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# TechSavvy

A YWCA Greater Pittsburgh Publication

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## TechGYRLS® Return to Design Squad

PBS offers engineering resource materials suitable for elementary through high school students. For the last two years, TechGYRLS® has used this curriculum to teach engineering design concepts and processes through fun, hands-on activities. Using every day objects such as cardboard, cups, and tape, the students produce creative work.

In May of each year, PBS hosts the annual Design Squad Challenge Competition, where students from all over Allegheny County compete and test their engineering design skills. This year, TechGYRLS® Denntra Holmes, Jassmine Moses,

Brianna Eleam, Tionna Tinker, Tamia Baker, and Drea Lumberger represented the YWCA Greater Pittsburgh. Challenges included building a paper table that focused on weight distribution and structure, constructing a rubber band car that would roll across the floor, and a helium balloon race.

In addition to the fun of competing, participants interacted with men and women in STEM fields serving as mentors and judges. It was a fun-filled day packed with STEM inspiration! Drea Lumberger was a member of the purple team that won first place in the competition. Among the

prizes were a trophy and \$25 Best Buy gift card. Brianna Eleam's team also placed coming in 3rd place. All the girls performed exceptionally and we are all very proud of your efforts!



Drea with first place prizes and cool "Paper Table" design.



Volume 2, Issue 2  
June 2011

So much has happened since our last issue! Read up on some of the cool and exciting things happening with the YWCA Greater Pittsburgh TechGYRLS® in recent months.

### GROW WITH US!

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## WV SEC, CSC, GMSP...System Decoding...

The girls went on their fair share of field trips this year. West Virginia Oglebay Institute and Schrader Environmental Center welcomed our large group as we explored nature at its best. Girls deciphered bird calls, made animal tracks, connected one on one with the facility's pet snake, and

observed birds outdoors in the wild.

A stop at RiverQuest provided a classroom river cruise of science discovery. Later we headed off to the Carnegie Science Center for our annual exploration into science.

The Girls Math and Science

Partnership welcomed us and provided a private group activity discussing genetics, genetic mutations and how it relates to eye color, hair, other physical attributes.

The scientific lesson transformed into an arts and craft activity as the girls created "genetic bracelets"! (Continued on page 3)

## TechGYRLS®:

### Coming to a neighborhood near you!

In February 2011, the TechGYRLS® program has joined forces with Gwens Girls® to expand services to more underserved girls. Teen Director Monique McIntosh has jumped back into the classroom to teach STEM to these wonderful young ladies once a week. Gwens Girls staff has been a tremendous asset in program development. Special thanks to Samantha Stowe and Binah Stinnett. In April 2011, Sterrett Elementary Principal Mrs. Sumpter welcomed our program into their school for after

school programming. These bright young ladies were eager to explore the world of STEM! And even more willing to teach the instructor Ms. Erica a thing or two! YWCA Greater Pittsburgh Teen Department is always looking to empower and impact young women.

We are motivated STEM mentors on a mission!

Photos include girls from all of our TechGYRLS® sites



### Look up in the SKYPE...its a CFO!

New this year to the TechGYRLS® mentoring component is to meet via internet video conferencing.

YWCA's Chief Financial Officer Valerie Wheatley pioneered the program as the first TechGYRLS® mentor via Skype. Ms. Wheatley talked about her life, schooling, and career in math, and answered questions such as "What courses did you

take?", "How have your mentors helped you?", and "What are your goals now?" The TechGYRLS learned good communication skills such as appropriate posture and eye contact.

Some were naturally shy to the video world. However, this experience allowed them all to explore the worlds of technology and mentoring both in new and exciting lights.

As we reflect on the importance of mentoring, we must give thanks to the those in the village taking part in leading our children.

Thanks Ms. Valerie!



Amira and Jassmine

### Tribute to Women Luncheon

Wednesday, May 25th marked the YWCA's 29th Annual Tribute to Women Leadership Awards Luncheon, celebrating outstanding women in the city of Pittsburgh who demonstrated excellence and leadership in the workplace and in the community. In preparation for the luncheon a few of the TechGYRLS® starred in a video telling the story of just who they are

and what being a TechGYRL is all about.

This video played during the luncheon where almost 700 hundred in the audience looked on.

Additionally, sported their orange TechGYRLS shirts our girls also volunteered at the luncheon — welcoming attendees, ushering them to their seats, and selling raffle

tickets to raise money for programs such as their own. They were greatly appreciated by the hundreds of community member and YWCA affiliates with whom they shared the message to "Grow with us." The TechGYRLS® represented themselves, their parents, their peers, and their program in an exceptional manner.

## Lessons Learned!

Penn State and Ms. Aprel Lavelle teach TechGYRLS® not to be the straw that breaks someone's back.

April was overflowing with life lessons. During the monthly trip to Penn State Greater Allegheny, Mrs. Jeannetta Thomas taught the girls the power of the tongue and how it can make or break a person's spirit. Conversation and activities focused on bullying and two different aspects including peer to peer and institutional bullying. One of the more extreme results of bullying — teen suicide — was powerfully portrayed in a Teen Suicide Project video that the girls viewed. As silence filled the room one thing was certain; this video tested their emotions — and prompted the students to take a stand.

They signed a pledge to acknowledge all differences, to respect one another, and to help one another.

Lastly, what better way to end a day of spiritual growth than with hand made ice cream! Yes hand made...using milk, ice, rock salt and energy...boy was it tasty!



(L to R) TechGYRLS Amiyah, Amira, Asha, Keshya, Ms. Aprel, Mykeia, Dayonna, Makayla, and Denntra

A few days later Ms. Aprel Lavelle, a YWCA employee and Point Park Student, led a well received presentation on Teen Suicide for the girls. Ms. Aprel made an instant connection with them and a presentation that was to last 15 minutes went to an hour long open dialogue. Ms. Aprel reminded us that it is important to learn, reflect, and express especially with our youth.

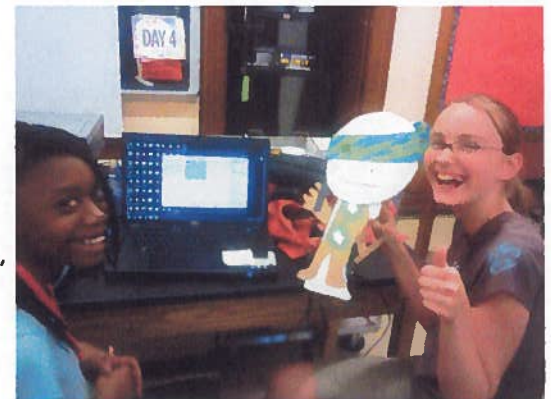
The Teen Department staff say thank you to all of our inspiring mentors!

## I-Puppets

Robot Diaries provides a unique means of exploring, expressing, and sharing emotions, ideas and thoughts while promoting technological literacy and informal learning.

Robot Diaries, or I-Puppets, was used as part of the TechGYRLS® curriculum this spring. The girls first used their artistic abilities to design puppets made of foam core board,

feathers, yarn, and other crafty materials. Technology was then applied using mini circuit boards, servos, and wires to add the expressions. Puppets raised hands, spoke, and had eyes that lit up. TechGYRLS® were able to convey feelings and ideas in a hands on, interactive exploration of STEM and the arts.



Sterrett Elementary girls Tafani and Gabby with their ninja I-Puppet. Green LED lights show off his outfit and servos show off his ninja moves.

## WV SEC, CSC, and GMSP...System Decoding...

(continued from page 1)

And the fun did not stop there, Heather Mallak with the GMSP visited with us during our after school program, where she introduced computer software that allowed the girls to explore science through animated games. On the site [clickspyschool.org](http://clickspyschool.org), the girls had to solve life like challenges that focused

on water filtration systems, biochemistry, computer coding, and more!

Another visit from Heather later in the semester demonstrated the vital component partnerships play in our mission to empower and impact youth.



Left: TechGYRLS® at Schrader. Right: Racheena observing organisms on the RiverQuest boat.

**eliminating racism  
empowering women**  
**ywca**

**greater pittsburgh**

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**The YWCA Greater Pittsburgh is  
dedicated to eliminating racism,  
empowering women and promoting peace,  
justice, freedom and dignity for all.**



As a hallmark program for the National YWCA, the TechGYRLS® STEM initiative represents one of the strongest and most successful initiatives to address the under-representation and performance of girls and young women in the science and technology fields.

Research suggests that exposure to STEM and STEM careers at an early age increases persistence in STEM through adulthood for underrepresented populations. Participants have several opportunities throughout the program year to interact with STEM professionals and work on STEM projects and innovative solutions that address real-world issues often found in communities where they live. Likewise, the program exposes participants to positive role models involved in STEM professions they would not otherwise be exposed to. The TechGYRLS® program also promotes academic achievement in math and science, increases STEM awareness and opportunities to engage in STEM activities. These too are precursors to persistence in STEM. The more girls that participate in the programming and increase their academics skills, as well as awareness and understanding of the STEM disciplines, the greater the impact is to be realized in expanding career and educational choices for this population, as well.

**GROW WITH US!** Help us bring STEM to a greater number of girls.

Invite girls to participate in the TechGYRLS® program. Serve as a mentor via Skype or in person. Conduct cool science, engineering, and robotics activities with girls, and maybe even donate supplies.

Your time is valuable to us and deeply appreciated! **THANK YOU!!**

**We're on the web!** [www.ywcaphg.org/STEM\\_Programs.asp](http://www.ywcaphg.org/STEM_Programs.asp)

## **A TechGYRLS® Testimony by Jaquayla Gilmore**

Hi my name is Jaquayla Gilmore and I'm going to tell you why I like TechGYRLS®.

I like TechGYRLS® because I get to meet new people and program and build robots.

I get on [myskillstutor.com](http://myskillstutor.com) everyday. It helps raise my math grades from B's to A's and helps me focus better in class.

I also like TechGYRLS® because we get to go on fieldtrips to very nice places and explore lots of things.

One of the nice places I've went while experiencing TechGYRLS® is Penn State where they teach us how it's not ok to bully people. They also took us to West Virginia to the Schrader

Environmental Center to study nature. It was fun while it lasted, we only stayed for a couple hours.

We've done lots of things with TechGYRLS®. One time we made lip gloss with Ms. Erica and Ms. Haley. I really enjoyed that; it was a fun experience.

Now I would like to take this time to thank a couple of people starting with Ms. Erica, Ms. Haley, Ms. Angelica, Ms. McIntosh, and all our visitors for teaching us how to build robots and do cool things! Thank you!

Love, Quay



**Jaquayla making lip gloss from beeswax, Vaseline, vitamin E, and natural extracts.**