

# Pendulum

## Assembly Instructions

This simple pendulum is an ideal tool for teaching and learning the basic concepts of harmonic motion. The concepts of cycle, period, frequency and amplitude are intuitively illustrated. Students can change three variables: the length of the string, the weight of the swinging bob, and the amplitude (angle) of the swing.

### Parts Checklist

The following items are provided with the Pendulum:

- pendulum body
- string and bob
- washers (10)
- blue knobs with attached threaded rods (2)

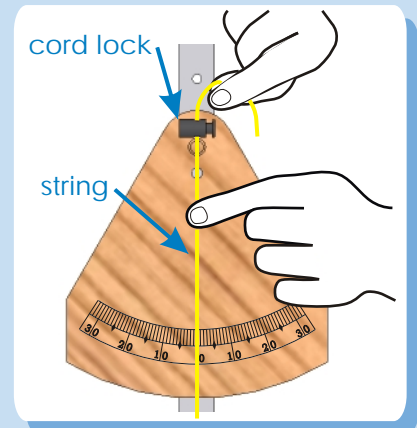
In addition, you will need these items:

- Physics Stand, assembled
- timer console with power transformer
- photogate with red or blue cord

### Attaching the Swinging Bob

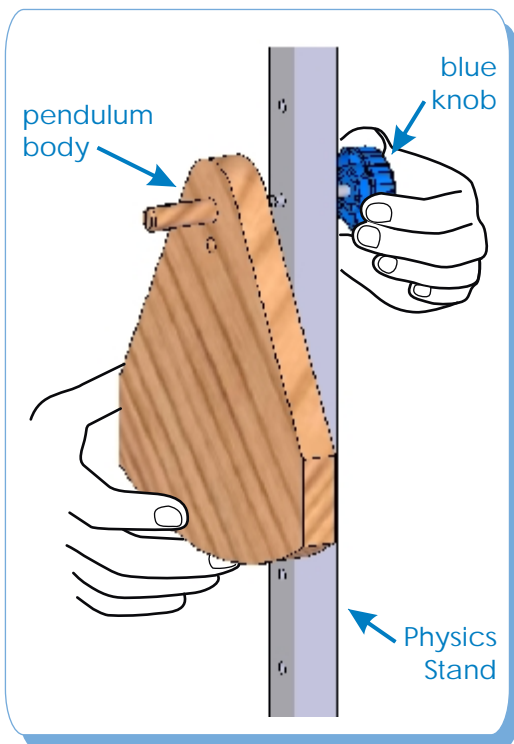
Put the string through the slot in the peg. The cord lock will keep the string from slipping. You can adjust the length of the string by pulling on either end.

Measurements are taken from the bottom of the peg to the bottom of the washers. Washers can be removed or added to change the weight of the swinging bob.



### Attaching the Physics Stand

Insert the threaded rod with the blue knob through one of the top holes of the Physics Stand. Attach the pendulum body and secure by tightening the blue knob in the back.

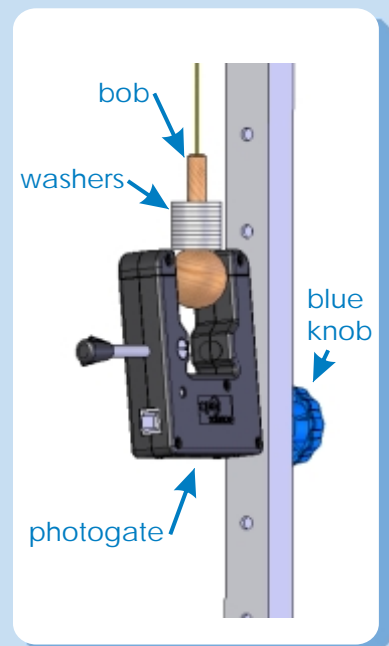


### Using the CPO Timer

To mount the photogate to the stand, insert the threaded rod with the blue knob through a hole in the pole. Attach the photogate so that the pole is between the blue knob and the edge of the gate. Tighten the knob to the pole. The placement of the photogate should be such that the center of the wood ball aligns with the 2 small holes in the gate.

Connect the photogate to the timer using a red or blue wire. Plug the wire into slot A and be sure the A button light on the timer is turned on. The timer should be set to interval mode.

Note: For detailed instructions on using the CPO Timer, please refer to the manual that is supplied with the CPO Timer.



For activities, consult your *Teacher's Guide*. We also offer multi-level activities in the *Pendulum Curriculum Resource Guide*, sold separately.

For technical assistance, please call 866.588.6951.