

# CREATING AND REPLICATING HIGH-QUALITY EXPERIENTIAL LEARNING OPPORTUNITIES

A GUIDE FOR BUSINESSES AND SCHOOLS

## CASE STUDY

# Geo-Construction

Combining Geometry, Construction, and Experiential Learning for Student Success



Carl Vinson Institute of Government  
UNIVERSITY OF GEORGIA

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## Combining Geometry, Construction, and Experiential Learning for Student Success

How do you make math more interesting and applicable? That's what high school teacher Scott Burke and his colleagues in Loveland, Colorado, were trying to figure out when they thought of combining geometry, construction, and service learning. Rather than taking geometry simply as another math class, they wanted students to apply their learning to real-world situations, like construction, which relies heavily on geometry skills and knowledge. In the 12 years since, more than 1,700 Loveland High School students have gone through the program and built 12 houses. Of those houses, seven have been in partnership with the local Habitat for Humanity, and three have gone to other local nonprofits. These modular houses are constructed top to bottom in the high school parking lot. Students do everything from framing and sheetrock to electrical and plumbing. Burke brings in local professionals and parents to work alongside the students and ensure everything is up to code before the inspectors come. Once a house is complete, a local company helps move the sections of the house to its final location in a neighborhood. Loveland does not give the houses away but sells them to Habitat to recoup their costs.

Loveland High School still offers traditional geometry classes for those who do not want to take what Burke calls the "contextualized" version, but he wants everyone to know that this class is for everyone, "not just the top 10% or the bottom 10%, but all students." In the past few years about 65% of students have opted for Geo-Construction; of those, almost 50% are female. Burke said that adding in the service aspect has helped attract girls to the program. This has even grown to a "Rosie the Riveter" club, which provides guest speakers and mentors for girls interested in nontraditional fields, not just construction.

While Loveland High School created the first Geo-Construction class, the concept has spread to nearly 450 schools across the country. Each school is adapting the idea to meet local community and student needs and abilities. Districts like Maine 207 in Illinois constructs walls for their houses built by their local Habitat affiliate rather than the whole house to save on the financial and space requirements. According to Maine 207 CTAE Director Becky Stewart, the district is already seeing increased math scores over traditional students. No matter what they build, students are learning math skills while applying them to the real world. Additionally, Burke is working on a similar program for Algebra I called AMPED, which stands for Algebra 1 in Manufacturing Processes, Entrepreneurship and Design. This class is set up more as a school-based enterprise than a service-learning opportunity, but the combination of core classes and pathway classes is similar.

