

## How to make a Plastic Bottle Barometer by tmross4

Download

7 Steps

Collection

I Made it!

Favorite

Share ▼



This is an easy project and would make a great science experiment. Using a vacuum inside a plastic bottle with water in it, you can observe the changing air pressure with this simple barometer. Please note, this type of barometer only allows you to see if the air pressure is high or low.

### Step 1: Supplies





Items needed to make this barometer are:

1. A plastic soda or water bottle with lid, size not important!
2. Air Tubing, such as from an aquarium or oxygen use about  $1 \frac{3}{4}$  the length of the bottle.
3. A nail or other sharp instrument.
4. A rubber band
5. Low-Heat glue gun
6. Food Coloring (gel or liquid)
7. Water

## Step 2: Making the Hole



Using the nail, make a hole in the bottle slightly smaller than the outside diameter of the tubing at the base of the bottle. This is to ensure you get a tight seal. I actually heated the nail using my stove top to make this easier to do, and the heated nail allows for more accuracy.

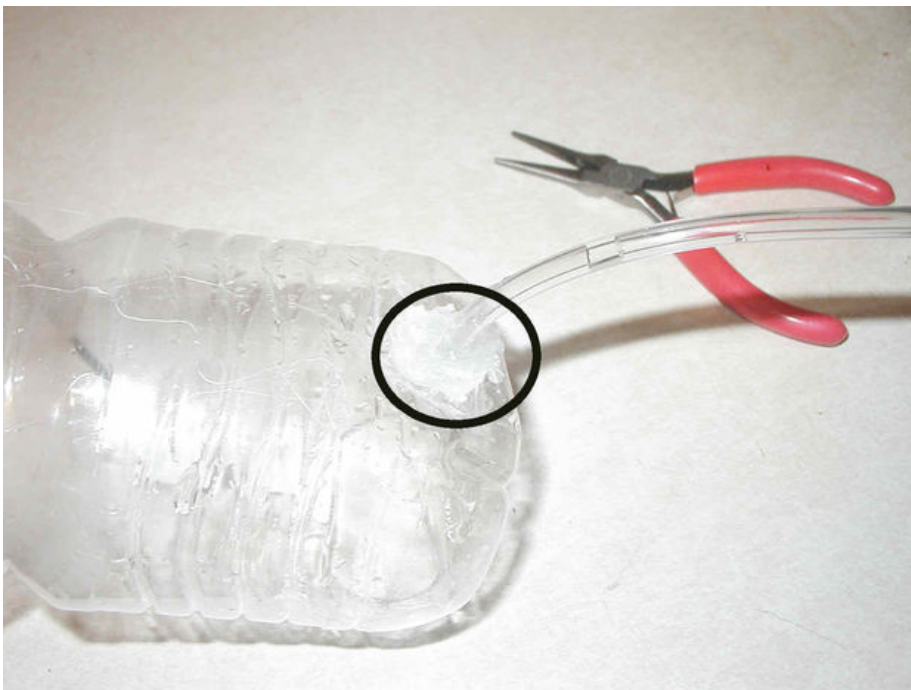
## Step 3: Inserting the Tubing





Insert the tubing until the tip is half way into the bottle, and should be resting on the bottom of the bottle. You may need the help of the cooled nail to insert the tubing. Remember, it must be a tight fit.

#### Step 4: Checking for leaks



Fill the bottle with enough water to come up about an inch on the bottle. If it leaks, dump the water out and apply a good size bead of low-heat glue around the tubing on the bottle. When the glue has cooled slightly, use your finger to push the glue into the area surrounding the tube to make a water-tight seal. Let cool, and check for leaks again. If still leaking, apply more glue.

## Step 5: Attaching the Tubing to the top of the Bottle



Using the rubber band, attach the tubing to the top of the bottle just below the threads, making sure you do not put pressure on the tubing.

## Step 6: Adding Water





Now that your barometer is completed, it's time to add the water! Pour water into the plastic bottle about half way up the bottle. Add desired amount of food coloring to get the shade you want, and then gently shake the bottle with the lid on to completely distribute the coloring. Alternatively, you can mix the water and food coloring prior to pouring into the bottle.

### Step 7: Afterwards...



Place your barometer in an area where it won't be disturbed too much. Each time you move the bottle, unscrew the lid and retightened the lid to give you the proper vacuum. Remember, when the water level in the tubing is low, high pressure is going on (or "Highs" as they say in the weather reports). When the water level is above the the water level and rising then a low pressure is in effect (or a "Low").