

Straight Talk from CAD Designers

Why I Teach Pro/ENGINEER® to My High School Students

How One High School Teacher Became a [Pro] ENGINEER



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KNOW**

Feature Article

Steve Johnson, a high school industrial arts instructor at A-C Central High School in Ashland, Illinois, has a degree in Industrial Education, and has been teaching for 15 years. Over the past four years, he has introduced his students to 3D CAD software, and they have enjoyed it immensely. In fact, Johnson may have even sparked interest in some future engineering careers.

Remarking on the ease-of-use of PTC's Pro/ENGINEER 3D CAD software, Johnson states: "I grew up in the days of board drafting, so I was amazed that I could produce a 3D CAD drawing so quickly with Pro/ENGINEER. I am not sure anyone can fully appreciate your program like those of us who spent hours over a drawing table, constructing geometric shapes with compasses, triangles, T-Squares, and French Curves." Here are his top four reasons why Pro/ENGINEER is a perfect fit for his own needs as a teacher, as well as the needs of his students and his high school.



Steve Johnson
Industrial Arts Instructor, A-C Central High School



5-cylinder radial engine piston assembly.



Automotive air conditioning blower motor assembly.

Four Reasons Pro/ENGINEER Is Ideal for High Schools

Reason #1. PTC Makes Pro/ENGINEER a Reality for Schools

"When I initially looked at 3D CAD programs for my class, I researched SolidWorks® software, but our school budget was unable to afford the site license. Later, at a conference I attended, I was asked by a colleague what 3D software I was using in my class. When I replied that we were unable to afford any of the programs, he suggested I contact PTC's Education Program. When I started looking at PTC, everything I found seemed to be too good to be true. I spoke with a colleague at a local college to ask him if they had ever heard of PTC. He told me to grab this opportunity, since high schools could get Pro/ENGINEER for free, and we would just need to pay for my training."

Reason #2. PTC's Training Program

"PTC's three-day training program let me understand 3D CAD, so I could teach it to my students. Since I was used to AutoCAD® (2D) and manual drawing, I first had to understand how 3D programs worked. On the third day of training, the program really started to click with me, and I have been in love with Pro/ENGINEER ever since. The training makes it easy to learn the software—for teachers and their students."

Reason #3. Pro/ENGINEER Enables Students to Be Successful

"When I first implemented Pro/ENGINEER at my previous school, a student brought in a rear shock absorber from his motocross bike. He disassembled it, measured all the parts, and then re-created them in Pro/ENGINEER. The two of us studied the tutorials until we figured it out. It was unbelievably easy to do, and it was exciting to see a student so motivated and proud of his work. We exhibited his work at Western Illinois University Industrial Arts and Technology exhibit, and he received an 'Outstanding'—the highest mark our school has ever received at that exhibit."

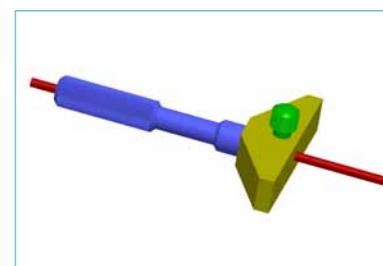


Rear shock from a motocross bike.

Reason #4. Pro/ENGINEER Student Edition Delivers Industrial Strength

"Let me share a personal experience with you—'outside of school'—to show you why I am convinced of the power of Pro/ENGINEER. A number of years ago, a friend of mine described to me a product he wanted to make and sell—the JugBuddy—which is essentially a standing funnel to help easily transfer liquids from one container to another. He showed me a couple of sketches he had made to visualize it. Later, he brought me a working drawing from an engineer he had hired who used a 2D CAD program. I noticed it didn't resemble his original sketches, and he was disappointed in the drawing.

"I explained that I had just been trained by PTC on a new type of drafting program, and asked him if I could take a shot at reworking the drawings. He gave me the basic dimensions and I created a design in Pro/ENGINEER. It was easy to create all of the geometry involved, and my friend loved it because the design was exactly as he had envisioned it. Interestingly, when my friend started production, the mold maker used SolidWorks and he needed to make one small modification to the design: adding a ridge around the edges. He said it took his engineer using SolidWorks an hour and a half. I re-created this modification in less than 10 minutes."



Machinist depth gauge.

"I personally appreciate PTC's support of high school teachers in our efforts to introduce young people to the world of 3D CAD."

— Steve Johnson, Industrial Arts Instructor
A-C Central High School

Pro/ENGINEER: Shaping a New Generation of Engineers and Innovators

Steve Johnson views his role in the industrial arts program as helping to expose his students to different opportunities and experiences, such as 3D CAD, during their high school years. Many people think that this type of a program is too difficult for high school students, but Johnson's work with the kids at A-C Central High proves otherwise.

To learn more about opportunities to incorporate free PTC software in your high school, middle school, or university curriculum, visit www.ptc.com.