

# Introduction to sense: Hearing

Humans and animals have many things in common. Our sense of hearing is really important to help us communicate with others by listening to ideas, opinions and questions, as well as helping to keep us safe.

To hear we use sound waves, like this one:



These waves travel through the air and we hear them by using our ears.

## How we hear

The human ear has a part outside the body (the part you can see) called the **pinna**.

The **pinna** guides the waves inside to the **ear drum** in the **middle ear**.

The sound is made LOUDER in the **ear drum**.

The sound waves then travel to the **inner ear** where they move into liquid form.

The liquid turns into **electrical impulses** for the brain to make sense of what has been heard.



Not all ears are alike. This rabbit's ears look very different to our ears, they are this special shape to help them to hear differently to us...

A rabbit's ears are really long and curved to help pick up all the sound waves and direct them into the middle ear, like a satellite dish.

Rabbits can move their ears by tilting and turning them to find out where sounds are coming from. We aren't able to do this as our ears cannot move!



## Activity time!

You can make your ears work in a similar way to a rabbit's by using your hand to make a cupped shape behind your ear, just like this.



Try it and think carefully about what sounds you can hear in the room! Do the sounds seem different now?

### Checkpoint! What have you learnt so far?

What is the outside of the ear called?

.....

What does the middle ear do?

.....

What happens to the sound waves when they travel through the inner ear?

.....

**BANG!**

### Challenge: Seek a Sound!

**CRASH!**

You will need: Access to different rooms in your home, a blindfold

1. Explore your home and find four or five different sounds. See if there are any objects you can use to make a sound by tapping, dropping, hitting or scratching.
2. Once you have found your sounds, use a blindfold to cover the eyes of a family member (or someone else who can help you) while they sit in the middle of the room.
3. Make the first sound and ask the other person to guess what is making the sound.
4. Repeat this for the rest of the sounds, how well did they do?

You could try this a second time, but this time just using your voice to make different sounds.

## Questions to think about

Why is it so important for animals to hear really well? How can this help them to stay safe?

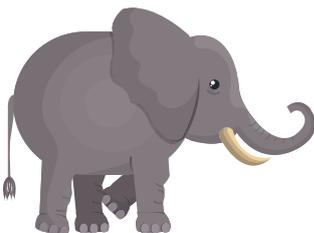
Can you think of any other reasons why sound is important to animals?

What happens if humans cannot hear? What happens if animals cannot hear?

## Did you know?

A dog's hearing is so sensitive they can even tell the difference between their owner's footsteps and a stranger's!

This is how they know you're coming home so they can greet you at the door.



An elephant's hearing is so sensitive they can hear special sound waves called infrasound - humans cannot hear these waves.

Elephants use infrasound to listen to the movement of the clouds to know when it's going to rain!