



What is Infrasound?

Discovering Sounds We Can Feel
but Not Hear

Learning Goals

By the end of this lesson, you will be able to:

- Explain how sound travels through the air as invisible vibrations.
- Identify the human hearing range and where infrasound fits in.
- Understand what Hertz (Hz) means.
- Distinguish between sounds we hear and sounds we might feel.

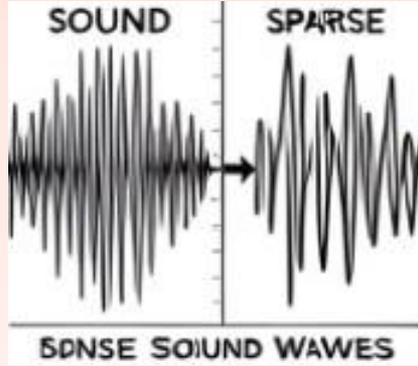


Key Vocabulary



Vibration

Sound: rapid particle vibration.



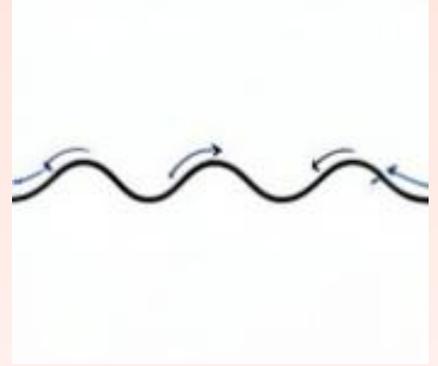
Frequency

How fast a sound wave vibrates per second.



Hertz (Hz)

The unit used to measure frequency or sound pitch.



Wavelength

The distance between the peaks of sound waves.



Sound is Invisible Movement

Imagine you are standing in front of a **massive speaker** at a concert. You can't see the sound coming out, but you can feel your chest thumping, right?

That's because sound is actually **energy** moving through the air. It acts like an invisible push that travels from the source to your ears.

How Sound Travels

The Vibration

An object moves back and forth very quickly, like a drum skin being hit.



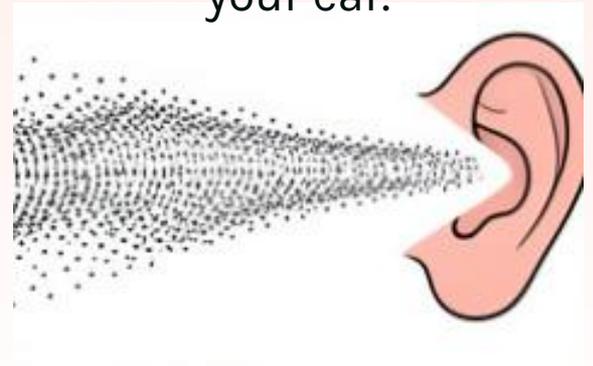
The Push

The vibrating object pushes against the air particles next to it.



The Wave

Those air particles bump into their neighbours, creating a wave that travels to your ear.



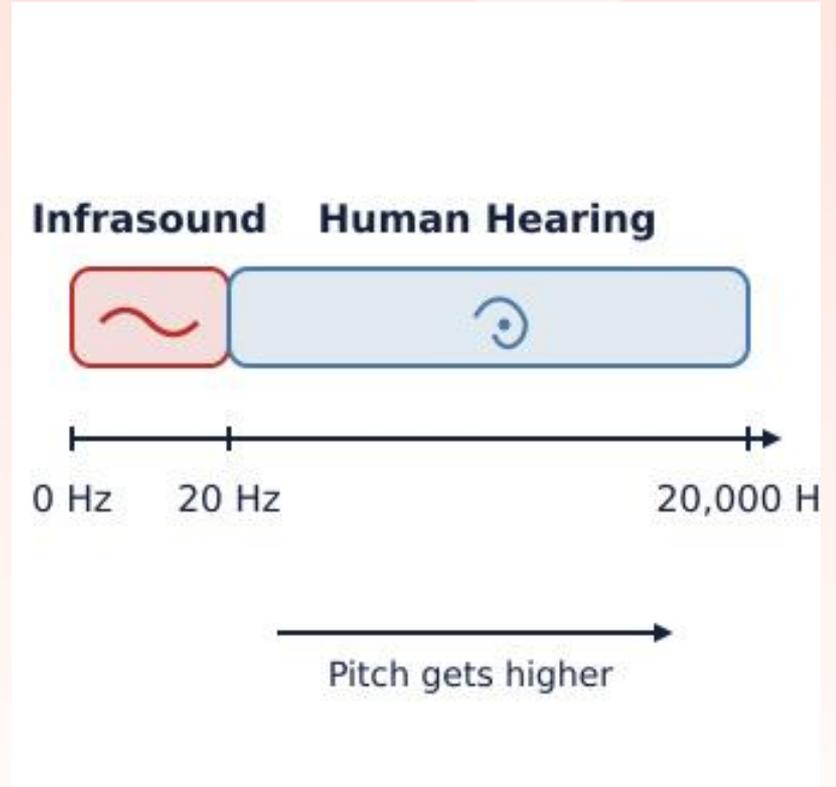
Seeing Sound



The Human Hearing Range

Our ears are amazing, but they have limits!

- **High Pitch:** We can hear sounds up to about **20,000 Hz** (like a whistle).
- **Low Pitch:** We can hear sounds down to about **20 Hz** (like a low rumble).
- **Below 20 Hz:** This is the mystery zone where **Infrasound** lives.



High vs. Low Frequency

High frequency sounds have **short wavelengths** and vibrate very fast. Think of a **bird chirping** or a **squeaky toy**.

High Frequency (Fast)



Short wavelength

Low Frequency (Slow)



Low frequency sounds have **long wavelengths** and vibrate slowly. Think of a **thunderstorm rumble** or a **truck engine**.

True or False

Infrasound is a sound that travels faster than the speed of light.



TRUE



FALSE

Answers on the next slide...

True or False



Infrasound is a sound that travels faster than the speed of light.



FALSE

Sound is much slower than light! Infrasound is just sound with a very low frequency (slow vibration), below 20 Hz.



What is Infrasound?

Infrasound is sound that is **too low** for our ears to hear. It vibrates at fewer than **20 cycles per second (20 Hz)**.

Even though you can't hear it, the energy is still there! Because the waves are so long, they can travel huge distances without getting weaker.

Discuss!



Think About It

If you stood right next to a huge waterfall or a rocket launch, you might 'feel' the sound in your chest rather than hear it clearly with your ears. Why do you think that happens?

Discuss!



You might have said...

The sound waves are so big and powerful that they vibrate your body, not just your eardrums.

This physical sensation is caused by low-frequency energy.
Infrasound can literally shake us!

Activity: Sound Detectives



Close your eyes for a moment! I am going to play three different mystery sounds. Your job is to be a detective. For each sound, decide if it is:

1. **High Pitch** (like a whistle)
2. **Low Pitch** (like a rumble)
3. **Silent but felt** (can you feel it in your feet or chest?)

Fill in the blanks

Sound travels through the air as _____. The unit for measuring frequency is _____. Humans cannot hear sounds below 20 Hz, which are called _____. These low sounds can sometimes be _____ rather than heard.

Word bank 

vibrations, Hertz, infrasound, felt, light, litres, ultrasound, seen

Answers on the next slide...

Fill in the blanks



Sound travels through the air as **vibrations**. The unit for measuring frequency is **Hertz**. Humans cannot hear sounds below 20 Hz, which are called **infrasound**. These low sounds can sometimes be **felt** rather than heard.

Word bank 

vibrations, Hertz, infrasound, felt, light, litres, ultrasound, seen

Summary

Today we learned that sound is all about movement!

- Sound is invisible **vibration** moving through the air.
- We measure sound speed in **Hertz**.
- Our ears hear between 20 Hz and 20,000 Hz.
- **Infrasound** is below 20 Hz—we feel it more than we hear it!

