Mirror, Mirror on the Wall: Angles of Reflection

Have you ever wondered why you can see your face in a mirror? This occurs because mirrors are very smooth and shiny. Light bounces, or reflects, off of the smooth and shiny surface of mirrors. When you see your face in a mirror you are seeing light from your face reflecting off of the mirror.

Directions

1. You need to work with a partner to do this activity. Find a place where there is a wall with plenty of space around it. Attach the mirror at eye level on a wall with masking tape. Cover the mirror with a piece of paper.
2. Now, both you and your partner should try to guess where you both need to stand to see each other's reflection on the mirror. When you both agree on the places, mark them on the floor with 6-inch pieces of masking tape.
3. Remove the paper from the mirror. Stand at your chosen place to determine if you can see each other in the mirror.
4. If you can't see each other, try different places until you can. Mark the places that work with the 6-inch pieces of masking tape.
5. Next, place long pieces of masking tape on the floor from the center of your 6-inch place markers to the wall straight under the center of the mirror. These should be straight lines.
6. Look at the angles made by the taped lines on the floor and the wall to see if they are the same size. Remember that light bounces off a mirror at the same angle that it arrives. Therefore, when the light from your face travels to the mirror on the wall, it should bounce off the mirror at the same angle to the eyes of your partner.
7. In your science notebook, write a description of what you did in this activity. Include a diagram with lines showing how light reflects off a mirror.

Materials

- [ ] Science notebook
- [ ] 4 x 6 inch Mirror
- [ ] Masking Tape
- [ ] Paper

Explanation

Have you ever wondered why you can see your face in a mirror? This occurs because mirrors are very smooth and shiny. Light bounces, or reflects, off of the smooth and shiny surface of mirrors. When you see your face in a mirror you are seeing light from your face reflecting off of the mirror.

The way light bounces off mirrors is very much like the way a ball bounces against a hard surface. You can throw a ball straight down, and it will bounce straight back at you. Or, you can bounce a ball at an angle and it will bounce off the floor at the same angle away from you. Light reflects the same way off of a mirror. In other words, light reflects from a mirror at the same angle as it arrives.