Humanimal Trust
ONE Medicine for humans and animals
Registered Charity No.s 1156927 & SC048960
www.humanimaltrust.org.uk

MONTESSORI GROUP
CHILD LED, FUTURE FOCUSED
Registered Charity Numbers 313636 www.montessori.org.uk

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.

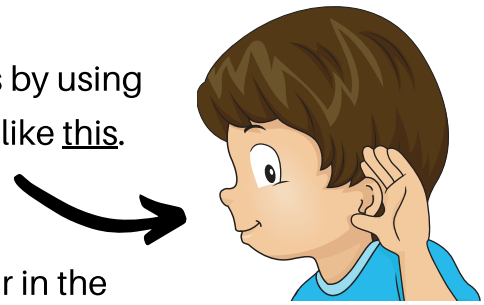
Not all ears are alike. This rabbit's ears look very different to our ears, they are this **special shape** to help them to hear differently to us.

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?

What have you learnt so far?

What is the **outside of the ear** called?

.....

What does the **middle ear** do?

.....

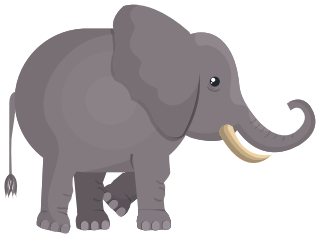
What happens to the **sound waves** when they travel through the **inner ear**?

.....

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**!

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Try it at Home - Make Sound Cylinders

This activity is for children ages 3-11. Young children will need help preparing the materials in the activity whilst older children can create them with very little support or even independently.

You will need: six or eight small containers with lids that you cannot see through, like film canisters (if you can find them), spice tins, or breath-mint boxes. Make sure all of your containers are the same. You will also need pairs of matching stickers (like two of each red dots, green dots, gold stars) one pair for each of your pairs of containers.

1. Add a small amount of rice to two of the containers and tighten the lid. (Make sure you add the same amount to each container.) Place two matching stickers on the bottoms of each container.

2. Add a few dried beans to two of the containers and close them up. Put matching stickers on the bottoms. Add some sand to two of the containers, then tighten the lid. If you have more containers, make additional pairs using other items, like a cotton ball, or a pebble.

3. Once you have filled your containers, place them randomly on the table in front of you.

4. Close your eyes or use a blindfold to cover your eyes. Pick up one container and shake it. Without looking, pick up a second container and shake it. Does it sound the same?

5. Try to find the container that has the same sound when you shake it. Match all the containers, then look at the bottoms to see if the stickers match. If they do, you found the matches!

Try it at Home - Make Sound Cylinders

Questions to think about

Why do you think the containers make different **sounds** when you shake them?

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?

Montessori is a hands-on learning approach that supports children's creativity, curiosity, problem solving and independence. The Montessori Group is pleased to Partner with Humanimal Trust to bring you interactive learning activities found in Montessori schools worldwide.

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