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Sound: Qualities of sound



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Sound: qualities of sound

1. Sound

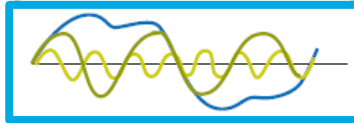


How is it produced

An object vibrates



A sound wave is produced

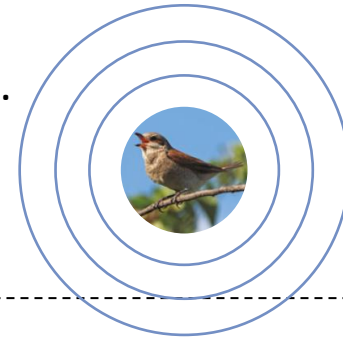


The sound wave reaches our ears



How it propagates

- Sound travels through **the air** at 340 m. per second.
- It travels faster through water and solid objects (wood, iron...).



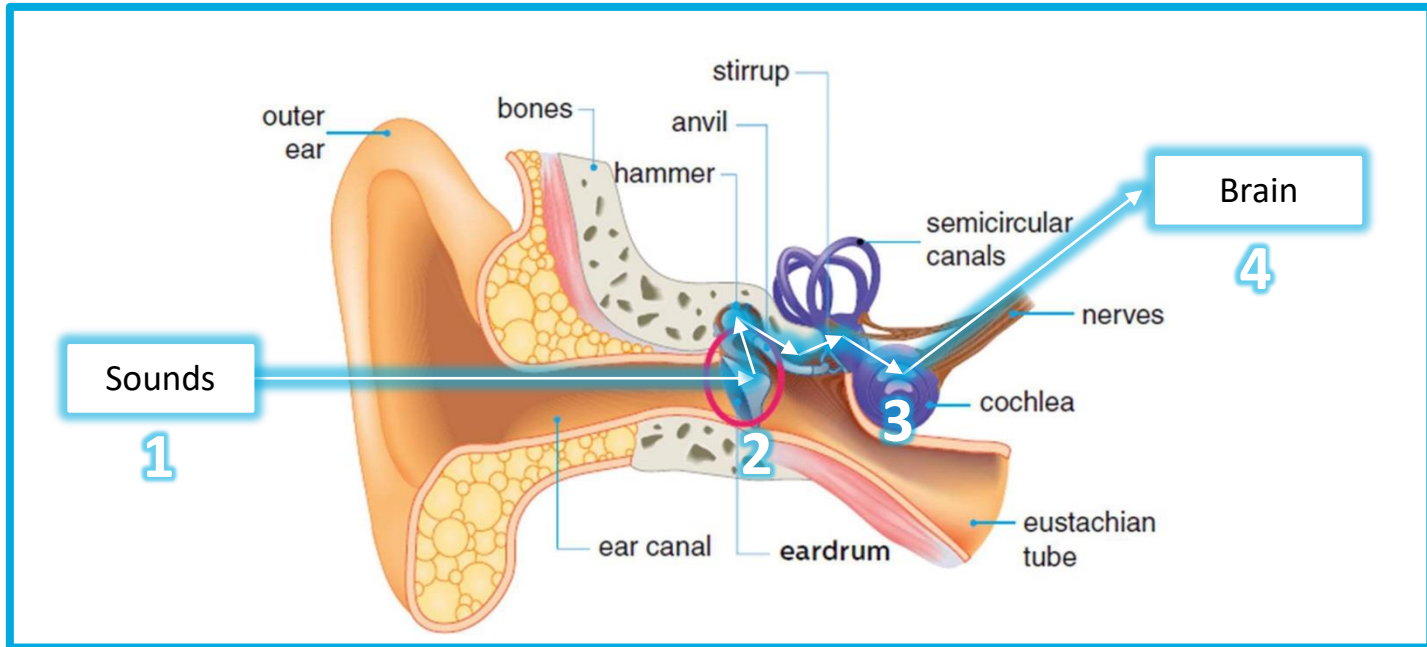
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Sound: qualities of sound

1. Sound



How we hear



1. Sound waves enter the ear.
2. Waves make the eardrum vibrates.
3. The ear transforms this movement into nerve impulses.
4. Nerve impulses reach the brain, which interprets them as sounds.

Difference between sound and noise

Sound

- **Regular or periodic** vibrations.
- **Pleasant** feeling.



Noise

- **Irregular** vibrations.
- **Annoying** feeling.



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Sound: qualities of sound

2. Silence



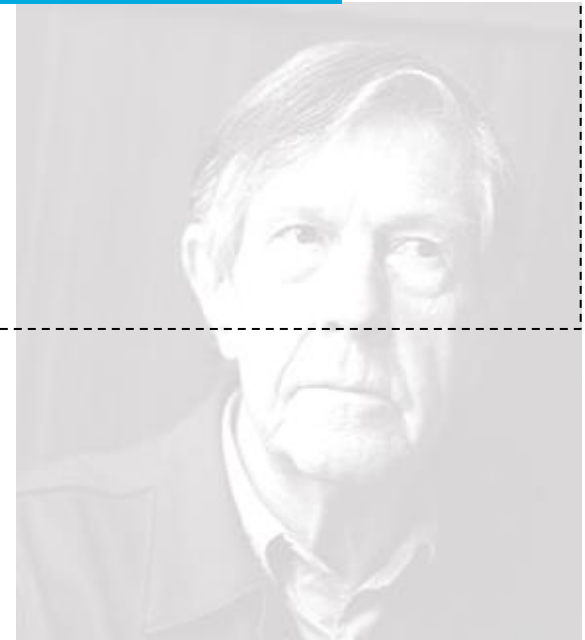
What is it?

- Silence is the absence of sound.
- It is the blank space in music.

What is it for?

- It is as important as sound.
- It is the previous condition to enjoy music.
- It serves as a break.
- It is a resource of great expressive energy.
- It gives structure to the musical discourse.

Absolute silence does not exist.
Even if we could isolate ourselves completely from other sounds, we would still hear our own body's inner sounds.



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Sound: qualities of sound

3. Qualities of sound

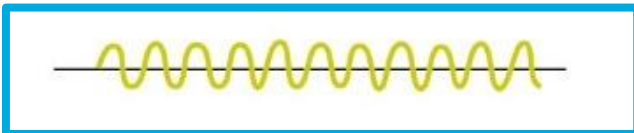


Pitch

- **High or low.**
- It depends on the wave **frequency**.
 - Speed of vibration.
 - It is measured in hertzes (Hz).



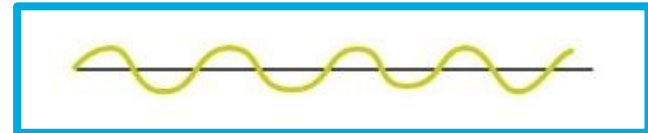
low
(slow vibration)



high
(fast vibration)

Duration

- **Long or short.**
- It depends on the wave **persistence**.



long
(it vibrates a long time)



short
(it vibrates a little time)

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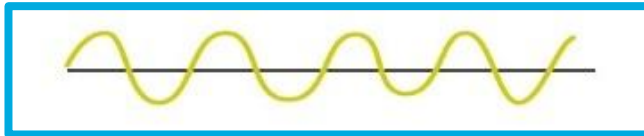
Sound: qualities of sound

3. Qualities of sound

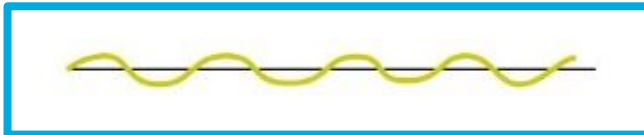


Intensity

- **Loud** or **soft**
- It depends on the **wave amplitude**.
- It is measured in decibels (dB).



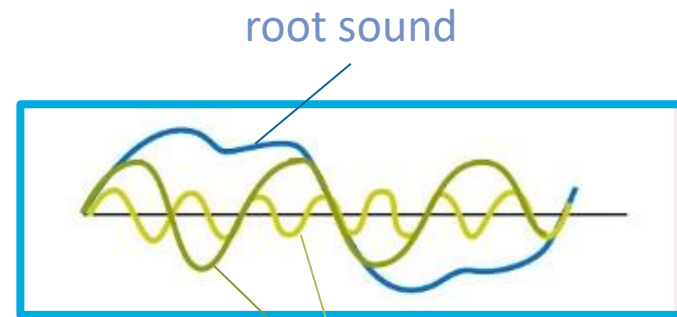
loud
(more amplitude)



soft
(less amplitude)

Timbre

- It allows us to distinguish **voices** and **instruments**.
- It depends on the mixture of root and **harmonic** sounds.



root sound

harmonics

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Sound: qualities of sound

4. Alternative graphic notation



Musical notation

- It represents the **qualities of sound**.
- It can be **conventional** or **alternative**.
- Symbols or drawings are used instead of notes.

Pitch



low



high



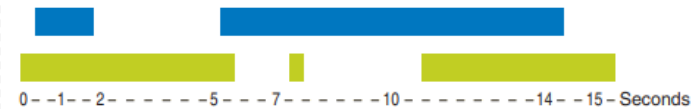
Duration



long



short



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Sound: qualities of sound

4. Alternative graphic notation



Musical notation

- Represents the qualities of sound.
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Intensity



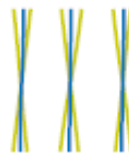
loud



soft



Timbre



guitar

recorder



hand drum



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Sound: qualities of sound

To sum up



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Sound → is produced when an **object vibrates**. That movement travels through sound waves until it reaches our ears . It travels through air and other mediums like water or solid objects.

2

Noise → **Irregular vibrations** without a specific pitch.

3

Silence → **is as important as sound**. It is necessary to enjoy music. Gives structure to the musical discourse and has a great expressive force.

4

Qualities of sound → **pitch, duration, timbre and intensity**.

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Qualities of sound

To sum up

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Pitch → high and low sounds. It depends on **wave frequency**.

6

Duration → short and long sounds. It depends on **wave persistence**.

7

Intensity → loud and soft sounds. It depends on **wave amplitude**.

8

Timbre → voices and instruments. It depends on the mixture of root and harmonic sounds.

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Musical notation → graphic representation of qualities of sound.
Alternative graphic notation → more free and expressive notation.