lives near coasts and is sometimes called a sea canary because it makes chirping and whistling sounds.

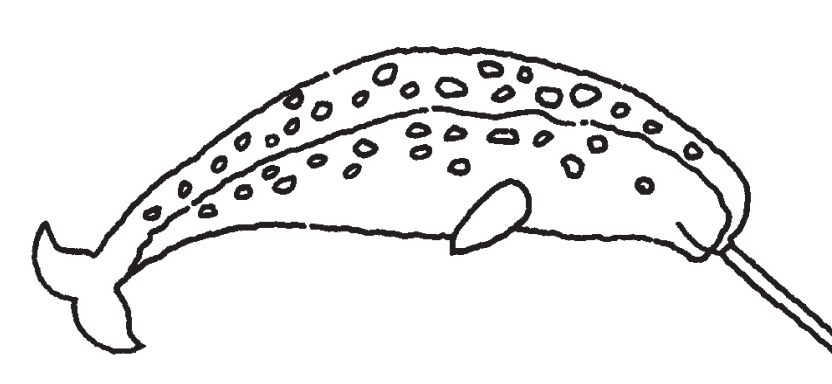


Color dark gray to black.

Sperm Whale

toothed whale

A sperm whale is the largest toothed whale. It can dive very deep and hold its breath underwater for more than one hour. It eats sharks, giant squid, fish, and octopus.



Color blue-gray with white patches.

Narwhal

toothed whale

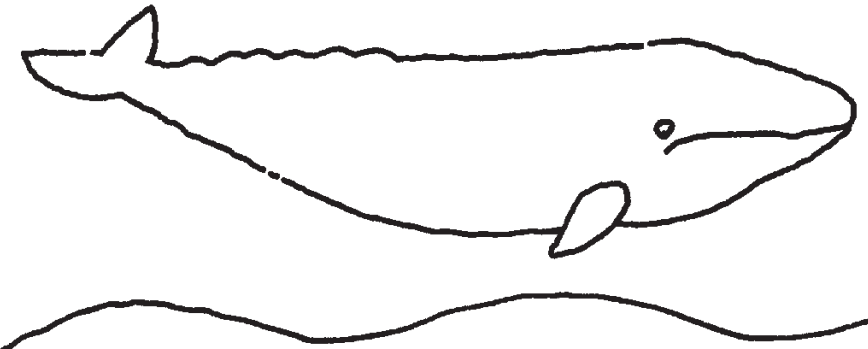
The male narwhal has a long spiral tusk that looks like the horn of a unicorn. Thick blubber keeps the narwhal warm in the icy waters where it lives. It eats fish, squid, crabs, and shrimp.

Color gray-black with white patches.

Right Whale

baleen whale

The right whale lives in all the oceans of the world and eats plankton. It is a slow swimmer and was easy to catch by hunters. The right whale is an endangered animal.

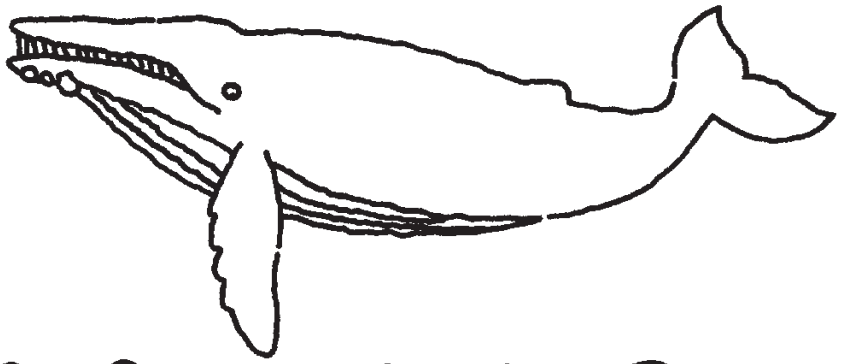


Color gray with white patches.

Gray Whale

baleen whale

A gray whale travels over 10,000 miles each year. It swims from the cold Arctic seas, where it feeds, to the warm ocean waters, where it rests and has its babies.

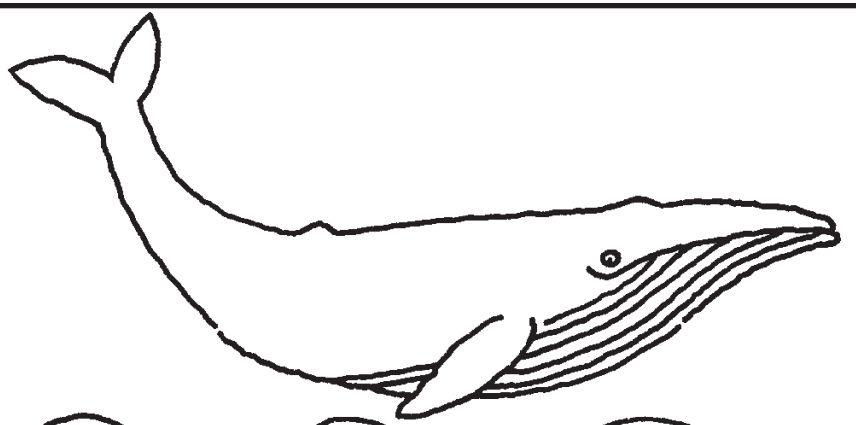


Color top black and bottom white.

Humpback Whale

baleen whale

A humpback whale is the most playful of all whales. It loves to sing and can make over 1000 different sounds. Humpback whales have very long flippers and throat grooves.



Color blue-gray with white patches.

Blue Whale

baleen whale

A blue whale is the largest of all living animals. It swims in very deep water and can eat four tons of krill each day. A baby blue whale can gain up to 200 pounds a day.