

ELEMENTS OF PHYSICS
WAVES: SOUND AND ELECTROMAGNETISM

Video Quiz

Directions: Answer the following true or false, or fill in the blank with the correct word to make it true.

1. Waves transport the energy of disturbances. T_____ F_____.
2. The number of wave cycles in a given unit of time is called the wave _____.
3. The speed of the wave is called its _____.
4. Sound waves are longitudinal waves. T_____ F_____.
5. Longitudinal waves never need a medium to transport the energy. T_____ F_____.
6. Sound travels faster in the air than in the ground. T_____ F_____.
7. Visible light is transported by _____ waves.
8. The Doppler effect only applies to sound waves. T_____ F_____.
9. Echoes of sound and mirror images are examples of refracted waves. T_____ F_____.
10. All waves can be distorted, deflected, or changed. T_____ F_____.

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Post-Test

Vocabulary

Directions: Fill in the blank with the appropriate term from the list below.

amplitude	frequency	reflected	velocity
Doppler	height	refracted	vibrations
echo	longitudinal	standing wave	wave
electromagnetic	medium	transverse	wave height
explosions	pitch	vacuum	wavelength

- The energy of sound, explosions, and earthquakes are all transported by _____ waves.
- The energy of visible light is transported by electromagnetic waves, which are _____ waves.
- Sound echoes are _____ waves.
- The _____ effect occurs when the pitch of the sound is higher as the source approaches the listener and is lower when it retreats away from the listener.

True or False

Directions: Fill in the blank with true or false. If the statement is false, change it to make the statement true. Rewrite the true statement on the lines provided.

- _____ Wavelength is the number of wave cycles in a given unit of time.
- _____ Sound waves need a medium to be propagated.
- _____ Amplitude is the speed of the wave.
- _____ Electromagnetic waves cannot travel through a medium.
- _____ Electromagnetic waves are only energy and have no matter.

Essay Section

Directions: Answer the following questions in complete sentences. Use the back of this page or a separate sheet of paper if you need more space to complete your answer.

- Why does sound travel more quickly in water than in air?
- What are photons?
- Explain the similarity between echoes of sound and images in a mirror.