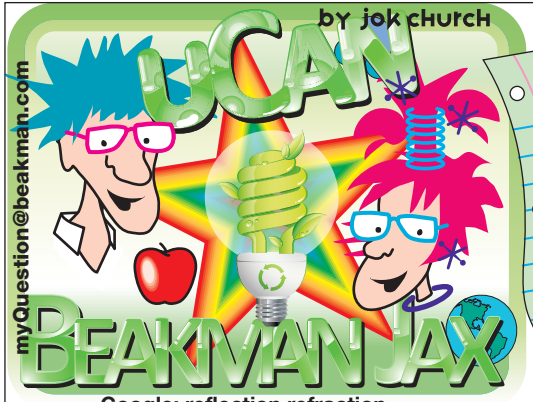


Google: reflection refraction

Dear Beakman,

How do mirrors work?

Luke Graskii
Milwaukee, Wisconsin

Dear Luke,

A mirror works a lot like the bumpers on a pool table: like a bank shot with lightwaves. For mirrors to work, they have to be very smooth with no roughness larger than $^{1}/_{25,000}$ of an inch. Rough stuff scatters light in all different directions.

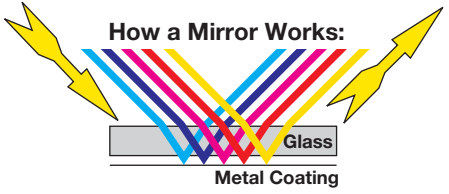
Beakman Place

Beakman or Jax
1130 Walnut Street
Kansas City, MO 64106
Questions, name & address

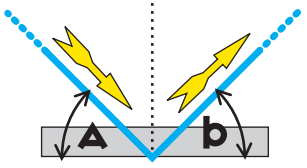
WALLS & MIRRORS

How a Wall Works:

Even though a wall looks smooth, up close it's very rough. That means light won't bounce off it in straight lines. The light scatters in different directions.



Light comes into the mirror, goes through the glass and is bounced off a thin layer of aluminum or silver. The light isn't scattered.



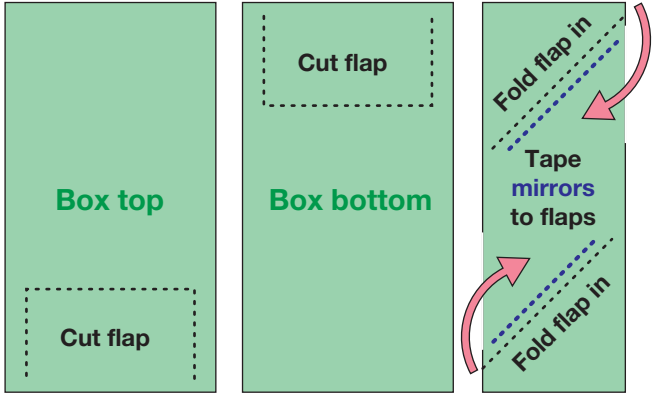
The angle at which light enters a flat mirror (angle A) always equals the angle at which it bounces out (angle B).

experiment #1

WHAT YOU NEED: Shoe box - 2 pocket mirrors - tape - scissors

WHAT TO DO:

Look at the diagram and copy it with your box. Use your periscope to look around corners. Look in one flap to see out of the other. Light bounces off the top mirror and sends it to the second mirror, which bounces the light into your eyes.



P.S. from Jax: The glass in a mirror is not as important as the metal coating, which really reflects the light. The glass just supports and protects the silver or aluminum.