The Pinhole Camera…
an Introduction to Photography

What is a pinhole camera?

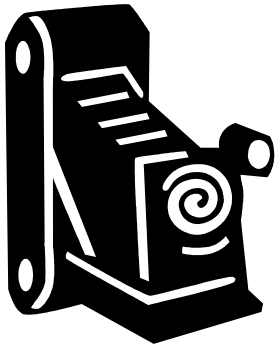
A pinhole camera is a small, light-tight can or box with a black interior and a tiny hole in the center of one end. The two ends of the camera are parallel. The end opposite the pinhole is flat so that the film (paper) is held in a flat plane. The pinhole has a cover to prevent light from entering the camera when you aren't taking a picture. This camera made out of a box, some tape, glue, and a piece of metal with a small hole in it. It can make really cool photographs!

How does it work?

Pinhole images are formed by a beam of light, the diameter of which governs its sharpness. The diameter of the beam is determined by the diameter of the pinhole...so, a really big pinhole will make a less sharp image and a very small pinhole will make a very sharp; but not as sharp as a lens, image...easy! The beam enters the pinhole and hits the film (paper) that is placed in the back of the camera, exposing the silver halide crystals to various intensities of light, causing a latent image (one that is not developed yet).

How do I take a photo?

To get clear, sharp pictures, you must keep your camera very still while the shutter is open. Aim the pinhole at an interesting scene. Creativity and innovation count! Use tape to hold your camera to a table, windowsill, chair, or rock, or use another type of firm support. Lift the tab (shutter) to uncover the pinhole and keep the pinhole uncovered for the recommended time. Cover the pinhole with the tab (shutter) between exposures. KEEP THE CAMREA AS STEADY AS POSSIBLE for the clearest image.



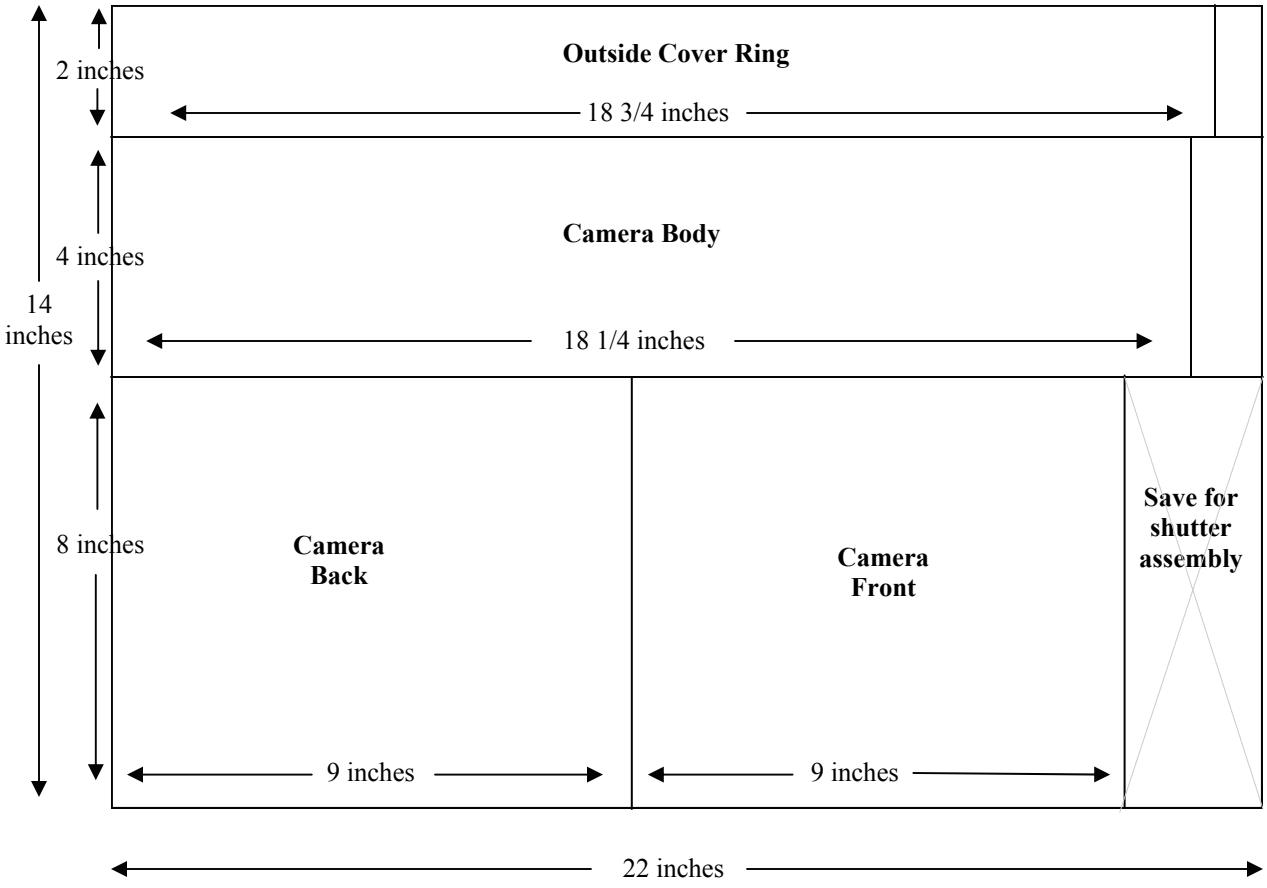
How long should my exposure be?

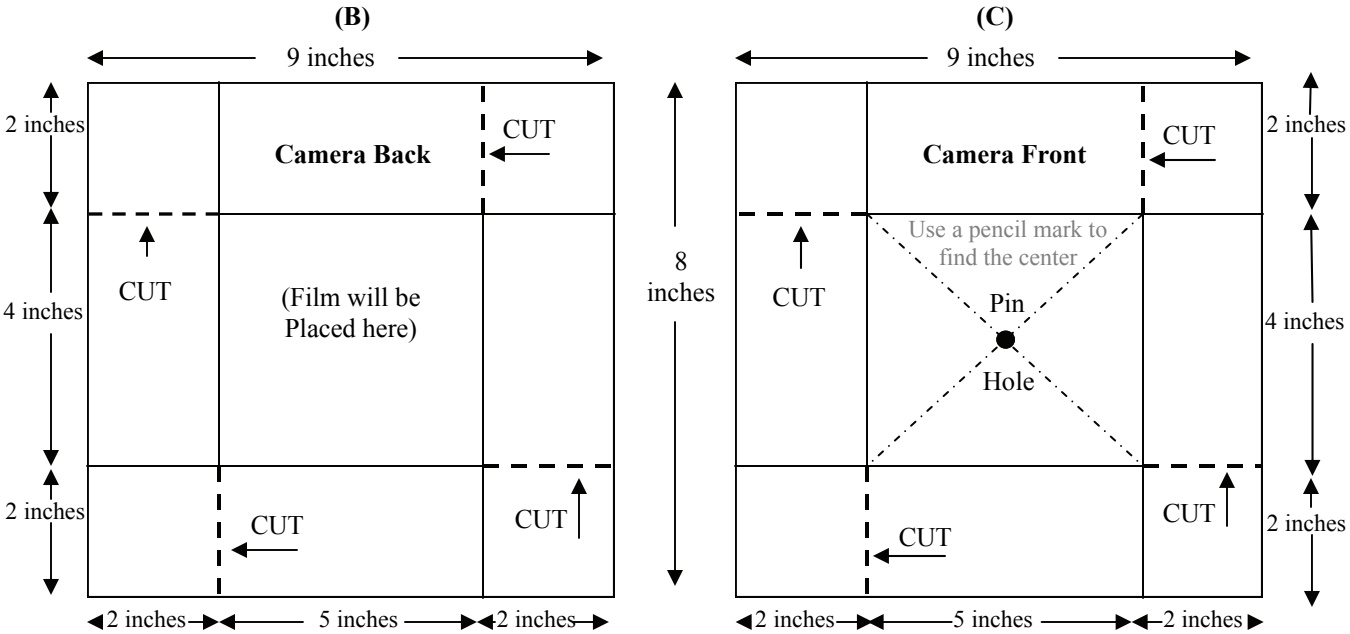
Somewhere between 2 and 8 minutes should work in most instances. If it is really bright and sunny, start with 2 minutes and see what you get. Then make adjustments accordingly. If it is cloudy or overcast, start with 6 minute exposures.

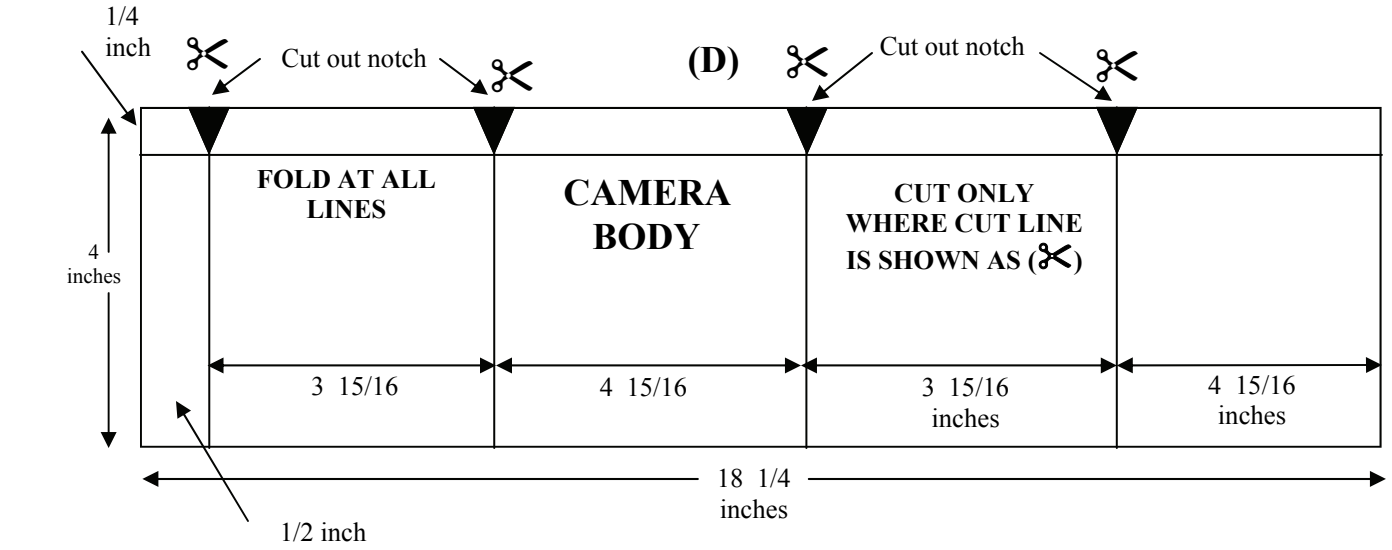
Assignment Specifications

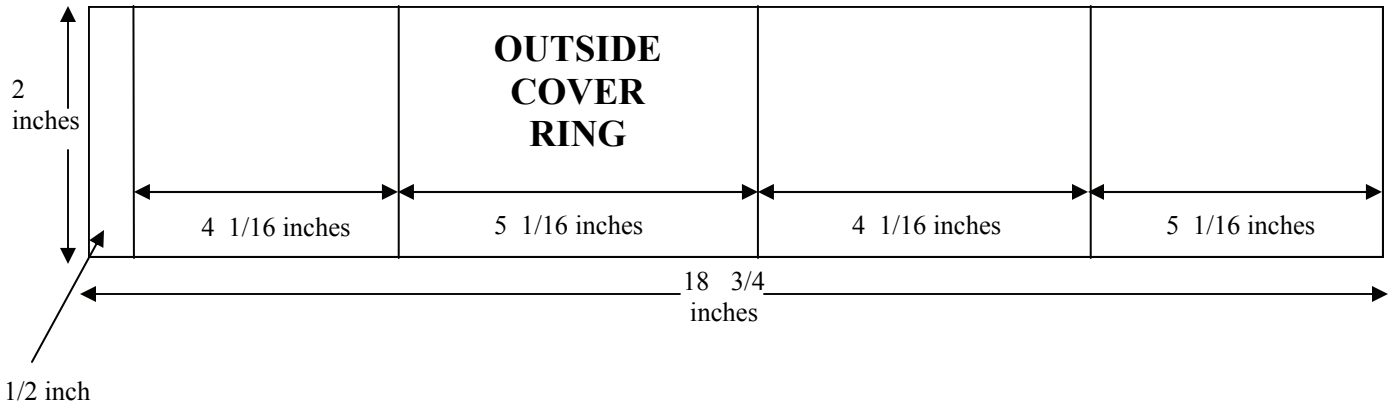
1. Work with a partner.
2. Get one piece of black tag board that is 14 x 22 inches.
3. Measure and cut out the four main pieces as shown in the first diagram (A).
4. Start making your camera! First construct the camera back (B) and front (C).
5. Make the camera body (D) and cover band (E).
6. Use glue (not too much!) to stick pieces together.
7. Make sure you **measure twice and cut once**! You will only receive one piece of black board. Use a pencil.
8. Press hard when making your marks. It will make folding the tag board easier.
9. Make cuts straight and folds neat. Craftsmanship counts and will be part of your grade!
10. Use black tape to adhere pinhole apparatus.
11. When complete (F), go into the darkroom and load your camera with one piece of 4 x 5 inch paper. The shiny side should face the pinhole or front of the camera. The dull side is against the back of the camera.
12. Go outside and scout your location.
13. Do not go far from the classroom. Stay on the sidewalks.
14. Be quiet and respectful of the fact that there are other classes going on.
15. Choose a scene that is interesting and innovative-try to do something no one else has thought of.
16. Place your camera on a steady surface and make your exposure.
17. Take careful notes as to the light quality, time of day, light direction, and exposure time.
18. Bring your camera into the darkroom and process the image that will show up on your paper.
19. Decide if your exposure was right on, over, or under and retake the photo if necessary.
20. After your paper negative is completely dry, place I on top of another piece of 4x5 paper with both sheets facing shiny side towards the enlarger lens. Expose the sandwiched papers under the enlarger in order to make a positive image. This will take some experi mentation with exposure settings.
21. Attach your photos to your tech sheet, fill out the self-assessment, and turn in your tech book to be graded.

(A)


Outside Cover Ring
2 inches
18 3/4 inches
Camera Body
4 inches
14 inches
18 1/4 inches
8 inches
Camera Back
Camera Front
Save for shutter assembly
9 inches
9 inches
22 inches


(B)
9 inches
2 inches
Camera Back
CUT
CUT
4 inches
(Film will be Placed here)
2 inches
CUT
CUT
2 inches
5 inches
2 inches
8 inches
(C)
9 inches
Camera Front
CUT
2 inches
Use a pencil mark to find the center
CUT
Pin
Hole
4 inches
CUT
CUT
2 inches
2 inches
5 inches
2 inches





Feel free to look at a finished camera if you get stuck.
TAKE YOUR TIME!!!!!!
There's no rush, so take the time to measure accurately, make clean folds and cuts, and glue or tape only where indicated.