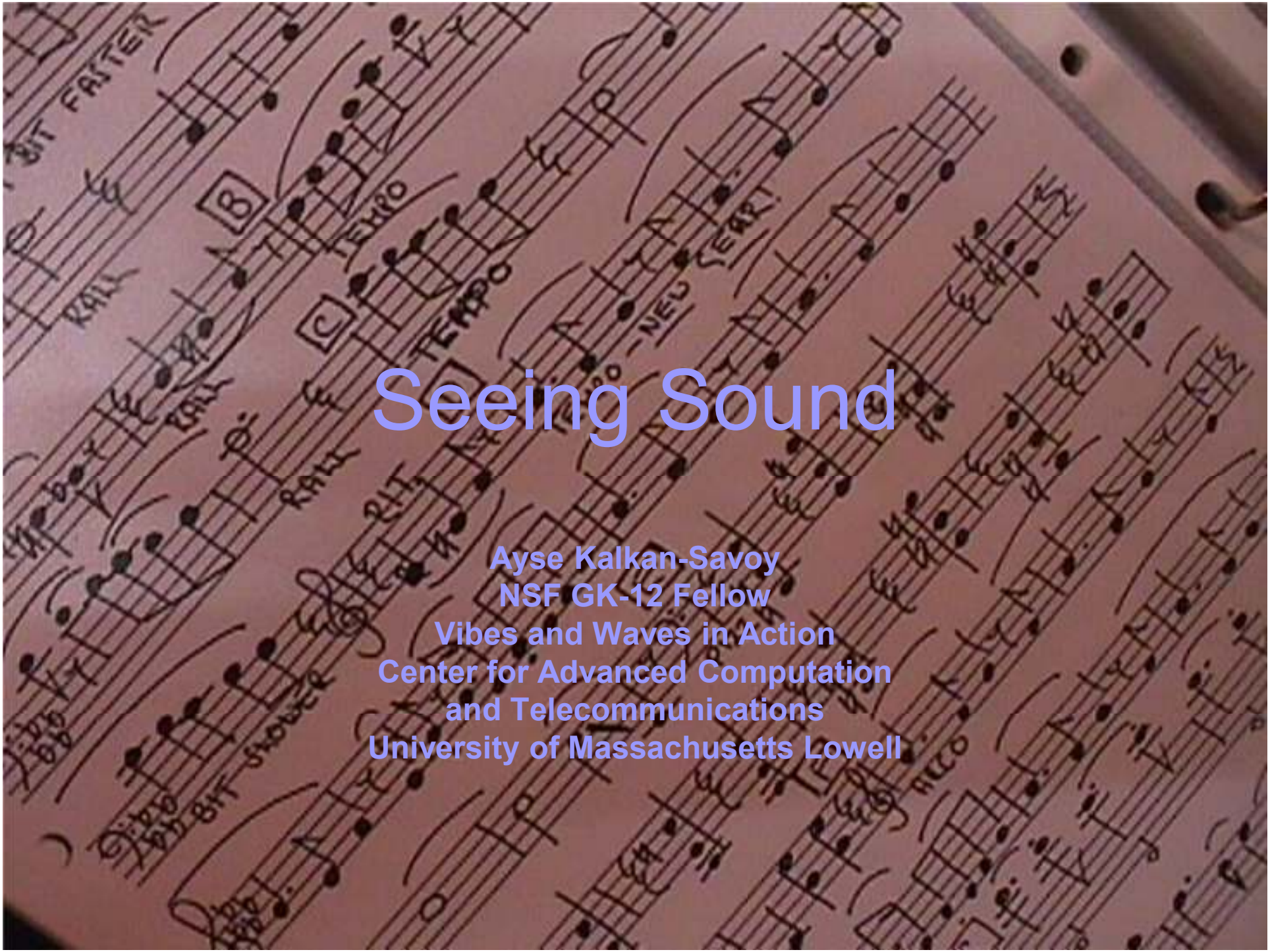

Seeing Sound

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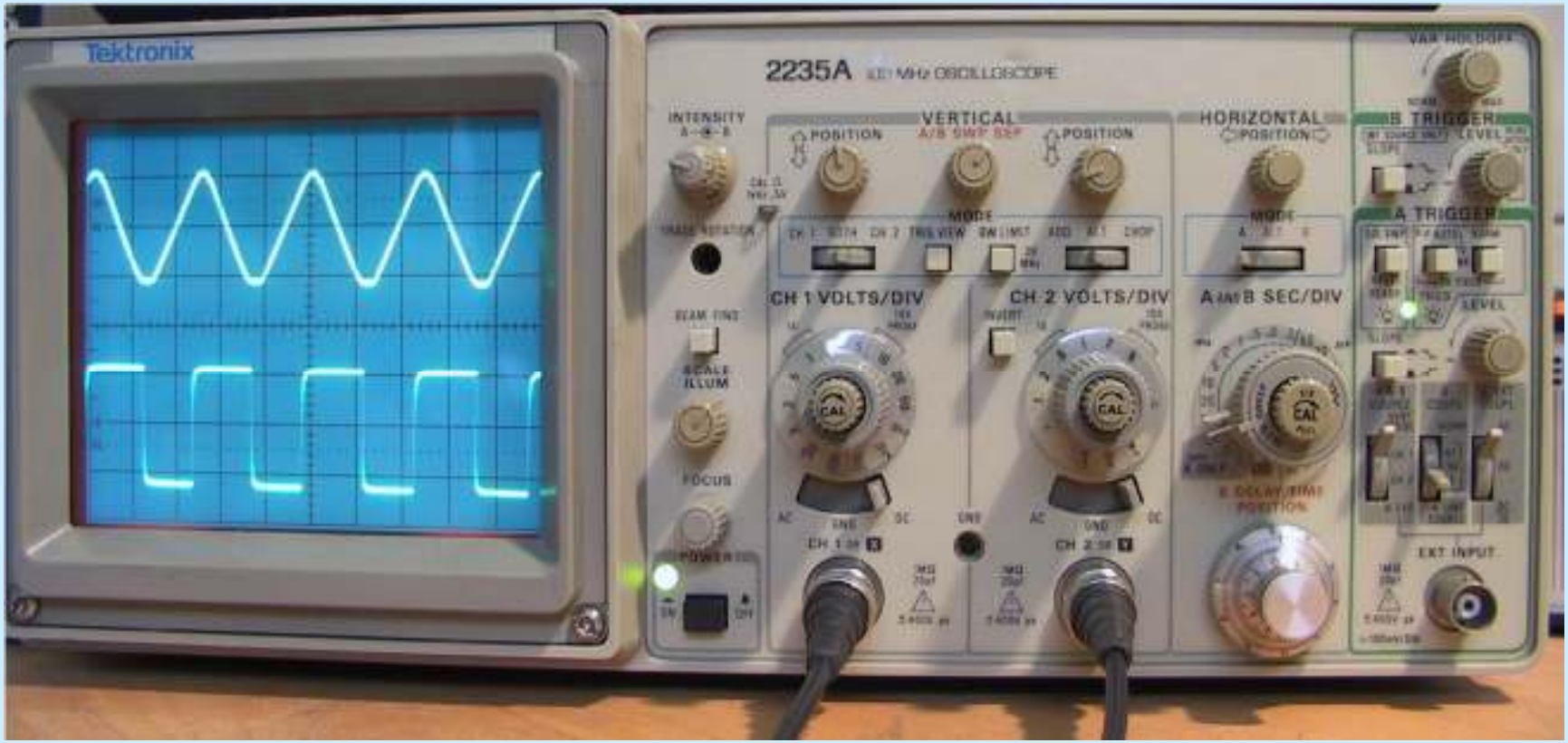
What do we need to have sound?

- Sound source
  - Can be anything that vibrates.
- Medium
  - Sound needs a medium; solid, liquid, or gas
- Detector
  - Perception of the observer.

How does the sound source create sound?

- The vibrations from sound source creates vibrations of pressure.
- Vibrations of pressure moves in the medium in the form of a pressure wave.
- The number of vibrations per second stay the same during the travel of this wave.
- Our ears receive the pressure wave, and we perceive it as sound (limited to 20-20K vibrations/sec).

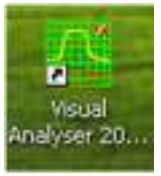
Oscilloscope

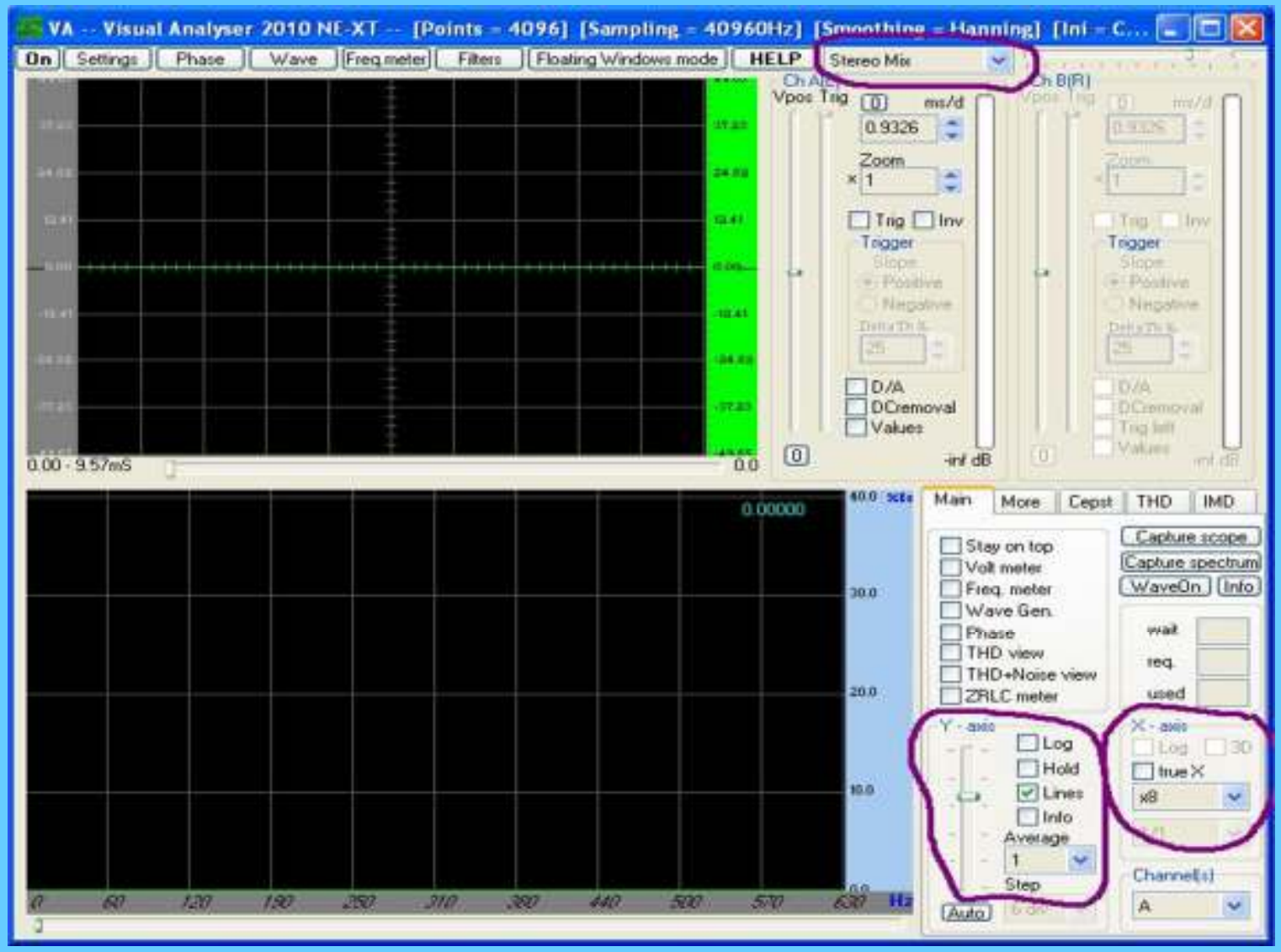


Oscilloscope (scope): A device to observe electrical signals

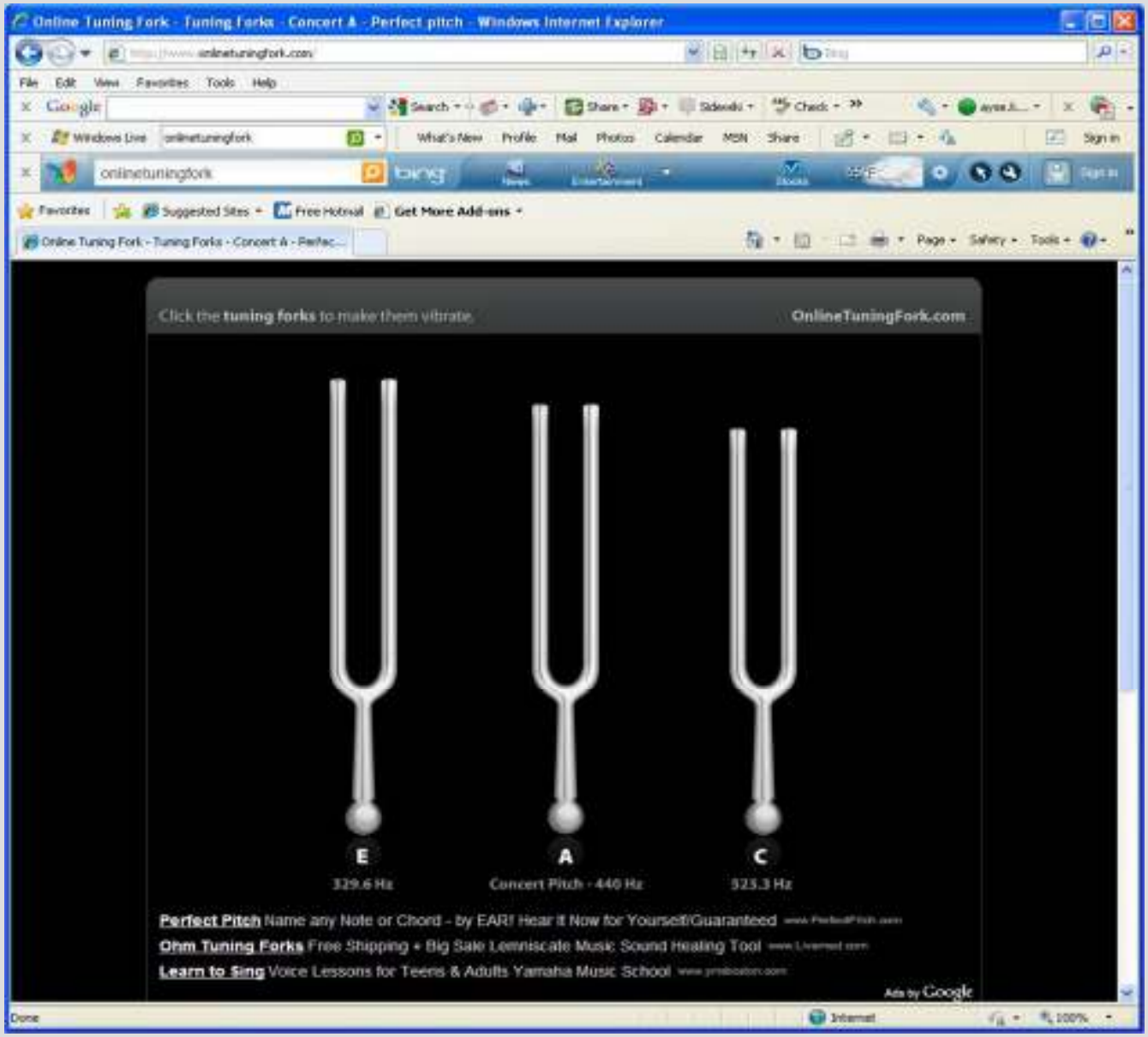
Visual Analyzer

- Click on Visual Analyzer icon.





1. Change the top drop-down list value to Stereo Mix or ..
2. Y-axis: Make sure to deselect “Log”.
3. X-axis: select x8



http://www.onlinetuningfork.com

Overview

- Sound is vibrations of pressure wave.
- Properties:
  - Wavelength
  - Frequency
  - Period
  - Speed

Overview

- Frequency: vibration (cycle) per unit time
- Hertz : cycle/sec
- Wavelength: length of wave for one cycle
- Cycle time (Period): Time for one cycle of the wave.
- Higher frequency -> smaller wavelength