FROM ANGLES TO APARTMENTS:

Applying Geometry in the Real World

By Samantha League

Last semester, our Geometry and Geometry Honors classes used their new knowledge to design a hypothetical apartment complex for their final project.

"I wanted to show my students one way geometry was used in the real world," Mrs. Jennifer Rodriguez says. "They may not become an architect, but it was worth it for them to see application (of geometry in the real world)."

Girls started designing in Homestyler, which is a free online home design software. They created the overall floorplan of the apartment complex as well as model floorplans for one-, two- and three-bedroom apartments. These "furnished units" were required to have paint, flooring, appropriate furniture and appliances. The overall apartment complex also needed outdoor features, such as landscaping and common areas.

Afterwards, girls started building 3D replica models out of foamboard at a scale of 1:96. This part of the project was made possible by a community action grant from the American Association of University Women (AAUW). According to their website, community action grants provide funds for innovative programs or research projects that promote education and equality for women and girls. Funds from the grant were used to supply materials for the girls.

Finally, each group presented their 3D models to a panel of real architects and engineers, who had to select one apartment complex to "build." Gianna Mazzei '19, Alexandria Seifert '19 and Emily Rivera '19 won for their outstanding complex, pictured below.

Gianna Mazzei '19, Alexandria Seifert '19 and Emily Rivera '19 pose with their final product, which was chosen by the judges' panel of professional architects and engineers.

As Ms. Molly Cunningham puts it, all of the final projects were beautiful. "They worked so hard to make them exact and perfect," she elaborates. "I was very impressed with everything they pulled off."

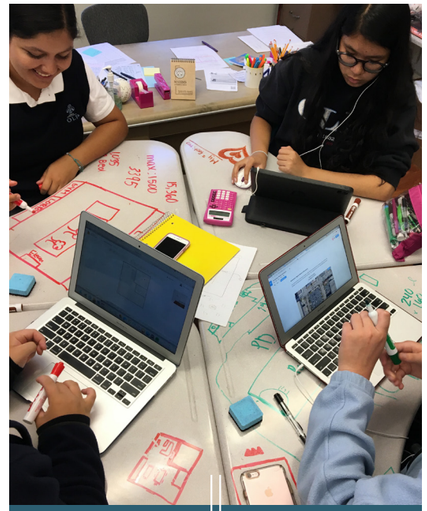
The girls' experience didn't end with the semester, however. Students have been attending AAUW conferences and luncheons to present their projects to AAUW members. Mariela Lopez-Oviedo '19 was one of the students who presented her team's apartment complex at a recent luncheon. Her team was one of the few who went above minimum requirements to furnish their 3D model with landscaping.

"My mom's an architect, so she shows me (her models) all the time," Mariela says. "I'm really into art – I like being creative with everything." Her team's project is pictured below.

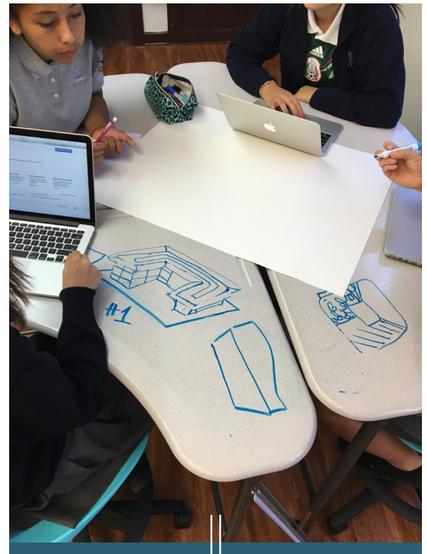
Sofia Esparza-Chavez '19, Samantha Weinzimer '19 and Mariela Lopez-Oviedo '19 pose with their final product.

Whether or not our girls pursue a career in architecture or engineering, we can guarantee they won't be asking, "When will I ever use this?" in a geometry course again. They also had the unique opportunity to meet and receive feedback from real STEM professionals.

"I think it was a really cool experience for them to see geometry outside of the classroom, and to have direct interactions with professionals who are currently using these concepts in everyday life," Ms. Cunningham says.



Girls began planning their apartment complex in Homestyler, an online home design program and maximized our new writeable surface desks for brainstorming.



Teams then use the Homestyler program, along with their new desks, to build a 3D model. We were able to outfit all of our new classrooms with these innovative and adjustable desks and chairs with the funds raised from our All in For OLP 2016 annual fund campaign.