



# ECHOLOLOCATION

## Nature's SONAR!

Animals, like people, use sounds to communicate with each other and to find their way around their environments. Bats and dolphins even depend on the sounds they make to “see” when there is not much light. These animals send out short and very loud sound pulses- like snaps - and listen for the echoes from these pulses to return so they know how far they are from the wall of a cave or the bottom of the ocean. The use of echoes to find objects in the environment is called **echolocation**. Using echolocation, thousands of bats can fly around a dark cave, all sending out pulses, without bumping into each other!

Bats and dolphins use echolocation, also known as **sonar**, to find food. By listening to echoes of their sonar sounds, dolphins can find fish buried in the sand, and bats can find flying moths. But, some moths are able to hear the sonar sounds of the approaching bat and make their escape. Similarly, some fish are able to hear the dolphin sonar sounds and avoid capture.

Some blind people use sonar by listening to the echoes from the taps of their canes to help them determine how far they are away from a wall. Sonar originated as an abbreviation for “SOund NAVigation and Ranging,” the **acoustic** method developed in World Wars I and II for locating submarines. Sonar is now a widely used method for finding objects in the ocean.

Acoustics is the science of sound. **Acousticians** study how sounds are produced, transmitted, and perceived. Scientists and Engineers who study **animal bioacoustics** and **underwater acoustics** focus on how sound is produced, the acoustic signals that are generated, and how listeners understand these signals.

Want to learn more?  
[www.acousticsforkids.org](http://www.acousticsforkids.org)