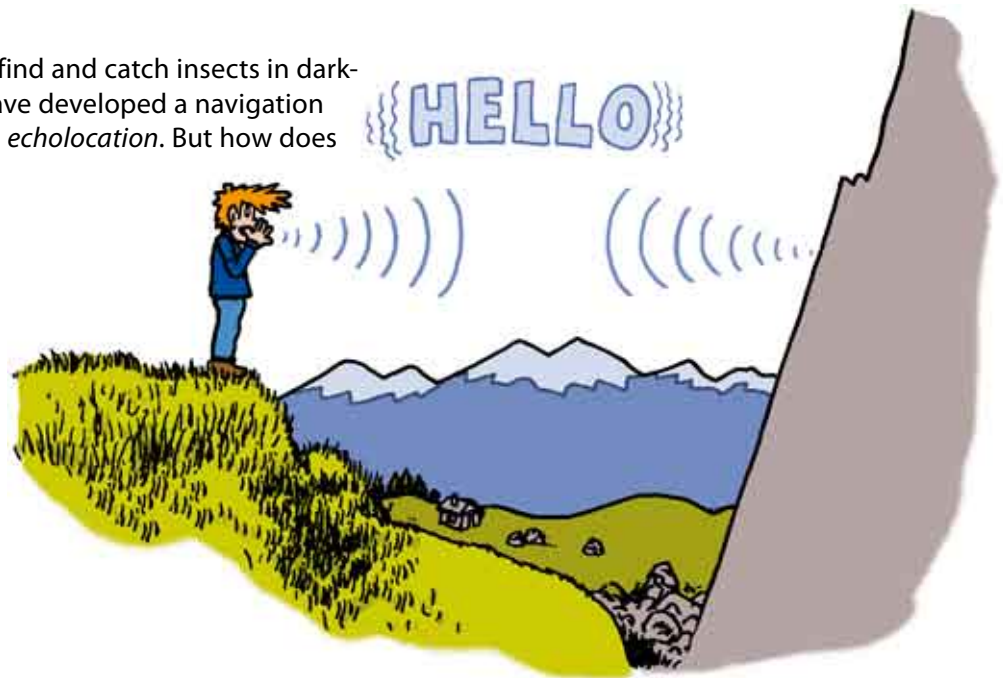
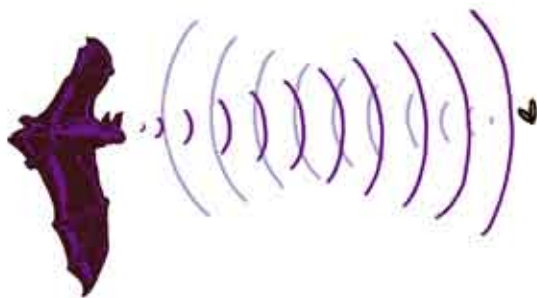


Special facts: Echolocation

How do bats find and catch insects in darkness? They have developed a navigation system called *echolocation*. But how does this work?



Imagine that you are standing on one side in a canyon and you shout "hello". You'll hear the echo of your voice coming back to you as if your greeting was repeated. When shouting "hello", you're producing a sound wave which is *reflected* back from the walls of the canyon. If the canyon is not very big and the walls are quite close, it takes almost no time for your voice to come back as an echo. If the canyon is big and the walls are far away, it takes longer. Sound always travels at the same speed, 340 metres per second. So if you could measure the time between the sound and its echo precisely, you could work out how far away the walls of the other side of the canyons are.



This is very similar to the system that bats use to find food at night. They send out sound waves using their mouth or nose. When the sound hits an object, an echo comes back. Bats can identify an object or an insect by the sound of the echo. They can even tell how big an insect is and its shape by the echo.

The sounds most bats make are extremely high so that human ears can't hear them. This is why *bat detectors* are used. These small machines translate the bats' sounds into sounds the human ear can hear too by making them lower.



<i>echolocation</i>	Ultraschall-Peilung
<i>reflect</i>	zurückwerfen
<i>bat detector</i>	Fledermausdetektor