

Knowledge Organiser - Sound (Year 4)

vibration

A quick movement back and forth

sound wave

Vibrations travelling from a sound source

volume

The loudness of a sound

amplitude

The size of a vibration. A larger amplitude = a louder sound.

pitch

How high or low a sound is

ear

An organ used for hearing

soundproof

To prevent sound from passing through

absorb sound

To allow sound to pass through

particles

Solids, liquids and gases are made up of particles. They are so small we are unable to see them.

vacuum

A space where there is nothing. There are no particles in a vacuum.

eardrum

A part of the ear which is a thin, tough layer of tissue that is stretched out like a drum skin. It separates the outer ear from the middle and inner ear. Sound waves make the eardrum vibrate.

What is sound?

Sound is a type of energy. Sounds are created by vibrations. The louder the sound, the bigger the vibration



Amplitude

The size of the vibration is called the amplitude. Louder sounds have a larger amplitude, and quieter sounds have a smaller amplitude.

Loud

Quiet

Pitch

Pitch is a measure of how high or low a sound is. A whistle being blown creates a high-pitched sound. A rumble of thunder is an example of a low-pitched sound.

Slower vibrations = lower pitch

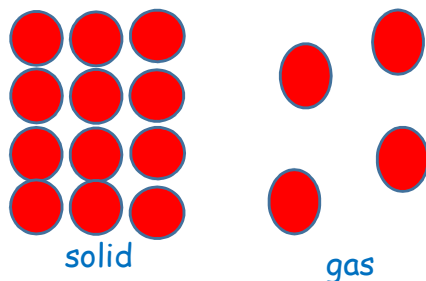
Faster vibrations = higher pitch

You can change the pitch of a sound in different ways depending on the type of instrument you are playing. For example, on a xylophone, striking the smaller bars with a beater causes faster vibrations and so a higher pitched note. Striking the larger bars causes slower vibrations and produces a lower note.

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How does sound travel?

Sound can travel through solids, liquids and gases. Sound travels as a wave, vibrating the particles in the medium it is travelling in. Sound cannot travel through a vacuum.



Sound energy can travel from particle to particle far easier in a solid because the vibrating particles are closer together than in other states of matter

How do we hear sounds?

When an object gives off sound it vibrates.



The vibrations bump into air molecules.



A wave of these vibrations travel to the eardrum.



The bones amplify the vibration and send it to the cochlea



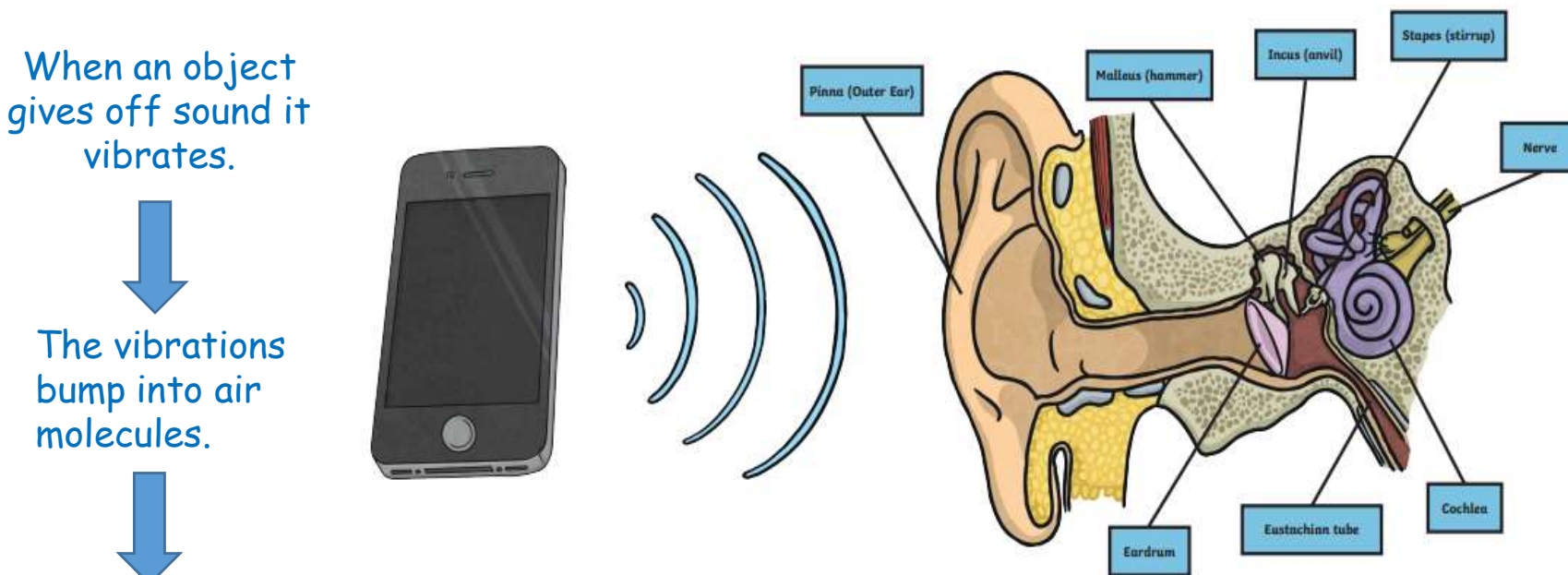
The cochlea is filled with fluid and tiny hairs.



The hairs bump into each other and an electrical impulse is created.



The impulse sends a message to the brain via the auditory nerve and is understood as sounds.

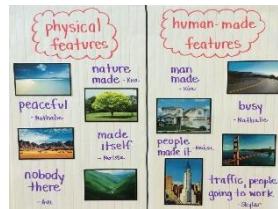


Key Vocabulary

- country** An area defined by its people, culture, language, geography and government.
- continent** A large area of land divided into countries.
- city** A large town.
- region** A region is an area of land that has common features.
- population** The number of people that live in a particular place.



human geography Anything in an area that is not naturally occurring and that has been shaped by people.



physical geography Anything in an area that is naturally occurring.

climate The usual or average weather conditions over a long period of time.

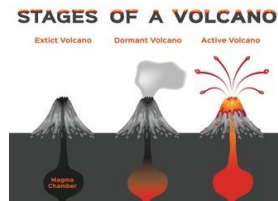
dormant Something inactive, sleeping or quiet.

active Either erupting or is likely to erupt in the future.

magma Extremely hot, liquid rock.

tectonic plates The earth's crust is made up of large areas called tectonic plates that join together.

eruption To suddenly burst out causing lava to explode out of the earth's surface.



All about Europe...



- There are 51 countries in Europe and 742 million people living there which is 10% of the world's population.
- The continent is in the northern hemisphere with the Arctic Ocean to the north, the Atlantic Ocean to the west and the Mediterranean Sea to the south.
- Eastern Europe crosses from 70°N - 40°N.
- The highest mountain is Mount Elbrus in Russia (5642m).
- The longest river is the Volga river in Russia (3693 km).
- There are many different landscapes, climates, physical and human characteristics all within this area.

Types of Geography

Physical Geography:

Oceans, lakes, mountains, rivers, weather and climate patterns.

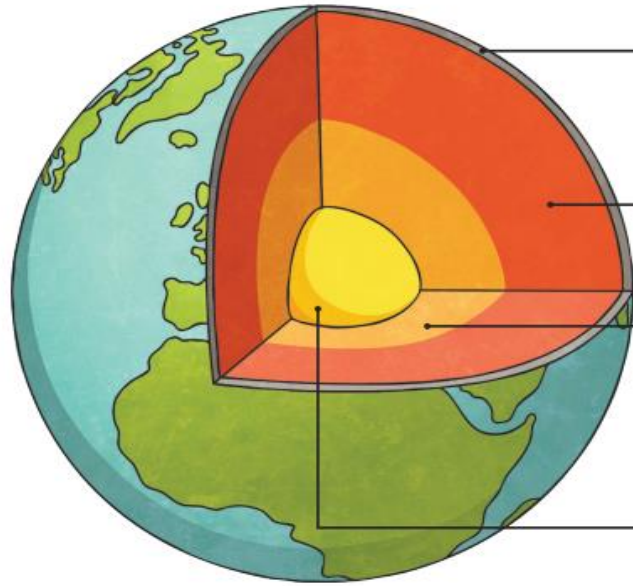


Human Geography:

Country/region boundaries, buildings, roads, language, religion, government.



Layers of the Earth



Crust

Thin outer layer. Hard rock. 10km-90km thick.

Mantle

Extremely hot rock that flows. 3000km thick.

Outer core

Iron and nickel. Mostly liquid with some rocky parts. 4000 °c.

Inner core

Iron and nickel. Hottest layer at over 5000 °c

Volcanoes

- Volcanoes are made when pressure builds up inside the earth.
- This affects the earth's crust causing magma to sometimes erupt through it.
- Active volcanoes have erupted in the last 10,000 years.
- Dormant volcanoes haven't erupted in the last 10,000 years but may erupt again.
- Extinct volcanoes aren't expected to erupt again.



Earthquakes

- Earthquakes are caused when the earth's tectonic plates suddenly move.
- Most earthquakes occur near the tectonic plate boundaries.
- Earthquakes can cause lots of damage to roads, buildings and property.

