Making Makerspaces More Welcoming to Girls & People of Color

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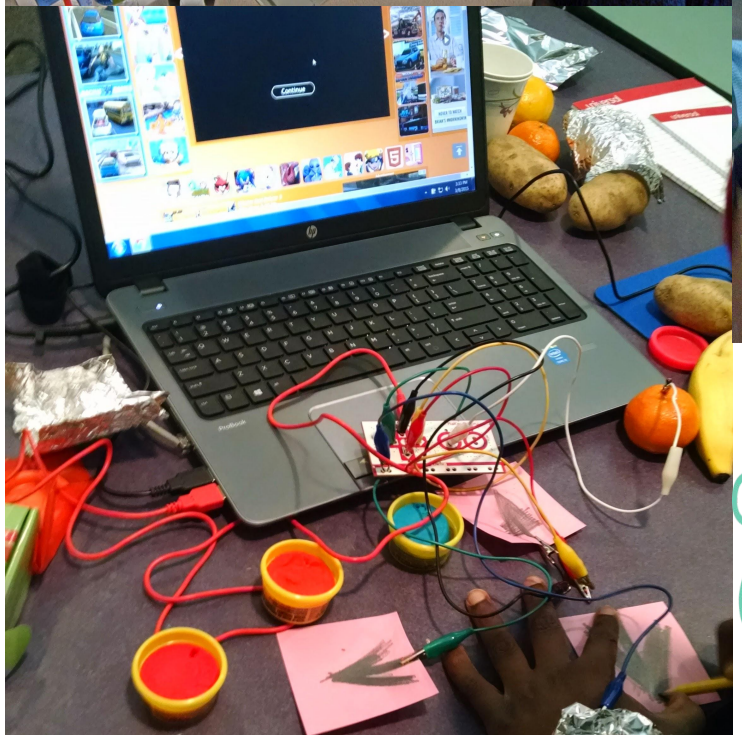
About Me



girls who code

My favorite subject is…

Computers

"makerspaces are community centers with tools"

-Makerspace

"The idea of a "makerspace" is a shaggy concept, encompassing a wide range of ideas and no foolproof recipes for success."

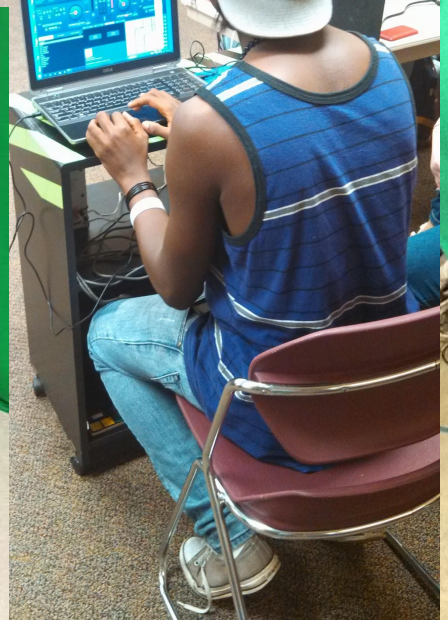
-Made in Baltimore

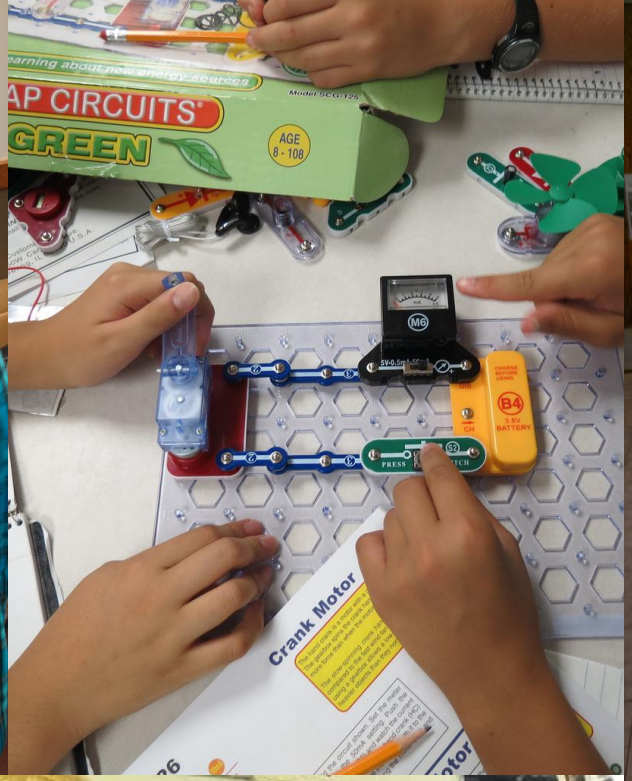
"The contemporary Makerspace is really about bringing people together to create something using digital or analog technology."

-LibraryLinkNJ







AP CIRCUITS
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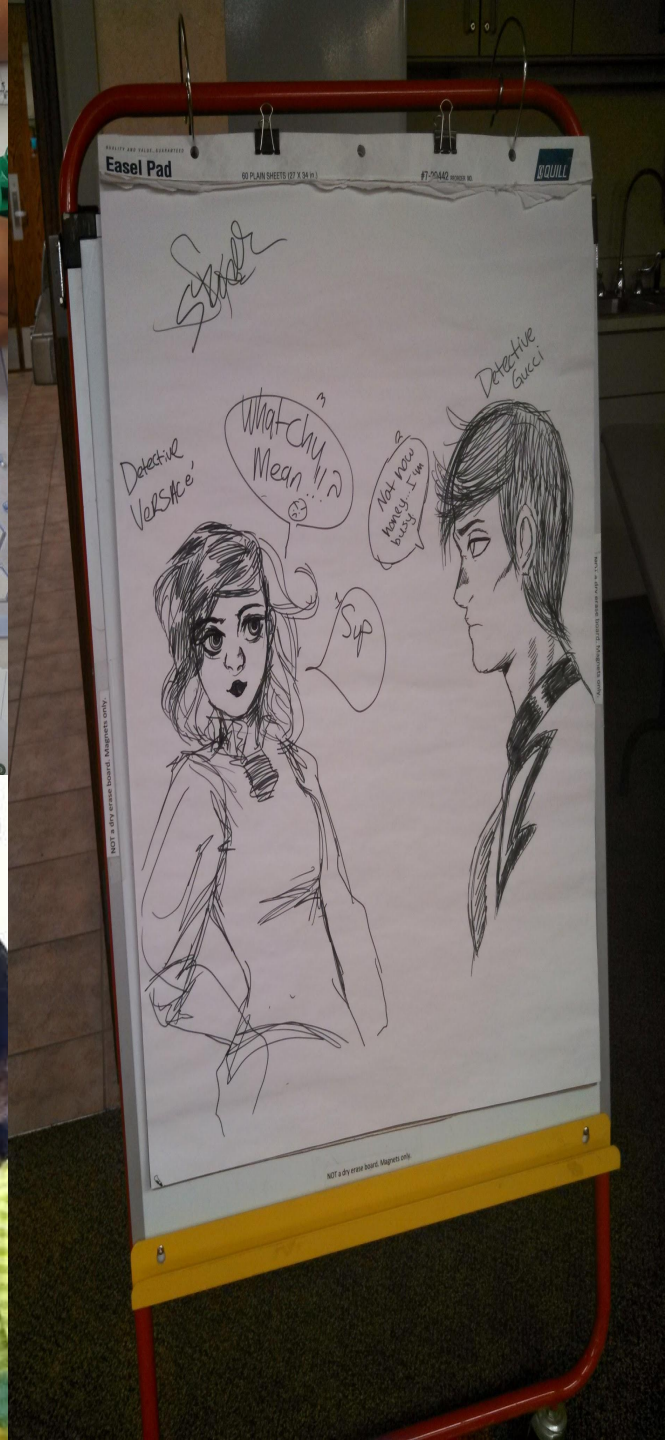
Crank Motor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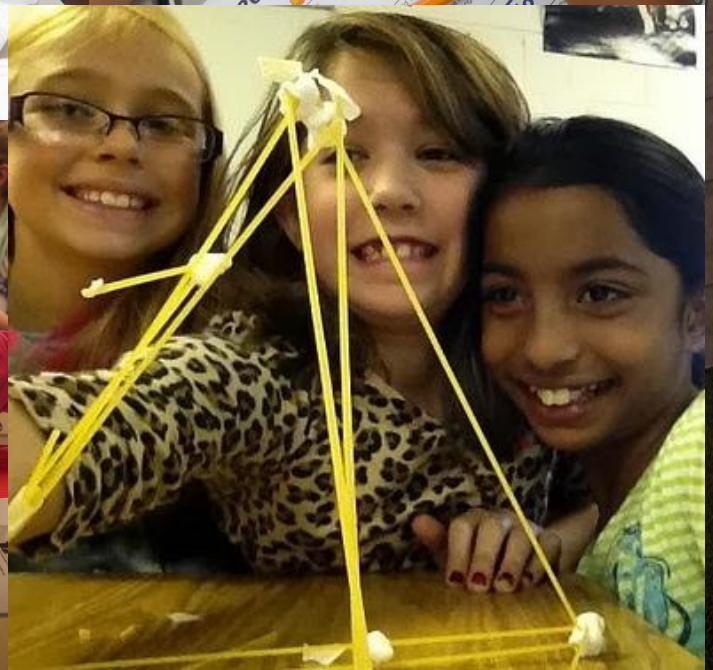
Not now honey, I'm busy
Sip
Detective Gucci



But why focus on girls and people of color?

U.S. Women & Technology (2014)

56% of AP test-takers

47% of AP Calculus test-takers

20% of AP Computer Science test-takers

57% of professional occupations

26% of professional computing occupations

6% of corporate Chief Information Officer positions

57% of 2013 bachelor's degree recipients

18% of 2013 Computer and Information Sciences bachelor's degree recipients

vs

37% of 1985 Computer Science bachelor's degree recipients

26% women in computing

5% Asian
3% African-American
1% Hispanic

Girls...

Lack sufficient female role models in computer science and engineering

Prefer sciences that are clearly connected to helping others

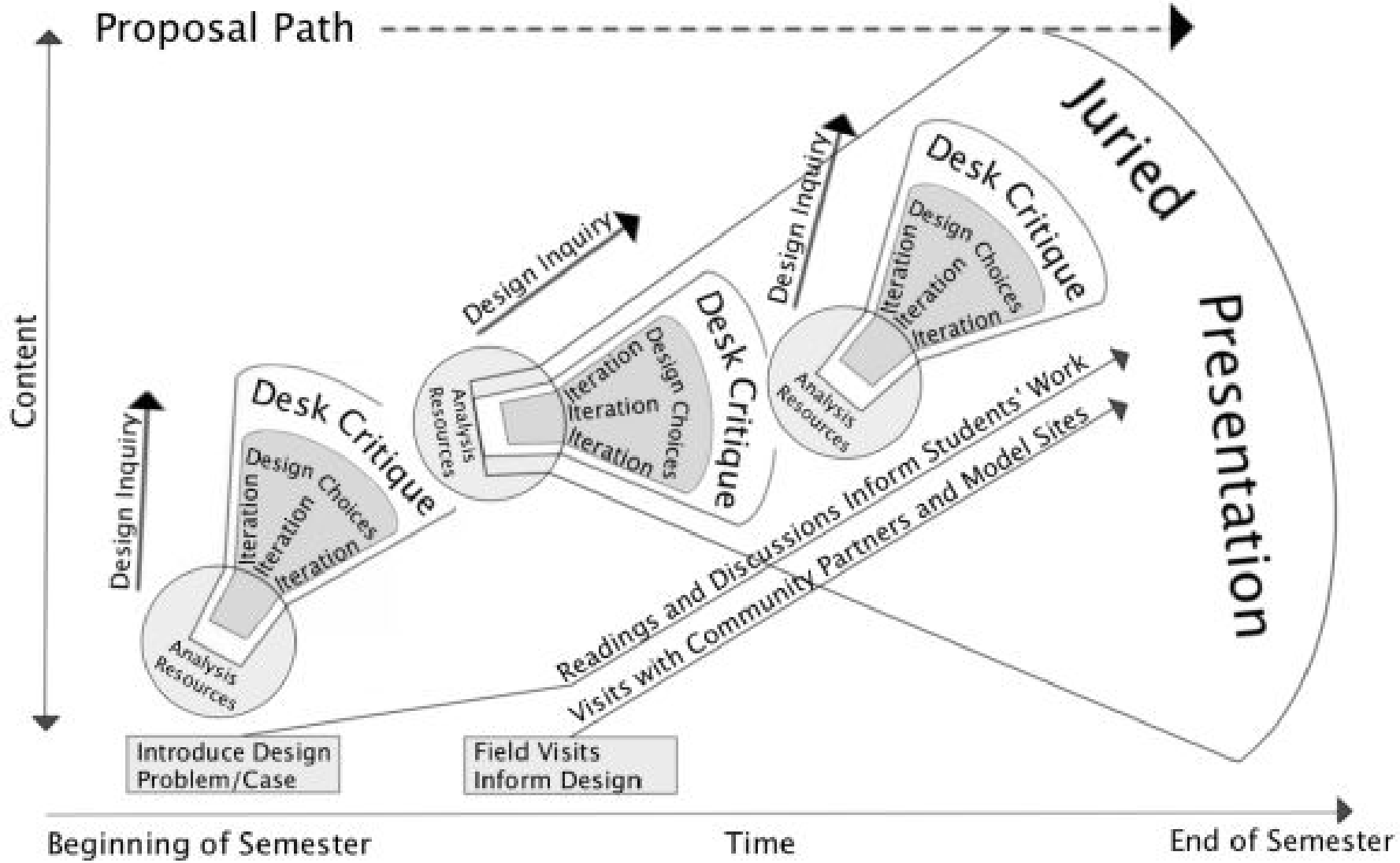
Turned off by the “isolated geek” stereotype that dominates their view of computer science and engineering

Don’t tinker

-Teaching Girls to Tinker

What can libraries do?

1. Identify needs and assets of underrepresented populations in your communities
2. Implement plans and policies to create a welcoming space for girls and people of color to "make"
3. Initiate ongoing reflections and dialogue with staff, community leaders and participants



Community Informatics Studio model based on Kay Brocato's Studio Based Learning proposal path

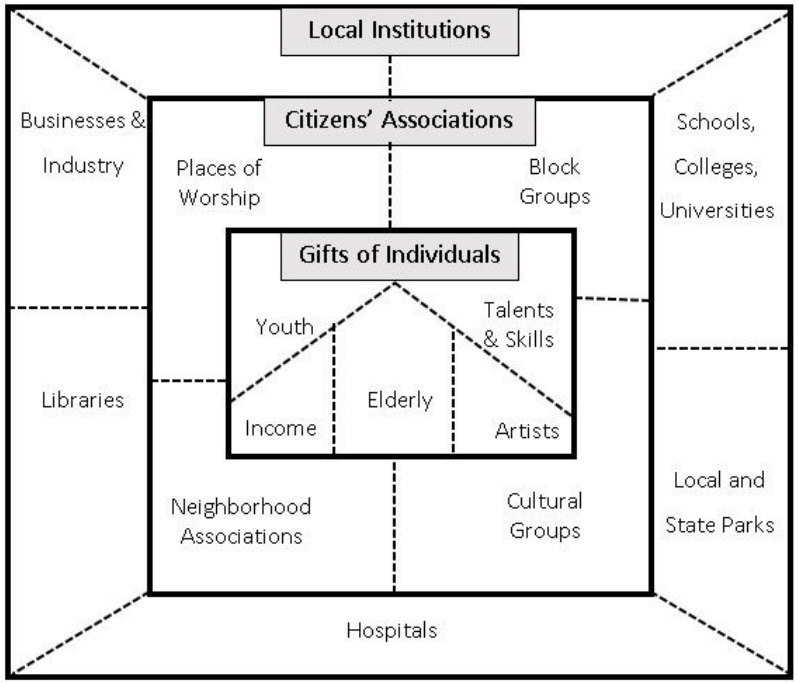
Identify Needs and Assets

Analysis & Resources

Community Asset Map

“Asset mapping involves understanding the array of capacities and social networks, what some call social capital, on which social change projects can be built. **Asset mapping diagnoses what is present**.”

“Always ask the turtle.”



Give ‘em What They Want

Public Librarian from Vermont:

We scoured the interwebz and expedited pink, purple, and whatever accompanying 'girl' minifigs we could find for the next week. You should have seen the smiles! One of the girls, maybe 5 or 6 said "it just magically turned pink because I'm amazing and I wanted to make it that way." **Making makerspaces welcome might only require letting them have the pieces they want to make with.**

Public Librarian from Texas:

Good mix of genders up until age 12, then mostly boys. Over the Christmas break we had two "mini-camps" - the LEGO Mindstorms program was mostly boys, the stop-motion animation was mostly girls. These were small groups (around 10 kids each), so it's hard to make generalizations. But I know some of the girls who came to the stop-motion camp came because the content was more interesting to them than the more technology/circuits/robots stuff we do.

Implement Plans and Policies

Iteration & Design Choices

- Solicit feedback and input in the design and creation of the space
- Provide a library space that reflects the community in which they live
- Ensure the space has appropriate acceptable use and age policies to make them feel welcome and safe
- Provide furniture and technology that is practical yet adaptive

-YALSA'S Teen Space Guidelines

Collaboration

-Center for Research on Girls

“A lot of the way we acquire intellectual ability and skills and how we learn new content is pretty similar,” Willingham says. Teachers, he said, should think about **what they want students to take away** from the lesson and then **find a way to make sure that’s what they are thinking about** during the lesson.

You may think you learn better in a certain way. You actually don’t

Initiate Reflection and Dialogue

Desk Critique

Stop focusing solely on attendance, instead measure:

- Improvement of knowledge and confidence
- Impact on community
- Long-term goals

Work with participants to create tools to measure effectiveness:

- Pre- and post-surveys
- Conduct evaluations often
- Redesign evaluation tools as needed
- Respond and update programs
- Share with stakeholders

-YALSA's Teen Programming Guidelines

#5. Having a "growth mindset" means understanding that we are not born knowing how to do things, but instead *learn* how to do new things and improve our skills. Rather than saying, "You're smart," celebrate persistence by saying, "What did you learn from that project?" **Learning from mistakes is an important step in gaining new skills.**

Use Others (re: don't reinvent the wheel)

- San Jose Public Library (CA): Girls Who Code
- Sunnyvale Public Library (CA): Make-Her
- Kenwood Elementary School (IL): Library Media Center blog
- The Urbana Free Library (IL): Teen Open Lab
- Chicago Public Library (IL): YOUmedia and Maker Lab
- Skokie Public Library (IL): Grrrls Code
- Clover Middle School (SC): Makerspace
- Make South Bend (IN): Female founder, "Chick-In-Charge"

Local:

NJ Makerspaces Project Contract Award Winners

NJ Library Makers Toolkit Workshop

NJ Makers Day

Use Others (re: don't reinvent the wheel)

- Girls Who Code
- Black Girls Code
- Made with Code
- Hour of Code

"More girls tried computer science than in the last 70 years."

-Hour of Code

- Girlstart
- CompuGirls
- National Center for Women & Informational Technology

What other organizations can help provide programs and resources for your community?

“It’s not really a question of what you’re good or bad at. It’s a question of what you want to learn.”

Maddy Maxey, Made with Code Mentor

Presentation Resources

- Makerspace: http://spaces.makerspace.com/
- Made in Baltimore: http://makezine.com/2016/01/13/made-in-baltimore-what-kind-of-makerspace-to-build/
- LibraryLinkNJ Makerspace Resources: http://librarylinknj.org/projects/makerspaces#contract
- U.S. Women & Technology (2014): https://www.ncwit.org/sites/default/files/resources/btn_04032015_web.pdf
- Teaching Girls to Tinker: http://www.edweek.org/ew/articles/2009/11/11/11damour.h29.html
- Community Informatics Studio model: http://prairienet.org/op/demystifying/de-mystifying-technology-workshop-for-families/design-rationale/
- Kay Brocato, Stuio Based Learning: http://ed602.weebly.com/uploads/3/2/6/7/3267407/studio_based_learning_in_higher_ed.pdf
- Stoecker, Randy. *Research Methods for Community Change: A Project-based Approach*. Thousand Oaks: Sage Publications, 2005. Print.
- Steinem, Gloria. *My Life On the Road*. First edition. New York: Random House, 2015.
- YALSA's Teen Space Guidelines: http://www.ala.org/yalsa/guidelines/teenspaces
- Center for Research on Girls: http://www.ncgs.org/Pdfs/Resources/Collaboration.pdf
- You may think you learn better in a certain way. You actually don't: http://qz.com/568617/you-may-think-you-learn-better-in-a-certain-way-you-actually-dont/
- YALSA Teen Programming Guidelines: http://www.ala.org/yalsa/sites/ala.org.yalsa/files/content/TeenProgramingGuidelines_2015_FINAL.pdf
- Top 10 Ways Families Can Encourage Girls' Interest in Computing: https://www.ncwit.org/resources/top-10-ways-families-can-encourage-girls-interest-computing/top-10-ways-families-can
- Made with Code Mentor: https://www.madewithcode.com

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