Book O Chapter 1 The Energy of Waves

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- d. By the vibration of particles in a medium

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- a. **Resonance**
- **b.** Diffraction
- c. Reflection
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A wave can make a bottle bob up and down on the water, but it can't move the bottle toward the shore. This is because waves only transfer ____, not ____.

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- **b.** Crests, media
- c. Partcles, matter
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- a. Frequency
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____ mechanical wave
____ surface wave
____medium

- 1. A wave that requires a medium through which to travel
- 2. A physical environment in which phenomena occur
- 3. A transverse and a longitudinal wave that combine at or near the boundary-between 2 media

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Iongitudinal wavetransverse waveelectromagnetic wavewave

- **1.** A wave that does not require a medium
- 2. A periodic disturbance in a solid, liquid, or gas as energy is transmitted through a medium
- 3. A wave in which the particles of the medium move perpendicularly to the direction the wave is traveling
- 4. A wave in which the particles of the medium vibrate parallel to the direction the wave is traveling

- 4 longitudinal wave3 transverse wave
- **1** electromagnetic wave

_2__ wave

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wave speed wavelength amplitude frequency

1. The number of waves produced in a given amount of time

- 2. The speed at which a wave travels through a medium
- 3. The distance from any point on a wave to an identical point on the next wave
- 4. The maximum distance that the particles of a wave's medium vibrate from their rest position

2 wave speed
3 wavelength
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_____ interference
_____ standing wave
_____ diffraction

- 1. The combination of two or more waves that result in a single wave
- 2. A pattern of vibration that simulates a wave that is standing still
- **3.** A change in the direction of a wave when the wave finds an obstacle or an edge

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reflection
resonance
refraction

- **1.** A phenomenon that occurs when two objects naturally vibrate at the same frequency
- 2. The bouncing back of a ray of light, sound, or heat when the ray hits a surface that it does not penetrate
- **3.** The bending of a wave as the wave passes between two substances in which the speed of the wave differs

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Math Focus

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$V = \lambda x f \text{ so } 30 = \lambda x 5 = \underline{\qquad}$ to solve, 30 ÷ 5 = 6 meters









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This ducky is moving with its own power, through creating force on the water from its little ducky muscles. Actions have reactions, so the ducky pushes on the water and the water pushes on the ducky, and the ducky moves.

Rubber duckies do not move with their own power. Waves transfer energy but not particles, so if you drop a rock in the water near a rubber ducky, it will bob up and down on the water, but will not move forward.



Is this possible? Explain with vocabulary words!



If this woman finds one of the resonant frequencies of the wine glass and can create the same frequency by shouting or singing, she will be able to make the glass vibrate. The glass is not flexible, and will shatter.

