

Application No. 70: Levitation with magnetic cubes

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How to make a little graphite disk float

Material used

- Four cube magnets W-12-N (www.supermagnete.de/eng/W-12-N) (for this project 2 nickel-plated and 2 gold-plated cube magnets were used; the gold-coloured ones are now no longer available)
- A small square disc of pyrolytic graphite with the dimensions 12x12x1 mm
- A small compass to determine the polarity of the magnets in order to position them correctly
- Optional: A small transparent plastic (or other material) box to hold the magnets in place

Use the compass to determine the north and south poles of the four cube magnets. Once you've determined the poles, it's helpful to mark them on the magnets. In this case I placed a small sticker with the letter N or S on the proper pole of each magnet.



Place the magnets as shown in the photo with the alternating poles facing up. Note: The magnetic field created by these magnets is very strong, so be careful not to get your fingers caught in between!



The alternating arrangement is necessary for the levitation effect. If you arrange the magnets differently, the graphite plates won't float.

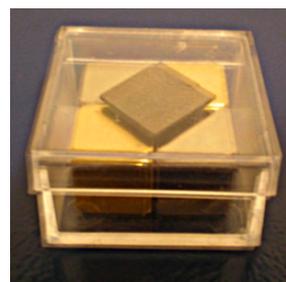


Remove the small stickers and place the graphite disc carefully over the four magnets. You will observe that the graphite disc levitates above the four magnets endlessly (yes, for minutes, hours, days, weeks, months...) The height of the levitation is approximately 2-3 millimeters and clearly visible. We can even push the tiny disc down with a finger, let it go and observe how it climbs again to levitate in the same place as before.



Place the whole construction into a transparent box to prevent dust and dirt collecting. I keep the box in good view for my friends - a unique and eye-catching decoration.

To prevent the magnets shifting in transport and to ensure that they remain centered, I placed a washer (or another small piece of metal) on the underside of the box.



Articles used

2 x W-12-N: Cube magnet 12 mm (www.supermagnete.de/eng/W-12-N)

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