

SEEING with SOUND!

by Lee Lamb

Have you ever shouted “Hello!” across a canyon and a second later heard it again? This echo is caused by sound waves traveling across the canyon, bouncing off the rocks and coming back to you. Animals that live in dark or murky places, such as bats and beluga whales, rely on the echoes of their voices to help keep from running into trees or giant squids. This is called *echolocation*.

Bats and belugas send out high-pitched sound waves. The longer it takes for an echo to come back, the farther away the object. Tiny differences between the original sound and the echo help them determine the size and shape of an object, if it is moving, and in what direction.

GONE BATTY

Bats’ calls are too high for humans to hear. Some bats make sounds through their mouths, while others send them through their odd-shaped noses. Most bats have big ears with lots of folds, which help them pinpoint and identify objects from the echoes.

Echolocation gives fast-flying bats the power to find their way smoothly in a pitch-black cave. It also helps them hunt insects and is so effective that little brown bats have been known to catch 1,200 mosquitoes in a single hour!

UNDER THE SEA

Toothed whales, such as sperm whales, belugas and dolphins, use their mouths to send a series of high-pitched clicks through the water. When an object is far away, a dolphin produces clicks at a slower rate. When it’s closer, the clicks come faster. The echo from this “click train” helps them home in on an object the size of a chicken’s egg a football field away. This makes them deadly predators, even at night or in deep and cloudy water.

NATURE’S SONAR

The people who design submarines took a lesson from the dolphins. **Sonar**—so(und) n(avigation) a(nd) r(anging)—is just a fancy form of echolocation. Sonar operators send sound waves through the water, then listen for echoes to detect ships, other submarines and underwater mountains.

THESE WORDS GOT ALL MIXED UP ECHOING AROUND. CAN YOU HELP UNSCRAMBLE THEM?

- ECHOLOCATION
- SONAR
- SUBMARINE
- BOAT
- BELUGA
- DOLPHIN
- CLICK
- SQUID
- WHALE



