

Last week we learned about the harmonic oscillator. Harmonic oscillators result in all kinds of interesting physics.

Traveling waves are the first physical effect that is based on the physics of the harmonic oscillator. Just check what happens when you play with your rubber ducky in your bathtub or in open water. You have probably seen how waves start moving away from the point where you play. In class we will talk about two kinds of traveling waves a) transverse waves and b) longitudinal waves.

1.
  - A) In your words, define what a transverse wave is:
  
  
  
  
  
  
  
  
  
  
  - B) Give an example from your own experience that you know is a transverse wave.
  
  
  
  
  
  
  
  
  
  
  - C) For your own example, which physical parameters do you think determine the speed of the wave?
  
2.
  - A) In your words, define what a longitudinal wave is:
  
  
  
  
  
  
  
  
  
  
  - B) Give an example from your own experience that you know is a longitudinal wave
  
  
  
  
  
  
  
  
  
  
  - C) For your own example, which physical parameters do you think determine the speed of the wave?
  
3. In this lab you will work with two new graphs to describe traveling waves a) the Snapshot Graph and b) the History Graph. Draw the coordinate system for a snapshot graph and for a history graph and label the axes. You do not need to draw a wave into your graph, we will learn that in lab!

Do you have any questions to this lab?