



SWENextEd Newsletter - January 2019

Welcome to the January 2019 issue of SWENextEd. In this issue, we highlight **architectural engineering**. Architectural engineers help their communities by designing buildings that improve our quality of life. We provide activities to incorporate into your lesson plans that get your students thinking like an architectural engineer, and we introduce you to the woman behind the Brooklyn Bridge. In this newsletter, we also share educator member Julie Wilson's story and share tips for parent teacher conferences. Read on to learn more about the various resources available to K-12 educator members! Get in on the conversation and **join our SWENextEd Facebook page** to participate in engaging discussions and receive tips for the classroom, resources for educators, and more!

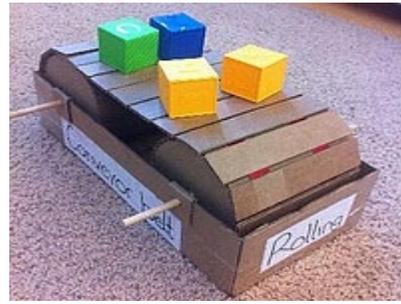
SWE Research Study Looking for Participants

SWE is looking for high school girls to participate in a research study funded by the National Science Foundation. Survey participants will be eligible to enter a raffle for a new tablet! We would really appreciate your help in sharing this survey with girls who have an interest in STEM.

[Access the survey here >>](#)

Building Like An Architectural Engineer

Help your students learn about how architects and architectural engineers think by **building a skyscraper from popsicle sticks**. In this activity, they will consider how material properties, support beams and crossbeams, and reinforcement affect the



structure's strength. [Education.com](#) suggests using a book called [Look at that Building: A First Look at Structures](#) alongside the [lesson plan](#) for younger students. The lesson plan from [CPALMS](#) incorporates the design process to plan, build, and test their skyscraper structure over the course of three days. For more advanced students, try this [lesson plan](#) from [Teach Engineering](#), where students must consider external factors like weather on their skyscraper. For more activity plans and resources on large structures, [check out the BUILDING BIG™ website](#) by PBS. Are your students still looking for more? [Check out archKIDecture](#) for design challenges, information on summer camps, and competitions.



“Women of Steel”

Did you know that after the chief engineer working on the Brooklyn Bridge fell ill, his wife took over for the remaining 14 years that it took to finish building it?

[Emily Warren](#), born in Cold Spring, NY, on September 23rd, 1843, was the 2nd youngest child of 12. She was interested in education and was pursuing that when she met Washington Roebling.



Emily and Washington were married in 1865 and later traveled as newlyweds to Europe to learn new techniques for building bridges. Some of these methods, such as a specific use of [caissons](#), were later incorporated into the Brooklyn Bridge. Emily learned from her husband during his time as the chief engineer of the Brooklyn Bridge, and was able to continue his work after he became severely depressed and bedridden. Though Washington's illness was a threat to his job, Emily had enough knowledge to keep the bridge project going and was able to defend her husband to the engineers and politicians who wanted him to step down.

[Check out this Gizmodo article](#) to read more about Emily Warren Roebling and other women who were the foremothers of females in architectural engineering.



Educator Spotlight: Julie Wilson

Julie Wilson teaches 7th and 8th grade science at [Boynton Middle School](#) in Ithaca, NY. Julie integrates the engineering design process into her curriculum on life sciences and physical sciences. She has also recently jumpstarted a SWENext club at her school. Her biggest piece of advice is to make sure you are interested in the activities you are doing!



Read more tips from Julie and learn about her creative curriculum and the activities she does by reading the [full article on SWE's All Together Blog!](#)

Advice to Give Parents

Are your mid-year parent teacher conferences coming up? Make sure the girls in your STEM classes are supported at home too by providing their parents with strategies to encourage an interest in STEM! [University of Nevada, Reno](#) suggests telling parents to promote good learning practices, like taking time to discuss an activity



and reflect on its outcome, while completing their STEM homework. It is also important for parents to [raise their expectations](#) for their daughters when it comes to STEM coursework. Seeking fun extracurricular STEM activities and events for their daughters is also a great way to foster positivity toward STEM careers and topics. Tell your parents to sign their girls up for [SWENext](#) so they can be notified of upcoming events in their area.

SWE Magazine: A Treasure Trove for K-12 Educators

"I'm not sure how many SWE K12 Educator members actually spend time with each magazine issue, but they definitely should! It is a wonderful publication, and I thank you for maintaining its quality."

STEM coordinator Meg Draeger from the [Chaminade Julianne Catholic High School](#) tells us that the SWE Magazine publications are one of her favorite tools to use to promote STEM opportunities for women. Read about Meg's favorite sections of the Fall 2018 issue of the SWE Magazine and how she plans to utilize them at her school by checking out the [full article on the All Together Blog!](#)



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