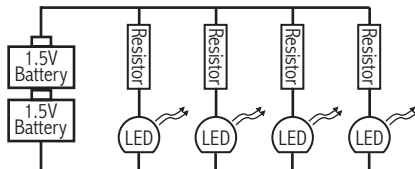


You may just connect more LEDs across the batteries, each with its own resistor.



AA cells should be enough to run up to 10 LEDs this way for a few hours. If you are planning on adding 200 LEDs to a costume, use bigger batteries, more batteries, and connect multiple LEDs in series. If you start adding LEDs in series, you will need to have more than 1 volt headroom from the batteries. Because the voltages I gave for the LEDs are not exact and may be different even between different models of the same color, and the overall voltage drops more over the battery life. There are also ways of using transistors to keep the LED current constant as the batteries wear down.

If you use blinking LEDs, please note that they do not require a series resistor. There are also some LEDs available that have the series resistor built-in.

Sound:

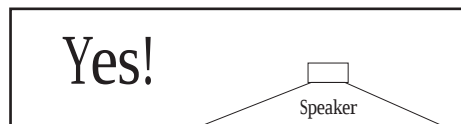
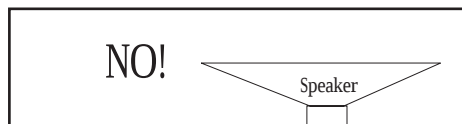
Some props just need sound! “Real” props for movies and TV don’t have sound built-in because they can add much better sound later. But you and I don’t have the luxury of a sound effects man.

There are several ways you can add sounds to your props. You can buy one of those digital recorders, either a kit or tear apart one of those toy recorder pens. Or you can build some kind of electronic sound effects circuit, an advanced subject I won’t attempt to go into..

But the big problem with small props is tinny sound. You don’t normally have the room to put a 6 inch woofer in that blaster you are building. If you are building a big blaster rifle, you may have the room to make the barrel into a crude subwoofer. For smaller props, you have a problem.

There are several ways to get a bigger sound from a prop. Just gluing a speaker somewhere inside is not the way.

1. Separate the front from the back of the speaker. It doesn’t matter so much if the back or the front of the speaker is facing “out”.

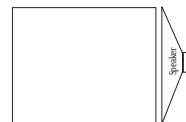


Holes or Grill to outside

2. Take advantage of the natural resonance of the prop. As I mentioned above, if you have a large barrel on a blaster, use it as a resonator. Put the speaker at the back end of it and then tailor the sound to take advantage of the resonance of the barrel.



Put speaker on open end



3. You can increase the size of the area radiating sound. Take a 1 inch speaker from a pair of inexpensive headphones and put the thin plastic cap from a bottle of mousse over it. Hotglue it securely around the edges. It is not very Hi-Fi, but it -will- be a lot louder. This only works with very thinwalled containers as it relies on the plastic flexing to radiate the sound.

4. In general, you can get deeper sounds from an electromagnetic speaker than from a piezo element.