

Electric Fan

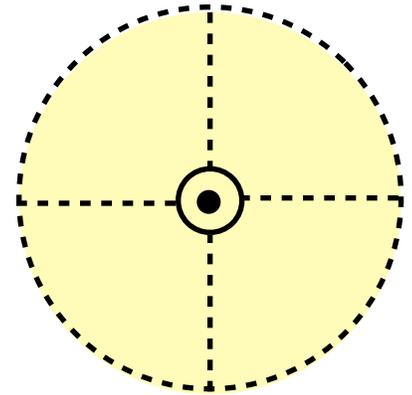
How to Build It:

Materials:

- | | | |
|--|--|--|
| <input type="checkbox"/> Small DC motor | <input type="checkbox"/> Plastic cup | <input type="checkbox"/> Soldering iron and solder |
| <input type="checkbox"/> 9V battery | <input type="checkbox"/> Permanent markers | <input type="checkbox"/> Awl or x-acto knife |
| <input type="checkbox"/> 9V battery snap | <input type="checkbox"/> Doodads | |
| <input type="checkbox"/> File folder | <input type="checkbox"/> Hot glue | |

Procedure:

1. Turn the plastic cup over and poke two holes in the bottom using the x-acto knife or awl.
2. Poke the two leads from the 9V battery snap through the holes so that the snap is on the inside of the cup.
3. Solder the leads to the small DC motor and use hot glue to attach the motor to the bottom of the cup making sure the spindle of the motor is completely off the edge of the cup.
4. Cut a circle out of the file folder to make fan blades. Decorate the fan blades with marker.
5. Poke a hole in the middle of the fan blades and use a small bit of hot glue to attach them to the spindle of the motor.
6. Snap the battery onto the 9V battery snap to test the motor. You can create a simple switch for the fan by leaving one side of the battery unsnapped and swinging the snap back and forth.
7. Hot glue the battery to the inside of the cup opposite the motor to balance the fan.
8. Decorate the cup with sharpie markers and doodads to give the fan a personality.
9. Turn on the fan and check out the cool patterns made by the design on the fan blades!



Fan blade pattern

How it Works:

The 9V battery supplies power in a simple circuit to the motor and 9V is a lot of electricity for this little motor. Bending the fan blades at a bit of an angle helps increase the amount of air they can move. If you bend the fan blades at the right angle, they can move a lot of air.

Experiment!

Try changing the size or number of fan blades on the motor.

Change the angles of the fan blades.

Use different material to make the fan blades? What happens?

What happens if you use a different power source or a different motor? How could you move the most air?

What happens if you connect the battery to the motor the opposite way?