

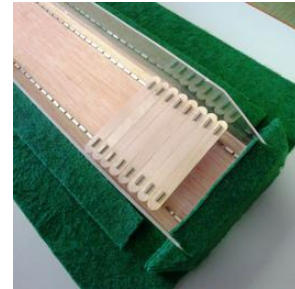
## Application No. 235: Levitating train (model)

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### An exciting physics project on the topic of magnetic levitation train

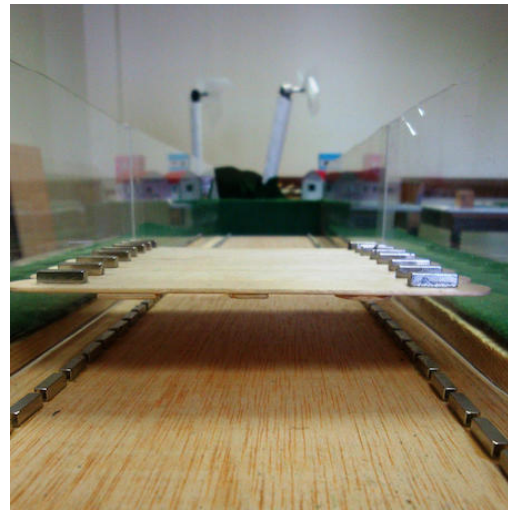
We - six student physics enthusiasts - built the model of a levitating train as a school project.

We actually wanted to build a Maglev train ([en.wikipedia.org/wiki/Maglev\\_train](http://en.wikipedia.org/wiki/Maglev_train)). The name is derived from "MAGnetic LEVitation train", which can be found only in China, Japan and Germany so far. But without a superconductor this was unfortunately impossible.



Our simplified train works because two equal magnetic poles repel each other, and the train is thereby kept in levitation. After some research we bought a whole bunch of your Q-15-04-04-MN ([www.supermagnete.de/eng/Q-15-04-04-MN](http://www.supermagnete.de/eng/Q-15-04-04-MN)) block magnets. Then we started building our model.

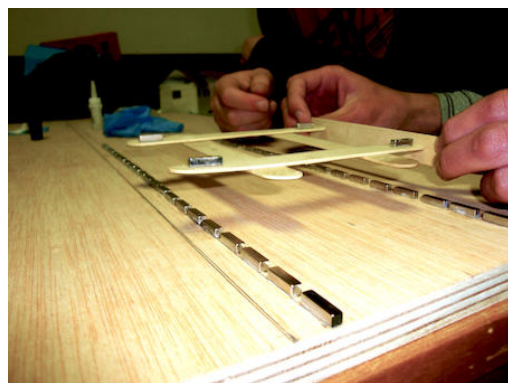
The base board (below) is a long piece of plywood. We glued the block magnets on it (always aligned in the same way) in two straight tracks. First tests showed that the tracks were not stable. That's why we glued a transparent acrylic board near the magnets on each side of the tracks.



Further tests showed that the tracks were stable now and levitation was possible.

The actual "train" consists of glued-together tongue depressors, the flat wooden sticks that doctors use when they examine your throat.

We glued one block magnet (turned by 90 degrees) to the left and the right on tongue depressors and did more tests. Result: The "train" levitates on the tracks when you nudge it a little bit!



At the end, we covered the outer parts with green carpet to make it look a little nicer.



By the way, we got the highest grade for our levitating train and our school loved it! At the end, we gave the installation to our physics teacher, because we couldn't decide who should keep the train!

**Articles used**

325 x Q-15-04-04-MN: Block magnet 15 x 4 x 4 mm ([www.supermagnete.de/eng/Q-15-04-04-MN](http://www.supermagnete.de/eng/Q-15-04-04-MN))

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