

Reader Guide

The Eye of the Whale

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Children/Nature; Grades 1-5

Summary

Off the coast of San Francisco, a fishing boat came upon a humpback whale that was tangled in hundreds of feet of crab-trap lines. She was barely able to keep her blowhole above the surface to breathe. In their efforts to free her, the divers were risking their lives, since one quick move of a whale's tail can kill a person.

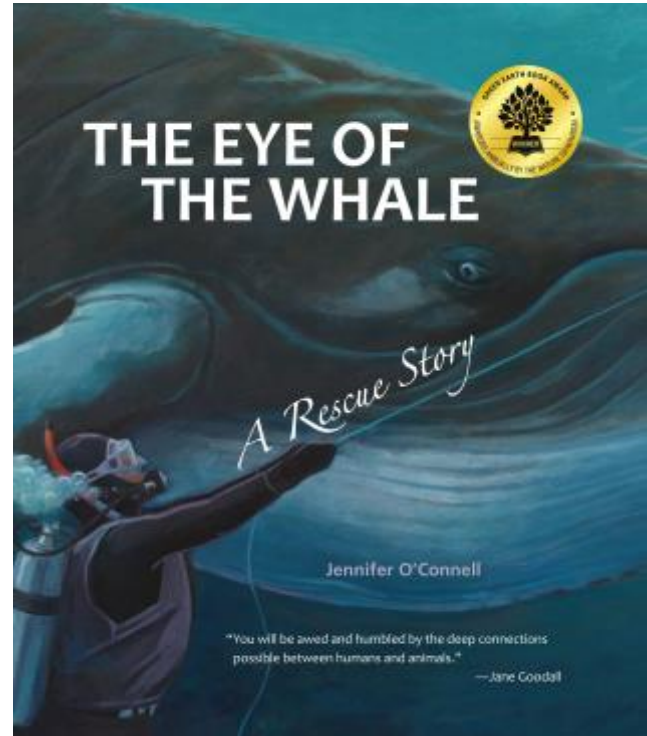
Yet as the divers worked, the whale held still. When they were finished, she gently nudged each diver before swimming away.

As people heard about this whale's actions during and after the rescue, questions arose. Did the whale help the divers by staying still and calm as they cut the lines or was she just exhausted? Was the whale full of joy after being freed or did she swim in circles to stretch out her huge body after being tied up for so long? How do we explain the whale nudging each of the divers, then looking directly at them? (The divers say that this was one of the most fantastic moments of their lives.)

Discussion Questions

The Eye of the Whale will help inspire classroom conversations about:

- Animal emotions; are they like human emotions? Are they different for different kinds of animals? What is anthropomorphism?
- Protecting whales and other marine mammals.
- What do you know about the rescue and rehabilitation of sick and injured marine mammals?
- Why are oceans so important for overall planet health, and what can be done to protect them?
- What advocacy opportunities related to ocean-related environmental issues exist for kids?



More Information

About Humpback Whales

Humpback whales are unique among whales for their long, bumpy flippers—in fact, the flippers give the whale its scientific name, *Megaptera novaeangliae*, which means “Big-winged New Englander.” They are found in all the world’s oceans except the Arctic, usually near the coast. They can grow as big as a school bus and weigh 40 tons.

Humpbacks are baleen whales. To feed they take in great mouthfuls of water, so much that their pleated throats expand, and strain it out through the curtain of flexible baleen that hangs down from their upper jaw. They then swallow the fish, krill, and other small creatures that remain in their mouths.

Humpbacks live in family groups called pods.

A Note about the Emotional Capabilities of Whales

In 2006, scientists Patrick Hof and Estel Van Der Gucht of the New York Consortium in Evolutionary Primatology made an important discovery—that there are spindle cells in a humpback whale’s brain. Before that point, spindle cells were only known to exist in the brains of humans and great apes. In humans, spindle cells are responsible for self-awareness, social interaction, and the processing of emotions. In larger whales, these cells were found in the same parts of the brain as in humans—areas that regulate emotional functions such as social organization, empathy, speech, intuition, and rapid gut reactions.

Large whales have up to three times the number of spindle cells as humans and have been evolving these cells for 30 million years—twice as long as humans. Does this mean that they are more advanced and smarter than we are? Scientists don’t know, nor do they know if the emotions that we humans feel are the same as those in the great whales. But we do know that large whales have acted in ways that reflect intelligence and suggest a deep emotional capability, as witnessed during the humpback whale rescue featured in *The Eye of the Whale*. (Source: “Whales in love: Like humans, their brains are wired for romance,” by Renee Knight, 10 December 2006, at: www.independent.co.uk/environment/nature/whales-in-love-like-humans-their-brains-are-wired-for-romance-427863.html)

Activities

How Big Is a Humpback Whale?

What you need: Rope and metersticks/yardsticks or rulers

How to do it: Using rope and yardsticks or rulers, children measure and outline a humpback’s 16-foot-long and 4-foot-wide flipper, its 18-foot-wide tail, or even its entire 50-foot-long body if this activity takes place out on the playground or in a large room. Students can compare the size of the whale, or its flippers and tail, to familiar objects that they know, such as a bicycle, car, school bus, or their own body! This will help them appreciate the enormous size of the humpback whale featured in *The Eye of the Whale*.

How Marine Animals Stay Warm

Whales and seals are warm-blooded animals and depend on a thick layer of body fat called blubber to keep them warm in the cold seas. The blubber on a large whale can be up to 24 inches thick. It is almost impossible for the cold to get through the blubber and chill the whale. To learn how blubber works, make a “blubber mitt” and see how it protects from the cold.

What you need: One cup solid vegetable shortening such as Crisco; Ziploc-type bags (without sliders), some duct tape, and a basin of cold, icy water or snow.

How to do it: Put one cup of shortening into a Ziploc bag. Turn the second bag inside out and put it inside the bag with the shortening, being sure to reverse the zipper tracks. Join the bags together at the top by zipping them to each other. For added protection, you can seal the bags around the zipper with duct tape. Push the shortening around, from the outside, to distribute it evenly in the "mitt." For each mitt, make an empty mitt, without shortening, so you can compare it with the insulated one.

Place one hand in an empty mitt and one in an insulated mitt (with the shortening) and then place both hands in a basin of cold, icy water or snow. The "blubber" mitt will protect your hand from the cold. Whale blubber acts the same way to help maintain the animal's body heat in cold water.

Mural or Bulletin Board Challenge

What you need: Bulletin board, art supplies.

How do to it: Divide a bulletin board in half vertically. Have children brainstorm factors that endanger the ocean and its animal life. They then create illustrations of these factors and place them on the left side. On the right side, children illustrate what the ocean would look like with all the destructive factors eliminated. Images might include whales and fish swimming in bright blue water; colorful coral and plant life; recycling containers placed on the shore, etc.

Stream Clean-Up

What you need: Child and adult volunteers, trash containers

How to do it: Children form a crew with their classmates, teachers, and/or parents to clean up a local stream, river, or creek. By doing so, they will be creating a cleaner ocean for whales and other sea animals, because the water nearby will eventually end up in the ocean.

Adopt a Marine Mammal

How to do it: Many marine research and educational organizations run programs that allow members of the public to "adopt" a whale, seal, or other marine animal. Adopters usually receive photographs and information about their animal, and the funds go toward research and educational programs.

Further Reading

The picture books below complement the ideas and information in *The Eye of the Whale*:

Granny's Clan: A Tale of Wild Orcas by Sally Hodson (Dawn Publications, 2012)

Based on actual orca (killer whale) research, this book combines science with the real story of how family, friendship, and a grandmother's love are helping this magnificent but endangered orca clan to survive. Ages 4-8.

Face to Face with Whales by Flip and Linda Nicklin (National Geographic, 2010)

With his beautiful photographs, Flip Nicklin brings us face to face with whales as we learn about different kinds of whales, discover how we can aid their recovery from years of humans overhunting them, and learn how we can protect their environment.

The Secret World of Whales by Charles Siebert, illustrated by Molly Baker (Chronicle Books, developed in collaboration with the NRDC–National Resources Defense Council, 2011)

A chapter book filled with great photos and illustrations, this has several descriptions of human encounters with whales—how whales were (and are) hunted, and how the activities and inventions of humans now impact them. Though whales are obviously very different from humans, Siebert explains that scientists have discovered that whales' brains are very much like those of humans. He gives examples of how we have reached out to them as well as stories of when they have reached out to us—such as during the famous rescue featured in *The Eye of the Whale*.

Sea Soup: Zooplankton by Mary M. Cerullo (Tilbury House, 2001)

The diet of humpback whales consists of plankton, krill, and small schooling fish. This is a good book to help understand the importance of these creatures, not just to whales, but to all life on the planet. Ages 8-12.

Life in the Ocean: The Story of Oceanographer Sylvia Earle by Claire Nivola (Farrar, Straus, and Giroux, 2012)

Sylvia Earle has dedicated her life to learning more about what she calls "the blue heart of the planet." Sylvia's ocean exploration and advocacy have made her known around the world. This picture-book biography also includes an informative author's note that will motivate young environmentalists.

Jacques Cousteau by Dan Yaccarino (Dragonfly Books, 2012)

A short biography of a real-world hero: famed oceanographer Jacques Cousteau. This is a brief text that includes a few direct quotes. The book covers Cousteau's lifelong fascination with the sea, filmmaking, and invention, and shows the scientist as a young boy, tinkering with cameras and swimming in the ocean to recover from chronic illness. Ages 4-9.

The Watcher: Jane Goodall's Life with the Chimps (Schwartz & Wade, 2011)

This book shows children the value of "watching:" and it introduces them to a hero—Jane Goodall. Although not about whales or oceans, Goodall's work relates to protecting all animals, including those who live in the sea. Ages 4-8.

Internet Resources

There are many organizations and education associations dedicated to promoting awareness about whales and improving relationships between humans and other species on our planet and ultimately promoting ocean literacy. Visiting the websites of a few of these organizations will provide educators with additional information and/or offer activities that are related to themes embedded in *The Eye of the Whale*.

The Marine Mammal Center

This is the organization responsible for coordinating the rescue in *The Eye of the Whale*. Its mission is to expand knowledge about marine mammals—their health and that of their ocean environment—and to inspire their global conservation. Each year, The Marine Mammal Center education programs and events

reach over 30,000 children and adults in the San Francisco Bay area. www.marinemammalcenter.org/what-we-do/#.UFiVHkaf91M

National Marine Educators Association

Making known the world of water. www.marine-ed.org

Center for Whale Research

www.whaleresearch.com

Save the Whales

Dedicated to educating people young and old about marine mammals, their environment, and their preservation. www.savethewhales.org

The New Bedford Whaling Museum

Originally instituted to document the history of whaling, which centered in New Bedford, Massachusetts, during the 1880s, the museum now also educates people about whales with its exhibits and programming. This link will take you to lists of comparative information about different species of cetaceans:

www.whalingmuseum.org/learn/about-cetaceans

Ocean Literacy

Primarily for adults, activists, and educators, this site will lead you to a wealth of information and resources: oceanliteracy.wp2.coexploration.org

Jane Goodall's Roots & Shoots

Provides young people with the knowledge, tools and inspiration to improve the environment and the quality of life for people and animals. www.rootsandshoots.org