

0. Listening for Whales - Story Preface



Humpback Whales are known for their singing ability. This photo, from NOAA (National Oceanic and Atmospheric Administration) depicts a Humpback "in the singing position."

SC.4.P.10.3 Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates.

Listening for Whales (570L)

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Whales are my favorite animal. They live in oceans and spend most of their lives underwater. But they are mammals! They are also the biggest living things on Earth. The biggest animal to have ever lived is the Blue Whale. The Blue Whale is huge! It weighs more than 170 tons. It is longer than two school buses!



Source: Wikimedia Credit: SW Fisheries, California

Whales live in oceans. Oceans cover more of our planet than dry land. Whales have been living in oceans for millions of years. Ancient whales have many things in common with whales today. This extinct whale lived 45 million years ago. It was a predator, hunting its food. There are many whales today that are also predators. This ancient whale was also a mammal.



Source: Wikimedia Credit: Pavel Riha

I know a lot about whales. I read everything I can about them. Today, I am going on a whale watching trip with my family! I will get to see living whales for the first time! Before now, I have only seen them in pictures or on TV. But today, we will take a boat and look for whales!

The boat travels really far from land. We go so far that dry land is only a skinny strip of green on the horizon. The captain of the boat tells us that the water is just right for whales today. I'm excited as I gaze out at the calm surface of the ocean. The captain says to watch for ripples and spray. This means that whales are coming to the surface to breathe. They can only hold their breath under water for so long. We suddenly see a spray of mist break the water's surface! The captain says it is our lucky day. It's a Blue Whale!



Source: Wikimedia Credit: Finhval

The Blue Whale is three times as long as our boat! It takes a breath at the surface, and sinks below. I ask the captain about whales. He tells me that whales have a lot in common with us. They are mammals. They have live young, and they care for their babies as they grow. Whales also talk to each other. They don't actually say words. They communicate under water with sound. To our ears, it sounds like singing. Scientists actually call it whale song. Their

singing can travel thousands of miles. This is important for whales because of how big oceans are. Imagine being able to yell loud enough to be heard in another state! Whales can use these songs under the water because water transmits sounds much better than air.



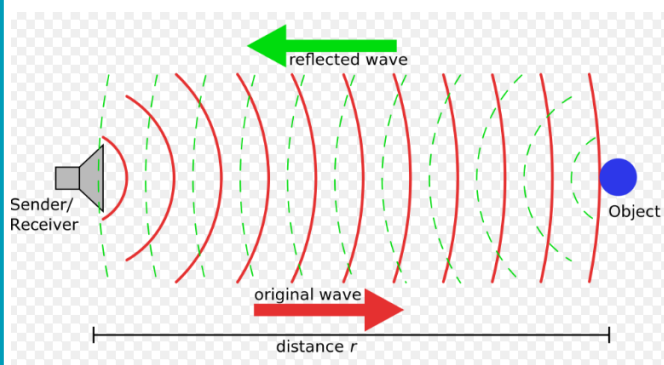
Source: Wikimedia Credit: JJ Ron

I'm surprised. I had no idea that sound could travel further in water. I always talk to people through air. They can always hear me. The captain says sound does travel through air. It just travels better in water! The captain takes my family below the deck into a special room. There is a dashboard panel full of instruments in here.

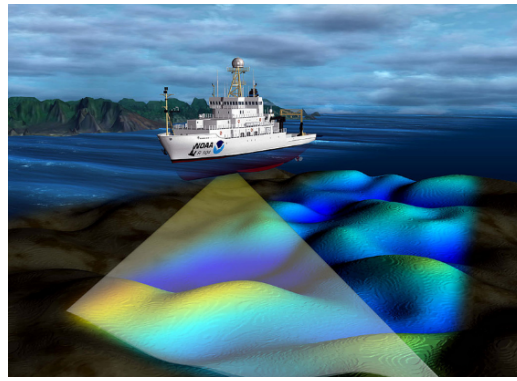


Source: Pixabay Credit: David Mark

They help the captain steer the boat. They also measure weather. He points out one called SONAR. SONAR lets the captain see what is going on under the water. It sends out a sound signal under the boat. It then records echoes that come back. These echoes bounce off objects under the boat, and forms an image on a screen. It displays underwater hills that the boat could run into. SONAR also bounces off big living organisms. It can tell the captain if there are whales nearby.



Source: Wikimedia



Source: Flickr

Whales use sound in two ways. First, whales make a clicking noise to make echoes, like SONAR. The clicking noise reflects back. Whales have special sensors in their heads that lets them hear the echoes. This helps them find food and avoid predators. Whales also use sound to communicate with each other. To do this, they use a kind of whistling sound. They change the pitch to "say" different things to each other. Whales communicate with each other through sound about food sources. They also "sing" to each other socially, like how I talk to my friends after school. They warn away predators, and use sound to stay in touch with family pods and young. So how do whales make sound? All sounds begin with vibration. For example, a guitar string vibrates the air when it is plucked. The vibrating string repeatedly pushes against the air particles next to it. The pressure of the moving string causes these air particles to vibrate. The air particles push together and spread apart very quickly. Vibration travels in all directions away from the strings. This same thing happens underwater. When whales whistle or click, they cause the particles of water to vibrate. Sound can travel through any type of solids, liquids, or gases. The boat travels back to the harbor. I think about how special whales are. Maybe someday I'll become a scientist that studies whales! I want to learn how to understand what whales are saying when they sing. Maybe then I could talk to them! I think that singing lessons may be the way to go.



Source: Flickr Credit: Sylke Rohrlach

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<http://www.awesomestories.com/asset/AcademicAlignment/Listening-for-Whales0>

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Media Stream



Singing Position of Humpback Whales

NOAA, NOAA

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