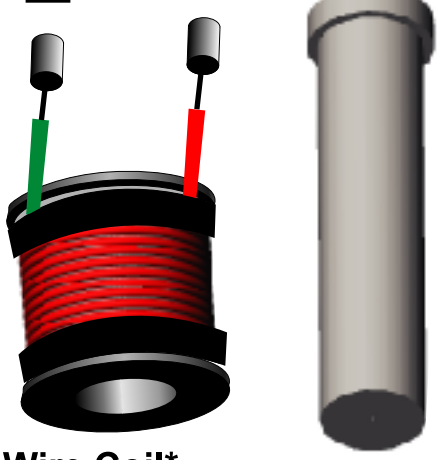
Electromagnet Pack

PN 392-1225
(formerly PN 292-1225)



Wire Coil*
*550 Turns
Coated Copper Wire
#26AWG (0.0159")

Solid Steel Core

Permanent Magnets
Also Included

cpo science

Electromagnet Reference Sheet

With the wire coil oriented as in figure 1, with the terminals leading from the top of the coil, the wires are spooled as shown in figure 2.

Fig. 1

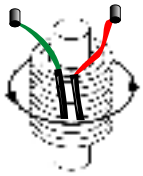


Fig. 2

Take your right hand and wrap it around the coil so that your thumb faces up (where the coil terminals come out of the coil). The direction that your fingers wrap around the coil is the direction that the wire is spooled *(Fig. 2)*.

A permanent magnet has two fixed poles, a north and a south *(Fig. 3)*.

Fig. 3

Fig. 4

The magnetic field surrounds the permanent magnet (Fig. 4).

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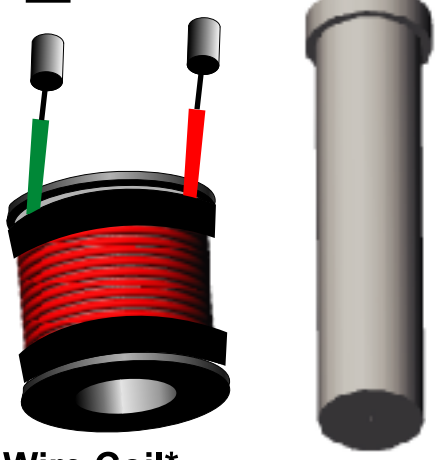

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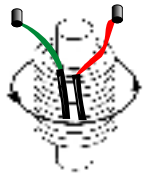

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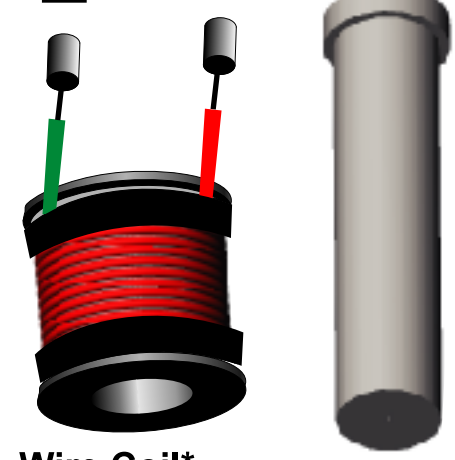

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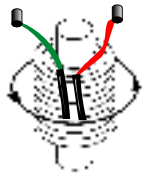

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The magnetic field surrounds the permanent magnet (Fig. 4).

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See figure 5.

1 Attach the red terminal to the positive terminal of a battery.

2 Attach the other terminal of the coil to the negative terminal of a battery. (If you perform this on the CPO Electric Circuits board, it is better to connect the negative terminal of the battery through a switch *as shown* - with the switch open.)

3 Place the core into the coil.

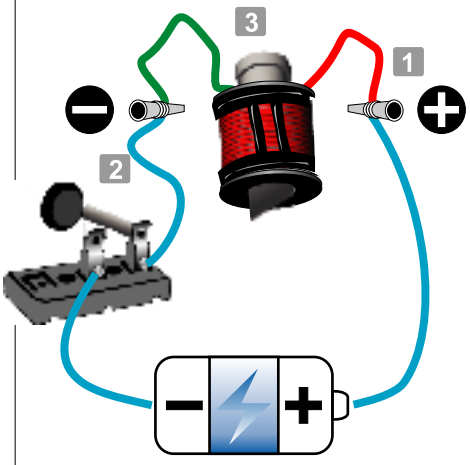

Fig. 5

CAUTION: **DO NOT Leave the battery connected to the coil for an extended period of time.** This will cause the coil to heat up and burn out the battery or potentially cause damage or injury.

See figure 6.

4 Place the permanent magnet at a distance of 4-5cm from the top end of the core.

5 Close the switch. Which pole of the magnet is drawn to the core?

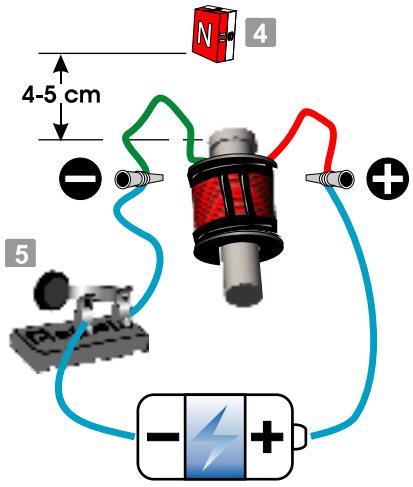

Fig. 6

6 Repeat steps 4 & 5. Does the same pole of the permanent magnet get drawn to the top of the core?

7 Switch the battery so that only the positive and negative terminals change places.

8 Repeat steps 4 to 6. What happens?

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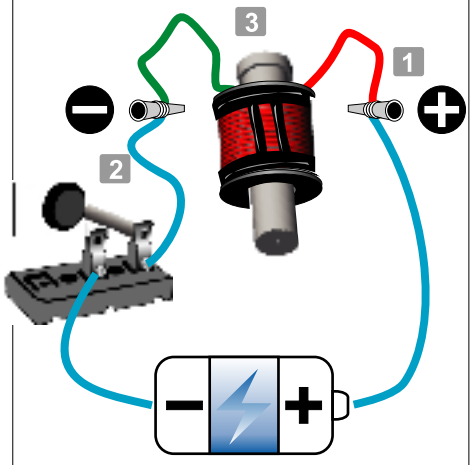

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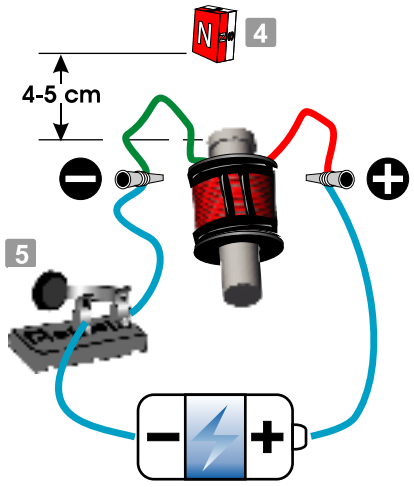

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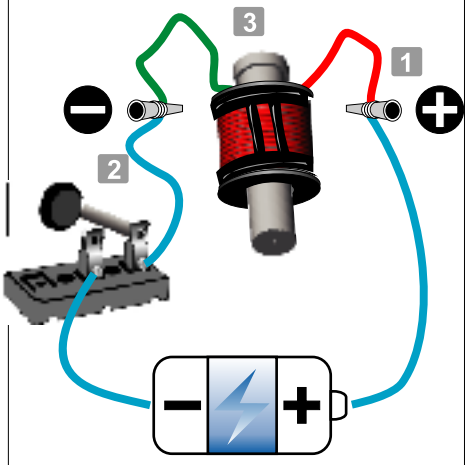

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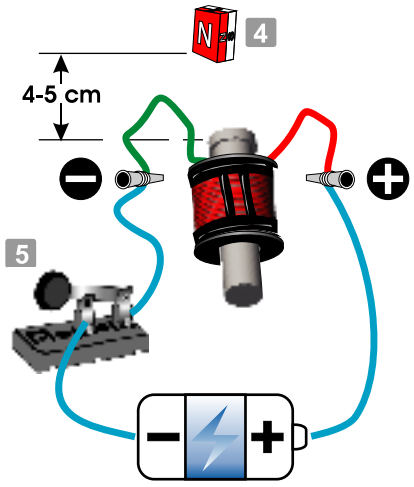

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