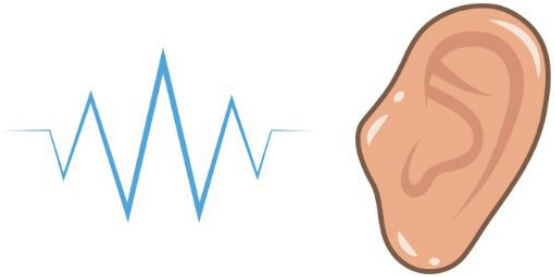
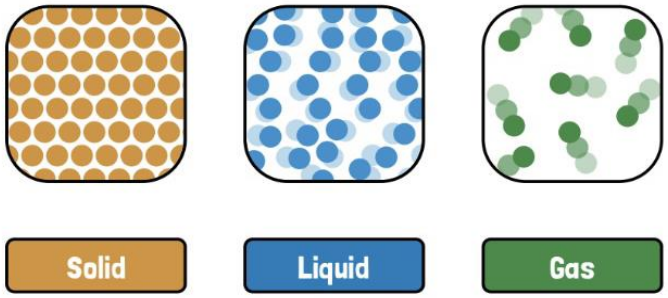
Important Information

Sounds are made when objects vibrate. The vibration makes the air around vibrate, and the air vibrations enter your ear. You hear the vibrations as sounds. You cannot always see the vibrations, but if something is making a sound, a part of it is vibrating. The vibrations travel in all directions and they don't travel in straight lines.





The vibrations caused by the sound can travel through the air (gas) but can also travel through liquids and solids.

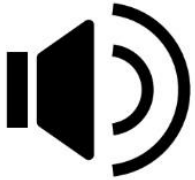
Sounds can be high or low. We call this the pitch. The pitch of a sound is how high or low the sound is. A high sound has a high pitch and a low sound has a low pitch. The pitch of a sound is due to how many times the object vibrates each second. The higher the number of vibrations the higher the pitch. We can change the pitch of the sound we make on different instruments.

Sounds can also be loud or quiet.

We call this the **volume** or loudness of the sound.

Loudness is the amount of energy in the sound. The energy creates different sized vibrations. If you hit a drum hard, you give it lots of energy and the vibrations will be bigger than if it was hit gently. Bigger vibrations cause louder sounds.

Loudness is measured in **decibels** (dB).



Key Vocabulary

ear – the organ used to hear

noise – a sound – usually unwanted or unpleasant

pinnae – the outside flaps of the ear which help 'catch' the vibrations

pitch – how high or low a sound is

sound – vibrations that travel through the air and other mediums and can be heard

vibration – very quick movements

volume – how loud or quiet a sound is

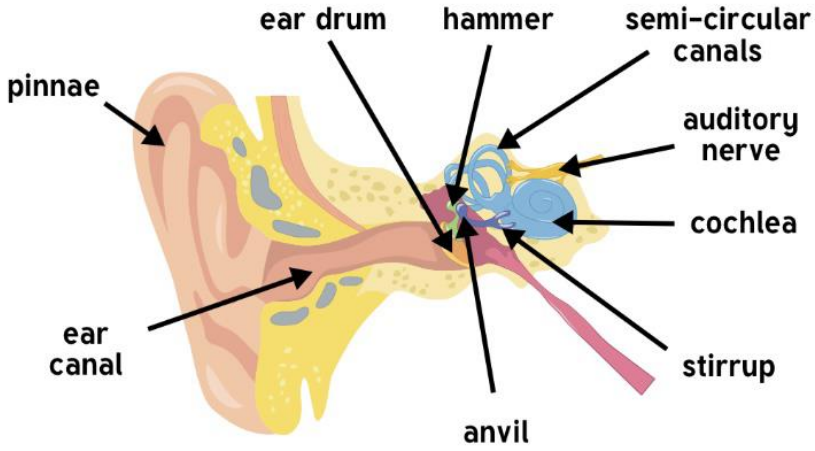
Interesting Fact!

If you have bigger pinnae, you can hear sounds louder. Try it out! Cup your hands round your ears to make bigger pinnae! Do sounds sound louder?

Did you know?

The stirrup is the smallest bone in the entire human body.

The Ear



Progression of skills in Science: Working Scientifically

Year 4

Throughout the year, pupils will:

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- gather, record, classify and present data in a variety of ways to help in answering questions
- identify differences, similarities or changes related to simple scientific ideas and processes
- report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- use straightforward scientific evidence to answer questions or to support their findings
- use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Year 5

Throughout the year, pupils will:

- plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- identify scientific evidence that has been used to support or refute ideas or arguments
- report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- use test results to make predictions to set up further comparative and fair tests

Sound (Y4/5)

Within this unit, children will be able to:

- identify how sounds are made, associating some of them with something vibrating
- recognise that vibrations from sounds travel through amedium to the ear
- find patterns between the pitch of a sound and features of the object that produced it
- find patterns between the volume of a sound and the strength of the vibrations that produced it
- recognise that sounds get fainter as the distance from the sound source increases
- answer the key question: Describe what happens to sound when it is produced from a source. Explain.