

PhyzGuide: Making Waves 3

SOUND WAVES



The undisturbed medium. In this case, we have a volume of air contained in an open-ended tube (the dots represent individual particles of air).



The air at the left end is compressed by the energy-loading source (a speaker). Air that was between the speaker and the tube is pushed into the tube. We now have a **compression**. This region of higher-pressure air will travel down the length of the tube at the speed of sound.



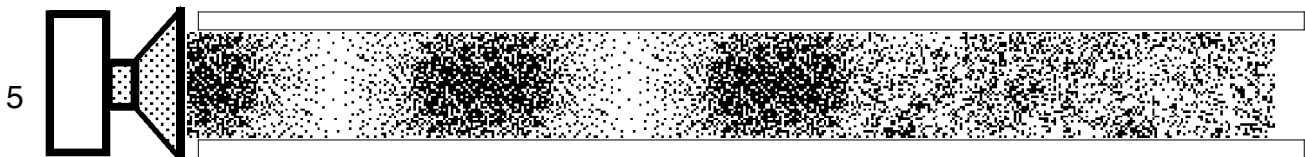
The speaker pulls back and forms an expansion of air at the left end of the tube. This region of lower-pressure air, sometimes called a **rarefaction**, will also travel down the length of the tube at the speed of sound.



The speaker once again pushes forward, compressing air into the left end of the tube. Another compression is launched to chase the rarefaction which is itself chasing the first compression.



The speaker pulls back and forms a second rarefaction. The **wavelength** of a sound wave is the distance between successive compressions or rarefactions.



Is sound composed of transverse or longitudinal waves?