

Edexcel IGCSE Physics

3 - Sound Waves (Physics Only)

Flashcards

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What is the type of sound waves?



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Longitudinal



What is the range of frequencies that humans can hear? (Audible Range)



What is the range of frequencies that humans can hear? (Audible Range)

Between 20 - 20000 Hz



How would you measure the velocity of sound in air?



How would you measure the velocity of sound in air?

- Echo clap method - clap a long distance from a wall, record the time taken to hear the echo. Record the distance travelled, which is twice the distance between the wall and the person. Use $\text{speed} = \text{distance} / \text{time}$ to work out the speed.
- Make a sound and record how long it takes to hear it over a large distance (ie larger than 50m). Use an electronic timer or data logger to record the time. Use the equation $\text{wave speed} = \text{distance} / \text{time}$ to find the speed.
- Using two microphones and a data logger. The sound is made and picked up by both microphones which are placed in different places. The data logger records the time taken between each microphone to hear the sound. This can be used to calculate the speed.



How does sonar work?



How does sonar work?

When ultrasound waves are emitted they reflect off boundaries and their echoes are detected. The speed of the ultrasound is known and also the time it takes to detect the echoes. The equation $\text{distance} = \text{speed} \times \text{time}$ is used to find the distance between the ultrasound emitter and the boundary (the distance calculated would be double the actual distance as the sound has travelled there and back).



How does ultrasound scanning work?



How does ultrasound scanning work?

An ultrasound wave is sent into the patient's body. It passes through the body and reflects off the organs and tissue. The device then uses the reflected ultrasound waves to produce an image of the foetus. Ultrasound is safe and therefore does not damage cells.



Which property of sound waves describes the loudness of the sound?



Which property of sound waves describes the loudness of the sound?

Amplitude

-Higher amplitude means louder sound



Which property of sound waves describe the pitch of the sound?

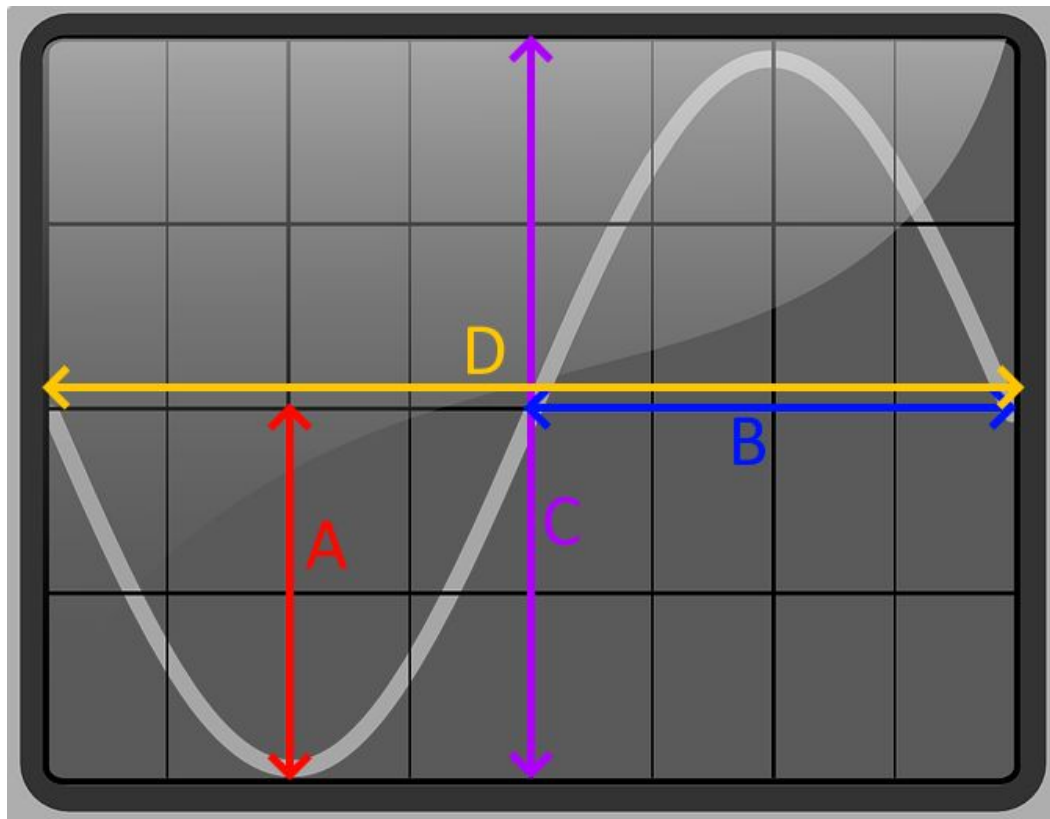


Which property of sound waves describe the pitch of the sound

Frequency

-Higher frequency means higher pitch.



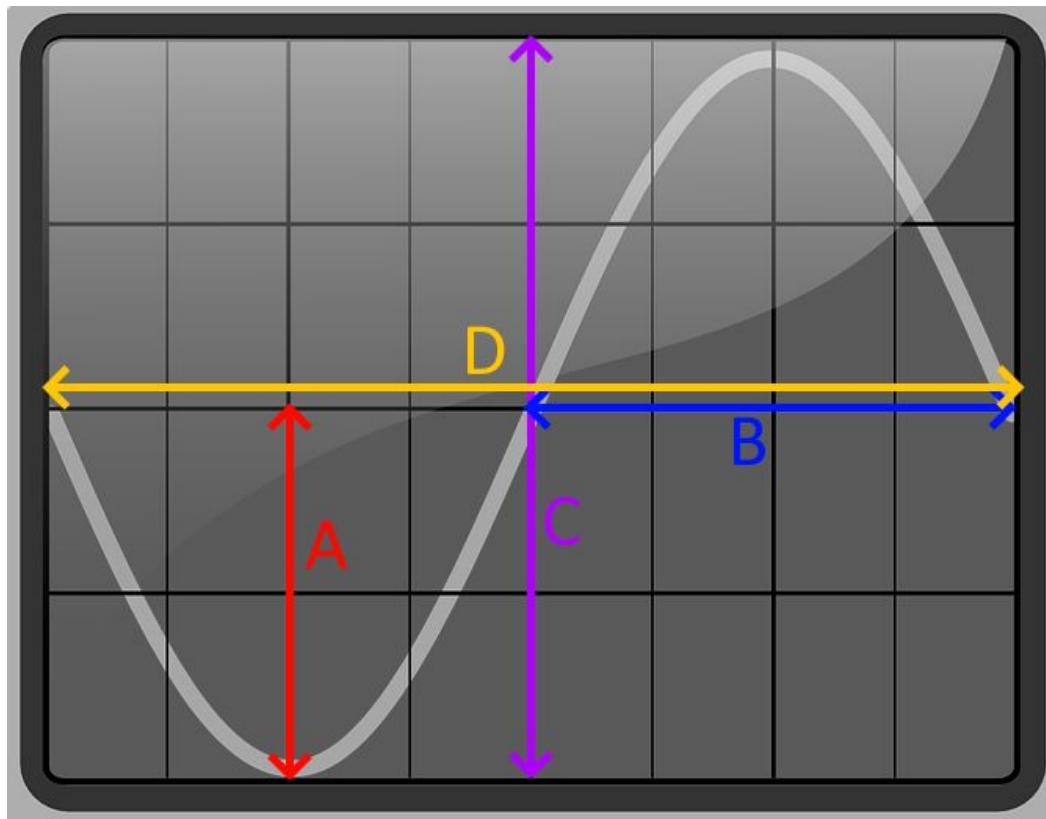


Which letter represents

a. Wavelength

b. Amplitude





Which letter represents

a. Wavelength : D

b Amplitude : A

