

Pendulum Lab

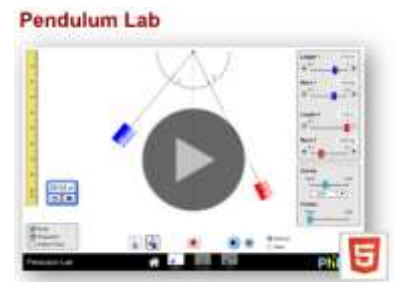
<https://phet.colorado.edu/en/simulation/pendulum-lab>

BEFORE YOU BEGIN:

- You need to complete PART A of the lab on your own (at home or at school if there is time) BEFORE you have you do Part B of the lab. This must be done before class on the lab day
- You'll be doing PART B of this lab with a lab group of 2 people. **Each person will have the lab pulled up on their own device**
- **Lab report** - Write up a formal lab report. Save your final document as PDF & submit to Google Drive Physics Shared Folder & Turnitin
- Post a photo of your lab group in progress in your lab report

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

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 Lab Partner, working on separate laptops, but together

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 (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 of your lab group in progress.
- Submit your formal lab report as a PDF to your Google Drive Physics Shared Folder.