**How to Make a Pinhole Camera Photography**

 **Mr. Martin**

**Supplies you will need:**

A light-tight container matt cutter or 1/4” drill bit and drill

Black matte spray paint scissors

Aluminum foil or aluminum can sewing needle or tack

Gaffer tape Very fine grit sandpaper

**Instructions**

1. Use a small can or box for the camera body. You can use anything that has a tight-fitting top: a shoebox, a coffee can, an oatmeal container, a mint container, a gift box, etc.

2. Measure the center of the lid or the side of the container, wherever the pinhole is going to go and cut a small square or drill a 1/4” diameter hole into it.

3. This is one of the most crucial parts!!! Make the actual pinhole by cutting out a small separate piece of heavy black paper or thin metal. Heavy-duty aluminum foil or a piece of aluminum cut from a soda can will work. Place the material over a piece of cardboard or magazine and while rotating, push the pin into the material. This will act like a drill and make a smoother hole. Don't press too hard; the tip should just barely break through the surface.

4. If you make the pinhole out of a piece of aluminum can, lightly sand the opening to make sure the hole is smooth and not jagged. Hold it up to a light source to make sure it is unobstructed.

5. Spray paint the inside of the container and the piece of aluminum, the side that will be facing the inside of the camera body, with dull black paint or line it with black paper to prevent light reflections. If the container you use has a plastic lid, paint the lid black. Before using it, check to make sure no paint has chipped off. Chipped or peeling paint will allow light to enter the camera body, reflect and affect your image.

6. Secure the pin over the hole in the lid with Gaffer tape. Your pinhole should be in position over the center of the hole. Make sure the side that is painted black is facing in towards the camera body.

7. Use a piece of black paper or a piece of Gaffer tape to cover the pinhole. This will act as your shutter.

Your camera is now ready to be loaded with photographic paper or film.

**SOME TIPS**: A viewfinder for a pinhole camera, while not necessary, can be made of 2 pieces of cardboard or wire. The front frame of the viewfinder should be the same shape and slightly smaller than the film and located directly above the pinhole at the front of the camera. The rear frame is a sighting peephole directly above the lid of the can and aligned with the center of the front frame.

When you aim your camera at subjects closer than 5 feet, position the subject low in the viewfinder to allow for parallax--the difference between the view you see through the viewfinder and the image recorded on the film. This effect is caused by the separation between the viewfinder and the pinhole.

**Loading a Can or Box Pinhole Camera (taken from KODAK website)**

You can load the camera either with film or fast photographic paper. Your choice of film or paper may depend in part on the exposure times. Paper, because it is less sensitive to light than film, will probably require an exposure of about 2 minutes for sunlit subjects. Film may require only 1 or 2 seconds for subjects in sunlight.

Paper is easier to handle since you can load it into the camera under a safelight. If you don't have a safelight, you can work by the light of a flashlight covered with several thicknesses of red cellophane paper placed 6 to 8 feet away. Most film, on the other hand, must be handled in total darkness.

If you use film, you can cut up a roll of KODAK TRI-X Pan Film or KODAK T-MAX 400 Profesional Film, 120 size, into 2 3/8-inch squares or 2 3/8 x 3 1/2-inch pieces. This must be done in total darkness, of course. At night a closet will probably be dark enough if lights in adjoining rooms are turned off. Sheet film, such as KODAK Tri-X Pan Professional Film, is easier to use because it's flat.

A camera made from a 2-pound coffee can will take a 2 1/4 x 3 1/4-inch piece of film or photographic paper. You can use a 3 1/4 x 4 1/4-inch piece if about 1/2 inch is clipped from each corner of the film or paper. A camera made from a 1-gallon paint can will take a 4 x 5-inch piece of film or paper.

When you have the size of paper or film you need, tape it firmly to the inside of the end of your camera opposite the pinhole. The emulsion should face the pinhole. The emulsion side of photographic paper is the shiny side. The emulsion on roll film is on the inside of the curl. Sheet film is identified by notches cut into one of the shorter sides. When you hold the film in a vertical position with the notches in the top edge toward the right side, the emulsion is facing you. Another way to determine the emulsion side of either paper or film is to touch both sides with a moistened finger. The emulsion side will feel slightly tacky. Test near the edge to avoid a fingerprint in the center of the picture. You will need to tape down the four corners if you use cut-up roll film or paper. Taping two diagonal corners will work for sheet film. Close the camera, making sure the shutter is closed.

It's a good idea to practice with an exposed piece of film or paper before trying the load the camera for your actual picture taking.

**Exposure**

To get clear, sharp pictures, your camera must remain very still while the shutter is open. Use plenty of tape or a lump of modeling clay to hold your camera still. Lift the black paper to uncover the pinhole and keep the pinhole uncovered for the recommended time. Cover the pinhole with the black paper between exposures.

It's a good idea to make three exposures of different durations for each scene to improve the likelihood you'll get a good picture.