Ashna Patel and Victoria Ren had an idea. The two girls, students at North Allegheny Senior High, wanted to help younger kids enjoy STEM subjects as much as they did. So they created an after school mentoring program for elementary and middle schoolers.

STEM & Buds is a nine to ten week program that started in three schools during the 2018-19 school year. As if that wasn’t enough, Ashna and Victoria also organized two weeks of summer camp for sixth to eighth graders at their high school campus and the Cathedral of Learning on the University of Pittsburgh campus in Oakland. The savvy girls reached out to local STEM related companies and received sponsorships from Open Arc, Spectroscopy Society of Pittsburgh and Argo AI, which allows them to offer their afterschool and summer camp programs tuition-free.

Teaching practice

I visited the STEM & Buds camp on the last day at the high school, minutes before parents were to arrive for a casual “science fair” in the cafeteria to see the projects their kids worked on that week.

When I walked into the building, several kids wearing blue T-shirts that read “STEM & BUDS August 2019” greeted me. A few minutes later, I met Ashna and Victoria, who barely looked older than the campers. They smiled easily and seemed relaxed and composed, like they had been running summer camps for years. They explained that both the afterschool program and camp curriculum covered six topics: engineering, psychology, biology, chemistry, math and computer science.

“We really enjoy doing the lessons and the teaching part of it,” the girls told me.

“So how did you figure out what to teach?” I asked.

The girls described how they researched each topic and prepared presentations based on what was currently happening in that field, choosing subjects that particularly interested them. For example, Victoria, who teaches the engineering lessons, is interested in green buildings and sustainability, so that’s what she focused on.

“And I’m interested in architecture,” said Ashna, “so I had the kids look at different art designs and pictures.”
Three girls, Marina, Kaitlyn and Sarah showed me replicas of Pittsburgh bridges they built out of popsicle sticks and described the construction of each. I now know the difference between suspension (Roberto Clemente), beam (Veterans) and truss (Hot Metal) bridges.

A cheerful boy named Agneeshwar showed me the computer program he coded using Scratch software.

“You’ll like this. It’s kind of funny,” he told me.

He pointed to the little figure he drew which he programmed to go into what he described as “Elmo Warrior mode,” which means “crazy.” He was right. I did like it.

Two boys named Daniel showed me how they purified dirty water by passing it through different kinds of filters, such as dry rice, charcoal and banana peels. The cloudy water was noticeably clear after they let it drip through their organic filters.

My favorite project was the Buzzfeed Quiz created by William, Raymond and Matthew. These boys devised a clever computer game, similar to Buzzfeed’s popular online quizzes, which asked me a series of questions, like:

How many friends do you have in Roblox?
   My confused answer: NONE?
What Roblox avatar do you have?

Choose from Noob, Pro, Hacker and God.
   HUH?
   I did my best and after I answered all the questions, the computer used a point system to calculate what type of “shoe” I was. Out of four options, I ended up being the long name of an athletic shoe that contained the words “Air” and “Nike.”
   “Are there any stiletto heels in those four?” I teased.
   Eyes blinked and brows furrowed.
   The boys looked at me like I was nuts.
   I laughed. What was I thinking?

Looking forward

Ashna and Victoria hope to organize ten STEM & Buds chapters at different schools this year. Although the girls taught all the afterschool courses last year, they compiled their curriculum in binders so other leaders can use what they have already prepared.

I wish them well. Ashna and Victoria are the best STEM buds a kid could have.

After writing this article, Ann K. Howley checked her closet to confirm that she owns several pairs of athletic shoes, but NO stilettos.