Physics 1111: Lab 11
Doppler Effect (stationary source, moving observer)

Supplies:

- wheel thingy
- a few meter sticks
- stop watch with lap function
- pencil/paper

Instructions:

- Form into two group of 8-10 students.
- Choose reasonable values for:
  - wave propagation velocity, v
  - wavelength, λ
  - velocity of the observer, v_s
- From these values calculate the expected unshifted period, T, and the observed (shifted) period T'.
- Have 5-6 students walk in a single file line with velocity v, separated by a distance λ, holding out their hands for a high-five.
- Choose an observer from your group. The line of 5-6 students should then high-five the observer as they walk by. Do this twice - once with a stationary observer and again with the observer moving towards the line with velocity v_s.
- While the experiment is running, have another student use a stopwatch to record the time interval between high-fives. Record several time intervals for each experiment and average them.
- Compare your calculated T and T' with your measured T and T'.