Science
Year 4

Cycle B - Autumn 2
Sound - Sirens

In this unit: Pupils will discover what sound is and how we hear them. They will investigate different sources of sound and measure pitch and volume. They will explore a range of different musical instruments before creating a 'siren' to warn off Grendel (an Anglo-Saxon mythical beast).

Children should already know:

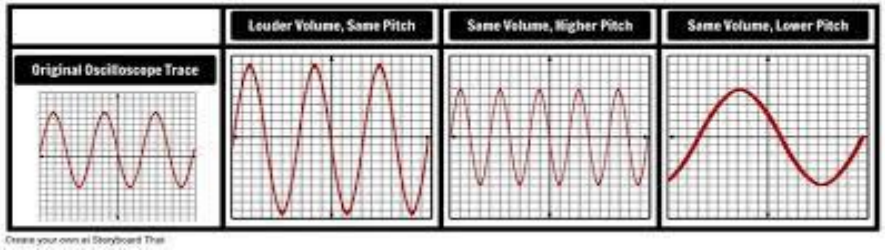
- that hearing is one of the five senses.
- that we use our ears to hear.
- that sounds can be made using musical instruments.
- that different musical instruments are played in different ways to create sounds.

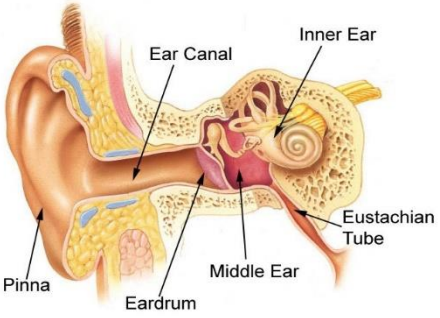
At the end of this unit, children will know:

- that a sound is a thing that can be heard and the object which makes a sound is called the source.
- that sounds are made when subjects vibrate.
- that if an object is making a sound, part of the object is vibrating even if you cannot see it.
- that sound travels in waves through a medium – solid, liquid or gas.
- that we hear sounds when sound waves travel to our ears and makes the ear drum vibrate.
- that sounds can be changed through pitch and volume.
- that we measure sound using an oscilloscope which shows amplitude, decibels and frequency.

Pupils could investigate:

- how sound is made louder or quieter.
- how the length of the string on an instrument affects the pitch of the sound made.
- how sounds are changed.
- how sound travels differently through solids, liquids and gases.
- which material is the best absorber of sound.





Key Vocabulary	
absorption	when material takes in sound energy
amplitude	a measure of the strength of a sound wave
blow	to push air into something
decibel	a measure of how loud a sound is
echo	the reflection of a sound that is heard
energy	the power given from a source
frequency	the speed of a soundwave
instrument	an object or device used for producing musical sounds
insulation	a material used to stop sound travelling
medium	an object or liquid, solid or gas
oscilloscope	a device used to measure sound
pitch	how high or low a sound is
pluck	to quickly pull and release a string
reflection	when the direction of a sound wave changes after striking a surface
soundwave	a wave which moves through the air when a sound is made carrying the sound to our ears
source	where something comes from
tone	a sound which can be recognised
transmit	to pass from one place or person to another
vibration	invisible waves that move quickly
volume	how loud or quiet something is
wavelength	the length of a soundwave

Key Questions:

- is there a link between pitch and volume and the object that produces it?
- how does sound travel through different a solid, liquid and gas?
- which material is the best absorber of sound? Why?
- does the length of the string in an instrument affect the sound? How?