

Music

Music vs. Noise

Music: sounds created using specific pitches and sound quality in a regular pattern

Noise: sound with no regular pattern or definite pitch

White noise: sound consisting of very many frequencies, capable of interfering with other noises

All materials, objects and musical instruments vibrate at a frequency that is natural for it, called **natural frequency**.

Resonance: When the vibrations of one object cause another object/material to also vibrate, when the vibrations are the same as its natural frequency.

Sound quality: When musical instruments produce other frequencies unique to that instrument even when the same note is being played.

Overtones: Frequencies of musical instruments that are numerical multiples of some fundamental frequency.

Tuning a musical instrument: Whenever a second sound source is vibrating at a slightly different frequency than another, a warbling variation in sound intensity is heard called a beat. When the beat disappears, the instruments are now at the same frequency.

Interference: When two waves combine to make a new wave.

Constructive Interference: The compression's of two waves meet and combine to produce a louder sound.

Destructive Interference: The compression of one wave meets with the rarefaction of a second wave, canceling each other out, resulting a lower sound or the elimination of the sound altogether.(active noise cancellation)

Acoustics: the study of sound

Reverberation: Effect produced by many reflections of sound. To reduce this effect, the shapes of rooms, ceilings, walls and the materials on them are designed to absorb these unwanted reflections. Examples: Pitted ceiling tiles, overhangs between adjoining rooms, drapes or other soft materials on walls, carpeted floors.

Anechoic chamber: a room designed with soft, porous, triangular foam pieces to absorb or block all sound reflections.