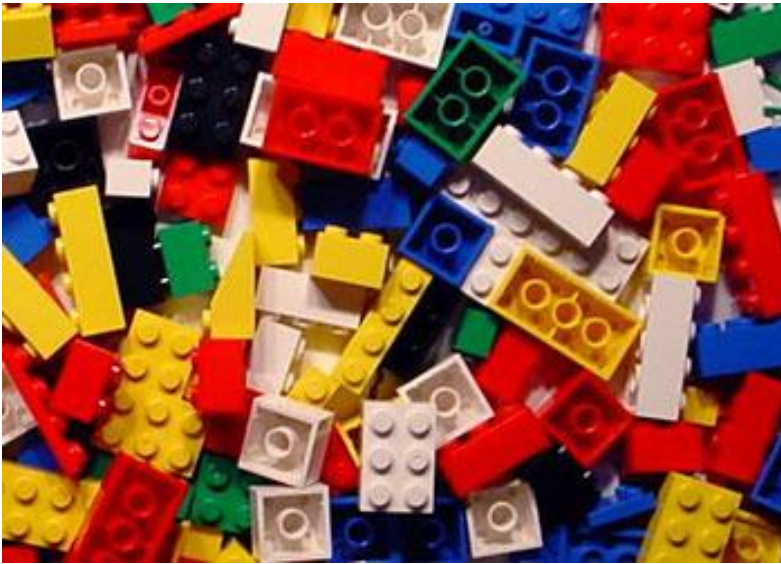


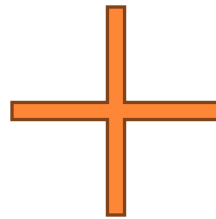
Conductive LEGOS

Adedoyin Ogunniyi

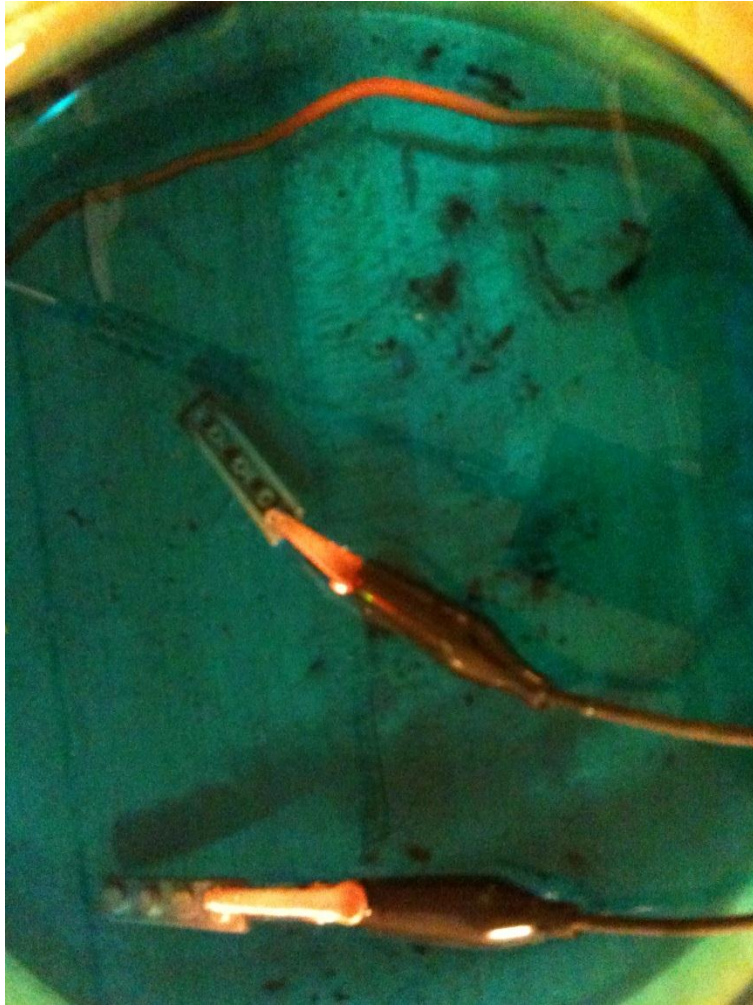
The Idea



LEGO: fun, stackable toy bricks



Copper: highly conductive metal



The Process

Each LEGO piece was first covered with a layer of silver-based conductive ink.

Then, the pieces were dipped into the electroplating bowl for 3-5mins.



Problems

I had some trouble because the copper layer started to peel off the LEGO pieces.

This was because of 2 reasons:

- The layer of conductive ink was too thin
- I had only put ink on the top and bottom edges

Solutions

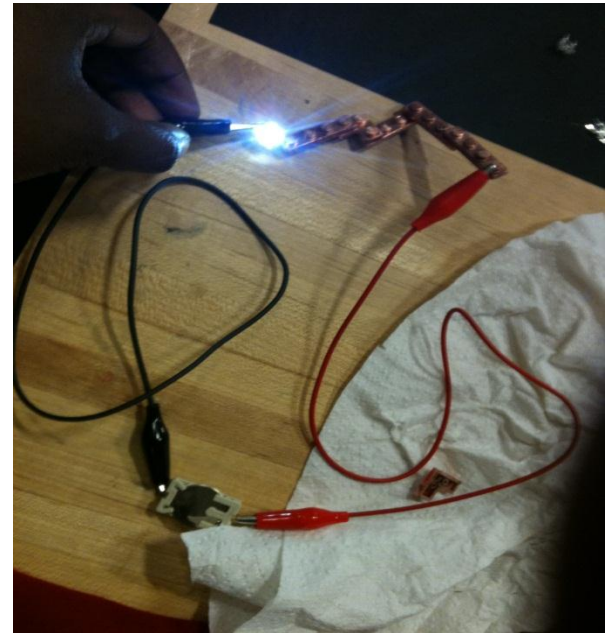
I received a couple of helpful suggestions for my problems.

- * One was to coat the entire LEGO, rather than the top and bottom.
- * Another was to use a thicker layer of conductive ink.
- * A third suggestion was to sand the edges and sides of the LEGO to create a more porous surface for the copper.
- * The final suggestion, I would highly recommend. When electroplating, make sure the components don't touch. If they do, you are causing a short circuit.

The Result



Resistivity = $0\text{k}\Omega$



LEGO circuit!