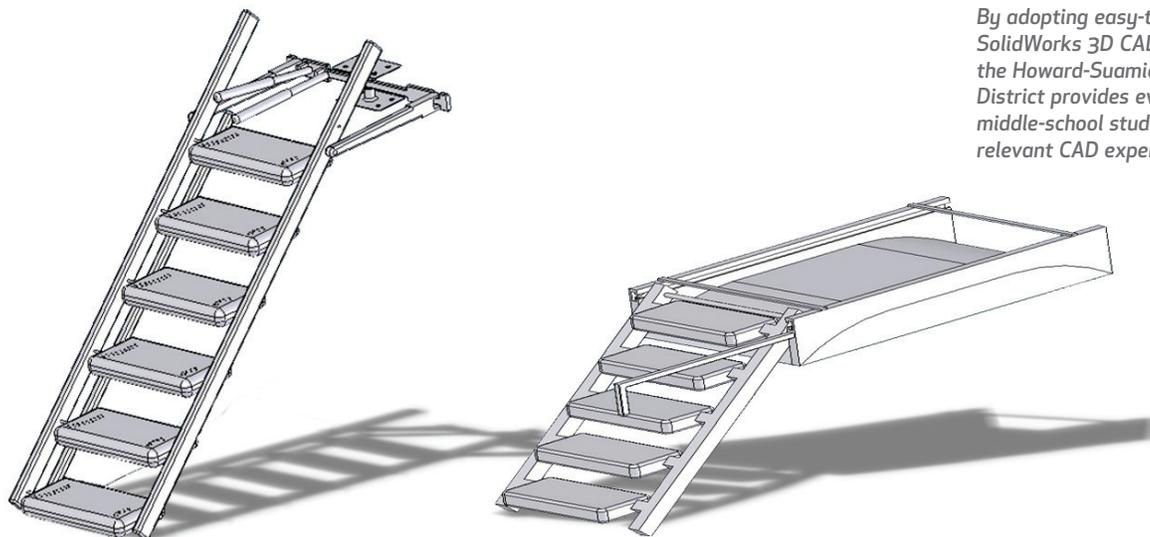


HOWARD-SUAMICO SCHOOL DISTRICT

Giving all students the chance to discover 3D CAD with SolidWorks software



By adopting easy-to-use SolidWorks 3D CAD software, the Howard-Suamico School District provides every middle-school student with a relevant CAD experience.

Most schools require a shop class or two, as the countless wooden ladders collecting dust in attics across the country can attest. While that rite of passage continues in many schools today, one progressive school district in suburban Green Bay, Wisconsin, has reinvented the student technology experience by using 3D CAD software to provide every middle-school student with a glimpse of what it is like to be an engineer. This school district's Technology and Engineering Program not only opens a window on a possible career, but also enables students to do real-life work while acquiring the same valued CAD certification sought by engineers.

Located 10 miles northwest of historic Lambeau Field, the Howard-Suamico School District (HSSD) began the new millennium by deciding to upgrade its AutoCAD® 2D tools to a 3D platform, according to Scott Gutschow, technology and engineering instructor at Bay Port High School. "Having worked in manufacturing, I understood the value in giving students access to the same design tools used in industry," Gutschow explains. "I realized how important it is to have students use parametric 3D CAD software so that they can actually work and partner with local manufacturing companies. That way, we can combine classroom instruction with practical, real-world experience."

After evaluating 3D CAD packages, HSSD chose to implement SolidWorks® Education Edition software with The CAD Academy® curriculum. The school district selected SolidWorks software because of its ease of use, widespread industry usage, integrated simulation tools, broad data compatibility, effective tutorials, and flexible curriculum.

Challenge:

Incorporate 3D technology in a high school setting in a way that facilitates learning and supports partnerships with local manufacturers.

Solution:

Implement SolidWorks Education Edition software and The CAD Academy curriculum so that all students have a chance to learn 3D CAD in middle school and advanced students obtain certification.

Results:

- Increased enrollment in the Technology and Engineering Program
- Facilitated partnerships with private industries
- Provided every student the chance to discover 3D CAD technology
- Graduated students with CSWA certification

Making 3D CAD accessible

Because SolidWorks software is easy to learn, HSSD front-loaded its Technology and Engineering Program by first introducing students to 3D CAD software at Bay View Middle School. "We have made the effort to introduce all students to SolidWorks software through our Exploratory Engineering course, which is a requirement during seventh or eighth grade," Gutschow notes. "This way, 100 percent of our students have the opportunity to see and develop an interest in 3D CAD."

The approach has paid dividends for HSSD, which has enjoyed increasing enrollment in its high school technology and engineering courses. The school's Introduction to Engineering course enrolls about 175 students, and the more advanced Pre-Engineering course has an enrollment of 50 to 95. "We attract more students into the program while elevating the content," states Gutschow. "I used to teach software. Now, because the students already have worked in SolidWorks software in middle school, we can quickly move into actual projects and engineering."

Merging class assignments with real-world experience

SolidWorks software has enabled HSSD to reach out and collaborate with local manufacturing businesses—such as the Paper Converting Machine Company and Georgia-Pacific—on actual engineering projects. "From the start, I realized that I couldn't teach engineering without taking my students through an actual engineering environment," Gutschow points out. "Our commercial partners allow our students to tour their facilities and then treat them as if they were independent engineering consultants, giving them a real engineering challenge to attack."

One of the school partners—Carver Yachts—asked the students to create designs for boat accessories, such as a swim-platform ladder and a catwalk stretching from a boat to the dock. "The students can then use SolidWorks software to create a design, run SolidWorks Simulation to verify that the design will meet specific weight loads, and even do some rapid prototyping with our 3D printer," Gutschow adds. "The project concludes with the students going back to the partner to present their design concepts, just like a real engineering consultant."

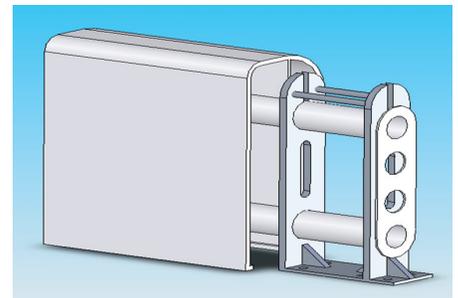
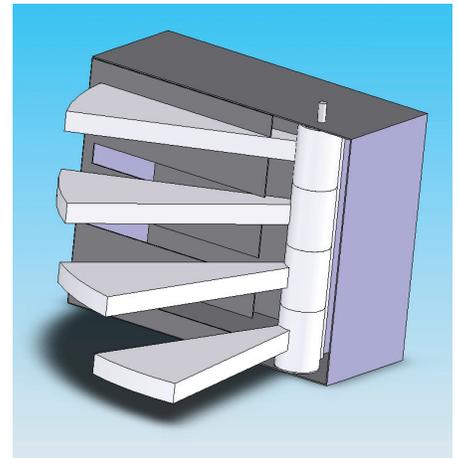
Graduating students with certified CAD skills

Instead of working solely on classroom exercises, HSSD students can exploit all the capabilities of the SolidWorks 3D software suite to solve real design problems. This experience allows students to build practical CAD skills. In addition to demonstrating the role CAD technology plays in industry, the curriculum enables students to advance to the point at which they can pass the Certified SolidWorks Associate (CSWA) examination, which provides them with the same CAD certification that engineers seek.

"A student who graduates with the certification has a leg up, whether he or she goes to college or into the workforce," Gutschow says. "DS SolidWorks is helping us to recruit, train, and prepare our technology and engineering students to be successful in whatever career paths they choose."

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Scott Gutschow
Technology and Engineering Instructor
Bay Port High School



By taking and passing the Certified SolidWorks Associate examination, students gain valuable 3D CAD skills certification.



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