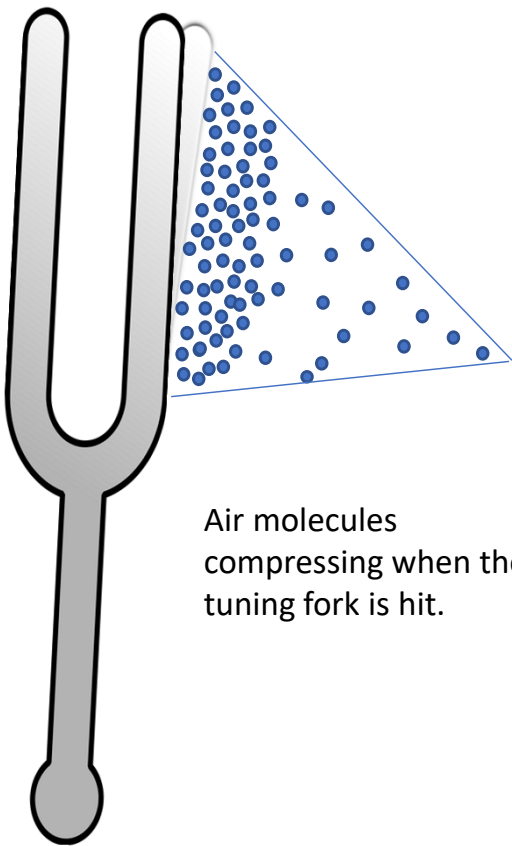
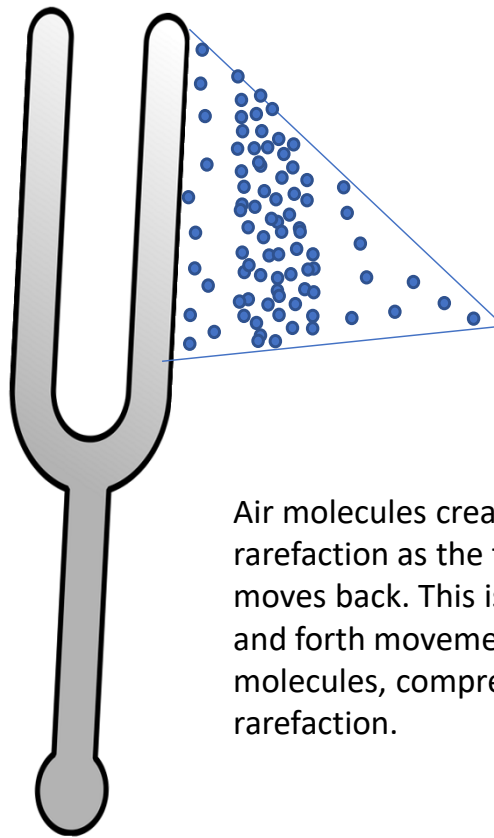


# Sound Waves

A vibrating object produces sound because it produces sound waves that can't be seen with the eye. The vibrations create the sound waves that travel to the ears which how sound is heard. These sound waves carry energy from one place to another without transferring actual matter which is why you can't see the sound waves. When an object vibrates, it causes the air molecules to move back and forth much like the way a coil moves back and forth. This type of movement is called compression and rarefaction as illustrated below with the tuning fork.



Air molecules compressing when the tuning fork is hit.



Air molecules creating a rarefaction as the tuning fork moves back. This is that back and forth movement of air molecules, compression and rarefaction.

This tuning fork makes sound waves when struck which causes the vibrations (back and forth many times, called compression and rarefaction) as the vibrations slow and eventually stop, so do the sound waves that cause the vibrations and so does the sound.

## **Question:**

**Explain what would happen if you covered the tuning fork with a pillow after it was struck and provide an explanation as to why you think that.**