



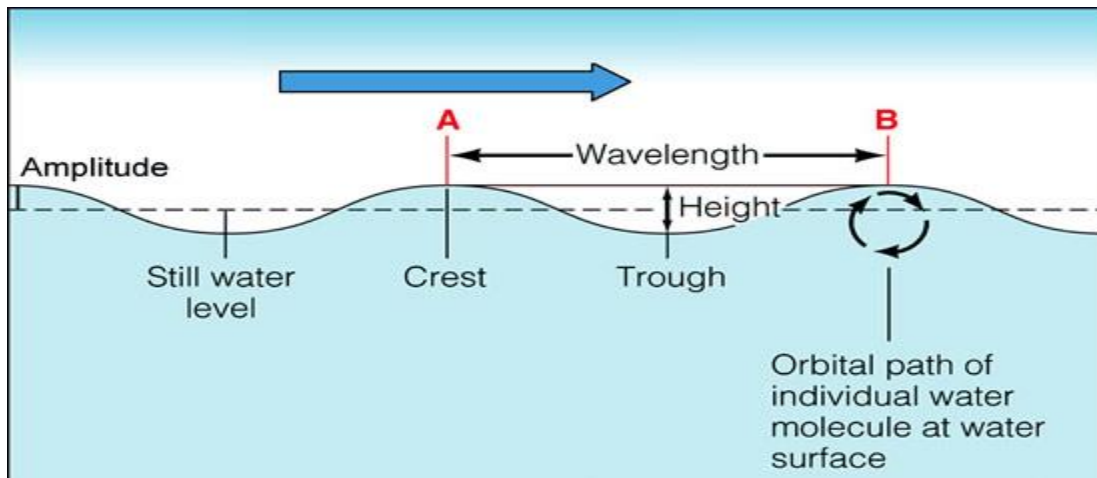
## Properties of Waves on Water: Energy Basics



Whether we enjoy a day at the ocean or a lake, we will see waves moving across the water. The wind moves the surface of the water in a regular pattern of motion that we call waves.

Would you believe friction causes the waves? It may sound unlikely until you think about how the wind can move dust and trees and so much more. Friction between

the water's surface and the movement of air causes waves. But deep water does not move forward in waves. Only energy is transmitted in deep-water waves and, if not blocked, can travel from shore to shore. Water molecules in the deep water move in circles staying in the same location and just going around and around.



At the shoreline in the shallow water, the sand and rocks under the water create friction with the water and slow it down. The top, called crest, of the wave does not slow like the water passing over the lake or ocean bed and topples over. Because of this, water near the shore *does* move forward in the direction of the wave.

