

# AT HOME BATTERY TESTER PROJECT – “How to Test Batteries with Aluminum Foil and a Flashlight”

Joe Blanton, MS

**Objective:** Use aluminum foil and a flashlight to build an electrical circuit to test the strength of a battery.

## Materials:

Aluminum foil strip (about 2” in width and 12” in length)  
Flashlight with removable batteries (C or D size)  
Tape  
2 New Batteries (C or D size)  
Batteries to be tested (C or D size)  
Black marker



## Background:

A non-rechargeable battery is a useful storage device for electricity. However, after a few years of non-use, the separated chemicals inside the battery combine on their own. Once this happens, most or all of the stored electricity is lost or discharged and the battery is called a “bad” or “dead” battery. Knowing if a battery is “bad” or is as “good” as new is important. You can use a flashlight bulb and aluminum foil to make a battery tester to test the strength of your batteries.

## Directions:

1. Tear a strip of aluminum foil about 2 inches wide and the length of the package, usually about 12 inches in length.
2. Fold the aluminum foil strip in half along its length so the new width is about 1 inch.
3. Fold the strip one more time so you end up with a piece of aluminum foil about ½ inch wide and at least 12 inches long.



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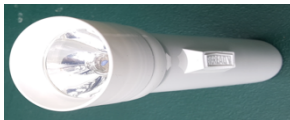


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4. Open up the flashlight and remove the bulb portion of the flashlight.
5. Tape the end of the aluminum strip to the side of the flashlight bulb, not the tip of the bulb. The aluminum foil is a metal conductor of electricity and it will allow electrons to flow through it once the circuit is complete.
6. Next, tape the other end of the aluminum foil strip to the flat end of a NEW C or D battery. (This end of the battery is labeled with a “-” MINUS mathematical symbol. It is called the “NEGATIVE” terminal or “ANODE” end of the battery.)



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7. Set the pointed end of the flashlight bulb on top of the opposite end of the battery which has a raised center about the size of a shirt button. (This end of the battery is labeled with a “+” PLUS mathematical symbol. It is called the “POSITIVE” terminal or “CATHODE” end of the battery.)
8. What happened? Did the flashlight bulb light up? If you used one NEW battery, there should be a dim light.
9. Try adding a second NEW battery on top of the first. Is the amount of light brighter with two NEW batteries?



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10. Next, test an old battery. How? Replace the second NEW battery with the old battery that you wish to test. Observe the amount of light produced. Is this light as bright as the two NEW batteries? If no, the light is less, then this old battery is “weak” and will become “bad” soon. If the amount of light is the same, then this old battery is “strong” and “good” for a couple of more years. Write the year that you tested this battery on the end of the battery and store it for future use.



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**CONGRATULATIONS! YOUR BATTERY TESTER IS NOW COMPLETE! SHARE IT WITH FAMILY! SEND ME A PHOTOGRAPH!**