



Young Scientist Lab



WHELMERS

Charged Fingers: Do You Have the Magic Touch?

Watch as your finger mysteriously moves a pencil without touching it!



WHAT YOU NEED

- wooden pencil
- carpeted floor or rug
- wooden or plastic chair
- any kind of oil (optional)

WHAT YOU DO

1. Place a chair on the carpet or rug.
2. Place a wooden pencil on the back of the chair. Balance the pencil at its midpoint. If necessary, place a drop of oil between the pencil and the chair to help balance the pencil. The pencil must be free to rotate.
3. Wipe your feet across the carpet. This builds up a static charge on the surface of your body. Bring a finger close to either end of the pencil.
4. Slowly move your finger back and forth, perpendicular to the end of the pencil. The pencil should rotate, following the motion of your finger. With practice, you can cause the pencil to rotate in a complete circle without touching it.

WHAT HAPPENS

Wiping your feet on the carpet generates a static charge on the surface of your body. Electrons eventually spread out over your entire body. Moisture in your skin creates pathways for the flow of electrons. The pencil has no charge, but its neutral state is positive when compared to the negatively charged electrons on the surface of your skin. This difference in charge is enough to cause the pencil to move.