

Presented by



HOMOPOLAR MOTOR

Overview and objective:

Students will learn how to make a **homopolar motor**

A **homopolar motor** is a direct current electric **motor** with two magnetic poles, the conductors of which always cut unidirectional lines of magnetic flux by rotating a conductor around a fixed axis so that the conductor is at right angles to a static magnetic field.



Homopolar motor - Wikipedia, the free encyclopedia

https://en.wikipedia.org/wiki/Homopolar_motor

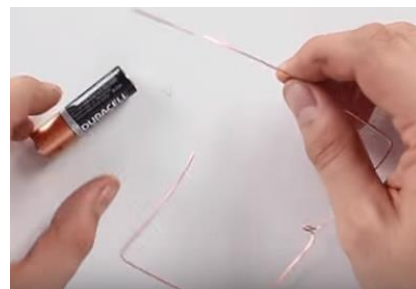
WHAT YOU WILL NEED:

- Copper wire
- A battery (we used AA)
- Neodymium Magnets that stack (found in hobby shops)
- A pair of pliers
- Some tac or playdough



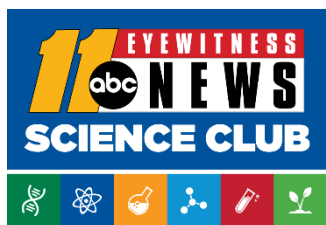
Procedure:

1. Using the wire cutter function on your pliers to carefully cut off about a 16" length of copper wire. (ask a parent to help)
2. Fold it in half, then using the pliers, tightly bend the fold together.
3. Bend the ends back to straighten the wire out (with a loop now in the center).
4. Bend both pieces into right angles to make a box (as shown) that is a little taller than the battery.
5. You'll want your bottom ends of the box to overlap and curve in a little bit. These bottom ends will curve around the magnets.
6. Place some tac or playdough on your counter.
7. Stack the magnets up and place the battery on top.
8. Carefully place your wire over the top of the stack with the top loop coming in contact with the top of the battery.



Source: YouTube/HooplaKidz Lab





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BASF
We create chemistry

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Procedure Continued:

9. Let go! The wire should start to spin.

We had very small magnets. When we tried it, the wire started spinning slowing and gained speed over time.

We'd like to see your attempts! Please share on our Facebook page.



Visit us on www.Facebook.com/abc11scienceclub and share the video or picture of your HOMOPOLAR MOTOR.

www.abc11.com/scienceclub

