SWE Activity Report 2005 - 2006

Event: Elementary School Outreach

Time - From: 7:30 AM To: 3:00 PM

Date: December 5th, 2005

Number of Participants: 22 volunteers, 475 elementary school students

Please attach all participant lists, relevant pamphlets/flyers, and pertinent info.

Chairs of Event		
Name	**Email**	**Year / Major**
Shi Ming Luo	**Sl455**	**2009/Undecided**
Morgan Rog	**Mer44**	**2006/CivE**
Diane Wuest	**Dmw45**	**2006/ChemE**

Please submit a brief schedule of the planning of your event and any relevant contact people:

Activity to be done	By (Date)
Meet to discuss project, set timeline for semester	10/16
Made volunteer announcement at general meeting, volunteer sign-up on tearoffs	10/23
Contact schools, pick project	10/16 – 11/30
Organize volunteers and drivers	12/4
Volunteer meeting	12/4 (2pm)
Buy breakfast food and supplies, organize supplies and email volunteers about the event schedule	12/3-12/4
Day of the event!	12/5

School:	Cayuga Heights	Belle Sherman	South Hill
Initial Contact:	Patrick Jensen (607)-257-8557	Karen Keller kkeller@icsd.k12.ny.us	Mrs. Rae Covey rcovey@icsd.k12.ny.us
Number of 3rd	0	2	3

Grades visited (teachers who participated)		(M. Cox, Shaw)	(Miller/Lazarro, Anderson, Wilhelm)
Number of 4th Grades visited (teachers who participated)	3 (Merola, Devers, Kaminsky)	3 (Gaines, Ewing, Sahasrabudhe)	0
Number of 5th Grades visited (teachers who participated)	3 (Sternquist, Kornreich, Patterson)	3 (E. Cox, Salamon, Van Slyke)	2 (Koestler, Duttweiler)
Total Classrooms Visited:	6	8	5

1. **About the event** – Please describe the event briefly. Was the turn out what you expected and/or wanted?

   This year, we visited three different elementary schools in the Ithaca area, including Belle Sherman, South Hill and Cayuga Heights. At each school, we visited third, fourth and fifth grade classrooms to teach the students about engineering. We had different projects for each grade level, which allowed the presentations to be age-appropriate and the students to be entertained and educated. For third grade, we built skyscrapers with gumdrops and toothpicks, fourth grade students constructed bridges out of drinking straws, dental floss, tape and paperclips, while the fifth graders worked together to clean up an oil spill simulation. We were able to get twenty two volunteers to help us with the projects. While this number was sufficient, it would have been more desirable to have several more volunteers, since we visited three separate schools with numerous classrooms in each. During the volunteer meeting, the chairs demonstrated each project so the volunteers would understand and be comfortable with them.

Activities:

3rd Grade: Gum Drop/toothpick Building
This activity applied to Civil Engineering. Students were supplied with 50 gumdrops and a handful of toothpicks. We experimented with different building techniques, such as strong bases, shapes, double toothpicks, and heights. We went over the characteristics of a good building.

4th Grade: Bridge Building
This activity applied to Civil Engineering. Students were supplied with 7 drinking straws, masking tape, dental floss, scissors, paper clips, paper cups, and jelly beans as weights. The activity description can be found at http://www.pbs.org/wgbh/buildingbig/educator/act_suspension_ho.html. Students built a suspension bridge first and then a beam bridge and compared the success of holding jelly beans in the paper cup attached to the bridge. The suspension bridge was much stronger.

5th Grade: Oil Spill Clean-up
This activity applied to Environmental Engineering. We presented the severity of oil spills in the environment and experimented with materials that can clean up an oil spill. Students were supplied with one aluminum pan for each group filled with sand and water. They made an aluminum foil boat, which was filled with vegetable oil and "spilled" into the "ocean". They used cotton balls, spoons, cups, pipe cleaners, and feathers to clean it up. After they experimented with their own materials, the volunteers added one drop of dish soap to each pan which pushed all the oil to the edge of the pan making the oil easier to clean up.

2. **Specific Problems** – Please list any problems that were encountered in the organization and execution of the event.

   As stated previously, it would have been helpful to have more volunteers. Despite announcements in SWEmails and at meetings, we were worried about having enough people to visit all of the classrooms. The most reliable volunteers were friends that were recruited by the chairs.

   Secondly, although we began contacting elementary schools in October, we got very little response from any of them until late November. There were even some schools that made changes to the schedules we had worked out the day before the event occurred. Although this caused confusion, we were able to work things out.

   Finally, purchasing the supplies required for this event presented a significant challenge. Since we had three different activities and many different classrooms to visit, we exceeded the budget used in previous years. Also, it was difficult for only a few people to purchase and transport that excessive amount of equipment.

3. **Suggestions** – Please elaborate on ways in which SWE can improve this event for next year. Include general suggestions and advice for the future.

- Limit the number of schools visited to ensure that you will have enough volunteers for each classroom, since many presentations had to be scheduled simultaneously.
- Attempt to recruit as many volunteers as possible so that each presentation has enough to keep the students entertained and under control. Advertise to other student organizations such as Engineers for a Sustainable World and Engineering Student Council.
- Make sure the presentation and experiment take up a significant amount of time. If the students finish early and there is nothing else for them to do, they will go crazy and make a mess. We had a portion of time to talk about our own majors and what we liked about engineering, and then the students could ask us questions. This was an effective way to reinforce the whole entire point of the program, which is to introduce young students to engineering.
- Continue offering different projects for different grade levels, since this was very effective this year.
- If projects require any kind of food, make sure to contact teachers to see if any of their students might have severe food allergies.
- Actually do each experiment in the volunteer meeting, so all of the volunteers understand and feel comfortable with them.

4. **Budget-** Please make a budget of things purchased for this activity and their prices.

Item	Purchased From	Cost
All other supplies (straws, pans, oil, cotton balls, spoons, cups, floss, etc.)	Wegmans	~180
Toothpicks, paperclips, etc.	Target	~20
Sand, feathers, pipe cleaners	AC Moore	~40
Jelly Beans	Tops	~10
	Total =	~250