

Floating Plate Trick

You will need:

- Plate
- Glass
- Candle
- Kitchen roll



1. Fold a piece of kitchen roll into quarters and dampen it with water.
2. Place a candle in the centre of the kitchen roll on a plate and light it.
3. Put the glass over the candle and push down, making sure the rim of the glass is inside the square of kitchen roll.
4. Keep pushing down for about a minute after the candle has gone out.
5. Lift the glass and the plate will lift with it!

Try with different sized plates or dishes to see how much weight you can lift!

THE SCIENCE

As the candle burns, it uses up the oxygen in the glass. The heat generated by the flame causes the air inside the jar to start moving very fast, to quickly expand and to leave the jar. With less air inside it, the pressure in the jar drops. When the candle goes out, the air inside the jar cools and contracts quickly. Normally, air outside an open jar would enter and the pressure would be equalised instantly. This time there's a wet towel in the way that blocks the returning outside air. This keeps the lower pressure air inside the jar and the higher pressure air outside the jar. The water molecules on the kitchen roll create an airtight seal between the plate, the kitchen roll and the glass. Once this water dries, the seal breaks.



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