Periscope

Secretly scope out stuff with this spying tool.

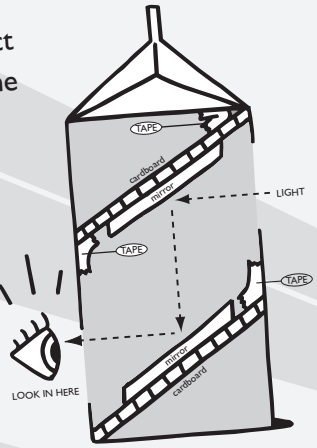
What You Need:

- a friend
- a mirror
- 1 empty milk or juice carton, rinsed and dried
- 2 small mirrors taped to pieces of cardboard
- scissors
- duct tape

1. **Ask** a friend to stand behind you while you look into a large mirror. What do you **see**? Even though your back is to your friend, can you see her or him?

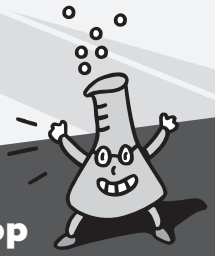
2. You can **see behind you** because your friend is reflected in the mirror. Can you see in other directions using just **one mirror**? Move your body or the mirror and see what happens!

3. Now try using two mirrors. Place a large object on a tabletop. Sit under the table and **hold** one mirror so it **reflects** the object. Hold the second mirror below the first so that you are able to see the **reflection** from the first mirror. Notice the **angles** of the mirrors, which allow you to see the object. Now you've made your own **periscope**.



4. You can make a portable periscope by using a milk carton to hold the mirrors in place. With a marker, **label** opposite sides of the carton "front" and "back." Cut two windows out of the milk carton, one at the **bottom** of the front and one at the **top** of the back (see diagram). **Tape** your mirrors in place so that you can **look into** one window and see the **reflection** out of the periscope from the second window. Have fun **peering** over walls and around corners!

Sent in by Erin of Bountiful, VT

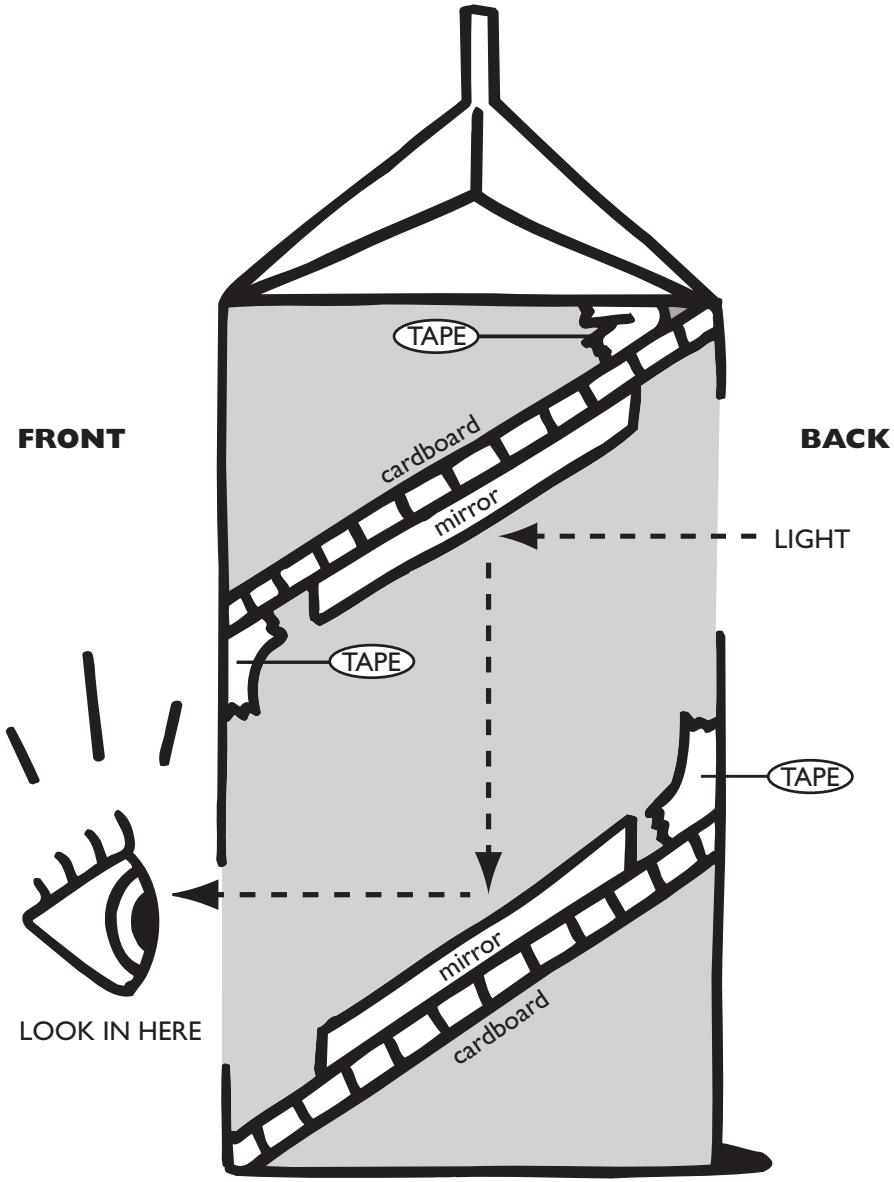


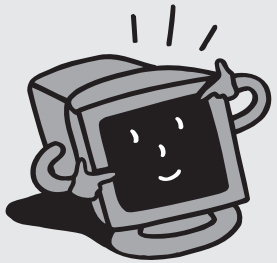
Science Scoop

When you **look** at something, like a ball, you see it because **light** from the sun (or another light source) **reflects** off the ball and reaches your eye. If a friend **holds** the ball around a corner, light reflecting off the ball **can't reach** your eye anymore and you can't see it. But you CAN see it when you use a periscope. That's because the periscope **uses mirrors** to reflect the light from the ball around the corner and to your eye.

Can you think of ways to **improve** the design of your periscope? What happens if you use a **longer box**? Try it out, and **send** your results to ZOOM at **pbskids.org/zoom**

Periscope





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