

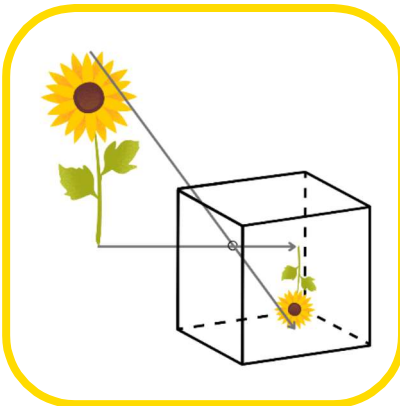
Picturing the Past



Pilot Eddie Hubbard with Boeing B-1 mail plane at Lake Union, ca. 1925. MOHAI, Austin Seward Photograph Collection, 1980.6877.176

The MOHAI collection is rich with photographs that show us people, places, and moments from Seattle's past. These photos span the history of photographic technology, from some of the earliest photographic technologies to digital images created in the past few years. Looking closely at historic photos and noticing how things happened or how things have changed helps us see the past for ourselves.

Creating images with light



Many of the photos in the MOHAI collection were taken with film cameras. All **analog** (non-digital) cameras work pretty much the same way. The body of a camera is a lightproof box, except for a tiny hole (usually covered by a lens) that light travels through. As light travels through the lens, it is focused and projected onto the back of the inside of the camera, where the image is captured by a light sensitive material. A good exposure is achieved by finding a balance between the sensitivity of the photographic material, the size of the hole (**aperture**),

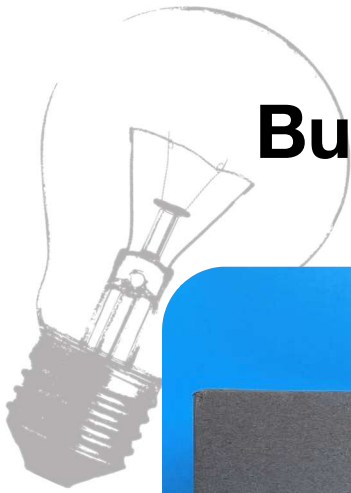
and how long you leave it open for (**shutter speed**). In order to see images taken on film, it first needs to be processed in chemicals. Then you can use the film to print photographs in a **darkroom**.

Did you know?

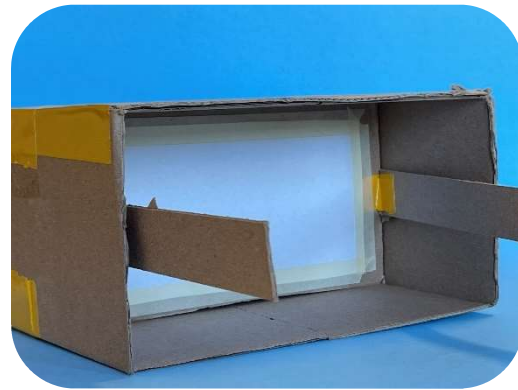
"Camera obscura" is Latin for "dark room"

"Photograph" comes from Greek and means drawing (graph) with light (photo)

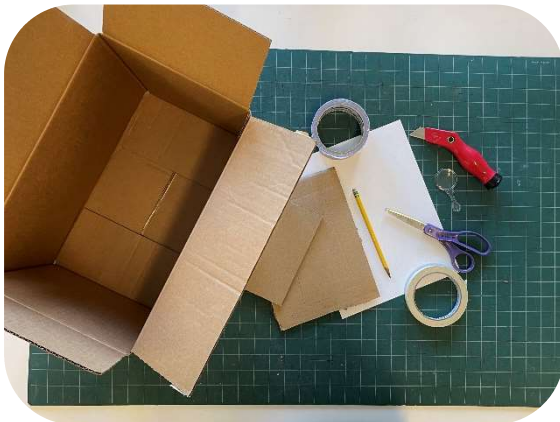
You can observe how light travels through a camera by making a **camera obscura**, the ancestor of the photographic camera. It works essentially the same way, but instead of capturing the image on light sensitive materials it projects the image onto a viewable surface.



Build a Camera Obscura



Watch the video introduction on the MOHAI YouTube Channel (@mohaiprograms)!



What you'll need:

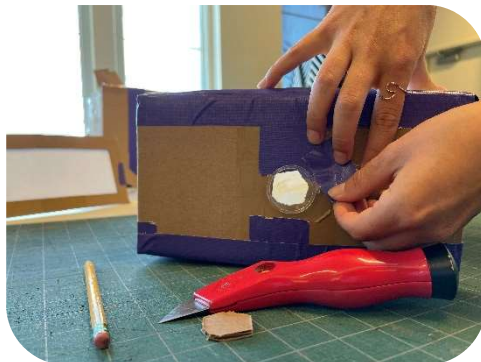
- Cardboard box
- Extra cardboard
- Scissors/box cutter (with adult supervision)
- Small magnifying lens
- Pencil
- Duct tape
- Masking/craft tape
- Copy/tracing paper (white)
- Surface to cut on

What you'll do:



1. Build your "dark room"

- Tape together your box with duct tape but leave one side open.
- Make sure to cover any areas of the rest of the box where light could enter!



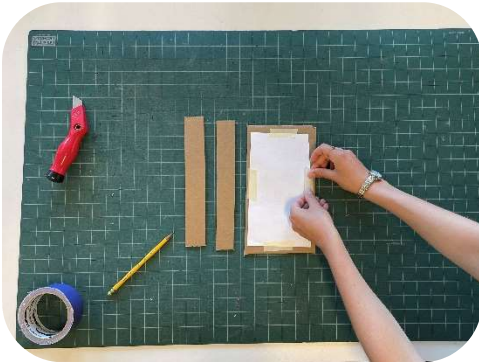
2. Make your lens

- On the opposite end from your open side, cut a hole slightly smaller than your lens and tape the magnifying lens over the hole with duct tape.



3. Make your screen

- Cut a rectangle out of cardboard that is the same size as the inside of your box. Then cut the middle out, creating a frame that is approximately 1 inch thick.
- Additionally, two strips of cardboard to serve as your handles.



- Cut your white paper to a size that covers the middle of the frame, and tape it to the frame.



- Tape one handle to each of the short sides of your frame.
- Your assembled screen should somewhat resemble a pair of glasses.



4. Put it all together!

- Slip the screen inside your camera body (handles facing towards you).
- Point your lens towards a bright window and watch the image appear – upside down!
 - Curious why this happens? Research **refraction**, a phenomenon that occurs when light passes from one material to another!
- Use the handles to focus the image by moving the screen further in or out of the box.
- Experiment with different light sources and viewing conditions. This camera obscura works best with a bright light source and dark viewing conditions – if you bring it outside, try placing a jacket or blanket over your head to get better results.

Pinhole Variation:



- To make a camera obscura without a lens, use the pinhole method!
- In this version, your box will be entirely light proof except for two small holes.
- Before you tape your box closed, tape a piece of paper to the inside of one end of your box. This will be your screen.
- On the opposite end of your box from your screen, poke a small hole with a pencil and cut a slightly smaller viewing window next to it.
- Make sure your hole and window are far enough away from each other so that when you look into the window your head doesn't block the hole.
- Try different pinhole sizes to get the right focus of your image. If you need to make the hole smaller, just cover it up with a fresh piece of cardboard and try again!

Share your camera obscura with us on social media!

 @mohaiseattle  @mohai  @seattlehistory