Warm Up

1. What is the mass of a ball that is resting 6 m from the ground and has 461 joules of energy?
2. What is the velocity of a 40 kg object that has 812 joules of energy?
3. What is the energy of a sack of potatoes with a spring constant of 310 N/m and is stretched 18 cm?
4. What was the velocity of a ball thrown into the air if it was launched from the ground and came back to the ground after 3.8 sec?
5. What is the gravitational attraction between two objects, one with a mass of 40. kg and the other 49 kg, if they are separated by a distance of 71 cm?

Target

- I can describe the different types of wave behaviors.

Wave Behavior

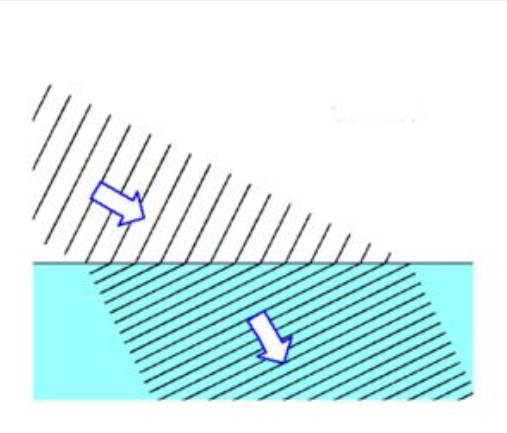
Reflection

- Reflection occurs when a wave bounces off a surface that it cannot pass through.
- Reflection does not change the speed or frequency of a wave, but the wave can be flipped upside down.

http://weburbanist.com/2008/11/21/21-impressive-examples-of-reflective-and-symmetrical-photography/

Refraction

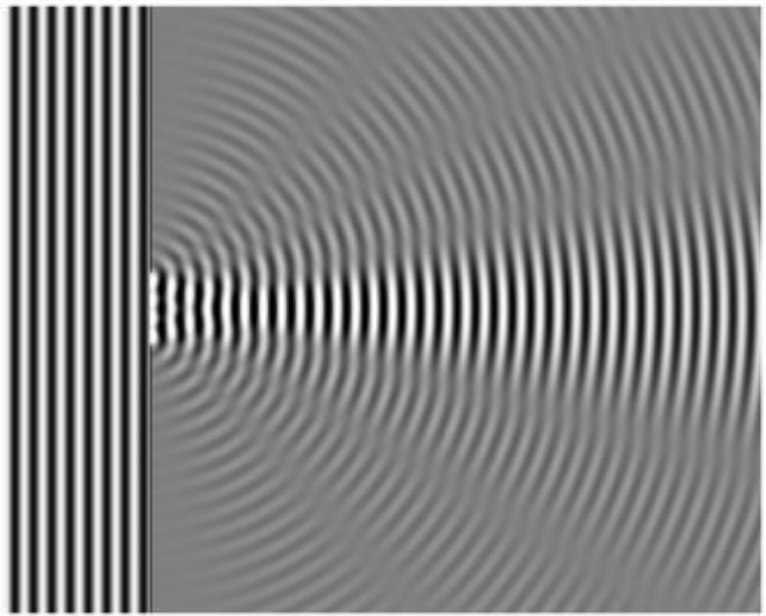
- Refraction is the bending of a wave as it enters a new medium at an angle.
- When a wave enters a medium at an angle, refraction occurs because one side of the wave moves more slowly than the other side.



Blogster.com

Diffraction

- Diffraction is the bending of a wave as it move around an obstacle or passes through a narrow opening.



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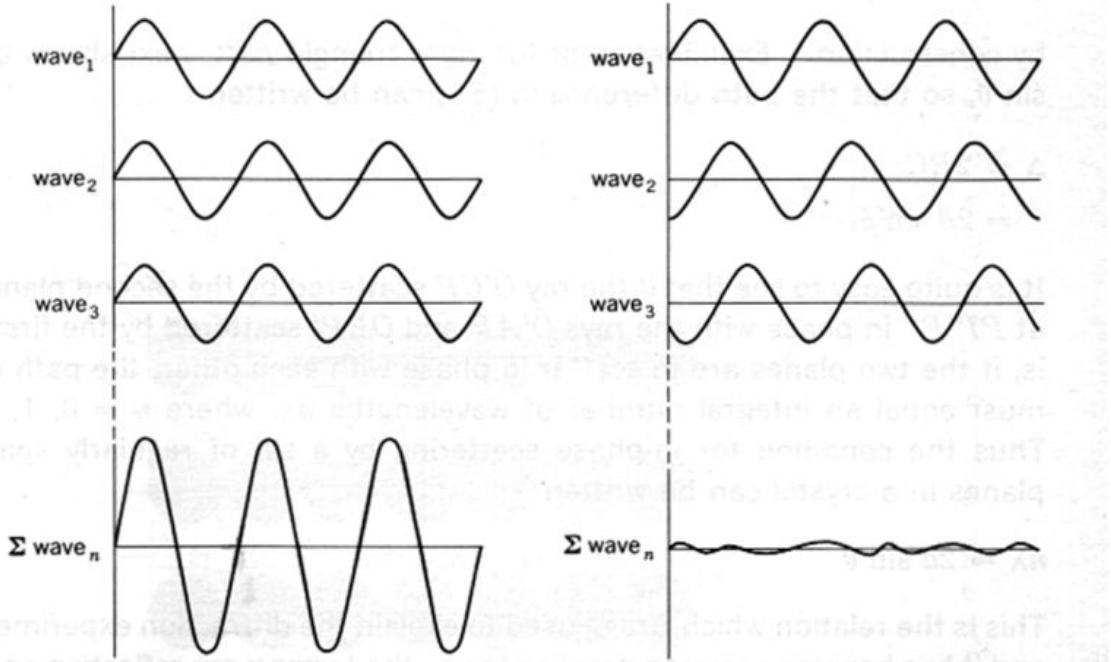
Interference

- Interference occurs when two or more waves overlap and combine together.
- Constructive interference occurs when two or more waves combine to produce a wave with a larger displacement.
- Destructive interference occurs when two or more waves combine to produce a wave with a smaller displacement.



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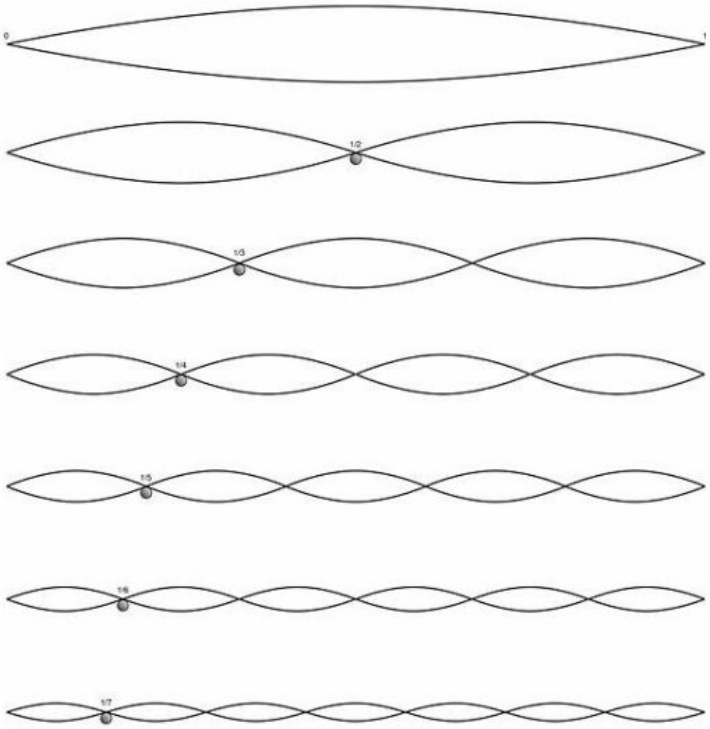
Standing Waves

- A standing wave is a wave that appears to stay in one place.
- A standing wave is produced by an incoming wave and its reflection.
- A node is a point on a standing wave that has no displacement from the rest position.
- An antinode is a point where a crest or trough occurs between two nodes.
- An example of a standing wave is a Ruben's tube.



http://www.stmary.ws/highschool/physics/home/notes/waves/5

Summary

- Wave behaviors include: reflection, refraction, diffraction, and interference.
- Waves can interact to form constructive or destructive interference.
- Standing waves appear to stay in one place.

Assignment