



# Science

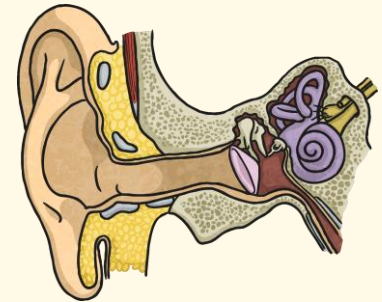
## Sound

# Aim

- I can explain how different sounds travel.

# Success Criteria

- I can describe how vibrations make sounds.
- I can explain how vibrations change when a sound gets louder.
- I can explain how loud and quiet sounds travel to our ears.





# Vibrations

Sounds are made when something vibrates.

Talk to your partner about what is vibrating in each of these pictures to make a sound.



# Vibrations

By placing rice on a drum, you can see the vibrations when you hit the drum, as well as hearing the sound.



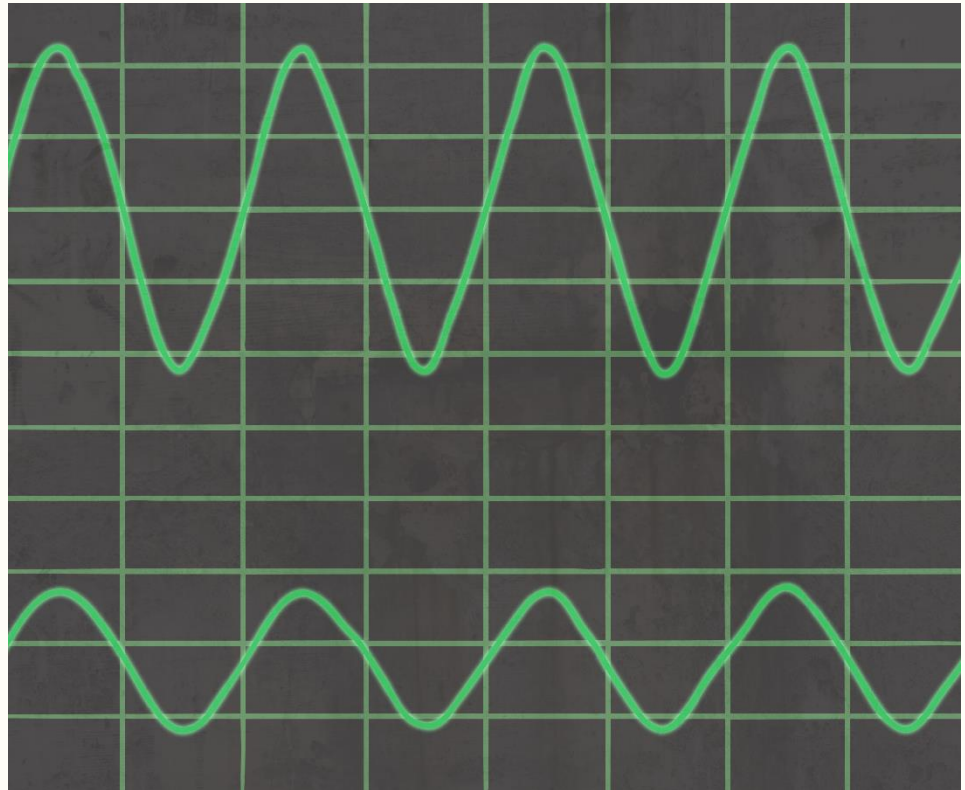


# Loud and Quiet

The **louder** the sound, the **bigger** the **vibration**. Rice grains will vibrate more when you hit a drum harder, creating a louder sound.

The size of the vibration is called the amplitude.

Quieter sounds have a smaller amplitude, and louder sounds have a bigger amplitude.



# How Does Sound Travel




So we know that sounds are caused by vibrations, and the louder sounds have bigger vibrations.

But how do these different sounds reach our ears?

These children have been talking about their ideas.

What do you think of their ideas?



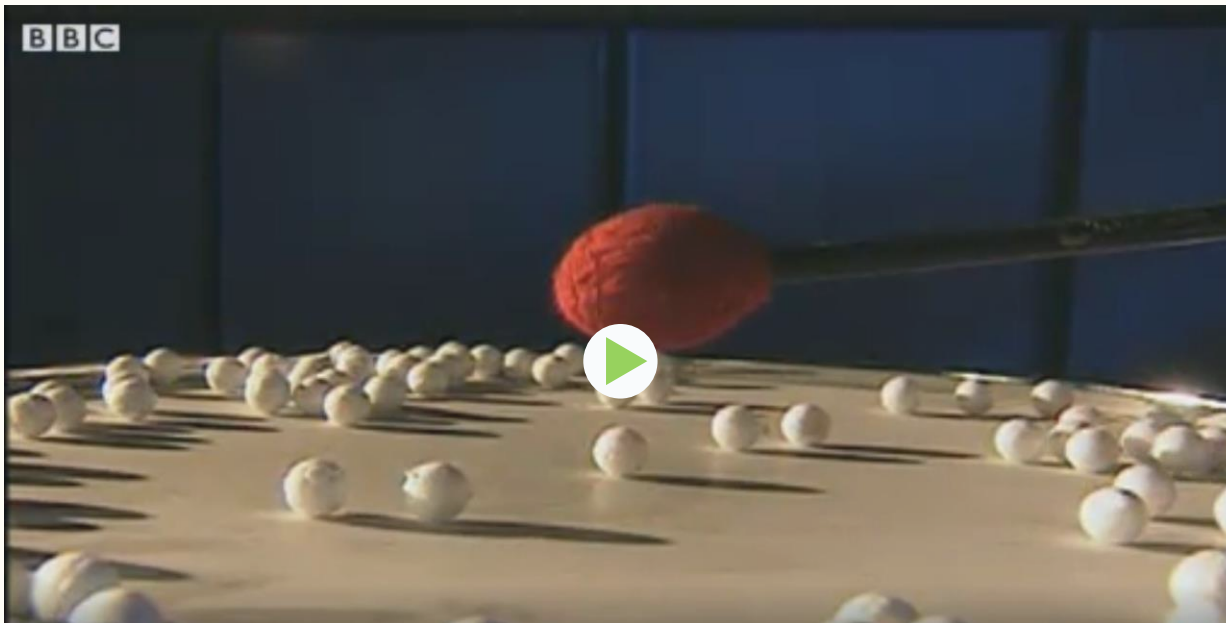
I think sound can travel through the air because the air is lighter and easier to get through than solids or liquids.

Sound moves the air from the source of the vibration into our ears. If we are listening, we will hear the sound.

# How Does Sound Travel



Watch this clip to see if you can identify how different sounds travel.



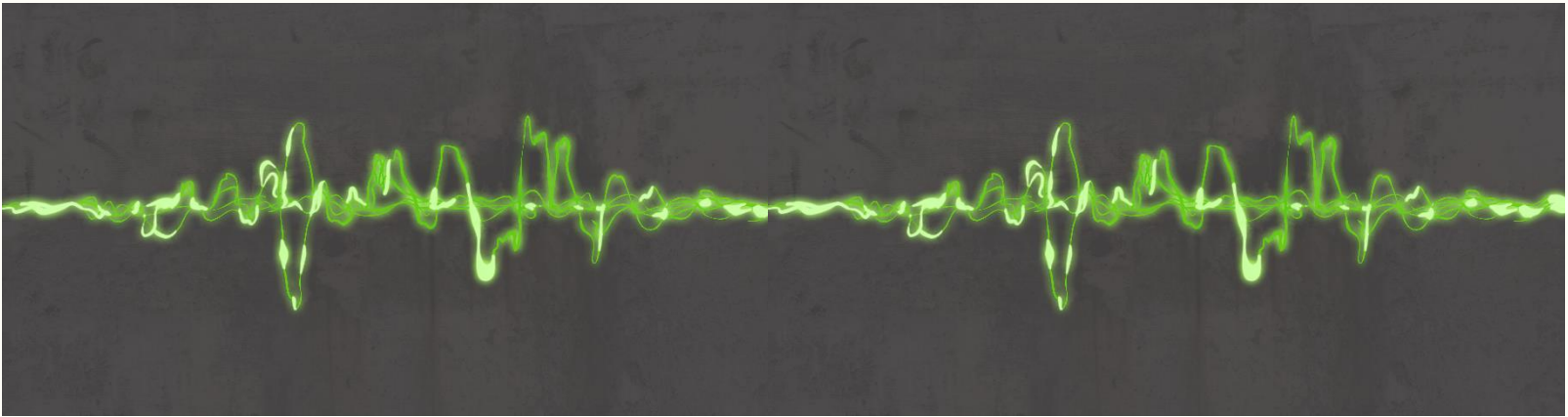
Click on this image to play the video in a new window.



# How Does Sound Travel?

Sound can travel through solids, liquids and gases.

Sound travels as a wave, vibrating the particles in the medium it is travelling in.

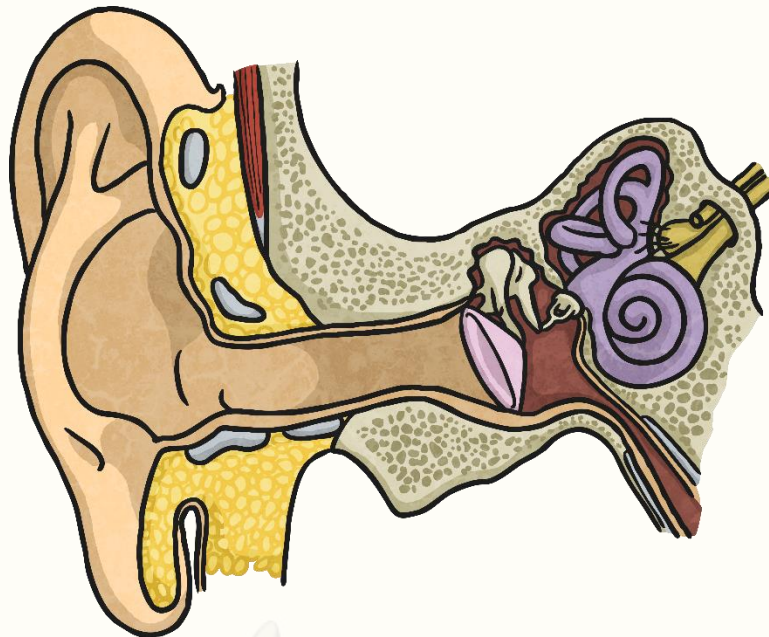


So in our example, when you **hit the drum**, the **drum skin vibrated**. This made the **air particles closest** to the drum start to **vibrate as well**. The **vibrations** then **passed** to the **next air particle**, then the next, then the next. This **carried on** until the air particles **closest** to **your ear vibrated**, passing the vibrations **into** your ear.



# Hearing Sounds

Once in your ear, the vibrations travel into the ear canal until they reach the eardrum. The eardrum passes the vibrations through the middle ear bones (the hammer, the anvil and the stirrup) into the inner ear. The inner ear is shaped like a snail and is called the cochlea. Inside the cochlea, there are thousands of tiny hair cells. Hair cells change the vibrations into electrical signals that are sent to the brain through the hearing nerve. The brain tells you that you are hearing a sound and what that sound is.





# Activity Time!

Follow the instructions on your worksheet.

