

Pendulum Lab

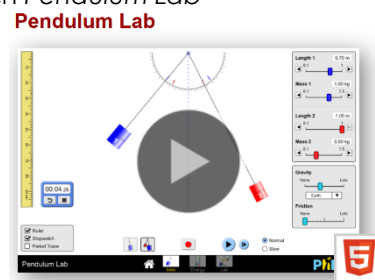
<https://phet.colorado.edu/en/simulation/pendulum-lab>

BEFORE YOU BEGIN: You'll be doing PART B of this lab with a Zoom lab group of 2 or more people (3 or 4 is good!)

- Use the **Discussion Board** in PowerSchool Learning to sign up for lab groups and set date & time, etc., for your Zoom meeting (*This is so I'll know who is in which group.*) This must be done before Tuesday morning, 9:00 A.M.
- Establish a person who will be the leader of your group. This person will send me the date and time that you want for your Zoom lab meeting.
- I will schedule your Zoom lab meeting(s) and communicate the Zoom meeting info to the members of your lab group via Remind. *Students cannot schedule their own Zoom meetings. It's a Zoom rule.*
- You need to complete PART A of the lab BEFORE you have your Zoom lab meeting to do Part B of the lab.
- Post a photo of your lab group in progress (from Zoom) to the **Discussion Board**
- **Lab report** - Write up a formal lab report. Save your final document as PDF & submit to Google Drive Physics Shared Folder & Turnitin

PART A: ON YOUR OWN – Explore the simulation for yourself before you begin working with your Zoom lab partners

1. Click the link above or go to the PhET site (<http://phet.colorado.edu>) and launch *Pendulum Lab*
2. Select LAB
3. Play with the lab to explore how the different variables affect the motion of a pendulum.
4. Write qualitative descriptions for the effect of each variable on the motion of the pendulum – length, angle, mass, gravity, friction. LIST your observations in your lab report.



PART B: LAB DESIGN – with Zoom Lab Partners

5. As a group, design and carry out an experiment to determine the factors that affect the period of a pendulum in the absence of friction.
 - a. Use good experimental technique! Be careful to identify controls!!!
 - b. Include a Data Table with at least 3 trials for each variable.
 - c. Hint: Use the recording features in the simulation, i.e., ruler, period timer, etc.
 - d. Take screen shots for use in your lab report

LAB REPORT: For this lab, you'll be writing a formal lab report.

- Graph your data with a spreadsheet generated graph (Google Sheets or Excel). Remember the parts of a good graph! Review that if necessary!!!
- Does your graph(s) support your conclusion. Discuss this in your Conclusion.
- Lab photos can come from the simulation, but at least one lab photo should be the Zoom lab meeting shot.
- Submit your formal lab report as a PDF to your Google Drive Physics Shared Folder.