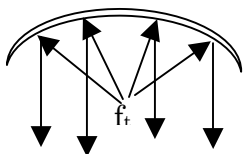
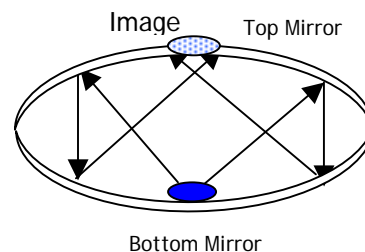


G0-10 "Magic Illusion" Mirror Set

This image is not a mirage! This is the most compelling demonstration of a real image you can have! Two concave mirrors are placed edge-to-edge, facing one another. One of the mirrors contains a viewing hole. When an object is placed inside the mirror set, a real image is formed in the center of the hole.

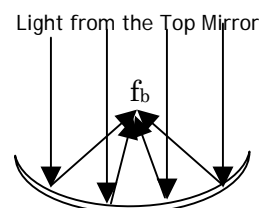


Only two light rays are needed illustrate how the image is formed. Notice that the two light rays leaving the bottom mirror reflect off the top mirror and emerge parallel to each other. When does this phenomenon occur?



Answer: When the light rays originate from the focal point ' f_t ' (of the top concave mirror).

Next the parallel light rays strike the bottom mirror. What happens when parallel light rays strike a concave mirror? They reflect into the focal point f_b (of the bottom mirror). At the focal point of the bottom mirror, an opening allows for real image formation. Real rays form a real image of the mini-car (included). Place other objects (coins, etc.) for added interest!



O.K. class, how do you determine the focal length of the mirrors? Simply drop a ruler down inside the mirror set and measure the height from the bottom to the hole. The focal length of each mirror is this inside height of the apparatus.

Misconception alert! Sometimes oversimplified pictorial representations confuse students. It is important that students realize that light from every point on the mini-car undergoes a double reflection. These reflections combine to form an image in the hole. Also remind students that the car is not a luminous object. Light from the room enters the mirror set and first reflects off the mini-car before reflecting off the mirrors.