

# Girls Love Science



## Hi. My name is Renee. I'm 12.

You might remember me from about a year ago, when my dad wrote about me and the home-made motor project we did together ("Make the Connection," February 2014).

That was a really fun project, and I got to learn a little bit about how electric motors work. After that article ran, we made a way better motor and I took it to school to show my class.

I like science, especially when I get to make things and see how they work. My dad says that sounds like something an engineer would say, and I guess that's true. In March I got to meet a bunch of engineers when I went to the "Introduce a Girl to Engineering" event held at the Siemens factory in West Chicago, Illinois.

The engineers there work with motors that are a little bit fancier than the one my dad and I made. At Siemens, they make motor control cabinets, which are basically big closets full of wires and electronics. They're used to turn motors on an off, and to make sure the motors and equipment don't get damaged, which is really important in a big factory or building where there are a lot of motors running.

I got to see how metal is bent to form the cabinets, how they use lasers to cut shapes in the metal, how the cabinets are painted and how everything is put together and tested. We talked to a manufacturing engineer at the factory's "copper fabrication cell." That's where they punch holes and bend pieces of copper for their cabinets. He said his job was to figure out how to make things faster, better or cheaper. We also met an industrial engineer. She designed the system Siemens uses to automatically load sheet metal into a machine that punches holes in the metal.



More than 130 5th-12th grade girls took part in the 11th annual "Introduce a Girl to Engineering" day at the Siemens factory in West Chicago, where they manufacture motor control centers, switchboards and enclosed controls for companies in the food and beverage, aerospace, automotive, metals and paper industries.

One of the coolest things was when we got to stand on the giant scale they use to weigh the cabinets before they go on trucks to be shipped out. In case you're interested, our group weighed 1,794 lbs.

During the event, we also got to work on a few science projects. Working in teams, we designed and built a windmill out of notecards, paper clips and a cork. Then we tested them to see whose generated the most electricity. Unfortunately, my team didn't win, but it was fun anyway. My favorite project was building a structure out of marshmallows and dry spaghetti. My team *would* have won, but our tower developed a leaning problem right at the end.

We also got to hear a number of people speak about engineering and what they do every day. Did you know that only about 12% of engineers are women? I think that's too bad, because most of the smart people I know are girls.

Anyway, I'd like to thank Siemens for hosting the event. It was a lot of fun, and I learned a lot, too. If you have a chance, you should all find a way to share *your* love of science and engineering with kids my age (even if they're boys). It was a great experience that I would definitely do again.

Besides, visiting the factory and talking to all of those engineers has given me some new ideas about that motor we made last year. Do you think my dad will let me add a control cabinet to our design?

Renee