# Making a Fusible Link
# A BattleBots Learning Activity

This is an inexpensive easy and dramatic activity that can be performed by every student. This activity will clearly demonstrate how even very low electrical pressures can develop circuit currents high enough to generate temperatures capable of burning light gage metals.

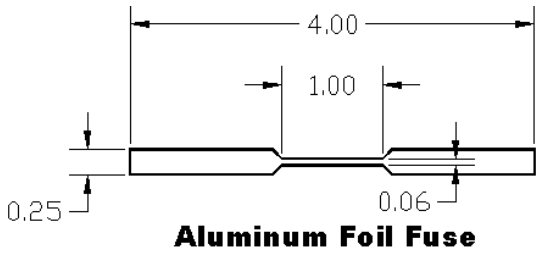
**Materials**

| | | |
|---|---|---|
| Scissors | Kitchen Pot Holders | Tinfoil |
| Safety Glasses | Fresh "D" Size Batteries | Ruler |
| Stop Watch | Dial Calipers | Graph Paper |
| Pot Holder Mittens | | |

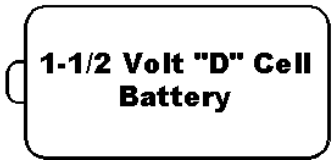
**Procedure**

**Caution: Understand you will be creating high temperatures and melting or burning the aluminum foil. Wear pot -holder mittens and safety glasses throughout the experiment.**

1.) Cut several strips of tinfoil into ¼" x 4" long rectangles per the diagram below. The dimensions are only approximations…Just remember to keep the necked down section very narrow. Try several different sizes.




**Aluminum Foil Fuse**




2.) Using a pair of dial calipers, determine the cross sectional area of the "Necked Down" part of the Aluminum Foil Fuse.

3.) With the Pot holder "Mittens" on, press each end of the Aluminum Foil Fuse to the terminals of the battery.

4.) Time how long it takes each fuse to burn out.

5.) Create a graph that compares the cross sectional area of the fuse, with the time it takes to burn out.

6.) What can you infer from the data on the graph?

7.) Is it clear to you that Current working against a resistance causes destructive heating in circuits?