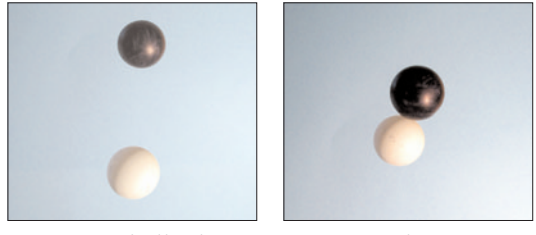
Ping-pong chaos

Here is a fascinating exhibit to set up for open days and for those occasions when you want to amaze people with physics.

Obtain a vacuum cleaner that has a 'blow mode' (rather than 'draw in mode') and arrange it with the emerging air jet directed vertically upwards. Place a ping-pong ball in this air jet, and it will quite happily stay 'suspended' in the air flow stream. Then, very carefully place a second ping-pong ball a few centimetres above the first 'suspended' ball. Both balls will stay within the vertical air flow **but**, from time to time, they will flip, with the top one changing positions with the bottom one, and vice versa.

It takes a little skill and practice to perfect this demo, but it is quite impressive to see. I discovered this effect by accident while I was setting up one of my own physics displays, way back in 1987. The random changing in position of the two balls took me by surprise. It has impressed me and many people since. Let me know if you try this demo.



Ping-pong balls changing position (photos courtesy Graham Brown, Ampleforth College, York). An animation of the exchange of positions is available in the online journal.

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