

Pendulum Lab Activity 1

Learning Goals: Students will be able to:

- Design experiments to describe how variables affect the motion of a pendulum.
- Use a photogate timer to determine quantitatively how the period of a pendulum depends on the variables you described.

I plan to have the sim open to demonstrate the answers, but I have included the results from the photogate timer just for precise evidence.

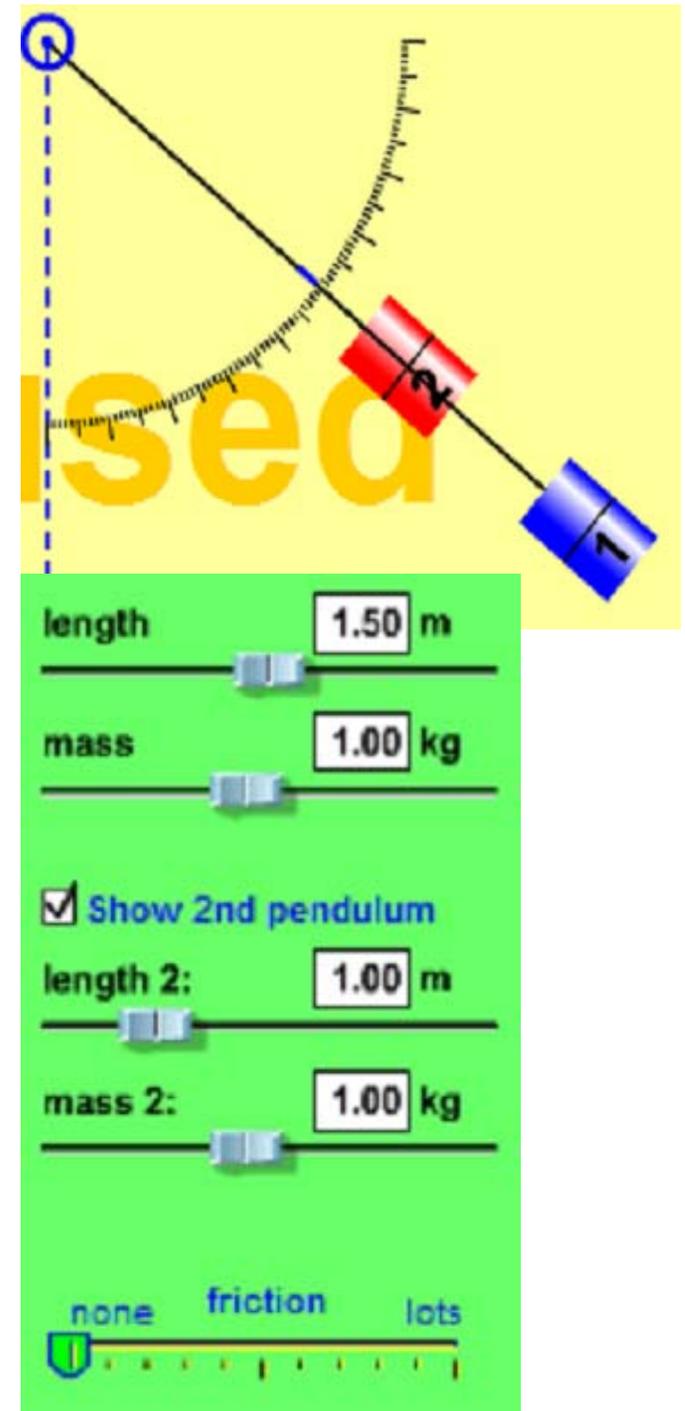
Trish Loeblein updated 7/20/2008

1. Which one swings faster?

A. They go the same speed

B. 1 is faster

C. 2 is faster



Answer to 1

photogate timer

Pendulum: 1 2

period:

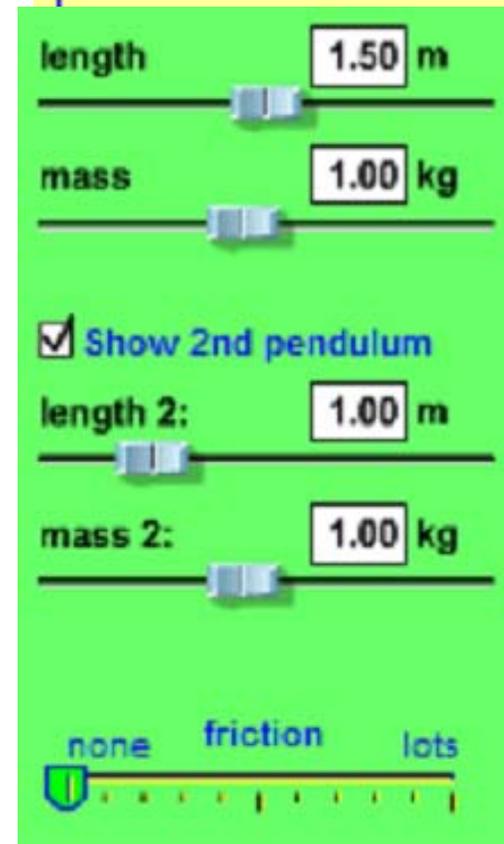
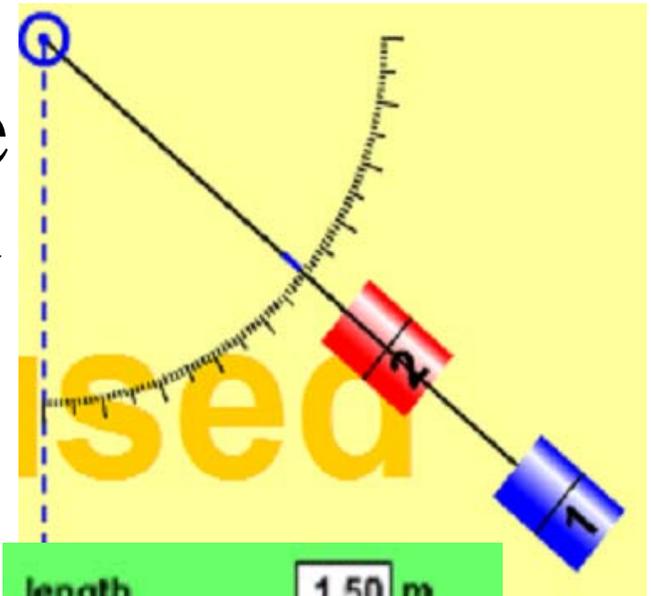
photogate timer

Pendulum: 1 2

period:

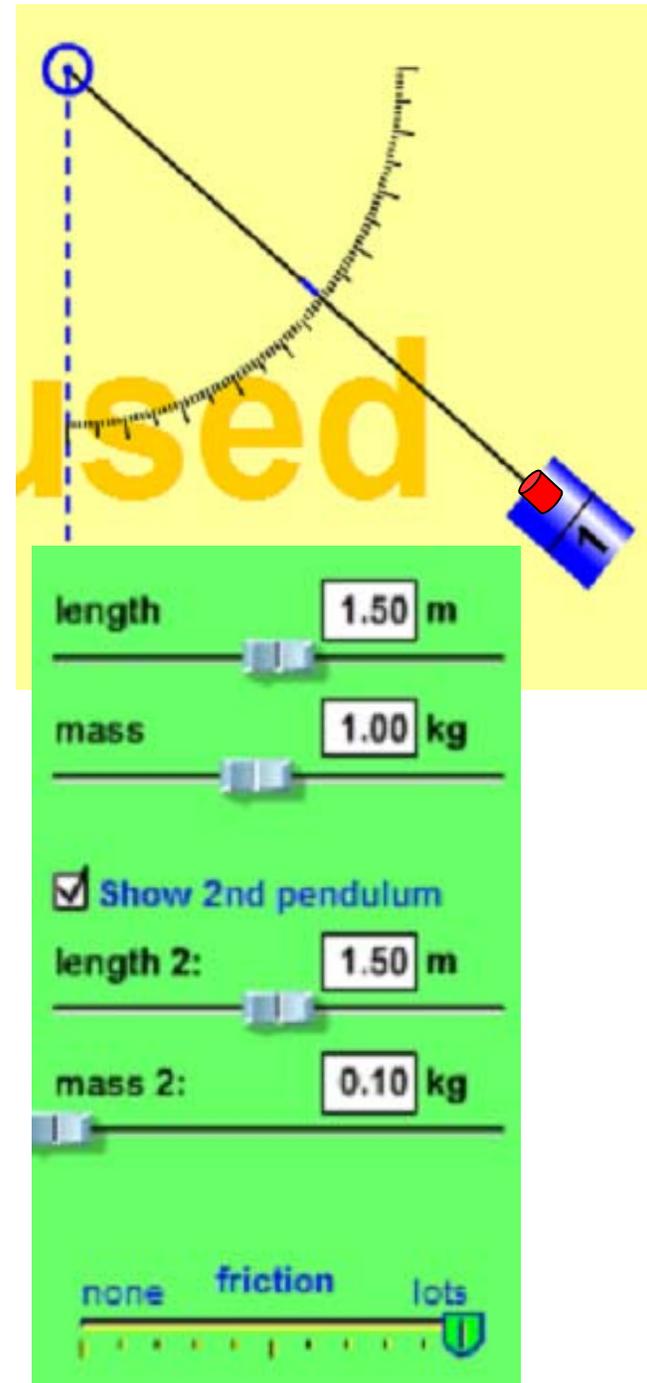
2. What is true about the maximum angle as they swing left?

- A. They have the same max angle
- B. 1 swings to a greater angle
- C. 2 swings to a greater angle



3. What will be the differences in the swinging patterns?

- A. There are no differences
- B. **1** swings higher; stops last
- C. **1** swings higher; stops first
- D. **1** swings lower; stops first
- E. **1** swings lower; stops last

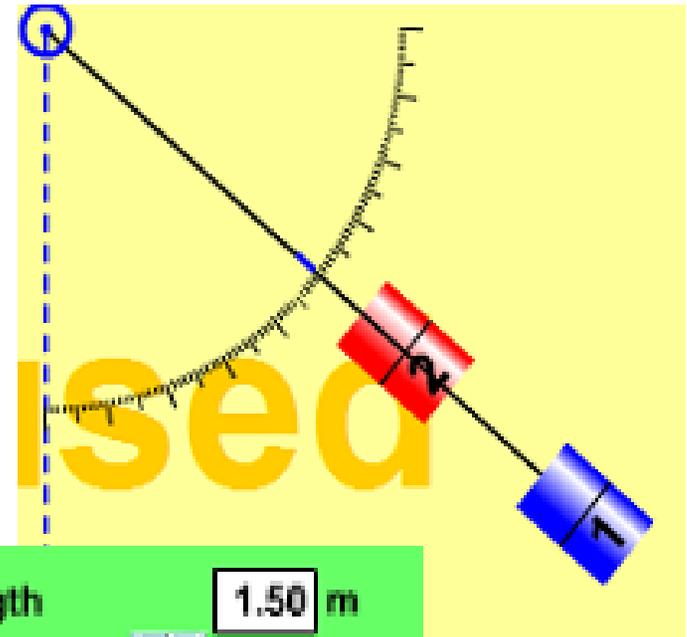


4. Which one will stop first?

A. They stop at the same time

B. 1 stops first

C. 2 stops first



length 1.50 m

mass 1.00 kg

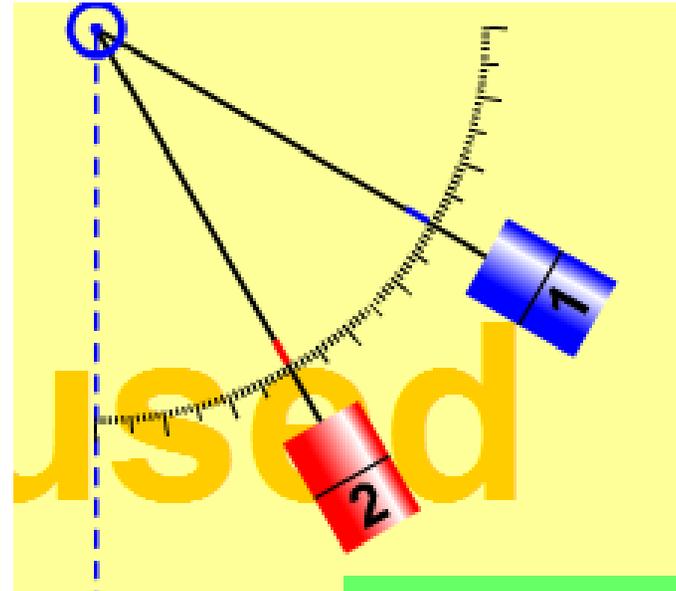
Show 2nd pendulum

length 2: 1.00 m

mass 2: 1.00 kg

none friction lots

5. Which has the shortest period?



- A. They have equal periods
- B. 1 has a shorter period
- C. 2 has a shorter period

length 1.00 m

mass 1.00 kg

Show 2nd pendulum

length 2: 1.00 m

mass 2: 1.00 kg

none friction lots

Answer to 5

photogate timer

Pendulum: 1 2

period:

photogate timer

Pendulum: 1 2

period: