

# HOW TO BEND LIGHT

Have you ever noticed the rippling effect of light at the bottom of a swimming pool? This is because light travels at different speeds through different materials, such as air, water, and glass. In this experiment, you'll see how light "bends" when it travels through different mediums.

## MATERIALS:

empty water bottle, a bowl, water, screwdriver or scissors, laser pointer

## HOW TO:

1. Stand an empty water bottle up in a bowl, so the top is pointing at the sky. Make a hole halfway down the side with a screwdriver or scissor.
2. With the bottle in the bowl, fill the bottle with water. The water will start flowing out of the bottle through the hole.
3. Point your laser so that the beam is horizontal to the hole from the other side of the bottle.
4. Notice that the laser beam follows the flow of the water stream and the beam crashes down along with water into the bowl.
5. Try letting the water flow onto your hand to see how the light crashes onto your palm!

## HOW IT WORKS:

Light travels more slowly through denser material like water and glass than it does through air. In your experiment, light is going from a denser medium (water) to a less dense medium (air). When this happens, the light actually gets continuously reflected inside the stream of water. This is called total internal reflection. It's this idea that is used in fiber-optic technology, which can transmit data over long distances through plastic fiber.

