

# Making a pinhole camera

The box is constructed from card stock which is black on at least one side. The black side becomes the interior of the camera and prevents light being scattered on the inside of the camera. (Look at the inside of your commercial camera. It's also matte black.) If you used a pre-made box, it's necessary to paint the inside matte black. The box is made from three 4" x 5" rectangles, two 5" x 5" rectangles, one 5" x 6" rectangle, two 1" x 5" strips and two 1" x 4" strips.

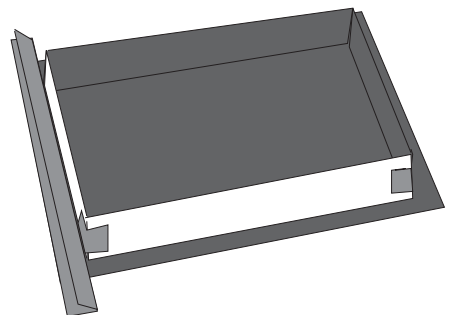
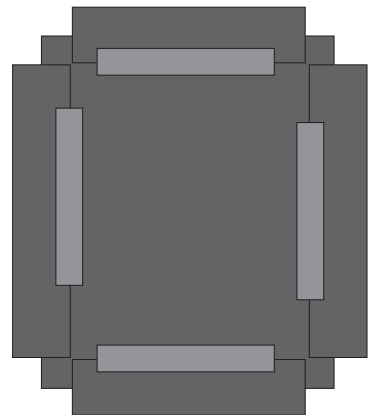
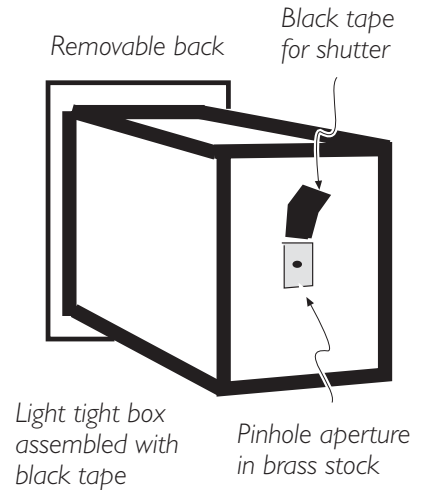
It's assembled with black tape in order to make the seams light proof.

## Step 1 The removable camera back

The removable back of the camera is constructed from the 5" x 6" rectangle and the 1" strips.

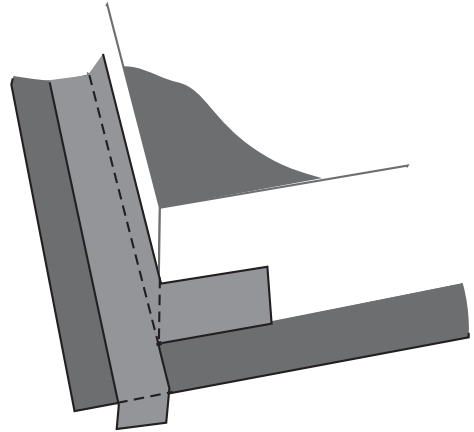
Centered on the back of the camera, draw a 4" x 5" rectangle. (Use the front of the camera as a template) Lay the edges of the 1" strip against these lines and tape them on with small pieces of tape, and fold up and tape the corners (black to the inside). Make sure the inside dimension is 4" x 5" so the "film" fits inside.

Then tape the seams several times to make them light tight. You'll be working with an inside corner seam. In order to get the tape tight into the corner, fold it length wise, adhesive side out, and then press it into the corner.



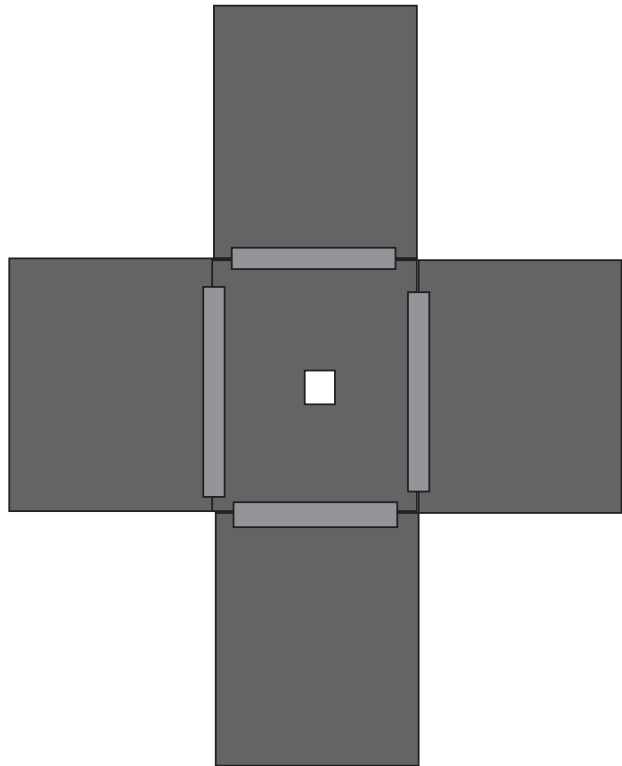
Place it on the seam, and then split the part which extends beyond the box with scissors. Then fold one part in one direction and the other in the other to form a tight corner. Perfect neatness isn't important, the main thing is to make the seams absolutely light tight.

Since the back of the box will take a bit of a beating getting the back in and out, once you have gotten the back together, place a single strip of tape around the back of the box to keep the seams from coming apart.

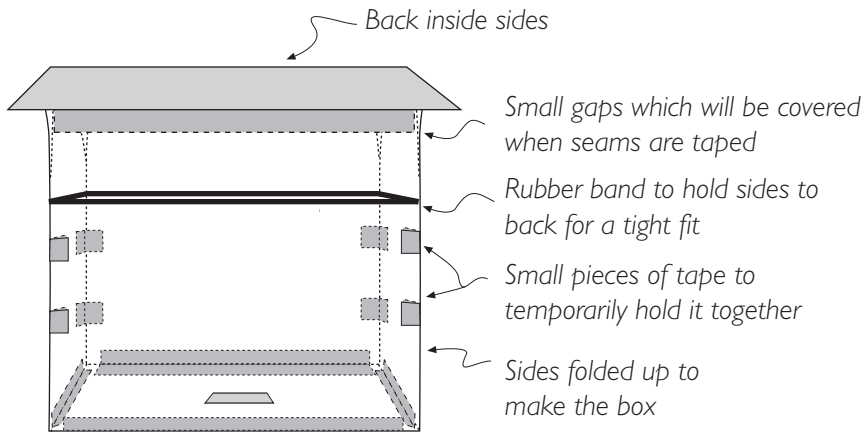


## Step 2 The box of the camera

Lay the front of the camera, black side up, with the two 5" x 5" rectangles against the 5" sides and the two remaining 4" x 5" rectangles against the four inch sides to form a cross (black sides up). Tape the seams together.



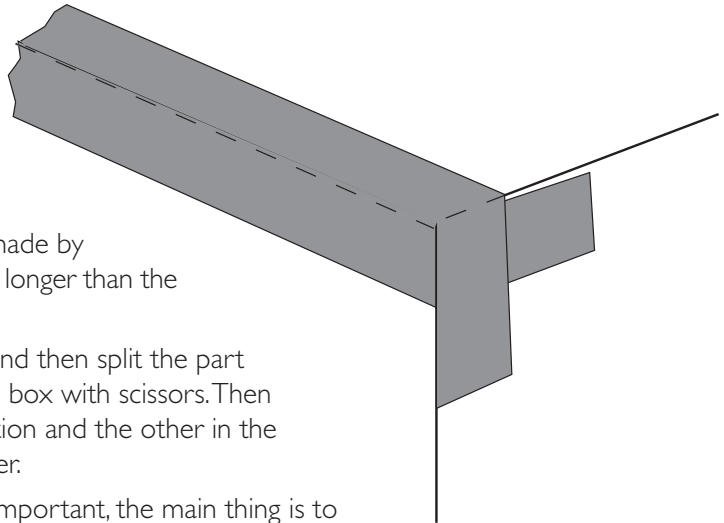
Then fold the sides up. Put the back inside and put a rubber band around the box so it holds together around the back. This is to make sure the back fits tightly on the finally assembled camera. Put a few small pieces of tape to hold things together while you finish the seams. Notice that there will be a gap between the sides of the box where it fits over the back. We'll cover these with tape.



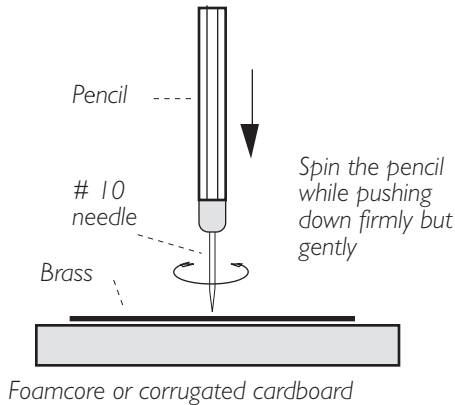
Then tape the seams. Pay particular attention to the corners. The corners are made by using a strip of tape slightly longer than the seam.

Place it on the seam, and then split the part which extends beyond the box with scissors. Then fold one part in one direction and the other in the other to form a tight corner.

Perfect neatness isn't important, the main thing is to make the seams absolutely light tight.



### Step 3 Drilling the pinhole



Place a one inch square piece of the brass shim stock on a couple layers of corrugated cardboard or on some styrofoam.

With the needle/pencil, using slight pressure and rotating it back and forth, drill a hole in the brass.

Just pushing it through will tear through the metal creating a non-circular hole, with more of a spur and more rough edges than you want, and might bend the needle.

With a piece of fine emery paper, polish off the slight spur that was created on the other side to create a nice, smooth, circular pinhole.

### Step 4 Attach the pinhole to the camera

Using tape, attach the pinhole to the front of the camera. Be careful not to cover the pinhole!

Attach it securely so it doesn't pull off when you're taking pictures

For a shutter, take a piece of tape and cover the pinhole