

RATTLE WRITER HACK

In this hack sheet, we will show you how to make colorful drawings with an unlikely duo: an electric toothbrush and a pool noodle!

Materials: electric toothbrush (with one AA battery), pool noodle, plastic knife, washable markers, rubber bands, balloons, permanent marker, googly eyes, paper, duct tape, ruler

All the materials are available at dollar stores.

One-dollar electric toothbrushes can be found at both Dollar Tree and 99 Cents Only Store.



Directions

1. Install the battery in the toothbrush and check that it will work when you turn the switch on. Troubleshooting: Double check the battery is in with the negative side down and the positive side up. Make sure the cap is aligned correctly. There are little arrows on the body of the toothbrush and the cap you should line up.
2. Using a plastic knife (Figure 1), cut off a 7 inch length of pool noodle. If you don't have a ruler, just measure the pool noodle to be long enough that it can fit the entire toothbrush (Figure 2).

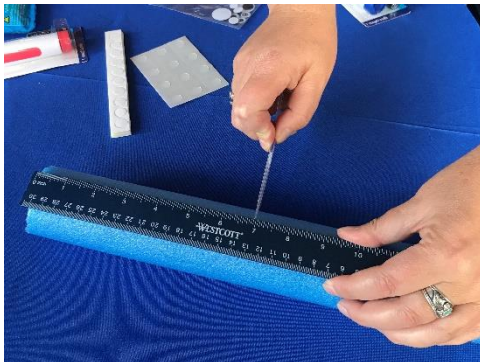


Figure 1

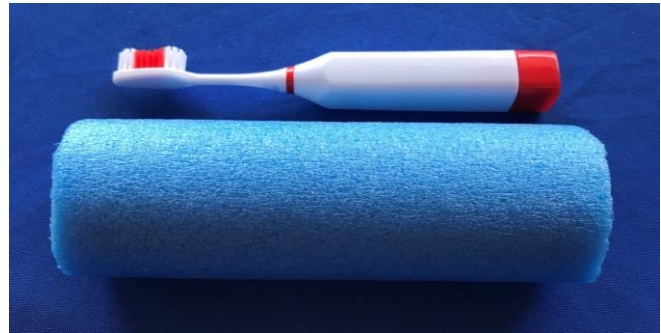


Figure 2

3. Blow up a balloon. Tie it. Draw a face on it with permanent marker and add the googly eyes (Figure 3).



Figure 3

- Using half a width of duct tape, secure the balloon nozzle about an inch below the toothbrush cap. Then push the toothbrush all the way into the pool noodle.



Figure 4a and 4b

- Choose at least three markers (in colors of your choice!), and secure them to the pool noodle with a rubber band off the end of the pool noodle with the brush end.



Figure 5a and 5b

- Uncap the markers and place the rattle writer on a sheet of paper (Figure 6). Turn on the the toothbrush, and watch your Rattle Writer go! Now would be an appropriate time to shout, "It's alive!" Be sure to give your rattle writer a name. (If you have trouble getting your writer to move, try adjusting the height of the toothbrush or the angles of the markers. Try angling them all slightly.)
- Now, think about how you might fiddle with the arrangement of the markers, rubber bands, or toothbrush to create different designs!

Challenges

- ❖ Can you get the rattle rider to draw a (nearly) straight line?
- ❖ How about overlapping circles? Small spirals? Big spirals?
- ❖ What other shapes can you get it to draw?
- ❖ Can you give your rattle writer arms and legs? Hair?
- ❖ Can you make an outfit of clothes for your rattle writer?



Figure 6