Passive Lego Walker
## *Activity Sheet*

Please use this sheet to record your data from the passive walker activity session.

Materials Needed: *Two small binder clips, two large binder clips, pencil, ramp with a small incline (around 5°), patience! Optional: Tape & weights (we used two dimes and electrical tape for example to test).*

Passive Walker Assembly

1. Fold the two larger binder clips up so they look like the picture below
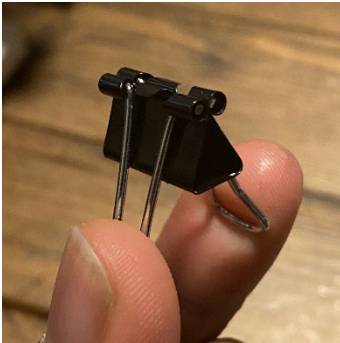
2. Put the pencil through the silver rings of both the larger binder clips and move them roughly to the center

3. Rotate each binder clips a bunch so it rubs off the wooden pencil. You are basically trying to remove enough wood so the clips can rotate freely. Make sure the wood is nice and worn.

4. Attach the smaller binder clips on to the pencil. Make sure they are on opposite ends of the larger clips. See below.

5. You have yourself a walker! Make yourself ramp by tilting a surface. Make sure there is something with friction on it. Put the walker on, give it a tip and watch it walk!

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Passive Walker – Tips

- Make sure the legs can swing nice and easily by just rotating the pencil. You make have to keep rotating the rings so that you rub off more wood.
- Might need to keep tapping it. If it doesn't look like its taking many steps. Also try adding some mass to either ends (make sure it's the same on both sides). This will increase the inertia and give you a bigger wobble.
- Make sure you surface has some sort of friction. Add a mouse pad or rubber mat if you have one.
- Try adjusting the height of the ramp (i.e. adjust the angle). Might need to lower it if your robot is just falling forward. Might need to raise it if your leg isn't swinging enough.

Passive Walker Q&A

What are your thoughts on this experiment?

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Did it work as expected? If not, what will you try to change?

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What applications might a passive walker have?

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Why would a roboticist choose legs over wheels?

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