

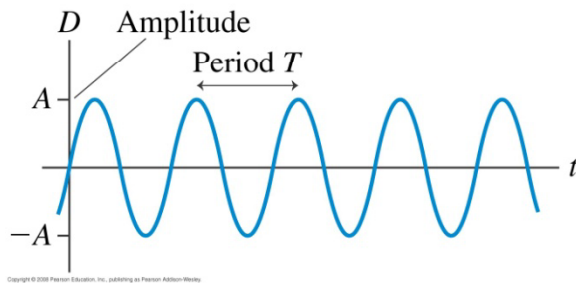
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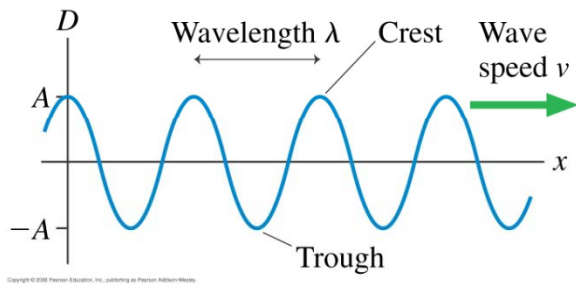
Chapter 20: Waves

- Transverse and longitudinal traveling waves
 - <http://www.ngsir.netfirms.com/englishhtm/TwaveStatA.htm>

(a) A history graph at one point in space



(b) A snapshot graph at one instant of time



- Wavelength, frequency, and speed
- Main factor determining wave speed: the nature of the medium. For example, with strings, it's the tension and the mass / length (think tuning a guitar or violin).

TABLE 20.1 The speed of sound

Medium	Speed (m/s)
Air (0 C)	331
Air (20 C)	343
Helium (0 C)	970
Ethyl alcohol	1170
Water	1480
Granite	6000
Aluminum	6420

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- Energy transmission by waves
- Doppler effect and “sound barrier”
 - <http://www.lon-capa.org/~mmp/applist/doppler/d.htm>

Chapter 21: Superposition

- General: beat frequency
 - <http://paws.kettering.edu/~drussell/Demos/superposition/superposition.html>
- Same frequency: interference
 - <http://paws.kettering.edu/~drussell/Demos/superposition/superposition.html>
 - http://www.youtube.com/watch?v=J_xd9hUZ2AY&feature=related
- Reflection & “boundary conditions”
 - <http://paws.kettering.edu/~drussell/Demos/reflect/reflect.html>
- Standing waves
 - <http://www.walter-fendt.de/ph14e/stwaverefl.htm>

Assignment:

- **Read Chapters 20 & 21**