FLOATING RICE BOTTLE

Next: Materials and Explanations

Then: Step-by-Step Photo Sequence
FLOATING RICE BOTTLE

Investigate these mysterious bottles of rice. Although this effect is presented with modern containers like plastic soda bottles, the original magic trick dates back thousands of years. The magician shows everybody two identical bottles of rice and two chopsticks. When the performer plunges a chopstick into the bottle of rice and lifts, the rice and bottle seem so light that they float upwards as the chopstick is raised. But, when a spectator is invited to do the same thing with the other bottle of rice and chopstick, it refuses to rise. Nothing changes when the performer and spectator exchange chopsticks – the performer’s bottle rises while the spectator’s does not.

Materials
- Two identical plastic soda bottles with lids
- Dry, uncooked rice (You'll need enough to fill both bottles. (Regular rice works better than the instant type.)
- Two chopsticks
- A tray, bowl, or dish

EXPERIMENT
THE PREPARATION
1. Make a label that reads “Lite Rice” and place it on one of the bottles. Label the other bottle “Regular Rice.”
2. Fill both bottles up to about an inch from the top with rice.
3. Put the lid on the regular rice bottle and shake it to fluff up the rice. It should appear nearly full.
4. Now, we want to put some extra rice into the lite rice bottle. To make room for the extra rice, tap the bottom of the bottle on the table. As you tap, the rice will pack down in the bottle and make room for more. Add some more rice and continue to tap. You may even want to use one of the chopsticks to make a few jabs into the rice to pack it down even better.

5. The important thing is to make both bottles look like they have the same amount of rice in them.

6. Place the bottles and the chopsticks together on your table, and you’re ready to perform.

THE PERFORMANCE
1. Hold up the “Lite Rice” bottle and explain to your audience that you have invented a new “Lite Rice” that has so many of the calories removed that now it hardly weighs anything at all. Tell them, “As a matter of fact, this rice is so light that it almost floats. Let me demonstrate the difference between this Regular Rice and my new Lite Rice.”

2. Give the Regular Rice bottle and a chopstick to a spectator and ask him to push the chopstick down to the bottom of the bottle. You do the same thing with your Lite Rice bottle and chopstick. It may be easiest to place the bottles back onto the table for support as you push the chopsticks into them.

3. So far, it should appear that you both have done exactly the same thing. But now, as you gently lift your chopstick, it should “stick” to the rice well enough to lift the bottle.

4. The spectator’s Regular Rice bottle will not rise.

5. Offer to exchange chopsticks and repeat the demonstration. Once again, it will work just fine with your bottle of Lite Rice, while the spectator’s bottle will remain on the table.

6. Prove to your audience that there’s no secret glue or gripping mechanism in the Lite Rice bottle by pouring the rice out onto the tray or into a dish or bowl. Take a bow.
HOW DOES IT WORK?
If the bottles were filled with water instead of rice, you would see the water level rise in the bottles when the chopsticks were plunged into the water. The water would have no difficulty creeping up the neck of the bottle to make room for the chopstick. The rice, however, is not a fluid like water and has great difficulty moving up the neck of the bottle. Instead, the packed rice has very little room to move so it tends to press against the sides of the bottle.
The scientific principle that makes this feat work is friction. The chopstick gets wedged between the rice and the sides of the bottle. That’s all there is to it. Friction is the magician.
HERE IS WHAT YOU NEED

LONG GRAIN RICE
2 EMPTY WATER BOTTLES
CHOPSTICKS
1. Fill both bottles with rice.
2
ASK A FRIEND TO PICK A BOTTLE
3
PUT THE CHOPSTICK IN THE BOTTLE AND PICK IT UP
4

Pour out the bottles to show the audience there's nothing but rice inside.

What is the difference between the two bottles?