LED Throwies

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PARTS:

- **LED (1)**
  
  20 cents each from HB Electronic Components (http://hebeiltd.com.cn).

- **Tape (1)**
  
  One roll will make many throwies.

- **Batteries (1)**
  
  25 cents each from CheapBatteries.com.

- **Disc magnet (1)**
  
  25 count for about $15 from Amazing Magnets (http://amazingmagnets.com).

- **Epoxy (1)**
  
  Weather-resistant alternative to tape. Available from Newark InOne (http://newark.com).

SUMMARY

Make and toss a bunch of these inexpensive little lights to add color to any ferromagnetic surface in your neighborhood.
Step 1 — Test the LED.

- Pinch the LED’s leads to the battery terminals, with the longer lead (the anode) touching the positive terminal (+) of the battery, and the shorter lead (the cathode) touching negative (-).

- Confirm that the LED lights up.

- Tape the LED leads to the battery by cutting off a 7" piece of strapping tape and wrapping it once around both sides of the battery. Keep the tape very tight as you wrap. The LED should not flicker.

- Place the magnet on the positive terminal of the battery, and continue to wrap the tape tightly until it’s all done. The magnet should hold firmly to the battery.

- The battery’s positive contact surface extends around the sides of the battery. Don’t let the LED’s cathode touch the positive terminal, or you’ll short the circuit.

- That’s it — you’re ready to throw (or make a few dozen more). Throw it up high and in quantity to impress your friends and city officials.
Step 2

- A throwie will shine for about 1-2 weeks, depending on the weather and the LED color. To get one off a ferro-magnetic surface, don't pull it, or it may come apart. Instead, apply a lateral force to the magnet base, and slide it off the surface while lifting it with a fingernail or tool.

- Throwies naturally chain together in your pocket, making multi-segmented throwie bugs, which will also stick to metal surfaces if they aren’t too long.

This project originally appeared in **MAKE Volume 6**, page 116.