

Activity 4

THE SCIENCE BIT



Thanks for helping me with my sounds of the sea curiosity challenge. I've been so impressed with all your hard work!

Before I travel back to the ocean to continue my research, I thought I would share some fun facts about how sounds travel underwater.

DOES SOUND TRAVEL IN WATER?

Sounds are made when objects vibrate. Every time an object vibrates it sends invisible sound waves to our ears! If something vibrates slowly it will sound low, and if something vibrates quickly it will sound high; this is known as pitch.

When sound travels through the air, the vibrations it makes knock tiny invisible gas particles (atoms) into each other. Water is full of liquid particles so sound travels in the same way, but because the liquid particles are closer together, sound travels much faster and further.

DO ANIMALS HEAR UNDERWATER?

A lot of marine animals use sound to communicate, look for food and to keep them safe. Many, like dolphins and whales, use echolocation to bounce sound waves off their surroundings and listen to the sound echoed back to them in order to visualise the distances between themselves and the objects around them.



HOW CAN WE HEAR SOUND UNDERWATER?

When you designed a device to hear sound underwater, you created a hydrophone. They are used to monitor animals or geological activity. Vibrations made by sound travel through the water and are captured by the hydrophone and turned into an electrical signal that can be sent to scientists above the water.

The simplest way to make your DIY hydrophone would be to cut the bottom off your bottle, place it into a tub of water and hold your ear against the top while someone else makes sounds under the water. The sound vibrations will be caught and funnelled up the bottle to your ear.