

Tesla and Envirolution Celebrate Introduce a Girl to Engineering Day.

February, 21, 2019

Event Summary Report- Draft

On February 21, 2019 [Tesla](#) and [Envirolution](#), a nonprofit dedicated to empowering the next generation of leaders, hosted middle school students at several Tesla locations to celebrate Introduce a Girl to Engineering Day – a national movement to show girls how engineering can be a great career choice and a great way to change the world. With females making up only a fraction of the engineering workforce in the U.S., Tesla is committed to increasing female students' exposure to manufacturing and engineering in Nevada as well as throughout the U.S.

After hosting 60 girls at Gigafactory 1 in Nevada last year, Tesla and Envirolution expanded the event to a total of eight facilities in Nevada and California. 58 students participated in Nevada at Tesla's Gigafactory 1 and 38 from the two showrooms in Las Vegas. 85 students participated at five locations in California including Fremont, Livermore, Atwater, Hawthorne and San Diego for a total of 181 students in the two states.

With the goal of creating a fun and engaging experience, multiple hands-on activities were used to explore different fields in engineering. Students at Gigafactory 1 received tours of the production line, built simple motors (electrical), suspension bridges (civil) and balloon-propelled cars (mechanical). In Southern Nevada and throughout California other students got to explore Tesla's solar roofs, learn about the steps involved in designing a residential PV system and see the inside of the Model X for the very first time. Over 80 Tesla employees from the eight facilities volunteered at the events, encouraging girls to see technology as a means to pursue their interests.

Pre/post evaluations captured some of the learning outcomes for the event. Four of the eight schools provided pre *and* post surveys. In all cases, there was an increase in student knowledge ranging from 47% to 70%.

- What kinds of engineering jobs can you get at Tesla? *50% improvement in listing engineering job opportunities at Tesla.*
- What are examples of sustainability at Tesla? *60% improvement in listing Tesla's sustainability practices.*
- What happens to the flow of electricity when you break the circuit loop? *47% improvement in describing flow disruption.*
- What is needed to make a simple motor? *70% improvement in describing how to make a simple motor.*

I liked that we got to learn how to create an electric motor. It helped me understand how electric cars work. Dilworth Middle School Student, Reno, NV

I can't begin to describe the impact that today had on our students... It began with excitement and our young girls singing on the way over to your facility. Followed by the oohs and aahs of viewing and sitting inside a TESLA X. Then I heard so many great conversations between the TESLA family and the Nighthawk family. Additionally, there was even more excitement in having created a simple motor, and then you turn around and offer the kits to our students. I can't thank you enough for these gifts. Florence Nightingale Middle School Teacher, Atwater Facility

The post evaluations also asked the students to reflect on the experience. 142 students responded from six schools.

- Tell us about your experience at the 2019 Introduce a Girl to Engineering Day.
 - 90% expressed positive feedback while 40% explicitly indicated that they learned something new
- What would you change about the day?
 - 45% did not want to change anything, while 34% indicated they wanted more time on the tour or more activities.
- Would you recommend this day at Tesla to other girls? If so, what would you say?
 - 81% would recommend the day, with 29% explicitly saying that it encouraged and inspired them, 25% explicitly said they were motivated to learn more about engineering

I thought that this was very impactful experience that not only has taught me about sustainable resources, how to make a motor, and showed us how the cars are so advanced and don't even make a sound when running, indicating that these cars are electric and do not pollute like other cars and don't cause global warming like other cars. We also learned about how they are finding ways to save us money. I liked this experience because it told me how the careers here don't only make a lot of money, but they have fun engineering as well. Innovation Middle School Student, San Diego, CA

So when can I start working at Tesla? Cold Springs Middle School Student, Las Vegas, NV

Yes, it was inspiring and fun. I have always been proud to work at Tesla and our mission. After yesterday I feel an immense amount of gratitude that my employer is not only saving the world but also inspiring and shaping the lives of our future generations. Tesla
Volunteer

Yes! It was great fun for all involved and cool to share about all the amazing things that Tesla is doing in the world. Tesla Volunteer

Media Coverage

Tesla developed press releases for the two target areas, Nevada and California, for the day of the event. This resulted in an article on the big national website "Electrek", with 293 people commenting and

engaging with the article ([link](#)), and great coverage from many local news outlets. Stations in the Reno, Las Vegas, and Fremont area; Fox Reno (KRXI), CBS Reno (KTVN), ABC Reno (KOLO), Las Vegas Review-Journal and Patch Fremont reported on the event. The event was also shown and shared on multiple social media platforms including Twitter, Facebook and Instagram. Links to the media reports are listed on [Envirolution's IGED website](#).

Methods:

In 2018 at Gigafactory 1, 60 students from Dilworth and Mendive Middle Schools participated in an integrated hands-on STEAM learning experience with tours and three hands-on activities, focused on different areas of engineering. Despite weather delays, the event was a huge success. In 2019, a planning committee was formed between Women in Tesla representatives and Envirolution staff, and feedback from the previous years event was reviewed. The scale and agenda was maintained with minor adjustments made to refine the event, including moving the activities to one central location and modifying the bridge activity to allow for more time to build and fine-tune their designs.

The biggest development for 2019 was testing distance engagement, training, support and implementation of the IGED program at seven sites outside of Reno. To make it viable, all of the outreach, planning and training had to be completed in less than five weeks. With help from Tesla staff in Reno, and the support of the Diversity and Inclusion Department, various Tesla sites were identified and Site Leaders agreed to recruit and lead volunteers at those sites. Schools were then directly recruited by Envirolution staff and, with intense follow-up, we were able to get commitments for all identified Tesla sites. One of the downsides to the late start to planning is that two schools were unable to get approval for bus transportation in time and the decision was made to pay for the buses for those sites via the existing program budget.

Training of the Tesla Site Leaders and volunteers was done via multiple live Zoom webcasts during the week prior to the event. During these sessions, Envirolution staff reviewed the goals and objectives for the event, identified logistical points to keep in mind during planning, and more importantly, training was given on how to deliver the simple motor activity. Tesla volunteers created their own simple motor during these sessions, allowing them the opportunity to anticipate any issues the girls might encounter the day of the event. Having multiple days available for the webcast training for Tesla staff was helpful in reaching all Tesla volunteers in the short amount of time allotted.

The simple motor kits were developed, packaged and shipped directly to site leaders and all arrived in time for the trainings. T-shirts for participants and volunteers were designed, ordered and delivered to the Tesla facilities and staff offered to take them over to the schools so that the girls and their chaperones could wear them on the Event Day. Tesla stickers were also mailed separately and made it on time for the day of the event. Envirolution also ordered, coordinated delivery and paid directly for food, drinks and snacks for lunch at each location.

Budget

The total cost of the three Nevada sites were \$17,149.81 and the cost for the five California sites was \$8,364.06. Appendix A lists the budget.

Results:

Lessons Learned: What worked

- Envirolution as the lead organizer helped assure the whole process was organized and all tasks were handled, either internally or through clear communication with Tesla volunteers.
- Organized webcast trainings and follow up meetings with Tesla site leaders outside of Reno were highly successful and beneficial.
- Simple Motor Kits- The purchase, assembly and shipment of kits to outside sites went smoothly.
- The utilization of Drop Box streamlined the process of sharing presentation templates, speaking notes and other event organizational tools.
- Valuable communication templates were developed for schools and Tesla volunteers

Lessons Learned: Improvement ideas for next year

- Coordinating and purchasing of lunch by Tesla staff would be preferable at sites outside of Reno
- While we were pleased in the anecdotal stories regarding the level of diversity, having additional prep time to contact School Districts in Tesla facility locations will be important.
- More time for transportation arrangements is needed to fit into school decision making calendar.
- Clearer expectations and more robust trainings for Tesla volunteers
- Need to start communication with school districts sooner to avoid conflicts with schools and to approve buses.
- Have a comprehensive contingency plan made prior to the day of the event, to account for weather, late buses, canceled event etc.
- Have all pre/post evaluations conducted online to minimize paper waste and streamlines the data analysis process post event.
- Utilize a customer relationship management system (CRM) for populating communication templates

To streamline the touch points as we look to expand the program in 2020, we are building a flowchart for contacts and a template set for engaging Tesla Facilities, School Districts, and individual schools in order to recruit and support Tesla Site Leaders, Tesla volunteers, teachers, chaperones, and students. See attachment B for checklist.

Expansion ideas:

- For 2020, we will work to make sure that all Tesla and Envirolution co-branding and joint recruitment is approved in Spring of 2019. This will facilitate in creating the logo used on tshirts and communication letterhead ahead of time.

- Identify Tesla locations and recruit Site Leaders by early September so that outreach to, and commitment from, school districts is completed before the Holiday season to ensure they have committed to transportation and substitute teacher costs.
- If there is interest in expanding to rural Nevada schools, it would be important for Envirolution to work with Tesla staff to explore how to remotely (while securely) broadcast to rural classrooms a “tour” of Gig 1. This could include interviews with Tesla women engineers. This will take a great deal of time and care to ensure confidentiality where needed, balanced with the excitement of the technology in the facility.