

Name _____

Sound Waves Unveiled: Understanding Frequency and Wavelength

Short Answer Key

1. High-frequency sound waves have a high pitch, while low-frequency sound waves have a low pitch. High-frequency waves vibrate rapidly, producing a higher-pitched sound, whereas low-frequency waves vibrate more slowly, resulting in a lower-pitched sound.
2. When the frequency of a sound wave increases, its wavelength decreases. This is due to the inverse relationship between frequency and wavelength.
3. One essential situation where manipulating the wavelength of sound waves is crucial is in medical ultrasound imaging. Short wavelengths are used to create high-resolution images of internal body structures.
4. The relationship between frequency and wavelength in sound waves is inverse, meaning that as frequency increases, wavelength decreases, and vice versa.
5. It is important to allocate different frequencies for different channels in radio and television broadcasting to prevent interference. When channels use the same frequency, it can lead to signal overlap and a degraded listening or viewing experience.

