MUSICAL TERMINOLOGY

Music is an aural art.

Music theory is the study of music; it is the analysis and composition of music.

Other fields for the study of music include **Musicology** -- the study of music, usually thought of as study of music history; and **ethnomusicology** -- the study of ethnic (world) musics.

Music comes from a sound source, usually a vibrating object (e.g., column of air, a vibrating string or membrane). The vibration produces **sound waves** -- vibrational disturbances transmitting energy. A single **cycle** of a sound wave is shown below.



The **amplitude** is the height of wave and creates/affects the sound's **intensity** -- the loudness/softness of the sound.

The **frequency** of the wave -- the number of times it repeats per second -- affects the **pitch** -- the highness or lowness of the sound. The frequency is also referred to as the number of cycles per second (Hertz). The A that we usually tune to in the orchestra (the A above middle C) has a frequency of 440 cycles per second (A 440). Every octave doubles or halves the frequency (e.g., A220 is an octave lower and A880 is an octave higher).

Barbara Murphy, 2025 - https://musictheorymaterials.com/ This work is licensed under a Creative Commons Attribution-Non-Commercial-Sharealike 4.0 International License The wave shown above is a **sine wave** and will produce a **pure sound**. Sine waves are only produced by electronic instruments and tuning forks; most instruments do not produce pure sounds. Instruments produce sounds that are combinations of many sine waves, each having a different frequency and therefore a different pitch.

The combination is different for each instrument, so each instrument has a different tone color, or **timbre**. The pitches that can be produced are the members of a tone's **harmonic series**. The harmonic series on C is shown below:



[Notes shown with black note-heads will be out of tune.]

A pitch also has an **envelope**. The envelope consists of the note's attack, sustain and decay.