

Assabet Valley Regional Technical High School's Bridge Project

Assabet's drafting and Metal Fabrication programs join together for the third year to learn from each other, how to: design, fabricate, weld and tests student's steel bridges. This unique week long integration project between drafting and metal fabrication programs began this week with two guest speakers Mr. Steve Frederick a professional civil engineer and Mr. Guy Shute a veteran structural Ironworker from Ironworkers Local 7 Boston, MA.

Students gathered from Mr. Frederick a clear understanding in how a civil engineers designs critical infrastructures such as, bridges, roadways, sewers, and drainage for cities and towns. In addition, students were able to gain knowledge about educational requirements when considering attending college and becoming a professional engineer. Mr. Shute, a forty year structural ironworker was able to provide complicated engineering and construction processes and concepts in simple to understand terms to our students in how bridges and buildings are constructed from blueprints and built by hand. Mr. Shute, was able to draw upon many of his own career experiences in structural steel erection in how buildings and bridges are constructed and stay standing up.

Next, drafting students and teachers introduced metal fabrication students to the national "West Point Bridge Competition Computer Program". Each student designed and tested their virtual computer bridge. Students then, while working in teams of four sketched their own style bridge with a final result of collecting their teams best and strongest bridge sketched to be built in the metal fabrication shop.

Moving along, our metal fabrication students provided a shop tour to all drafting students in teams of two to four including metal fabrication students as demonstrators and presenters to drafting students, explaining technical terms and welding processes used in today's welding and metal fabrication industries to fabricate buildings and bridges.

At each station, drafting students gathered notes on step-by-step processes to be incorporated into their final full size computer blueprint of their team's bridge.

Once the students brain storming and designs were out of the way, and the competition rules and materials were discussed the metal fabrication students went to work fabricating and welding their team's bridges while consulting drafting students as their ran into design changes and bridge construction.

Two days of bridge fabrication and welding and students were onto load testing with weights up to 2, 750 lbs. which was last year's winner.

This type of project allows students and teachers to work together and accomplish common goals while gathering a clear understanding of career opportunities, blueprints development, design engineering, and structural loads that building and bridge are placed under each day. It's a project that student's and teachers can have fun along the way, while learning and fulfill state requirements of core curriculums.

Photos of bridge construction are attached below.

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