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Women Engineers

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Southeast Region D

Charlotte-Metrolina Section, D-002

Event Report

"Engineers Are Cool!" Junior Girl Scout Badge Day

14 November 2009

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1. Event Name

"Engineers Are Cool!" Junior Girl Scout Badge Day

2. Event Date & Time

Saturday, November 14, 2009; 8:00am - 2:30pm

3. Event Location

Hornets' Nest Girl Scout Council Complex, 7007 Idlewild Road, Charlotte, NC 28212

4. Event Coordinators

Angela Berry

5. Attendance

Number of Members present: 6 SWE-CM; 6 SWE-UNCC
 Number of Non-members present: 15

6. Event Sponsors & Donations

Sponsors of the event are listed with their donations in Table 1 Event Sponsors & Donations:

Table 1 Event Sponsors & Donations

Event Sponsor	Donation

7. Awards/Door Prizes & Recipients

Awards and Door Prizes that were given at the event are listed with their recipients in Table 2 Awards/Door Prizes & Recipients:

Table 2 Awards/Door Prizes & Recipients

Award/Door Prize	Recipient
Junior Girl Scout fun patch - given to winner (distance on one puff of air) in each Puff Mobile session	Savannah, Emma, Breanna, Sami, Emily (Emily had furthest distance of all 50 participants 60+')
Junior Girl Scout fun patch - given to most creative design in each Puff Mobile session	Adithi, Jaden, Heather, Rachel, Olivia

8. Income & Expenses

Income, other than donations, that was received or collected for or at the event is listed in Table 3 Event Income:



Table 3 Event Income

Item	Amount	Receipt Remitted? (Yes/Pending)
Girl Scouts of America (\$9/registrant for reimbursement)	\$540.00	N/A
	\$	

Expenses, other than awards or door prizes, that were incurred for or at the event are listed in Table 4 Event Expenses:

Table 4 Event Expenses

Item	Amount	Receipt Submitted? (Yes/Pending)
MCM Electronics	\$212.61	Y
Dollar Tree	\$18.40	Y
Girl Scouts	\$64.95	Y
SWE	\$50.35	Y
The Science Company	\$35.77	Y
Dollar Tree	\$31.39	Y
Sam's Club	\$35.89	Y
Dollar Tree	\$9.74	Y
Lowe's	\$10.47	Y
Staples	\$18.48	Y
Target	\$20.24	Y
Bi-Lo	\$17.26	Y
Girl Scouts	\$5.14	Y
McDonalds	\$17.44	Y
McDonalds	\$15.80	Y
Family Dollar	\$3.24	Y
Pizza Hut	\$62.00	Y

9. Event Description

Written in the format of a newsletter article.

Twenty-eight volunteers showed up on a beautiful sunny Saturday November morning to assist with the semi -annual Girl Scout badge event "Engineers Are Cool!" This event is held twice per year by the Charlotte-Metrolina Section in association with the Hornets' Nest Girl Scout Council. The event is limited to 50 Junior Girl Scouts (4th and 5th Grade). This fall, we actually had 60 Girls registered and a waiting list of 20 girls! Our 28 volunteers conducted five sessions around various fields of engineering including mechanical, structural, civil, electrical, and chemical engineering. A single volunteer generally leads each session and is assisted by other volunteers so that the Girl Scouts are provided with a lot of attention.

Our structural session was led by the students of the UNC Charlotte Collegiate Section with Rebecca Turner, Collegiate Section President, heading up the team. The students explained the basics about bridges such as the components that make up a suspension bridge as well as the basic compression and tension forces that are balanced. Each group of Girl Scouts was broken into teams of 3 to 4 to build suspension bridges out of

chairs (towers), rope (cable), string (stringers) and poster board (deck). At the end, each bridge is loaded with engineering text books until the bridges collapse to the cheers and groans of the Girl Scout teams. While having fun, the girls learn to work together. UNCC engineering students Elizabeth Carver, Stephanie Cellemme, Emily Lukens, Allie Burke and Matt Johnson all helped with this session.

Long-time chemical engineering session leader Kerrie Goforth taught the girls how to make a polymer out of two simple household ingredients, borax and glue. Our polymer is better known as "Gloop" or "Slime" much to the girls enjoyment. This session teaches some basic principles of chemistry such as measuring ingredients to the right proportions. Kerrie was challenged throughout the day when her recipe didn't produce a polymer with the usual stretchy, slimy properties. She persevered, and with the help of Regina Cousar and Tina Maguylo, she was able to add dish detergent as an emulsifier to produce the polymer with the desired properties. Through this challenge, the leaders of this group were able to share the principles of trial and error with the participating girls. The Girl Scouts were thrilled as usual to take home their colored slime in plastic sandwich bags to share with their delighted parents. Ann Prock and Mya Aun and her husband volunteered with this group as well.

In the mechanical engineering session, the Girl Scouts make an air (sail) powered car called a Puff Mobile. Teresa Spicer stepped forward as a first-time leader for this session. She was aided by Machella Litaker, Raianne Cruz, and Zhengzheng Hu to learn the ins and outs of air-powered vehicles made of one sheet of paper, 4 lifesavers, 3 paperclips, 2 plastic straws and all the tape the girls can use. Junior Girl Scout Emily R. had the furthest distance of all five sessions - a record 60+ inches (our tape only went to 60 inches).

Emily Reinicker stepped forward again to lead our civil engineering session where the Girl Scouts make chocolate asphalt. Emily brings in pictures of paving equipment and explains the purpose of each. She also has cores of real asphalt sections for the girls to look at and compare what they see in the core against the ingredients in their "asphalt." The chocolate asphalt is made from melted chocolate chips (binder), chopped walnuts, shredded coconut, old fashioned and quick oats, and sprinkles (various sizes of aggregate materials). After stirring all their ingredients into the "binder," the girls roll out their "asphalt" between two pieces of wax paper similar to a drum roller being used to roll and compact real asphalt. Jan Anderson and Candice Crago provided roadway design knowledge to the session.

Another new leader, Jennifer Lawrence, volunteered to lead the loud, but fun, session on electrical engineering. In this session, the Girl Scouts use a manila folder, a plastic straw, aluminum foil, wire, a buzzer, battery connector, and 9V battery to construct a pressure switch that is a burglar alarm they can use on their bedroom doors. Jennifer was aided by Sandra Kolvick, Celia Gray, and Phon Bouaphanh (a past leader of this session). Again, another big take home hit with the parents!

Jenny Kichler and Chris Cathcart provided all around back up by running various errands, taking pictures and routinely checking in with the progress of each session.

During the introduction of the event to the enthusiastic group of Junior Girl Scouts, a troop leader unexpectedly offered the comment that this was her second time bringing girls to this event because it was the best event Hornets' Nest Council had ever sponsored. She made the whole day worthwhile to the volunteers even before we started!

Many thanks go out to our great, and varied, volunteer pool that makes this event possible every time. Our volunteers include men and women, architects, engineers, chemists, and even bankers. We couldn't hold this event without these great people who are willing to give up a Saturday twice per year to interest young girls in the profession of engineering.

10. Lessons Learned

Things that went well and things that we could do better next time.

1. Pizza amount worked out very well with none remaining out of 10 medium pizzas ordered.
2. We used up some more of our existing supplies which will be helpful with storage.

11. Contact Information

For future planning.

Angela Berry, 704-432-5259 or 704-398-2016

12. Photos

Have the photos taken at event been uploaded to Section's Flickr account?

Yes

Not yet

Photos will be uploaded by date .

None taken