

Music

Music is a “pleasant” sound (longitudinal) wave.
The pitch is the frequency of the wave.
The loudness is the amplitude of the wave.
Music is made by producing a large variety of waves and making a certain set of them louder by using resonance.
Resonance is the result of constructive interference caused by making an object vibrate at it’s natural frequency.

Resonance

When the object vibrates at its natural frequency it will cause constructive interference with other waves of the same or integer multiple frequency making that particular note (pitch, sound) louder.

Pitch

Pitch describes the frequency of the sound.

- High Pitch has a high frequency
 - The frequency DOES NOT change the velocity of the wave so a larger (higher) pitch means a shorter (smaller) wavelength
- Low Pitch has a low frequency
 - low (small) pitch has a long (big) wavelength

Pitch

- The average human can hear frequencies (pitch) between 20 Hz and 20,000 Hz
 - Frequencies of less than 20 Hz are considered infrasonic
 - Frequencies of more than 20,000 Hz are considered ultrasonic

Resonance

Sound demo in

- pipes
- rods
- strings