Application No. 78: Swimming Compass

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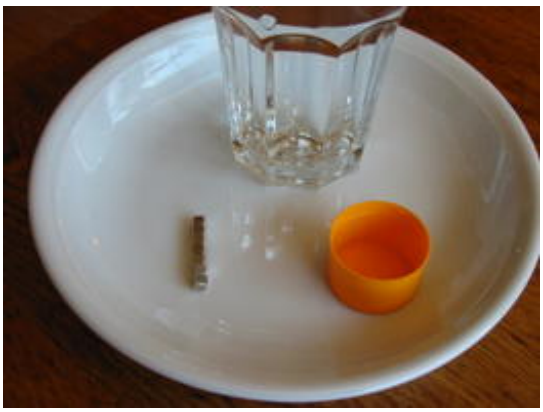
Magnetic principle - apparent in your own soup plate

You will need:

- 3-10 small cube magnets, e.g. W-05-N (www.supermagnete.de/eng/W-05-N)
- a floating object (bottle cork or something similar)
- a soup bowl



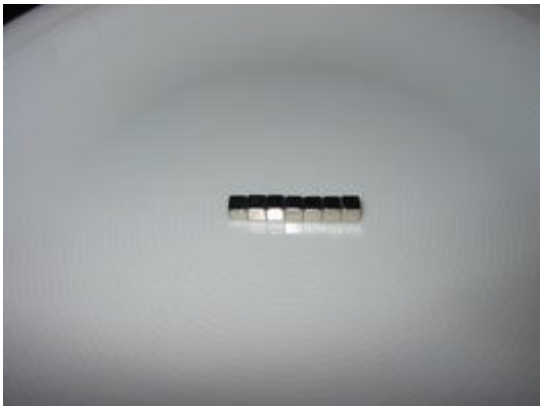
The Ingredients

Building the compass requires two steps:

1. Constructing a magnetic rod in which the poles are uniformly arranged

2. Placing the magnetic rod on a floating object in the soup bowl

The uniformly ordered magnetic rod can be constructed by allowing the individual magnets to attach themselves to each other unhindered. In this way the sides of the cubes that attract most strongly will automatically come together: the positive pole of one cube will automatically lie on the negative pole of the next cube.



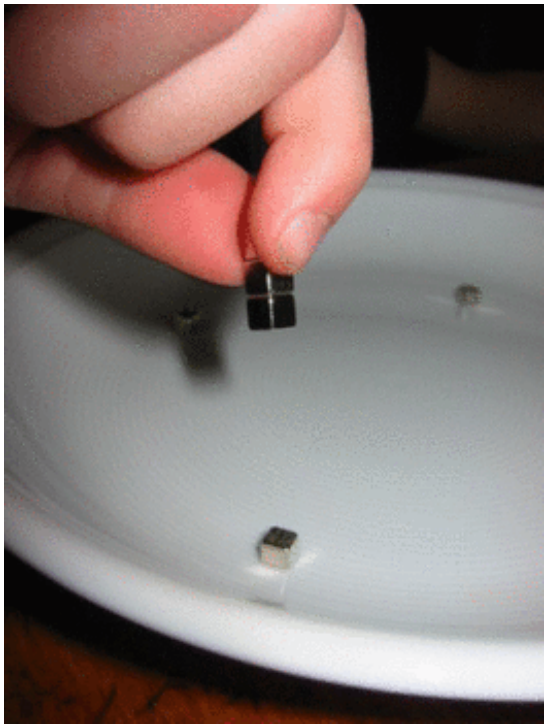
The uniformly ordered magnetic rod

The easiest way to construct the rod: place two cube magnets on a plate. Move them towards each other until they fly together automatically.

The beginnings of the magnetic rod

Take the pair of cube magnets in your hand like a match and move your hand over the remaining magnets swiftly - the other cubes will be attracted through the air and arrange themselves in the shape of a uniformly poled magnetic rod. The whole process is similar to vacuuming.

Note from the supermagnete team: Please note that the magnets could crack when they are flying through the air. The splinters may be very sharp and injure your hands and eyes. Please be especially careful during this process.



Additional magnets being "vacuumed" onto the rod

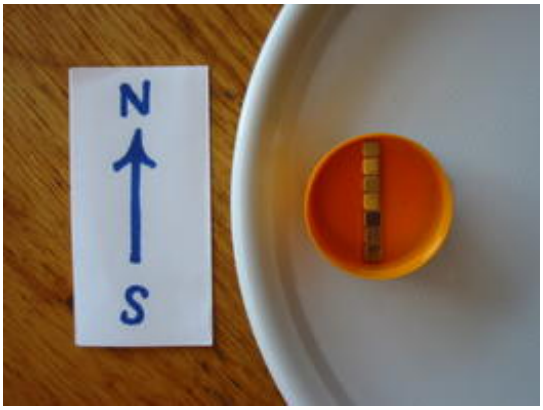
Then fill the soup bowl will water and place the floating object inside so that it can move freely.

Prepare the soup bowl and floating object ...

Then carefully place the magnetic rod onto the floating object (being careful not to capsize it!). The compass is finished!

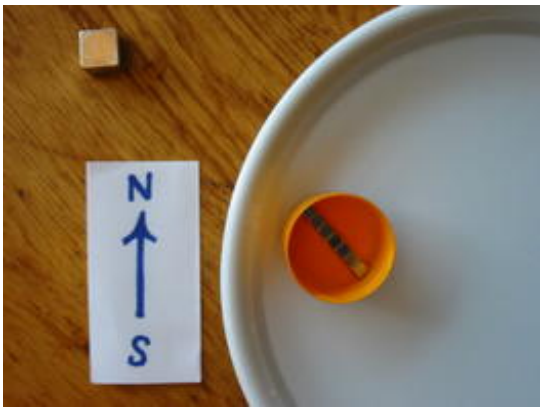
... equiped with the magnetic rod.

The magnetic rod will automatically bring the floating object into a position which points North.



Now we've found north again!

If another magnet is placed near to the rod, the earth's magnetic field will become distorted and cause the magnetic rod to point towards the pole of the magnet outside the bowl.



Stronger than the earth's magnetic field :-)

Articles used
10 x W-05-N (www.supermagnete.de/eng/W-05-N)

Online since: 18/04/2008

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