# Knowledge Organiser Science Year 4 Spring

## *Sound and vibrations*

St Elizabeth's Catholic Primary School
*"Love one another as I have loved you"*

### Prior knowledge

**Year 1**

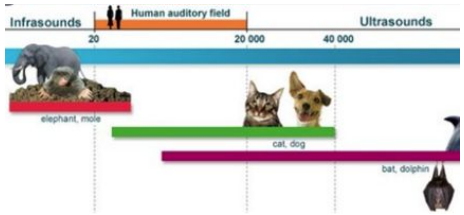
- ❏ How to identify, name, draw and label the basic parts of the human body.
- ❏ The part of the body associated with each sense.
- ❏ How to describe the simple physical properties of a variety of everyday materials.

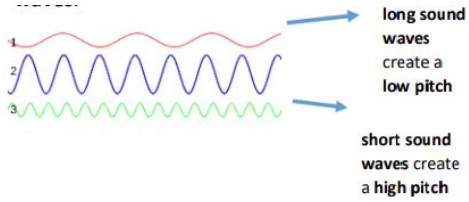
### Key words

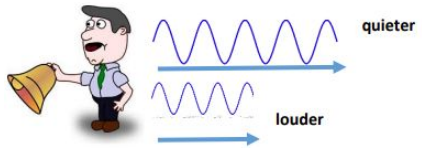
**Amplitude:** A measure of the strength of a sound wave.
**Decibel (dB):** A measure of how loud a sound is.
**Emit:** To let out.
**Frequency:** A measure of how many times per second the sound wave cycles.
**Hearing range:** Humans can hear sounds in the range 20-20,000 Hz.
**Hertz (Hz):** A measure of the pitch (frequency) of the sound.
**Medium:** Something that makes possible the transfer of energy from one location to another.
**Pitch:** How high or low a note (sound) is.
**Power:** Is energy; the more energy a sound wave has, the louder it will be and the further it will travel.
**Sound:** A vibration that travels through the air and is heard by the ear.
**Sound source:** An object that makes a sound is the source of the sound.
**Sound waves:** Invisible waves that travel through air, water, and solid objects as vibrations.
**Transmit:** To pass from one place or person to another.
**Travel:** How something moves around.
**Vibration:** When something moves up or down, backwards and forwards or from side to side repeatedly and quickly. Vibrations make sounds.
**Volume:** How loud or quiet a sound is.

### Scientific skills developed in this topic

- ❏ 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.
- ❏ Gather, record, classify and present data in a variety of ways to help in answering questions.
- ❏ Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, tables.
- ❏ Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- ❏ Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- ❏ Identify differences, similarities or changes related to simple scientific ideas and processes.
- ❏ Use straightforward scientific evidence to answer questions or to support findings.




### Knowledge and skills covered in this topic

- ❏ Children will understand that sound is a result of vibrations.
- ❏ Children will know that vibrations from sounds travel through mediums to the ear.
- ❏ Children will know that an insulating material reduces the amount of vibrations that pass through it and this can be used to protect the ears from damaging sounds.
- ❏ Children will know that different materials provide different amounts of insulation against sound.
- ❏ Children will know a variety of ways to change the pitch or volume of a sound.
- ❏ Children will know that quicker vibrations cause higher-pitched sounds and slower vibrations cause lower-pitched sounds.
- ❏ Children will know that stronger vibrations cause louder sounds and weaker vibrations cause quieter sounds.
- ❏ Children will know that sounds get fainter as the distance from the sound source increases.