Sound is produced whenever an object vibrates. Vibrations are just the rapid back-and-forth movements of the object. Sometimes the whole object will vibrate. Other times, just a part of the object may vibrate and produce a sound.

The faster the object vibrates, the higher the pitch of the sound. Pitch describes how high or low a sound or note is. This is sometimes also referred to as the frequency of the sound. The human ear cannot hear every single frequency. Smaller, thinner objects can vibrate faster than larger, fatter objects. That is because there is less matter in the object that has to vibrate back and forth.

The strength of the vibrations determines the sound’s volume or intensity. Volume describes how loud or soft a sound is. Many musical instruments use a cone-shaped structure to amplify the sound and create a louder volume. These cone-shaped instruments work like a megaphone. The flared end of a clarinet, a trumpet, or a tuba helps create a louder sound. Other musical instruments have a “sound box” that produces a louder sound. The body or case of a violin or cello helps to create louder sounds.
**Decibel Comparison Chart**

- **dBA - Example**
- **150 - Artillery Fire**
- **140 - Fireworks**
- **130 - Pneumatic Drill**
- **120 - Emergency Siren**
- **110 - Car Horn**
- **100 - Electric Drill**
- **90 - Heavy Traffic**
- **80 - Ringing Phone**
- **70 - Alarm Clock**
- **60 - Normal Conversation**
- **50 - Average Home**
- **40 - Quiet Library**
- **30 - Quiet House at Night**
- **20 - Leaves Rustling**
- **10 - Breathing**
- **0 - Silence**

Charts and images from various online sources.
detectable to the ear is around one decibel. A change of ten decibels will usually be quite significant.

To hear where everyday sounds lie on the scale, hover your mouse over an image.

charts and images from various online sources