

PINHOLE CAMERA CONSTRUCTION

Materials

Bring from Home

- Large juice mix container, coffee/hot chocolate container, oatmeal container, etc. (Must be cylindrical in shape and at least 11cm in diameter)
- Aluminum can
- Duct tape (1 roll)
- Electrical tape

Provided by the School

- Sand paper
- White glue/Glue stick
- Black construction paper

Procedure – How to Build a Pinhole Camera Video: <https://goo.gl/YGdZxR> or [Click Here](#)

1. Clean out the container with a bit of water and paper towel. *The inside must be clean for when it is spray painted.*
2. Cut out a circular piece of BLACK paper to fit inside the lid of your camera. Glue it in to place inside the lid.
3. Cover the outside of the container in duct tape. Making sure to cover every part with AT LEAST 2 layers of tape.
4. Cut a three-sided flap into the side of your container using an x-acto knife
 - a. The flap should be 1.5" x 1"
 - b. Make sure the flap is in the middle of the container**
5. Spray paint the inside of your can black. Wait for it to dry ****Teacher will do this****
6. Cut out a 2" x 2" square from the side of the aluminum can using an x-acto knife
7. Poke a hole using a pin into the **middle** of the aluminum square
8. Rub sandpaper around the pin hole. DO NOT TOUCH THE HOLE
9. After sanding, re-poke the hole using the pin
10. Sand the hole once more
11. Place the piece of aluminum inside your container making sure the pin hole is in the middle of the flap which you have cut out
12. Tape the aluminum square onto the inside of the container with electrical tape, making sure the pin hole stays in the middle of the flap
13. Create a cover to go over the flap which can be opened and closed (sealed tight when closed)
The flap should be larger than the flap itself to stop light from leaking in when closed

Taking a picture

1. One member of your pair will go into the dark room with your teacher to load the photo paper.
2. Before leaving the dark room make sure you have your hand over the flap to make sure no light can leak in.
3. Find a **solid** surface to put your camera on to take a picture. *Grass is NOT a solid surface.*
4. Record light intensity with the Vernier Light Sensor - Point the sensor in the direction you are taking the picture.
5. Open flap on camera to expose photo paper. **Make sure to hold the flap all the way open the entire time.**
6. When you think you have exposed your photo paper for long enough close the flap.
7. Record how long your flap was open/photo paper was exposed.
8. Cover the flap with your hand to ensure that no light leaks in.
9. Record weather conditions for the day (Overcast, clear skies, raining, etc.)
10. Bring your camera back and put it into your classes designated bin to be developed.

Inverting your photos

1. Use a camera phone to take a picture of your developed photo - (*it may take you a couple of times to get a good photo*)
 - a) make sure you are directly over top of the photo so you are getting the full photo in the shot
 - b) make sure there is no glare

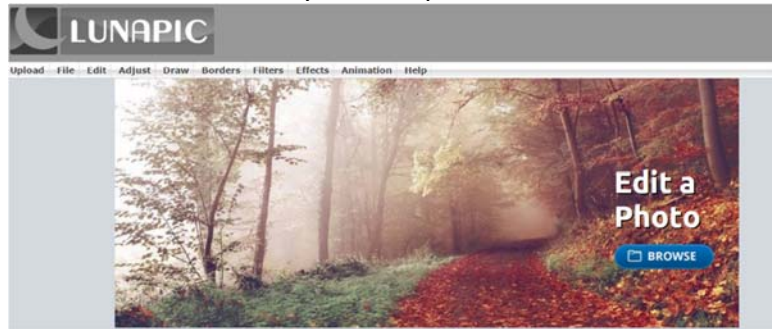
Good photo
Captured directly over top



Bad photo
Not captured ovetop, full image not in frame



2. Email yourself the photo and save to your computer.
3. Go to <http://www191.lunapic.com/editor/> and upload your saved photo by clicking on the blue "Browse" button to view the files on your computer:



4. Once your photo is opened, go to the top bar and click "Filters" ----- "Negative"



5. Once your photo is inverted, you can save it by going to "File" -----"Save As". Save as a jpeg.