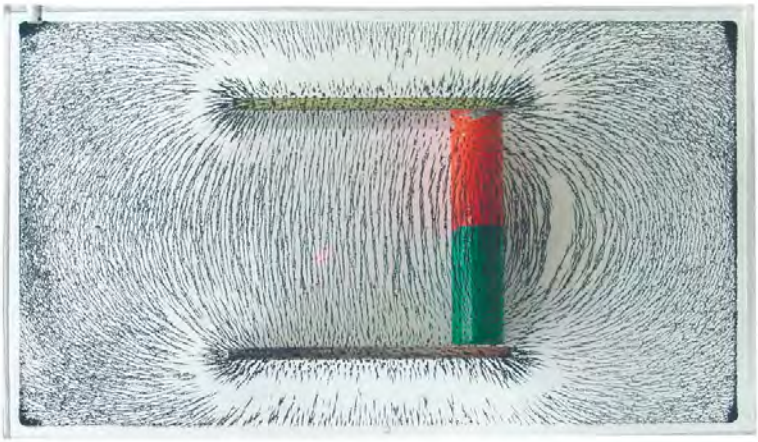
Student Experiments

Manual

MAGNETISM

P9160-5M



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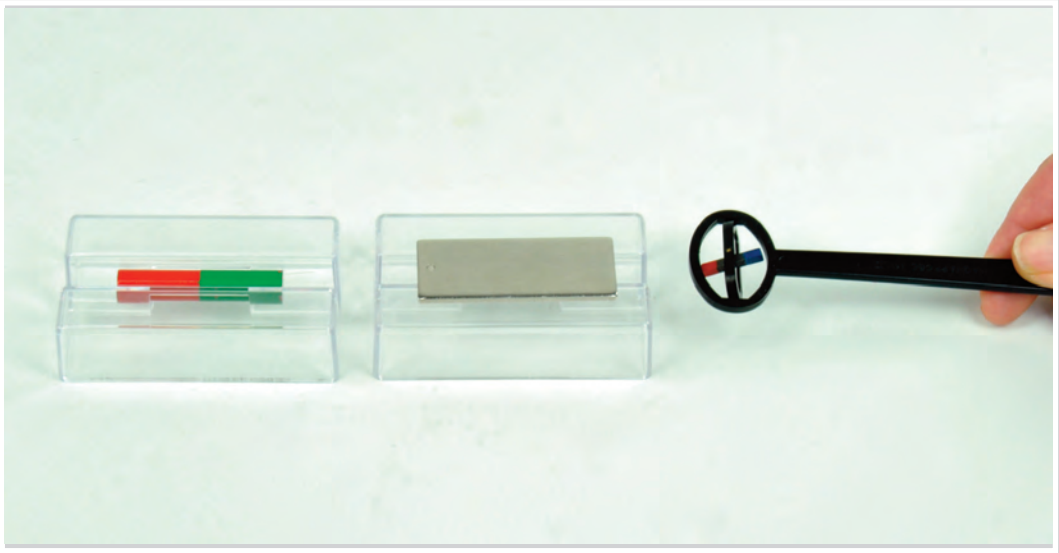
Required Kit:
P9902-5M Magnetism



Material:
1x Bar magnet
1x Iron nails in box
1x Pole plate
1x Magnetic field sensor
2x Supporting plate for bar magnets

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MAGNETIC INDUCTION

MAS 2.1

The interaction between the magnet and iron is investigated and an expalanation for this interaction is to be found.

1st Experiment:

The pole plate is held with one hand in vertical position. A bar magnet is brought about 1 cm near to the pole plate and the plate is stuck into the box with the iron nails. A few nails will stay on the plate and will concatenate with each other.

If the magnet is removed, the nails will drop down immediately. If one or two nails are already adhering at the plate just turn the bar magnet in such way that the other pole is heading to the plate. Now the remaining nails will also drop down.

We see that the pole plate and also the nails are having magnetic properties if a magnet is near to them.

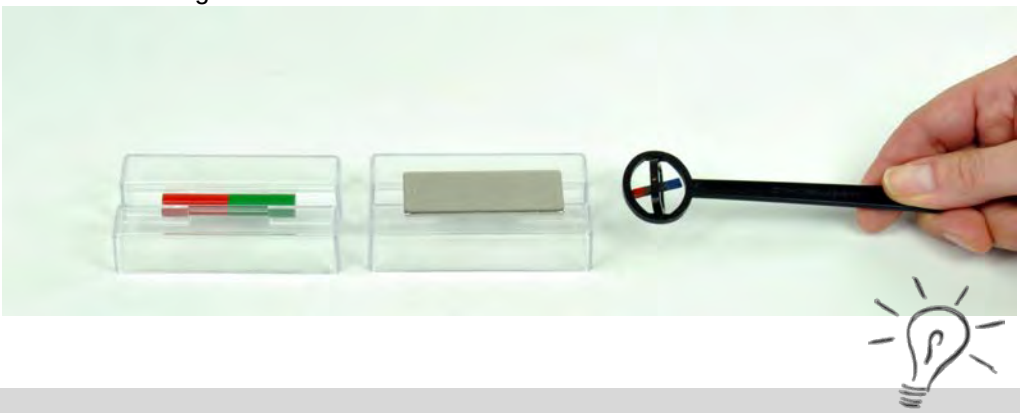
They behave as if they were magnets themselves.

2nd Experiment:

Now the pole plate is put onto a support plate for bar magnets and a bar magnet in a support plate is placed right behind the support plate with the pole lamination. Now the magnetic field sensor is brought near to the pole plate (same height like the plate). The bar magnet is turned in such way that alternately the green and the red pole is heading to the plate.

The magnetic field sensor is investigated. We can see that the iron pole plate is acting like a magnet with changing poles.

The small magnet in the field sensor is investigated first with and then without the pole plate between the bar magnet and the sensor.



Conclusion:
An iron plate becomes a magnet near a magnet.
As soon as the magnet is removed the iron block looses its magnetic characteristics again.
This process is called magnetic induction.

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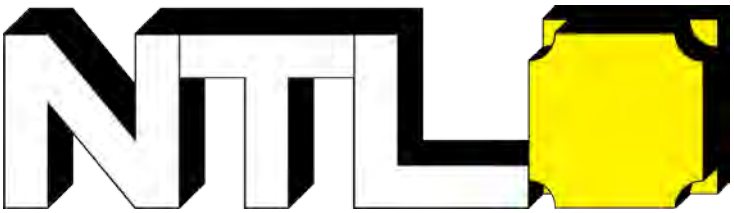

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