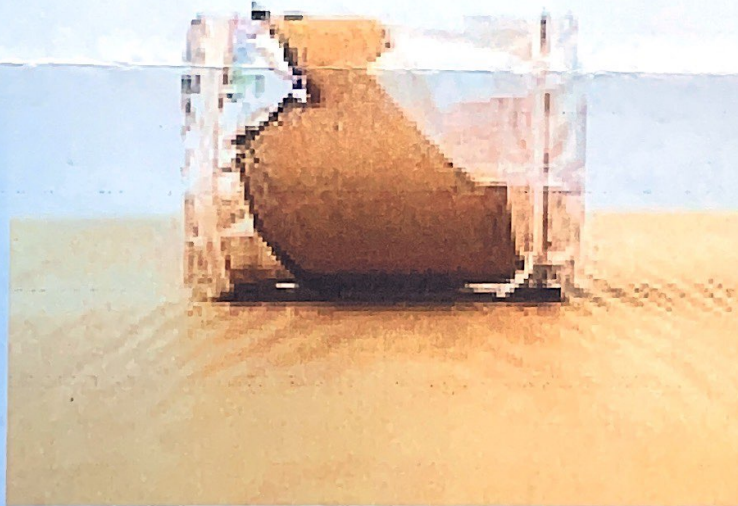


## INVESTIGATION: THE CAMERA OBSCURA

The earliest form of camera is called the camera obscura. It's first documented use was circa 470 BCE-circa 391 BCE in the Chinese text Mozi. There are hypotheses that prior to this documented use, camera obscuras were created from tiny holes in animal hides and inspired paleolithic cave paintings. Many artists throughout history are also noted to have used camera obscuras as a tool to better understand perspective and how light interacts with objects. In this investigation you will build your own camera obscura and discover how it works.

**Guiding Question:** How does a camera obscura demonstrate that light travels in straight lines?

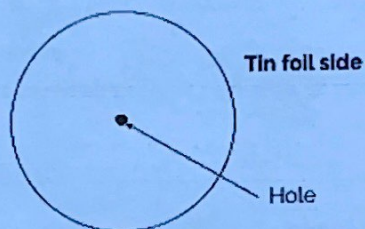


### **Materials:**

- Toilet paper tube
- Square of Wax paper
- Square of Tin foil
- 2 elastic bands
- Scissors
- Dark paper
- Tape
- Push pin

**Procedure:**

1. Cover one end of the toilet paper tube with tin foil. Secure it in place with an elastic band. Try to keep the tin foil smooth.
2. Cover the other end of the toilet paper tube with wax paper. Secure it in place with an elastic band. Try to keep the wax paper smooth.
3. Using the push pin, poke the smallest hole in the CENTER of the tin foil



4. Roll the dark paper into a *long* tube. It should fit snugly on the wax paper end of your pinhole viewer. This will be your eyepiece. Tape it in place
5. Look through the wax paper end of the tube (the tin foil end should be pointed at what you are viewing). Point your pinhole viewer at a light source (a window on a bright day works well). What do you notice? Something should be a little strange... :)