

Please use the following resources to learn about pendulums.

Watch this Video: [Harvard Natural Sciences demo on Pendulums](#)

Answer these questions:

- Which pendulum goes back and forth most quickly?
- Which pendulum goes back and forth most slowly?
- What makes the group of pendulums appear to “dance”?
- Challenge: keep track of when each pattern appears. What do you notice?

Activities: Follow these directions to test what happens when you change the length of a pendulum while it is swinging.

You will need:

<ul style="list-style-type: none"> • 15 identical small, flat objects, like washers or pennies 	<ul style="list-style-type: none"> • About 1 m of string 	<ul style="list-style-type: none"> • Optional: tape
---	---	--

If you're using washers (or something else that has a hole in it):

1. Tie one washer to one end of the string.
2. Tie the other 14 washers, all together, to the other end of the string.



If you're using pennies.

1. Use the tape to attach a single penny on one end of the string.
2. Tape a stack of 14 pennies taped together and attach it to the other end. on one end.

Next:

3. Hang the heavy end of the string (the one with 14 washers) over your finger. Let it dangle from about 15 cm of string.
4. Hold the light end (the one-washer end) of the string out, like you're getting ready to start a pendulum swinging.
5. Let go of the single washer and see what happens!



Make observations & use Claims, Evidence, and Reasoning!

1. **Claim:** A pendulum on a shorter string takes less time to swing back and forth.
 - **Evidence:**

 - **Reasoning:**

2. **Claim:** My double pendulum **did** **didn't** behave like I expected. (circle the word you agree with)
 - **Evidence:**

 - **Reasoning:**