St. Mark's School, 3rd grade Girl Scout Troop
May 19, 2013
10 students + 4 chaperones
3 - 4:30PM
Laurie Kovalenko

Laurie, "Inventors Badge"
What I did:
We met in Sharp Lecture Hall since there is a lot of room for the students to act out being insulators and conductors. We started with a great inventor, Ben Franklin, and explored lightning and lightning rods using a Van de Graaff generator borrowed from Jeff Cady in Physics. Rather than using a real person, we used a rabbit hide and a stack of aluminum foil cupcake tins. Since no one had such a generator at home, the girls did some activities with household items: they rubbed balloons and styrofoam plates to make charge objects, and then explored whether they attracted or repelled each other. And they made a "magic" wand by rubbing pvc pipe with material and then dropping a delicate piece of mylar onto it.

Then we explored electricity and magnetism a bit, dropping magnets and non-magnets down tubes of plastic or metal. Each girl dropped magnets down each tube, and watched from above as they fell. to see the lovely floating action. I also had borrowed a large metal tube and magnets from Jeff Cady, as well as a glass tube with three metal rings around it. Some girls were able to correctly predict what would happen with the glass and metal ring tube. I then used a magnet attached to a slinky to show how to make a seismometer.

Finally, to see some JPL inventions, we watched 7 minutes of terror.

Then we walked to 215 N Mudd, stopping to see the maps on the walls. In 215, the girls became inventors, thinking of problems, then brainstorming solutions, then picking one solution and drawing it. Unfortunately we ran out of time so the girls did not get to share their inventions but I asked them to share them with their families.

I also mentioned that some inventions come from mistakes and gave the example of post-it notes.

We finished up with snack outside, and I gave them each a sticky notes pad and a prepared piece of mylar that will become a sphere when charged.

What worked well:
They loved the Van de Graaff generator demos, the exploration of electricity and magnetism using the Lenz's law apparatuses, and the levitation of mylar. They also participated well in the inventors activities, though I had to give them a few

examples of problems. One girls insisted she had no problems!

Advice for next time:
I'd stay in one room - 215 N Mudd, though I'd walk around a bit in the middle to see the seismometer in Seismo Lab and the maps on the walls. The activities that take room could be done in the hallway. I'd give pairs of girls two balloons on strings and one styrofoam plate so they can work on the charging activity themselves, rather than having volunteers come up to do it (it was hard for some girls to see the results of the experiments since the girls doing the experiments were in the way). I'd be sure to schedule in some free time, so that when something unexpected happens we can explore it further (for example, one time the falling magnet got stuck in the plastic tube. I asked "Why?" and they took some time to figure out that one of the magnets was stuck on the outside of the tube. It would have been great to explore that further.)