

Thursday 29th April 2021

LO: To recognise that vibrations from sounds travel through a medium to the ear

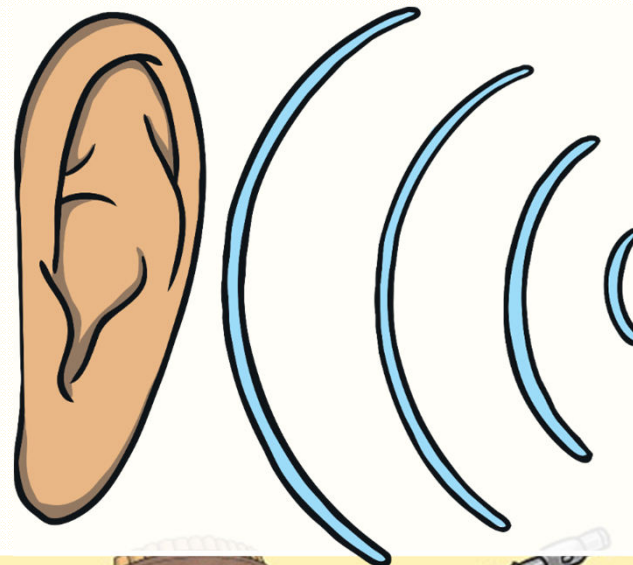
I can recognise that sounds travel from one place to another

I can recognise that sounds can travel through different materials

I can recognise that material might change the quality and the volume of the sound.

Recap- Think back to last lesson

- How does sound travel?
- What is sound made by?
- How do we hear sound?



A decorative border surrounds the text area, featuring illustrations of various musical instruments including a drum, guitar, trumpet, xylophone, and flute, as well as musical notes and a treble clef.

Sound waves can travel through mediums and still be heard.

For example:

- Sound waves travel through the air.
- Sound waves can also travel through plaster, concrete and bricks. Have you ever heard music being played through the walls of a house?
- Can you hear the TV being played in another room?
- Can you hear children shouting and playing outside?

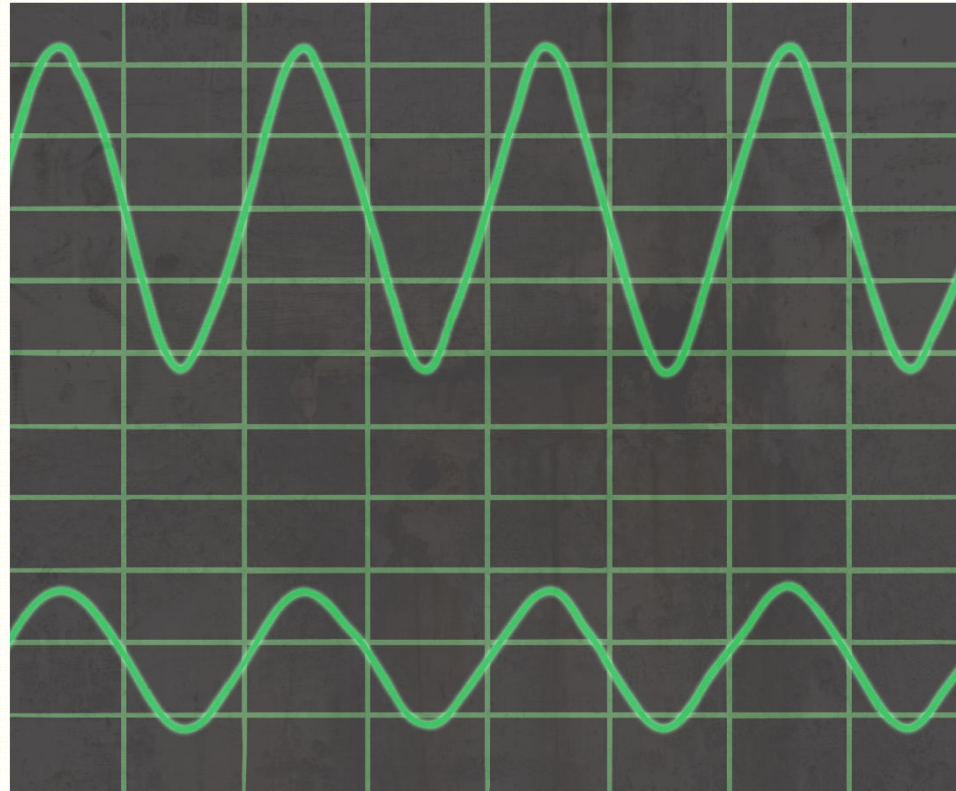


Loud and Quiet

The louder the sound, the bigger the vibration. A drum vibrates more when hit 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.



Does the quality and volume change when sound travels through different materials?

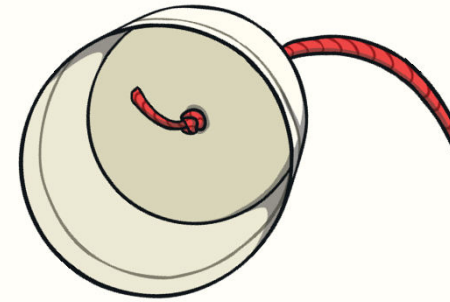
Today we will conduct an investigation testing whether sound can travel through different materials.

How do you think we could investigate this?



We are going to fill 5 plastic cups with different materials:

- Cotton wool
- No material
- Paper towel
- Metal foil
- Cotton sock
- We are going to play a beeping noise and record the volume of the sound we can hear through the plastic cup.
- How can we make this investigation fair? Which variables must we keep the same?



<https://www.youtube.com/watch?v=2gxuIfNeTTE>

A decorative border surrounds the central text area. At the top and bottom, there are illustrations of various musical instruments: a red and white drum, an acoustic guitar, a brass instrument (possibly a trumpet or trombone), a wooden xylophone, a silver flute, and a CD. On the left and right sides, there are vertical columns of musical notes, including a treble clef and several eighth and quarter notes.

Variables to keep the same

- The person who is listening to the volume of the noise- People's ideas of what is "loud" or "quiet" may differ, so to keep the test fair we must use the same volunteer.
- The plastic cups that the materials are kept in.
- The amount of the material in the plastic cup.
- The distance away from the beeping noise. Standing further away from the noise means it will get quieter. The person must be stood in the same spot.

A decorative border surrounds the page, featuring illustrations of various musical instruments: a drum, an acoustic guitar, a trumpet, a xylophone, and a flute. The border is also decorated with black musical notes and a treble clef on a yellow background.

Prediction

What do you think will happen when you are using the different materials in the cup?

I predict that the material that lets the sounds through the most is.....
because..... I think the material that lets through the least sound is.....
because.....

The slide features a yellow border decorated with various musical instruments and notes. At the top and bottom, there are illustrations of a drum, an acoustic guitar, a trumpet, a xylophone, a flute, and a CD. On the left and right sides, there are vertical columns of musical notes, including treble clefs and eighth notes.

Hypothesis and Results

Complete the table to record whether the materials allowed sound waves to pass through with a “high”, “medium” or “low” volume.

What factors do you think will effect the results?

Which material do you think will allow the highest volume?

Which do you think will allow the lowest volume?

The slide features a decorative border with musical instruments (drum, guitar, trumpet, pan flute, CD) at the top and bottom, and musical notes on a yellow background on the left and right sides.

Conclusion

- *What did you find out?*
- *Why do think this was the case?*
- *Was your hypotheses correct?
Explain why?*

Main Task

An investigation to find if the quality and volume change when sound travels through different materials?

Prediction

Method (What will we do)

Equipment (what will we need)

Fair test (What we will keep the same)

Hypotheses (What do we think is going to happen and why we think this)

Results

| Material | High Volume (Loud) | Medium Volume | Low Volume (Quiet) |
|-----------------|---------------------------|----------------------|---------------------------|
| No material | | | |
| Cotton sock | | | |
| Metal foil | | | |
| Paper towel | | | |
| Cotton wool | | | |

Conclusion

