Summary Report for Cascades Science Squad Science Days – Sep 8, 2012

Jul 14	Jul 28	Aug 11	Aug 25	Sep 8	Sep 22

Cascades Science Center Foundation is a non-profit organization with a mission to inspire enthusiasm for science, technology, engineering and mathematics through hands-on science education. Thanks to the parents for getting involved with the foundation by making their child part of the Science Squad , volunteers (activity leads and activity assistants) for donating their time to engage kids in science and Children's Home Society of Washington for providing a venue at North Seattle Family Center. Our last session with these kids will be on **Saturday, Sep 22, 2012**. We will be handing out certificates of completion and parents are bringing in pot-luck as a celebration. If you are the activity lead or activity assistant, you can find pertinent information in the Cascades Science Squad Activity Lead Guide. We would also like to thank Boeing employees – Billy Cedeno, Daniel Macy, Daniel Colwell and Kara Rucker for supplying the materials for engineering and aerodynamics lessons.

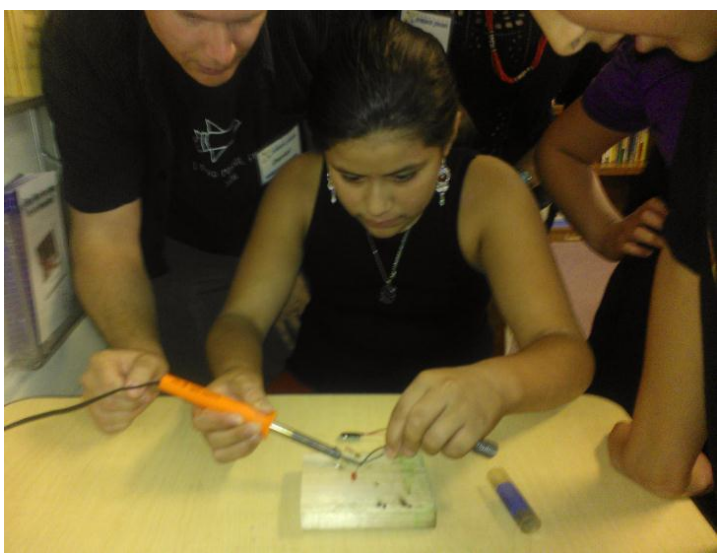
William Brenes, thank you for doing fabulous job as the program lead of the day. The photos from the event can be found on our Facebook page here. **Bryan, Adrian and Arturo** – thank you for moderating the class and helping the activity leads in all the three lessons. Activity Leads, without you the gift of education to the kids would not have been possible – THANK YOU!

Physical Science

Natural Water Filter — **Lead: Omar Richards, Maryam Manuchehri**

Water Filtering: This lesson started off with a video that talked about how to filter water as part of basic wilderness survival skills. We all know that boiling water is one of the best ways to purify dirty water. A compliment to boiling or chemical purifiers are filters to remove any suspended materials. The filter is created by filling in a bottle with layers of gravel, grass, charcoal, sand and stones. It is still recommended to boil the filtered water to remove any viruses before drinking it. Once the dirty water is poured through the filter, the sand and gravel should take out the dirt in the water. A combination of boiling plus filtering with activated charcoal can neutralize most pathogens and pollutants to purify the water.

Engineering



Learn to Solder — **Lead: Billy Cedeno, Kara Rucker, Daniel Colwell, Daniel Macy**

Introduction to Soldering: The purpose of this lesson was to get the kids familiarized with soldering. Billy and Kara started the activity by getting kids through a real world scenario that many modern gadgets go through: Design -> Manufacturing -> Testing -> Delivery. The kids challenge was to design a simple 'flashlight'. The kids did that by connecting together a LED, a resistor and 9V battery connector. They soldered all the joints together so that connections became permanent. Once the parts were all soldered, they put the flashlight on a popsicle stick and wrapped them with a duct tape. They used the 9V battery to test to make sure their battery worked. It was great to see the smile on kids' faces when they put the put a battery on their flashlight and it lit up. Thanks to the volunteers' generous donations, the kids could take the finished product home with them. The kids not only learned about electric circuits, they also got familiarized about the soldering process.

Aerodynamics

Aerodynamics — **Lead: Daniel Macy, Daniel Colwell, Malcolm Lalkaka**

Water Rockets: The kids learnt how the Four Forces of Flight (Drag, Lift, Weight and Thrust) apply to the flights of Rockets and how these forces differ as they are applied to an airplane. The activity leads also spent time talking about how stability is important in the flight of rockets and how the fins and weight play an important part in keeping the rocket flight stable. Activity Leads had already come prepared with a great launch ramp that could be used to launch the water rockets. The kids spent time first creating their rockets with soda bottles and fins created out of the cardboard. Once they designed their rockets, they went outside to test the launch of these rockets. We had couple of rockets that went straight up in the air at least 25 feet high. We believe this was the kids' favorite activity so far in the entire program.

We even have a video for you to watch: Part 1 and Part 2.