

Are Bats Blind?

Are bats blind?

What do bats use echolocation for?

What part of the bat creates sound waves? What do those sound waves do when they reach an insect?

What other animals use echolocation?

Can humans hear the echolocation sounds made by bats? Why or why not?

Why might it be important for an insect to hear ultrasonic waves?

How have humans adapted this technique for their purposes?

Echolocation: Communication of Marine Mammals, Bats, and Humans

How can scientists use echolocation sounds to identify bats?

The title of the article is somewhat odd. It says that echolocation is used for “communication”? What is it truly used for?

When the article uses the word “echo,” they mean:

- A. light reflection
- C. light refraction

- B. sound reflection
- D. sound refraction

Draw a picture of an echolocating animal using echolocation to find a target?

What do marine mammals use echolocation for?

Some humans have developed echolocation. Why did their brains learn to use it?

What sort of things can Ben Underwood detect using human echolocation?

Humans with Amazing Senses

What part of the brain is used for interpreting echolocation in humans?

On the basketball court, which objects can Ben Underwood “see” with echolocation:

- the pole
- the backboard
- the basket

Why are echolocating humans unable to see smaller objects that echolocating animals can?

How Ultrasound Works

What is the frequency of the sound waves made by an ultrasound machine?

A “megahertz” is 1,000,000 Hertz. The highest sound a human can hear is 20,000 Hertz. Why can’t humans hear the sounds created by an ultrasound machine?

Which of these is crucial to how ultrasounds function?

- | | |
|---------------------|---------------------|
| A. light reflection | B. sound reflection |
| C. light refraction | D. sound refraction |

Sound waves reflect off of a surface. How does the ultrasound machine know how far away that surface is?

There are more pages of this document about the technology inside the machine and about the medical reasons for using an ultrasound. You can read those sections.