

Lab: Wave Investigation Lab

CONCEPTUAL PHYSICS: WAVES

Purpose: Today, you will use the Waves on a String PhET Simulation to investigate the properties of waves.

Part 1 – Beginning Observations

1) Open the Waves on a String PhET simulation (<https://phet.colorado.edu/en/simulation/wave-on-a-string>). What can you change about the simulation?

2) Draw what you see on the screen.

3) What are the main differences between the manual, oscillate and pulse functions?

Part 2 – Manual

1) What are the two things *specific to the wave* you can change on the manual setting?

2) Change these two items and record your observations below.

Item changed	My observation

Part 3 – Oscillate

1) What are the four things you can control at the bottom of the screen?

2) What are the three types of ends you can have?

3) Now you will investigate how a wave behaves when it has a “fixed” end.

a) Before you begin. Define fixed end in your own words below.

Fixed end -

b) What is an object in the classroom that has a fixed end? Explain and draw a picture.

c) Write a short procedure on how you could investigate the four properties that you listed in #1. *Remember a procedure is a series of steps that could be repeated by someone else*

d) Use the table below to record your findings.

Property	What I did with the simulation	My observations

4) Repeat #3 with a loose end.

a) Before you begin define loose end in your own words below.

Loose end -

b) What is an object in the classroom that has a loose end? Explain and draw a picture.

c) Write a short procedure on how you could investigate the four properties that you listed in #1. *Remember a procedure is a series of steps that could be repeated by someone else*

d) Use the table below to record your findings.

Property	What I did with the simulation	My observations

5) Briefly investigate the no end setting. Describe what happens to the wave when no end is present.