

CHAPTER OVERVIEW

3.2: Vibrations

All sound starts with something that vibrates. The reed in a clarinet vibrates, the vocal cords in a singer's throat vibrate, the air flowing over the mouthpiece of a flute oscillates, and the speaker cone on your stereo or in an ear-bud vibrates. In this chapter we investigate a particular kind of vibration called simple harmonic motion. Most of the vibrations in musical instruments and the human voice can be described approximately by *simple harmonic motion*.

Key Terms:

Periodic, period (cycle), linear restoring force (Hooke's law), non-linear restoring force, amplitude, displacement, phase, frequency, natural frequency, spring constant, simple harmonic motion, damped harmonic motion, damped driven harmonic motion.

3.2.1: Vibrations

3.2.1.1: Simple Harmonic Motion

3.2.1.2: Period, Frequency, Amplitude, Restoring Force, Phase

3.2.1.3: Simple Harmonic Motion Simulation

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