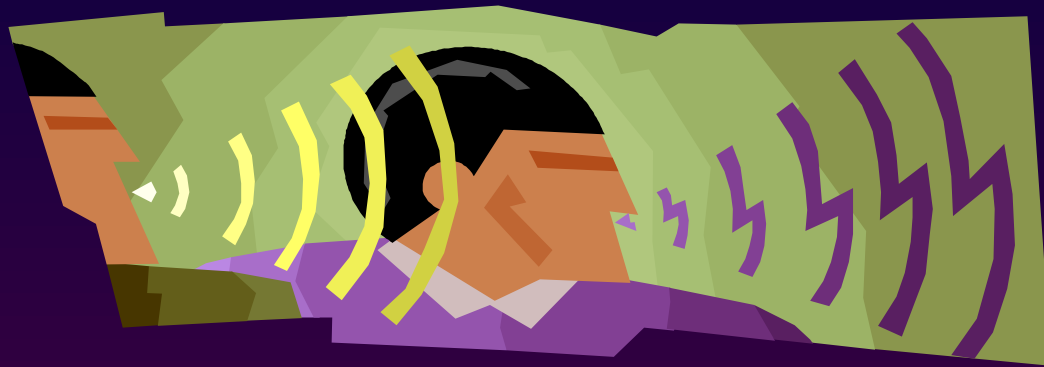


# How sound is made



<https://www.bbc.co.uk/bitesize/topics/zgffr82/articles/zstr2nb>

Like light, sound travels through the air in waves, but unlike light, sound is not made of lots of tiny particles. When something makes a sound, like you clapping your hands, it's because when you clapped your hands that shook the air molecules around your hands and made them vibrate (that means they shake quickly back and forth).





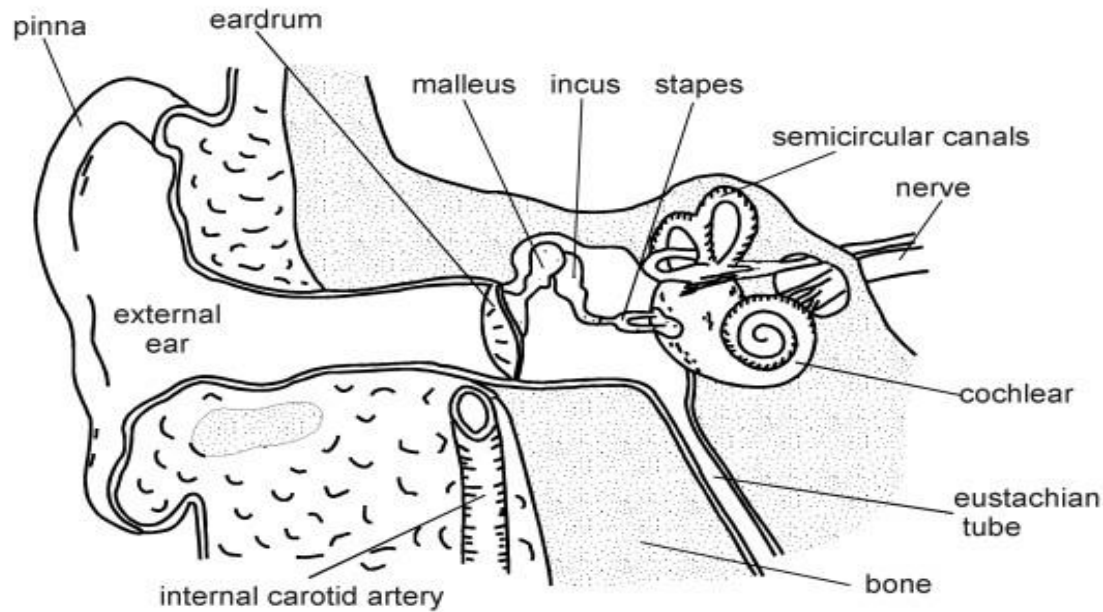
This vibration, in turn, shook the air molecules a little further away from your hands, and they shook the air molecules next to them, and so on, until the air molecules inside your ear were vibrating too (and inside the ears of the people sitting near you too!) Try feeling a speaker when the sound is on to feel this 'vibration'.

When the air molecules inside your ear begin to shake, they wobble tiny hairs inside your ear that are connected to nerves under your skin. If your ears are working, these nerves then send messages to your brain to tell you that you heard a noise.



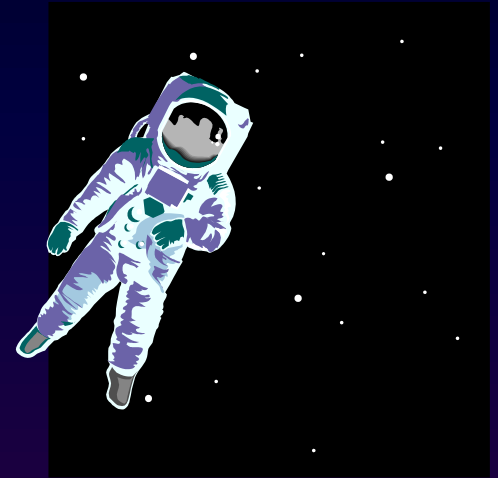
The Ear

Here is a cross section of the Human ear!



CROSS SECTION OF THE EAR

Because sound has to move molecules in order to travel, it's impossible for sound to move through space, where there are very few molecules. Space is a very quiet place. But sound doesn't have to move through air - it can just as easily move through water, or through metal wires. In fact, sound moves faster through water/solids than it does through air. Try putting your head against a desk and then tapping the desk, is the sound louder?

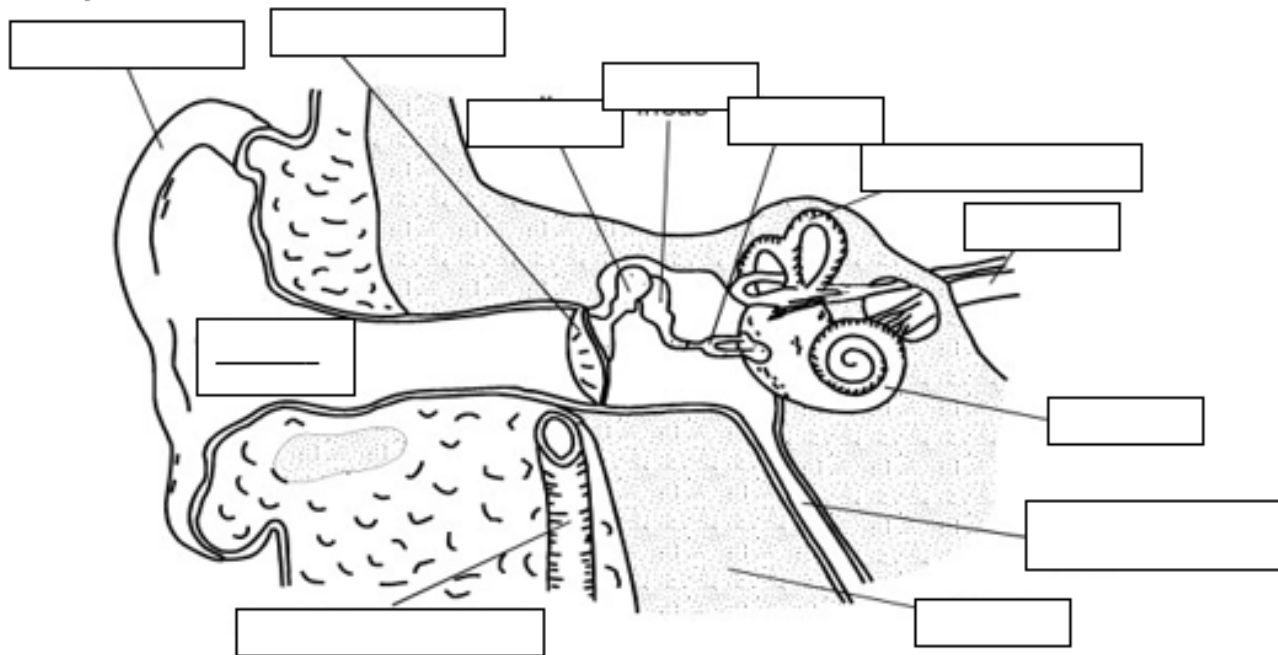


But whether in air or in water, sound moves much more slowly than light does. While light travels at 186,000 miles per second, sound only goes 343 metres per second, or about 770 miles per hour. A fast airplane can go faster than the speed of sound. Because of this, you often hear things long after you saw them. For instance, you have to wait several seconds to hear the thunder after you see the lightning in a storm, even though they are the same thing.



# Task 1

What good would sound be if we could not record it in some way? Today we are going to explore the greatest receiver of sound within the natural world- the human ear! Label the diagram below with the names of the various parts of the ear.



CROSS SECTION OF THE EAR



# Task 2

## Task 2

Now you have labelled your own diagram of the human ear, research and answer the questions below in full sentences.

Research describe and explain the functions of:

- The Outer Ear
- The Middle Ear
- The Inner Ear

Use each as a subtitle.