



Design a Filament

Experiment

In 1879, Thomas Edison finally completed the development of a practical incandescent light bulb after many hundreds of trials and errors. His greatest challenge was to find a material for the filament that could remain heated for days before burning up. Edison realized early on that, regardless of which material worked best, the filament must be contained in a vacuum. Setting him apart from other scientists was his realization that he needed a small amount of material that had a very high resistance to the current.

In this next experiment, you will recreate the efforts of Thomas Edison to develop the incandescent light bulb. Before you begin, you should know that it is unlikely you will have the kind of success that Edison achieved, but knowing that should better prepare you for the challenge of building a working light bulb!

After you have developed the techniques to construct a basic working light bulb, you are then going to be challenged to test a variety of materials for the filament, just as Thomas Edison did over the months and years before his success in 1879. Check with your teacher for complete instructions on how to conduct this experiment.