

Name(s): _____, _____

Objectives:

- To observe and describe interference when a wave is reflected back along the rope.
- To create a standing wave.

1. Open <http://phet.colorado.edu/simulations/stringwave/stringWave.swf>
2. Change the option from manual to pulse. Play with the simulation for a few minutes. You will introduce more than one wave into the string by pressing "pulse". Which variables change the shape of the wave?
3. Now hit the "reset" button. Make the following changes.
 - * Keep the option at pulse.
 - * Change the end of the rope to fixed end.
 - * Set the damping to zero.
 - * Set the tension to high.
4. How does the pulse width affect the shape of the wave?
5. Send one wave down the string. Describe the wave that is reflected back from the fixed end.
6. Hit reset. Send two waves down the string. Pause the waves when they interfere completely. Describe the wave that results **and** the type of interference that occurs.
7. Change the end of the rope to "loose end" and send one wave down the string. Describe the wave that is reflected back from the loose end.
8. Hit reset. Send two waves down the string. Pause the waves when they interfere completely. Describe the two waves that can result **and** the type of interference that occurs.
9. Read about standing waves on pages 500 and 501. Define the following...
 - A. standing wave
 - B. node
 - C. antinode

