

# Whitfield Career Academy

## Project Overview

**Project Title:** *Ramp it Up!: An Investigation into Special Triangles and Community Needs*

**Project Author:** Jessica Ashlock, Whitfield Career Academy

**Subject Area:** Mathematics

**Grade Level and Location:** 10<sup>th</sup> Grade, Room 229

**Duration:** Approximately 6 Weeks

**Driving Question:** *How do we use/learn math concepts and affect the community around us with our knowledge?*

**Project Summary:** Students research the federal regulations that apply to wheelchair ramps and slopes permitted when building the ramps. The students are then presented with a scenario in which they need to find dimensions and volume of a particular ramp in order to submit a written bid and a blueprint of the ramp that they are to build. The students get exposure to the carpentry field through the local carpenters who have come in to the class to share their school/career journey. These carpenters also share the “nuts and bolts” of constructing the frame and body of the ramp. The students are then required to build a scaled model of the ramp that they designed for the scenario. The students then have an opportunity to decorate the finished product. The project culminates when the top 3 groups are chosen by the 10<sup>th</sup> grade teachers based upon design, accuracy and presentation of bid. These groups then have an opportunity to work with *Rebuilding Hope*, a community organization that helps those in need, to actually help build a wheelchair ramp for a family that is in need and work with the local carpenters.

### **Major Student Products:**

Collaborative – Detailed blueprint of wheelchair ramp and model of ramp built with wood, popsicle sticks, etc. and opportunity to design and build ramps in community

**How the Project Was Conceived and Planned:** The project stems from the need of our community; Rebuilding Hope is a local organization that provides families and individuals with help in any construction need (especially the elderly generation). This project was created in hopes that the students would see how math affects everyday life and how our knowledge can be used to help others around us. Math is not just word problems on plain paper, but real life applications that can empower people.

