



Young Scientist Lab



WHELMERS

Disappearing Glass

Glass objects seem to disappear when placed in cooking oil.



WHAT YOU NEED

- large glass container (fish bowl, mixing bowl, or similar)
- very clean high-temperature-resistant kitchen or lab glassware container, small enough to fit completely in the larger vessel (one without markings works best)
- cooking oil—enough to completely cover the smaller glass vessel

WHAT YOU DO

For this activity, the temperature-resistant glass must be absolutely clean. After you have thoroughly washed and rinsed the small glass container with soap and water, you might need to give it a final rinse or two. Any spotting left on the glass will create telltale indicators of the invisible glass.

1. Pour the oil into the large glass container. Try to create as few bubbles as possible when pouring.
2. Carefully submerge the smaller container into the oil. It should seem to disappear! You'll soon see that any bubbles in the oil might stick to the small glass and make its presence evident, spoiling the effect.

WHAT HAPPENS

Scientists coined the word *refraction* to describe the bending of light as it passes from one medium to another. You probably have experienced the refraction of light reflected off objects submerged in water. Since the index of refraction of the oil is very nearly the same as that of the temperature-resistant glass, light is not significantly refracted as it passes from the oil through the glass, making it invisible in the oil. Common glass has a different index of refraction than the oil and therefore is slightly visible when submerged in it. Scientists often use refraction as a method of identifying the brand or composition of unknown glass.