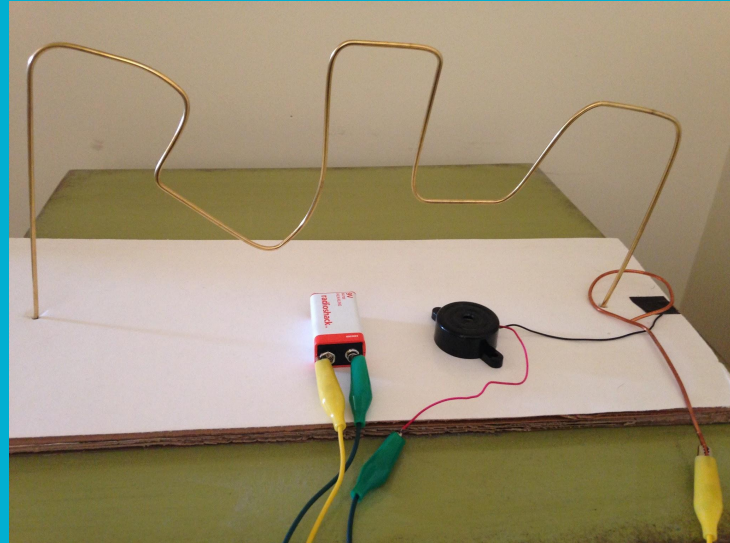


# How to Build a Wire Circuit Maze

---



# Materials you will need:

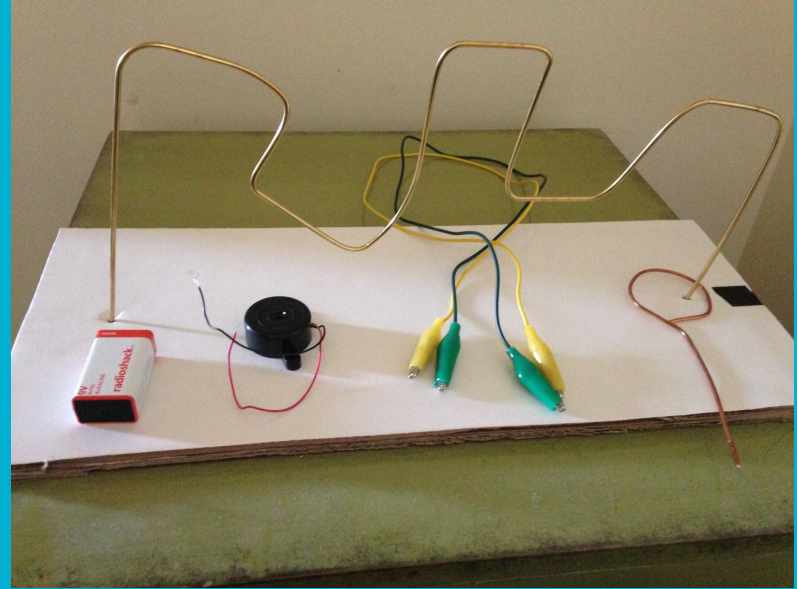
---

- sturdy metal wire
  - you want it to be of a large enough gage to stand on its own, but not so large that you can't easily bend it
  - [check it for electrical conductivity](#) first
- copper tape
- 9V battery
- wired buzzer (we chose cheap Piezo buzzers - see Pro-Tips later for more info)
  - You can choose other outputs like lights or motors, just make sure they have positive and negative connecting wires.

# Gather these supplies:

—

jumper leads with alligator clips  
(at least 2)  
electrical tape  
cardboard  
spray adhesive  
duct tape (or other heavy duty  
tape)  
pliers, wire cutters



# Let's Begin

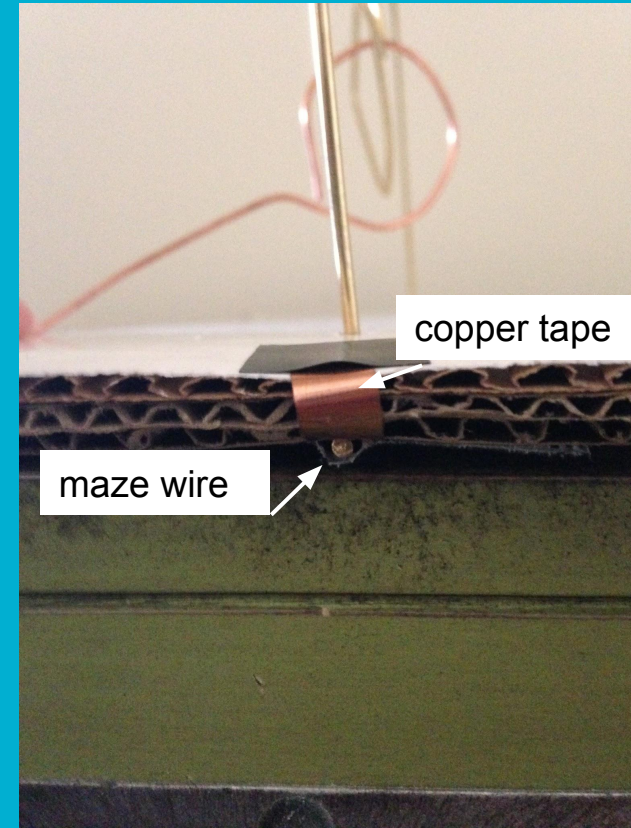
---

1. First, check your wire for conductivity
2. Spray adhesive spray on one piece of cardboard and top it with a second piece.
3. Use your pliers to bend your wire into whatever shape you want your maze to be in. The wire cutters can cut excess wire.
  - a. Make sure to have a tail on at least one end that is long enough to go below the maze, through two layers of heavy cardboard and tape, and end in a right angle under your boards.
  - b. You also want to make sure that you leave enough room for your wand to pass over, under, and through your maze - LEAVE SPACE!

# So far so good :)

---

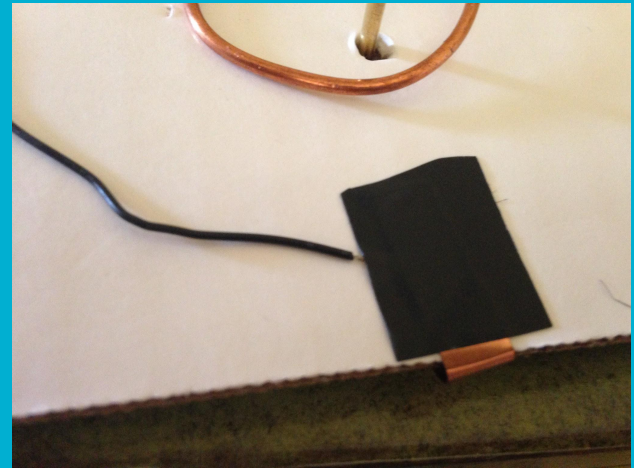
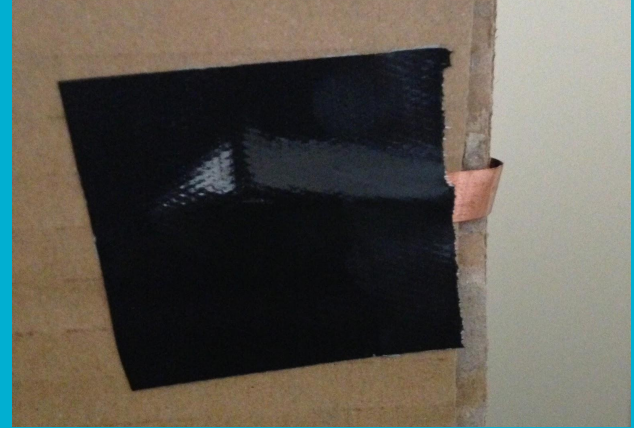
4. Poke the tail end(s) of your wire through both pieces of cardboard. Bend the end(s) at a 90° angle.
5. From one end of the wire maze, cut a piece of copper tape that will run the length from under the 90° angle out to the edge of the maze, around the side, and up to the top of the maze.



# How is it coming?

---

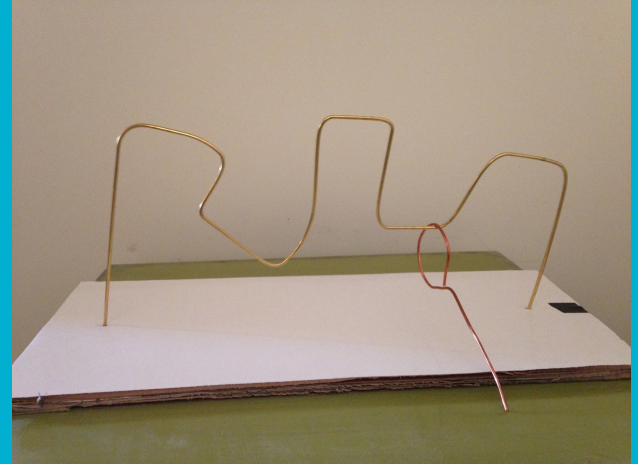
6. Secure one end of the copper tape between the end of the wire maze and the cardboard and run the tape around the cardboard. Place one of your buzzer wires under the copper tape on the top side of the maze before securing it down.
  - a. It's a good idea to secure everything with a layer of duct tape or gorilla tape.



# Next, build the wand

---

7. Use another piece of wire to construct a wand.
  - a. You want your wand to be able to pass easily through the maze.
  - b. USUALLY, a larger opening on a wand leads to an easier maze, but if your maze has tight turns, you'll need to make it smaller.

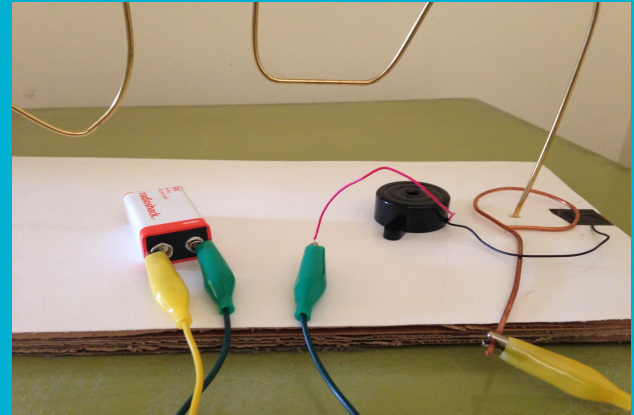
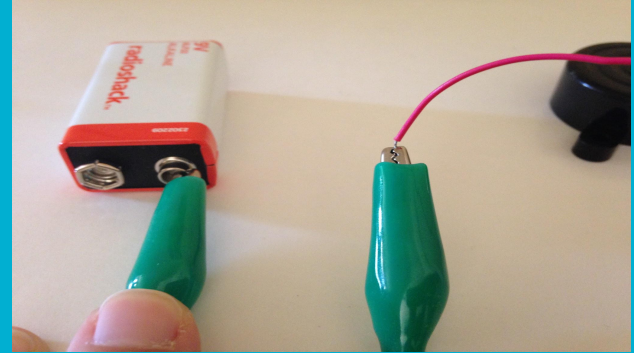




# Great job constructing your circuit!

---

8. Use the alligator clips on a jumper lead to connect the other buzzer wire to one pole of the battery.
9. Run another jumper line from your wand to the other pole on the battery.
  - a. If the buzzer doesn't sound when the wand makes contact with the maze, try swapping battery poles.





# Tips to keep in mind

---

1. Purchased buzzers at Radio Shack - A good idea to try out the buzzers with the 9V batteries to make sure they play nicely.
2. It's a good idea to tape your wand to the alligator clip to prevent it from rolling.
3. Buzzers get annoying. A piece of tape or some playdough would muffle it nicely.
4. Paper clips make a nice substitute for your wand.