

CONCEPTUAL PHYSICS	Activity
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29.3 Reflection and Refraction: Mirrors

MIRROR, MIRROR ON THE WALL

Purpose

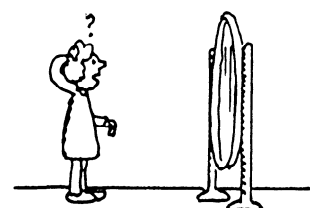
In this activity, you will investigate the minimum size mirror required for you to see a full image of yourself.

Required Equipment and Supplies

large mirror, preferably full length
ruler and masking tape

Discussion

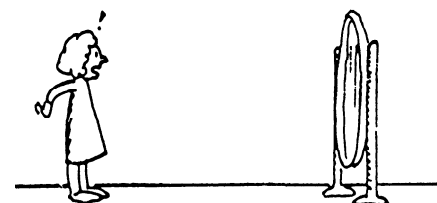
Why do shoe stores and clothier shops have full-length mirrors? Need a mirror be as tall and wide as you for you to see a complete image of yourself?



Procedure

Step 1: Stand about arm's length in front of a vertical full-length mirror. Reach out and place a small piece of masking tape on the image of the top of your head. Now stare at your toes. Place the other piece of tape on the mirror where your toes are seen. Use a meter stick to measure the distance from top of your head to your toes. How does the distance between the pieces of tape on the mirror compare to your height?

Step 2: Now stand about 3 meters from the mirror and repeat. Stare at the top of your head and toes and have an assistant move the tape so that the pieces of tape mark where head and feet are seen. Move further away or closer, and repeat. What do you discover?



Summing Up

1. Does the location of the tape depend on your distance from the mirror?

2. What is the shortest mirror you can use to see your entire image? Do you *believe* it?

Going Further

Try this one if a full-length mirror is not readily available *or* you are a disbeliever! Hold a ruler next to your eye. Measure the height of a common pocket mirror. Hold the mirror in front of you so that the image includes the ruler. How many centimeters of the ruler appear in the image? How does this compare to the height of the mirror?

