

Wave observations: <http://www.richtherrn.net/physics/waveobserve.htm>

IN CLASS:

A) Use all simulations found <http://www.richtherrn.net/physics/wavesims.htm> to investigate the phenomena of waves  
<http://www.richtherrn.net/physics/waveinteractions.htm>

Make detailed observations (on graph paper!)

B) Superposition one (click mouse to pause.... Use – to have them go in same direction, drag mouse on axis to move waves)

2 waves in same direction with:

same frequency, same phase (starting crests lined up)

same frequency, opposite phase (crest lined up with trough)

one half frequency (10 & 20)

one  $\frac{1}{4}$  frequency (5 & 20)

frequencies really off ( 10 & 27 etc...)

frequencies really close ( 20 & 21 )

C) Observe 2 dimensional waves...

D) Ripple Tank

Make detailed observations (on graph paper!)

Follow directions in class

Use low frequencies and resolution. Clear waves and walls between each trial.

Make observations of at least these phenomena:

no source, use mouse to just hold wave in center. Add border. Add walls. Observe reflections.

Reflections of point waves from straight & angled barriers.

Reflections of parallel (plane) waves from straight & angled barriers.

One point source as compared to 2 point sources. Change frequencies, locations, phase.

Make sure you have observed: beats, diffraction, interference.

For each write:

# sources, location, type of source, frequency, phase, walls, observation of waves 2D/3D