

Piezo Speaker Puppet

<http://dwig.lmc.gatech.edu/projects/prototypingpuppets/>

Georgia Tech
Digital World Image Group
An NSF AISL Funded Project

Materials & Tools:



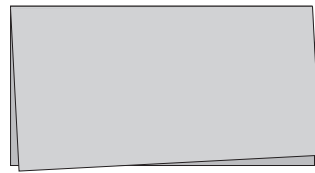
large craft stick



copper tape



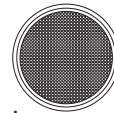
clear tape



construction paper



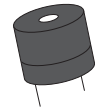
LED



battery



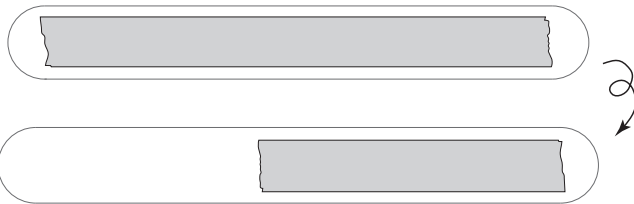
scissors



piezo speaker

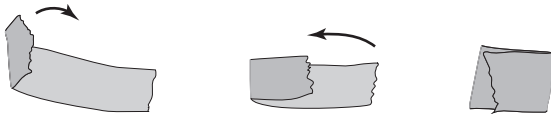
Instructions:

Step 1: Attach a strip of **copper tape** on to one side of the **craft stick**. Do not pull off the backing of the tape all at once. Peel it away slowly as you stick it down.



Flip **craft stick** over, and attach **copper tape** strip halfway across this side.

Step 2: Form loop with **copper tape**, sticky side facing out.



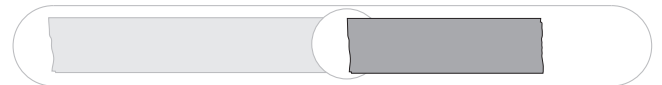
Attach **copper tape** loop on middle of **craft stick**. This must touch the copper tape that is already on craft stick.



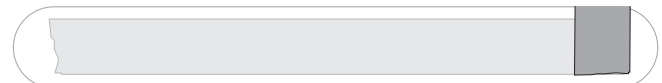
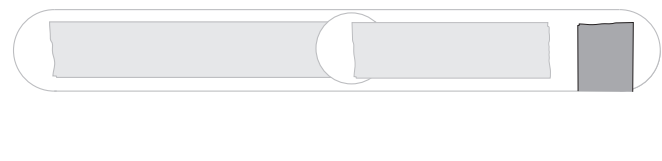
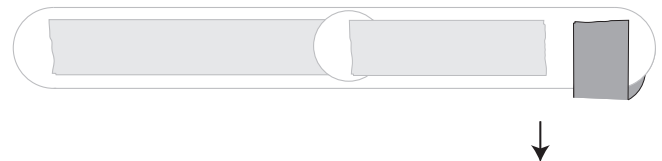
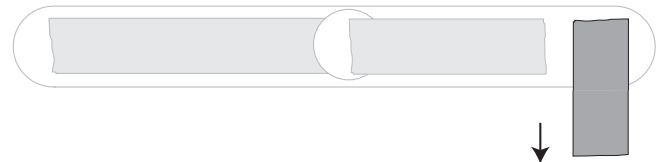
Step 3: Attach **battery** on top of **copper tape** with **positive** side facing up.



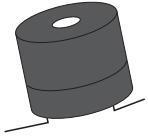
Step 4: Attach another piece of **copper tape** over middle of **battery**, extending towards the end, leaving a gap as shown.



Step 5: Attach another piece of **copper tape** over end, making sure it does not touch any copper tape on battery side. Fold tape over edge of craft stick, connecting it to copper tape on other side.



Step 6: Bend the **leads** of the **piezo speaker** so that they are pointing away from each other.



Step 7: Place the piezo speaker on top of the copper tape so that one leg is on one piece of copper tape, and the other leg is on top of the other.

Note: A piezo speaker has polarity, so connect the proper leads to the proper side of the battery.

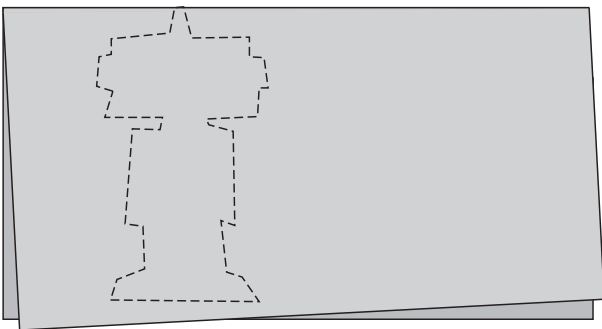


Step 8: Use **copper tape** to tape over the **leads** to connect them to the copper tape underneath, while securing the piezo in place.

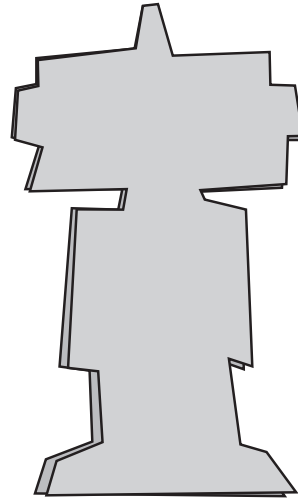


Step 9: Trace your puppet design on to **construction paper**.

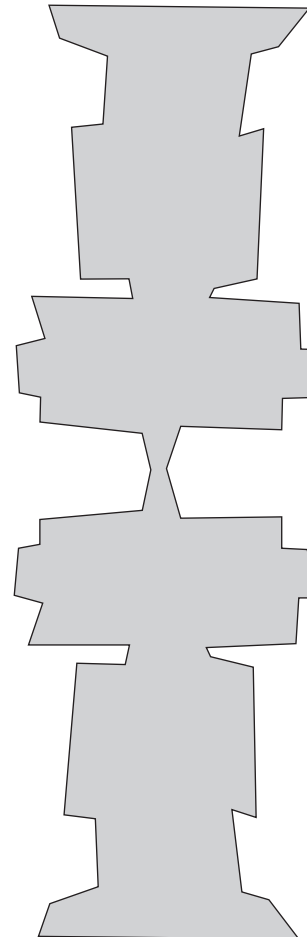
Note: ensure that design matches **folded edge** of **construction paper** so that a part of the puppet contains the fold.



Step 10: Cut out design.

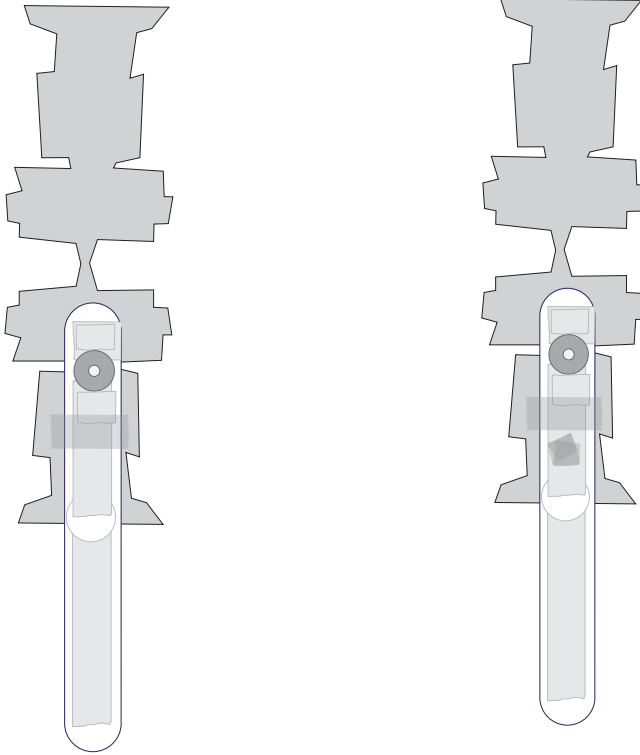


Step 11: Unfold your cutout.

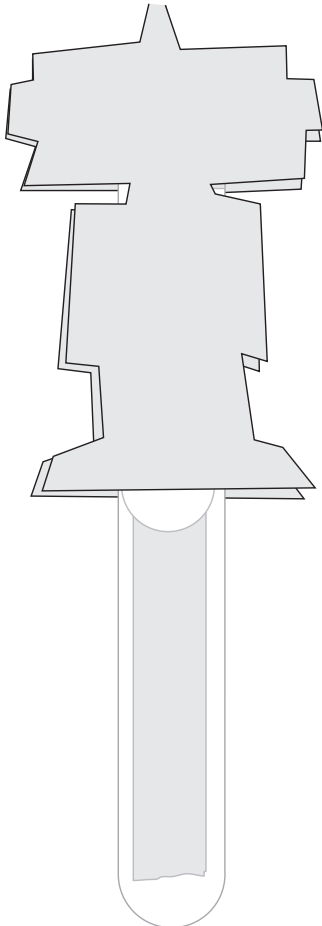


Step 12: Place **craft stick** on top of **cutout**.

Attach strip of **clear tape** over **cutout** and **craft stick**. Form another **clear tape** loop and place over **craft stick**.



Step 13: Fold **cutout** over to line up with other side.

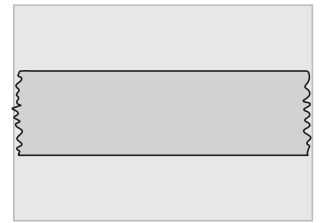


Step 14: Cut out piece of **construction paper** to act as your switch.

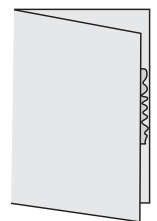
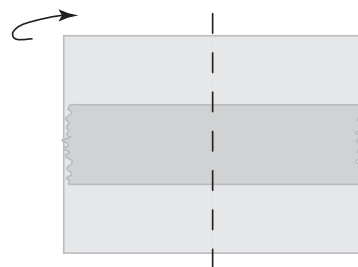
Actual size



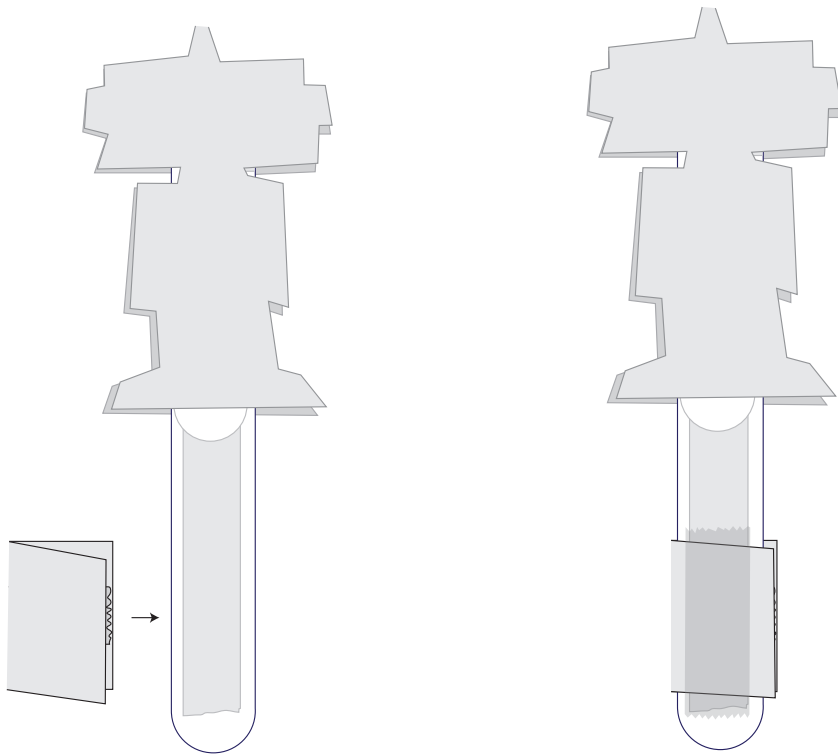
Step 15: Attach **copper tape** on to **construction paper**.



Step 16: Fold **construction paper** in half, vertically.



Step 16: Attach **folded paper** from step 13 to craft stick. Make sure that **copper tape** on **craft stick** makes contact with the **copper tape** on the **construction paper**. With clear tape, secure the paper to the stick.



CONGRATULATIONS!

Your puppet is now complete!

To beep, press down **paper flap** on **copper tape**.

