

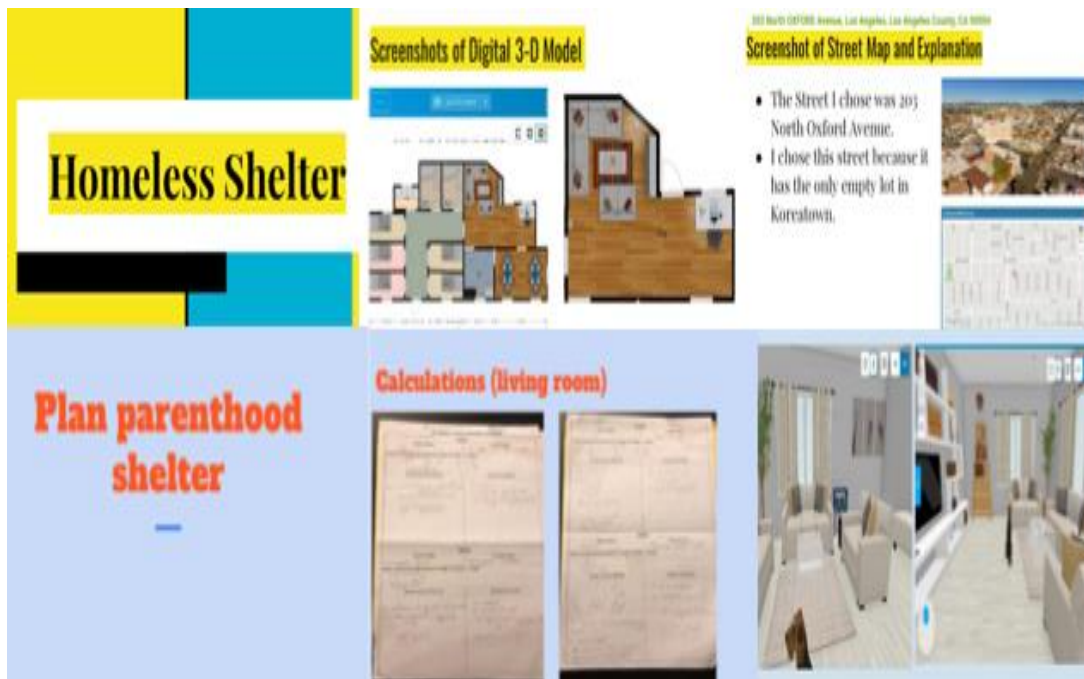
Student Project-Based Learning Projects

Sample 1

Driving Question: How can we use Geometry to help solve the needs of our community?

To respond to this question, students designed 3D buildings in their community using an architectural software, Floorplanner [<https://floorplanner.com/>]. The high school students began with a walking tour of the community and brainstormed assets they wanted to design to support their community members. The students decided to build homeless shelters, planned parenthood centers, centers for young adolescent females, among other community-based organizations. Their presentations included a rationale for their building, a community map of where they would build their building, a floor planner, 3D dimensions and calculations of their plans, and a budget for the materials and building.

“What surprised me about implementing my C-STEM-PBL was how excited students were to actually do the assignment once they began. I feel like my students learned how Geometry can be used to solve real-world problems within their community. C-STEM-PBL took me a lot of time planning, but the end result was worth it. Students enjoyed going out in their community and learning how to apply their mathematics knowledge.” - 10th grade Geometry teacher candidate



Sample 2

Driving Question: How can we reduce our carbon footprint in our community?

To address this question, students began their work in the science classroom where they learned about carbon and the carbon cycle, how human impact affects the carbon cycle, how the carbon cycle plays a role in climate change, and what they can do to reduce their carbon footprint. Through the project, Chemistry concepts were reinforced, and students presented to parents, students, and community members, showcasing their scientific knowledge and understandings in relation to their community and themselves. The teacher reflected that they could enhance the project by adding more Chemistry concepts such as chemical reaction combustion, gas laws, and kinetic molecular theory.

"I feel like my students were able to apply what they knew to something they care about. That was the power of my C-STEM-PBL. This project reminded me of why I entered teaching. It was exactly what I hoped teaching would be like." - 10th & 11th grade Chemistry teacher candidate

