Quakertown Senior High School

Education Success Story

Autodesk® Design Academy
Autodesk® Animation Academy
Autodesk® Inventor™ Professional
Revit® Architecture
AutoCAD®
Autodesk® 3ds Max®

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—Don Mease, Instructor
Quakertown Senior High School
Quakertown, Pennsylvania

The thrill of 3D.

Students at Quakertown Senior High School experience the power of 3D with cutting-edge Autodesk® 3D design software.

Project Summary

Quakertown Senior High School, located about 50 miles north of Philadelphia, Pennsylvania, is promoting the exciting possibilities of design by inspiring the next generation of animators, architects, and designers. Every day, more than 1,500 10th, 11th, and 12th graders come to Quakertown to study one of three curriculum tracks: vocational, business, and college preparation. In Don Mease's technological studies classes, students have an opportunity to apply their science, technology, engineering, and math (STEM) skills to projects rooted in mechanical engineering, architectural design, and 3D animation.

The Challenge

The biggest teaching challenge Mease faces is finding ways to keep coursework relevant and engaging for all students. Mease combats the issue by integrating software included in the Autodesk® Animation Academy and Autodesk® Design Academy curricula into classroom instruction. Using the applications in the classroom enables students to participate in real-world projects and become experts using student versions of the same design software used by professionals in the industry.

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Mease discovered an effective way to make Autodesk technology part of his instruction and keep his students motivated and engaged by tapping their natural competitive tendencies. For the past several years, Mease has challenged his students to design stomach-churning roller coaster rides, a unique project that ties together the broad range of design concepts covered in his 3D animation class.

Autodesk®

The Solution

After creating a design concept, Mease's students begin simulating a lifelike roller coaster experience using Autodesk® 3ds Max® 3D animation, modeling, and rendering software. Students then design background environments featuring space warps and atmospheric effects such as fire and fog, and incorporate animation, cameras, and lighting to transform their thrill ride into a compelling 3D masterpiece.

Autodesk software was so popular with Mease's students that he requested early access to the Autodesk Student Engineering and Design Community, which is now available to all middle- and high-school students and educators in the United States. By joining the community, students can download free* student versions of Autodesk software to continue learning from home. Now, all secondary educators can invite their students to join the community and start benefiting from numerous teaching and learning resources by registering at **www.autodesk.com/edcommunity.**

"My students are so grateful to be able to work on their projects at home," says Mease. "This is a new, rewarding experience for them and really inspires them to appreciate the joy of learning."

Modeled After the Pros

Like their peers in Mease's animation classes, mechanical engineering students at Quakertown Senior High also use Autodesk tools to learn. They work with AutoCAD®, AutoCAD® Mechanical, and Autodesk® Inventor™ Professional software applications to design parts and projects just like the pros, creating working and assembly drawings and even lifelike, 3D digital prototypes. Quakertown's architecture instruction also incorporates Autodesk technology. Students design their dream houses using AutoCAD, AutoCAD® Architecture, Revit® Architecture, and Autodesk® 3ds Max® software products.

Project-Based Learning

These applications are all part of the Autodesk Design Academy, developed specifically to support STEM education and help schools such as Quakertown take advantage of the proven efficacy of project-based learning, while mapping to national standards.

The Autodesk Animation Academy uses a standards-based, cross-discipline curriculum developed by experienced educators and technical experts specifically for secondary institutions. Innovative, project-based coursework encourages teamwork, planning, and critical thinking. The short learning time associated with Autodesk animation software also lets students quickly discover the basics of 3D visualization and animation and gain practical, hands-on experience.

"My job as a technology teacher means I never stop learning," says Mease. "Getting the necessary support and training I need from Autodesk lets me focus on what really counts—teaching."

The Result

Enrollment in classes that use 3D tools at Quakertown Senior High has increased dramatically over the past two years, and the school now has four classes dedicated to teaching animation. At first, participation in the roller coaster design competition wasn't mandatory, so Mease was surprised that more than 90 percent of his students chose to participate.

"My students were so enthusiastic about designing roller coasters with the software that many of them spent extra hours working from home," says Mease. "This experience inspired more students than I had ever seen before. It's definitely a favorite class project year after year."

A Promising Future

Many Quakertown students have gone on to further academic success: more than 85 percent of the 2006 graduating class continued their education at either a trade school or a two-year or four-year college. More than 50 percent of the 2006 graduating class went on to a four-year college.

"A lot of students who go on to study design or engineering tell me how easy their college-level courses are because of their experiences at Quakertown," says Mease. "Some of my students have even been recruited right out of high school to go work for professional firms."

To learn more about Autodesk's academic solutions and programs, including Autodesk Design Academy and Autodesk Animation Academy, visit **www.autodesk.com/education.**

To download free* student versions Autodesk 3D products, including Autodesk Inventor Professional and Revit Architecture, and access sample curricula, join the Autodesk Student Engineering and Design Community today at **www.autodesk.com/edcommunity.**

To learn more about Quakertown Senior High School, visit **www.qcsd.org/qcsdhs/site/default.asp.**

To learn more about Synergis, the school's preferred Autodesk Academic Value-Added Reseller, visit **www.synergis-ed.com.**

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