

Perton Primary Academy Knowledge Organiser

Science Topic:

Sound

Year Group:

Year 4

Overview:

Children will learn that sounds are vibrations that travel from sound sources, such as a person's vocal chords, musical instruments or pieces of machinery, through a solid, liquid or gas to the ears. They will explore the parts of instruments that vibrate to make sound and investigate the pitch, volume, distance and direction of sound. They will learn how sound waves are made and how they travel from a sound source to the ear. They will carry out research to find the answer to the question, 'How do we hear sounds?' and use diagrams and words, such as sound waves, vibrate, pinna, ear canal, eardrum, ossicles, cochlea and cochlear nerve, to record their findings. They will investigate the most effective ways to muffle sound and identify scenarios when muffling sound is important to prevent hearing damage. They will plan an investigation to learn how the volume of sound changes as they move away from a sound source and use a sound meter to measure the volume of sound. They will identify low and high-pitched sounds and then follow instructions to investigate the different ways the pitch of a sound can be changed. They will complete their learning by asking a scientific question about an aspect of sound that interests them before planning and carrying out an investigation to find the answer.

Opportunities to develop working scientifically:

- Identify how sounds are made, associating some of them with something vibrating.
- Recognise that vibrations from sounds travel through a medium to the ear.
- When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound

Key vocabulary:

- Cochlea
- Eardrum
- Medium
- Ossicles
- Particle
- Vibrate
- Pitch

wave. Sound waves travel through a medium, such as air or water, to the ear.

- Sound is energy produced by vibrations made by a sound source. Sound travels a lot more slowly than light.

There is no sound in space because there is no medium for sound to travel through.

Volume is the loudness of a sound and is measured in decibels (dB). Pitch is how high or low a sound is and is measured in hertz. Loud or continuous noise can damage hearing. Hearing can be protected by ear defenders that muffle the sound.

- Explain how sounds are made and heard using diagrams, models, written methods or verbally.

Prior Learning:

N/A

Future Learning:

Vibrations - Electrical circuits and conductors

Key knowledge:

This project teaches children about sound, how sound is made and how sound travels as vibrations through a medium to the ear. They learn about pitch and volume and find out how both can be changed.

Memorable Learning Experiences:

Ask the children, 'What do you know about sound?' and take

Assessment Questions:

I can define the word "sound"
I can explain how we hear sound

their suggestions. Introduce the children to the topic by sharing the [Sound video](#). Discuss the key learning and the meaning of any unfamiliar vocabulary.

I can define the words volume and pitch

I know sound units are called decibels (dB)