

كلية العلوم

القسم : الفيزياء

السنة : الثانية



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المادة : لغة تخصصية ١

المحاضرة : الثالثة / نظري /

{{{ A to Z مكتبة }}}  
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كلية العلوم ، كلية الصيدلة ، الهندسة التقنية

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## What are sound wave ?

A sound wave is a longitudinal wave , the particles of a medium vibrate in same direction that the wave travel.

## What determines pitch ?

**Pitch** is how high or low you think a sound is . Pitch depends on the frequency and wavelength of a sound wave .

**A loudness** of the sound is a measure of how well a sound can be heard .One way to increase loudness is with an amplifier . The unit used to express loudness is the decibel ( db ) .

## What affects the speed of sound ?

There are two main factors : The medium and the temperature .

## How do sound and matter interact ?

1 – Matter can reflect sound waves .

2 – Matter can absorb sound wave .

## What is an echo ?

It is a reflected sound wave . The use of reflected sound wave to find objects in their path is called **echolocation** . Sonar is a type of electronic echolocation that uses echoes to locate objects underwater .

Echoes are used in medicine .

Ultrasound procedures use ultrasonic sound waves to detect and make images

of organs such as the heart and bladder and to check how a fetus is growing

**Resonance** : It happens when sound wave matches the natural frequency of an object and causes to vibrate . It will happen wherever an object vibrating at or near the natural frequency of a second object causes the second object to vibrate . It is important for making music in wind instruments . Resonance can occur in buildings , towers , and bridges . For examples , rhythmic marching can create resonance and cause a bridge to sway or even collapse .

**How is sound recorded and played back?**

**1 – On compact discs , or CD .**

**2 -** In computers , sound can also be stored as digital files .

**How do sound wave interact with each other ?**

**1 –** Through constructive interference :  
The waves overlap and combine to form a wave with a larger amplitude .  
constructive interference can cause very loud sound .

**2 –** Through destructive interference : In destructive interference , waves combine to form a wave with smaller amplitude . The sound will be softer because the amplitude is decrease .



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