

# YEAR 4 SOUND KNOWLEDGE ORGANISER

## KEY VOCABULARY AND SPELLINGS

**Vibrations** – moving (wobbling) very quickly back and forth.

**Pitch** – how high or low a sound is

**Volume** – how loud or quiet a sound is

### **Anvil, stirrup and**

**Hammer** – the three small bones in the ear.

**Cochlea** – in the inner ear, translates vibrations to electrical signals.

**Ear drum** – a thin sheet in the ear.

**Soundproofing** – a way to reduce the movement of sound.

**Sound wave** – how sound/vibrations travel through the air.

## HOW IS SOUND MADE?

**Vibrations** - Sounds are made when something vibrates. By placing rice on a drum, you can see the vibrations when you hit the drum, as well as hearing the sound.

## HOW DO WE HEAR SOUND?

- **Sound can travel through solids, liquids and gases.**
- Like light, sound travels through the air in waves.
- Sound is made by air molecules vibrating.
- When vibrations are made (e.g. when you clap your hands) the air around the object vibrates. This is the air molecules vibrating.
- The vibrations pass on from air particle to air particle until the ones near your ear vibrate.
- When air molecules inside the ear vibrate, they shake tiny hairs on the insides of the ears. The hairs are connected to nerves under the skin. These nerves send messages to your brain to tell you that you heard a noise.
- Sound travels much slower than light, whether in air or in water. You often hear things after you see them, for example you see the lightning before you hear the thunder.

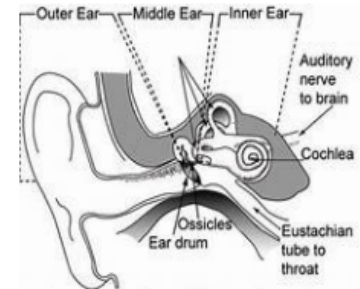
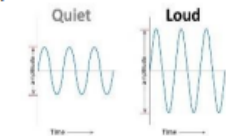


Figure 1: The Outer, Middle, and Inner Ear

**VOLUME** - The louder the sound the bigger the vibration. The size of the vibration is called the amplitude.

Quieter sounds have a smaller amplitude and louder sounds have a bigger amplitude.



**PITCH** - Pitch is how high or low a sound is.



On a stringed instrument: shorter, thinner and tighter strings produce a higher pitch.

On a wind instrument: shorter columns produce a higher pitch.