Make A Toy Camera

Discover light and photography with a toy camera!

Materials:

Small rectangular cardboard box (such as granola bar or pasta packaging), Camera Template printable (or draw your own), scissors, glue, crayons or markers. *Optional:* stickers or other decorations.

Instructions:

Step 1: Tape or glue your box closed.

Step 2: Cut out the camera template and viewfinder. Make sure to cut out the square in the middle of the viewfinder!

If you are printing the Camera Template, the printed dimensions are 6.5 by 4.75 inches (16.5 by 12 cm). Adjust the size to fit your box before printing.

Step 3: Color the camera and viewfinder pieces, and glue them on your box.

Step 4: Decorate the back of the camera with stickers, colorful paper or other materials. You can draw a rectangle as a screen, and draw a picture inside!

Step 5: Practice being a photographer! You can use your toy camera to do the **photography scavenger hunt** (see activity on website).

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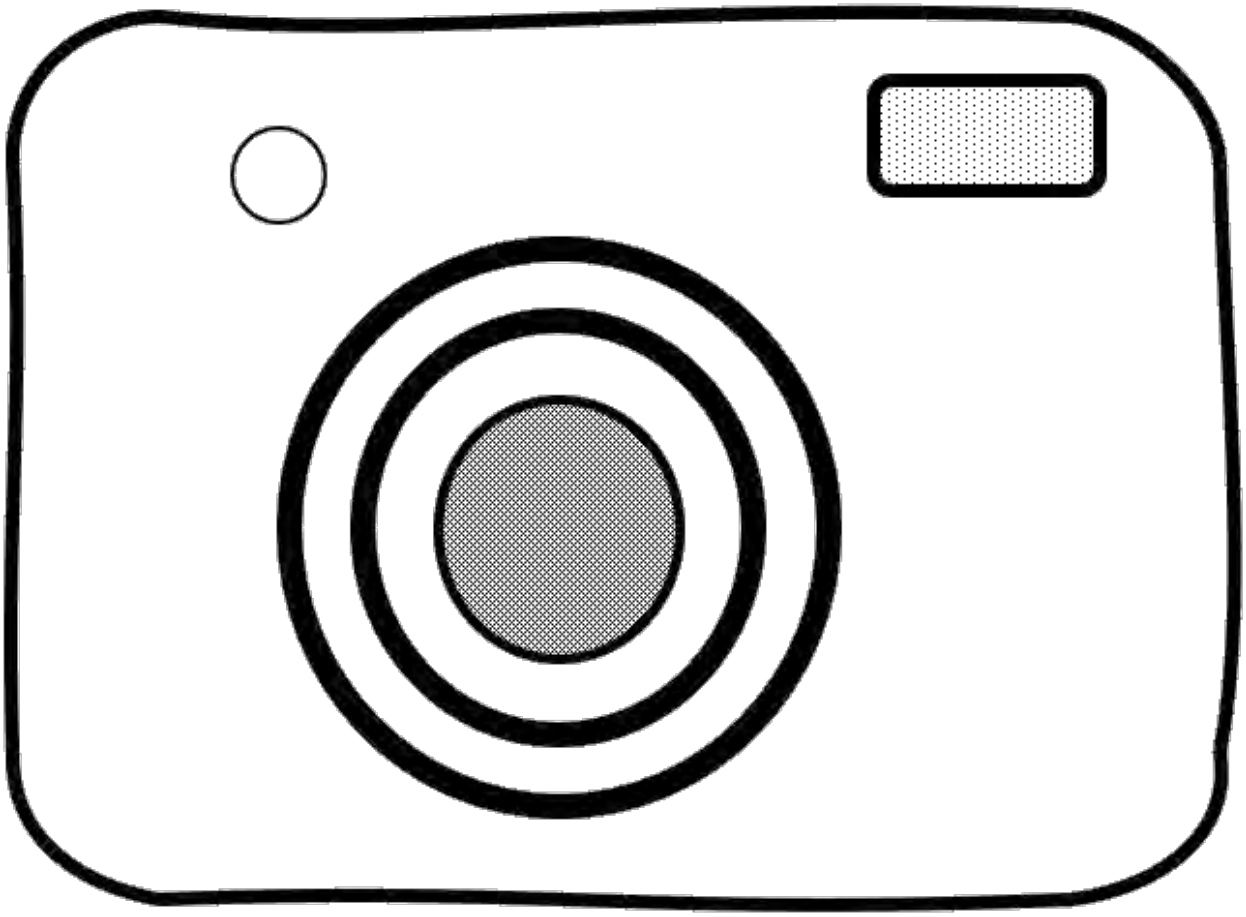
Camera Template Printable

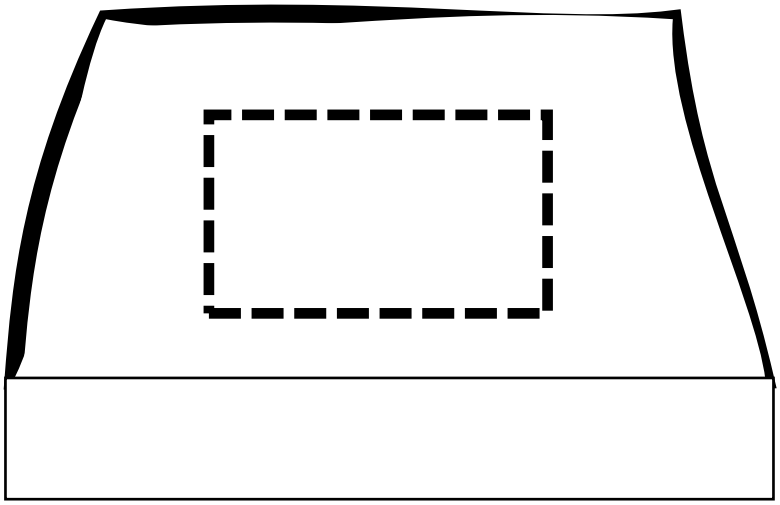
Camera Front



Viewfinder

Cut out the square in the middle along the dotted line.

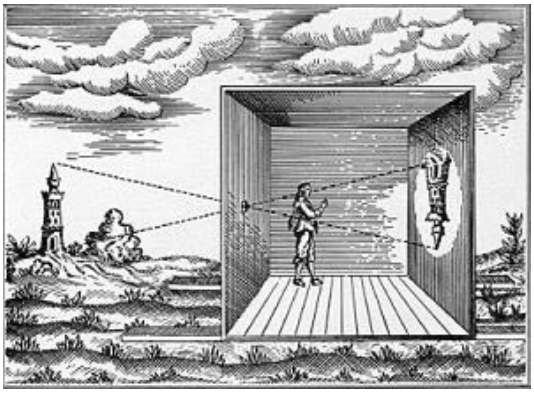
Glue the bottom tab onto the front of the camera.



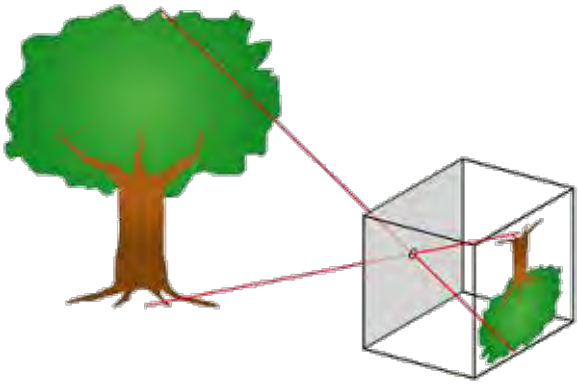
How Does a Camera Work?

The word *photograph* comes from the Greek words for "light" and "drawing". A camera works by taking the light rays around us and focusing them inside the camera to make the picture.

Since the 5th century BCE, people have known that light will reproduce an image through a hole. They would build boxes with a small hole in the side. The image of a scene outside the box was projected on the wall inside the box. Because the light rays criss-cross when they go through the hole, the picture looks upside down. This device was called a **camera obscura**.



Using an early Camera Obscura. From the book Ars Magna Lucis et Umbra by Anastasius Kirchner, 1646



In the 1100s, the scientist Ibn al-Haytham invented the **pinhole camera**, a portable version of the camera obscura. However, these devices had no way to save the image; the photographer had to trace around the image on a piece of paper.

Left: Diagram of a pinhole camera. Wikimedia Commons.

In 1825, scientist Joseph Niépce discovered that if he coated paper with special chemicals, he could save the image. When light hit the chemicals on the film through a small hole in the camera, it reproduced an image of whatever the camera was pointing at. Today we mostly use digital cameras, which capture images on an electronic chip instead of special paper.

Left: 19th century camera. Wikimedia Commons.

Right: Image by Kelly Sikkema on Unsplash.

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