

Using Zombie Batteries

"There's a big difference between mostly dead and all dead. Mostly dead is slightly alive."

-Miracle Max in **The Princess Bride**.

Relevance of Zombie Batteries to hams?

- Use up our leftover batteries
- Use available resources in emergency situations
- Fun simple circuit example to whet the appetite

Additional sources

- Hamnation #158 Smoke and Solder (21:30-ish)
- <http://www.evilmadscientist.com/2007/weekend-projects-with-bre-pettis-make-a-joule-thief/>
- www.instructables.com -> search for Joule Thief

Needed Parts

- Core and wire to make coupled inductor
- Npn transistor (2N3904 or 2N2222 should do)
- LED
- Resistor ($\approx 1\text{k}\Omega$)
- Battery
- Connections (breadboard and jumpers or solder and wires, etc.)

Circuit

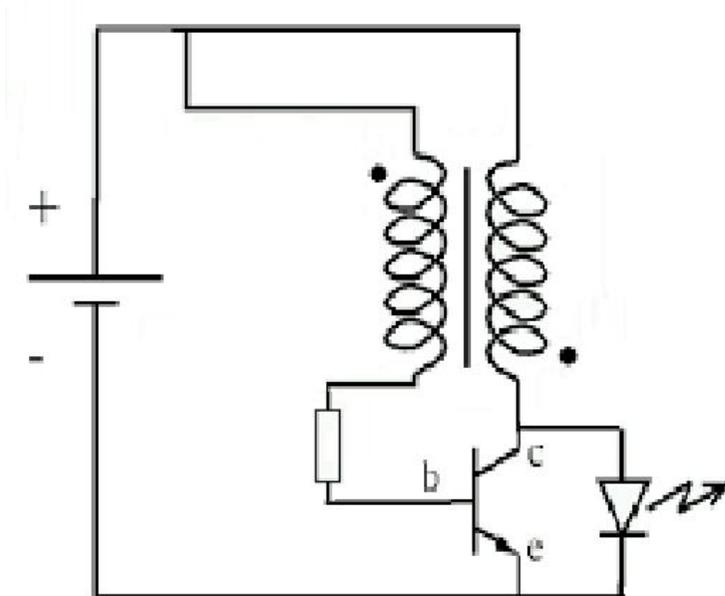
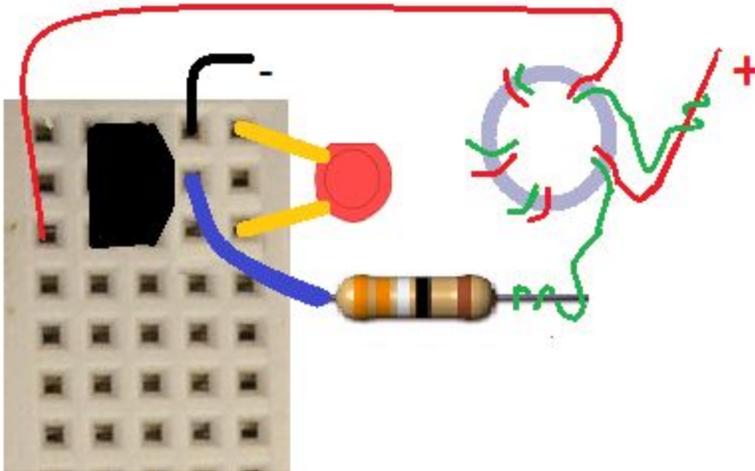


Illustration of breadboard version:



1. Place the LED, transistor, and resistor components in the first 3 rows of the breadboard as shown. Here the flat side of the transistor goes to the left . The flat side (and short leg) of the LED goes in the top row. The long leg of the LED goes in the 3rd row. One leg of the resistor goes in the 2nd row.
2. Two opposing ends the coil are wrapped together. Make sure the ends you twist together are bare, and from different ends of the coil. One will come out the front, and the other will come out the back. They should not be the same wire, but different colors. This junction will be connected to the positive terminal of the battery.
3. One remaining free end should be connected to the other side of the resistor.
4. The last remaining free end should be connected to the short leg of the LED. This connection will go to the negative terminal of the battery.