Interface

Journal of the WTEA

Spring 2012
Volume 51 Number 3

WTEA

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Change is on the Way

by Greg Groom, WTEA President

Just let me say it is a great honor to be your President and I will do my best to keep Technology & Engineering Education in the forefront for the state of Wisconsin. The future at this point is a little unclear, but one thing is clear ... change is on the way. Many of the changes that are happening now were set in motion before the past year. Our organization is also changing, with retirements and peers leaving the profession. Yet, for the first time in many years the WTEA Board has a full complement of members. This demonstrates that there is a commitment to being involved in WTEA. So I say, "There is no better time than now to be involved in WTEA at the state level, the local district or in your own program".

Some of us may feel that our profession is under attack from several directions. This is the time we need to pull together as a professional group. The WTEA needs your membership. Many in our profession are feeling the need to justify their programs, this justification coming because of the big impact we have on school budgets. We need to be proactive. It's important to show that our students are highly contributing members to our communities. Our students are our biggest assets. When our programs are recognized for students that meet the level of high tech, high pay and high demand, our communities and students will defend our programs.

The two things that many school districts are addressing this year are Disciplinary Literacy and Common Core Standards. Each of these has a very big impact on our programs. Do we need to do something big for these changes? Disciplinary Literacy has been a part of Technology Education from the start. If the students do not understand what you are talking about, have them demonstrate the skills they are learning. In most cases the articles students read or the website they visit are dealing directly with your class. We want to close the loop with disciplinary literacy, by assigning written reports to our students. Not only do our students need to be able to read within the discipline, they need to communicate in written and oral form using the language of our discipline. For years I have always asked students to do career reports. It is not only a great written assignment, but also a great way to get to know the students. To develop the speaking aspect of discipline literacy, have students talk to each other in peer teaching. In my classes, when three or four students understand a concept, they help other students understand the lesson. It is always great to see the interaction within a team when the team must learn a new concept together. The commitment between students is great.

The only Core Standards that have been accepted for the state of Wisconsin are Mathematics and English Literature. The Sciences Standards are still a work in progress. The Technology and Engineering Standards will be done this fall. Your input is vital. What does the TEE Standards mean to you. It will define what will be covered under the 220 license. This has a major impact on our profession and you? This is a huge game changer. Once the TEE Standards are done your next task would be to align your curriculum to the State TEE Standards. You will next need to crosswalk your curriculum to the Core Standards.

Looks like a lot of work. This is where the WTEA can come into play. One of the new parts to the WTEA Web page will be where members can post their curriculum and have access to others. Share you curriculum with others through a word document. Let your peers see what you are doing and how you build success. Whether you are teaching curriculum that is similar to other programs, or whether you are teaching curriculum that is unique to your program...we can all learn from each other. We do have some common classes that many of our programs share. This new proposal will only be successful when members post their work. For the first year, only members that have contributed to the web site will have access to this part.

Also, with new changes comes new training or updating our skills. Once again this is where the WTEA can help. We can host workshops across the state where training is needed. So if you feel over whelmed, ask and we can perhaps offer a workshop in your location. In most cases all you need to do is ask.

So in closing, once again I would like to say I am here for you as members and will work towards a better future for WTEA, it's members, and our students.

WTEA BOARD NEWS & CONGRATULATIONS

Winter 2011-2012 Board of Directors Meeting Highlights & Summary

The WTEA Board met at the Chula Vista Resort, Wisconsin Dells on Friday and Saturday, January 13 and 14. Below is a summary of the Board's activities.

- New Board memberts include District F Director Eric Sutkay, Director at Large Chris Strozk, and Secretary/ Treasurer Matthew Schultz.
- Steve Johnston reported on Building Wisonsin Strong conference presentations. Keynote speakers are set. Most break-out sessions are set. Vendors must be in the trade show if they wish to present a session.
- Joe Ciontea gave Executive Director report consisting of trade show vendors, award nominees, association finances, and Foundation scholarship. UW-La-Crosse will grant one graduate credit for attendance at conference. Ken Starkman will emcee at Awards Banquet.
- The Board voted unanimously to present the Lifetime Achievement Award to Dennis Skurulsky at the Awards Banquet.
- Brent Kindred gave the DPI report. Topics included Fall inservices, standards progress, CTE graduation diploma, SkillsUSA, disciplinary literacy, gender equity, and Carl perkins funding. Data, data, data will be a session presented at the conference. February is CTE month.
- Doug MacKenzie reported on the Interface magazine. Winter issue is the best one so far. There was discussion on the need for more articles being submitted. New artwork designs were presented for next year's cover. Board members voted on choice of designs.
- Mike Cattelino is running unopposed for Vice-President. Board voted and elected Mike.
- Committee report and discussion on Wisconsin hosting ITEEA conference in 2015. Conference would be in Milwaukee. WTEA will continue to discuss and evaluate this possibility.
- Awards committee reported that we need to get more nominations for our awards. Discussion followed.
- Marketing committee reported on various marketing methods used such as Interface and website. Motion made, seconded and passed to increase capacity of the website by 6 gigs costing additional $50 per month.
- Pete McConnell gave the President's report. A discussion on increasing membership suggested various activities. More items are needed for the Foundation auction.
- Greg Groom gave the President-Elect report. Tech Ed needs to be a voice that doesn't allow Science departments to take over the engineering sector.
- Mike Cattelino presented the Vice President's report. The article "Strive to Survive" published in the Interface indicated the WTEA is going in the right direction.
- Mike Beranek reported that the ITEEA conference is March 14-16 in Long Beach, California. Steve Meyer will be recognized as our Teacher of the Year, and Hartford Union High School will be recognized as our High School Program of the Year.
- Our website is averaging 200 sessions per day.

Complete minutes are available from Matt Schultz at mjschult@kusd.edu

Kimberly High School Wins National Rube Goldberg Machine Contest

Kimberly High School won first place at the National Rube Goldberg Machine Contest held March 17 at Ferris State University in Big Rapids, Michigan. Twelve teams from other regional competitions across the U.S. competed in the national contest. Kimberly won with two perfect runs of their "Up" themed machine that inflated and popped a balloon in twenty steps or more.

Last year Kimberly came in second at the national competition. Congratulations to the team for taking first place this year!

Stoke Up the Embers!

There can be a sense of release and closing down at the end of a glorious celebration. Your WTEA board and many volunteers work hard and long up to the conference and beyond to put on a first rate event that provides enough information and motivation to move all of us into the next year. What a gift we are able to partake in! I am grateful for all of you who were able to attend and share. For those of you who protected our trenches back in the classroom I say thank you for allowing the rest of us to attend!

I drove home from this conference reflecting on many aspects of our organization much like when we wake up the morning after a great campfire. You always find a couple of those powerful and beautiful embers still glowing at the bottom of the pit. I will often look for a stick to stir them up and maybe rekindle that flame that shown so bright the night before, maybe just enough to warm up some toast for breakfast. It made me think of our future and what we could do with it. Should we stir the flame and make it grow or let it linger throughout the morning?

I think about the awards ceremony and how incredibly proud I was to sit at our table of award winners and young buck educators that are kicking butt and taking names in the search of positive TEE education and activities. I listened to all of the positive comments about our quality key note speakers and how they shared their passion in order to move us all one step further in our journey. I attended sessions where we made speakers, cut out wood with lasers, and formulated plans to be better gender inviting professionals. I threw bean bags with the new shooting stars that will brighten our horizons each and every tomorrow. These are the embers that stirred in my thoughts.

And what should I do with those embers? My well calculated and planned time of service to our organization made room for a new champion to come to the podium. His experience, passion, and dedication will serve us well. I suppose I could kick the embers, relish the memories and walk away to let others start the next campfire or to lead the next interesting turn of events in our organization. What the heck, I put my time in...

Here is what I know. Embers die if they are not stirred. Ideas do not grow if they are not driven. Children do not learn if we do not encourage them to move forward in their thinking and attitudes. Technology and Engineering Education does not breathe new life if we are not willing to stretch out our hearts, hands, and minds to embrace the new technologies of tomorrow. The embers need the enriched life that I can, that you can, offer to it every day! Think about it the next time you show up to work and turn on the light switch! What new energy can I bring to the classroom and to our students today? How can we move them forward? How can we invite them to stir the embers deep inside of themselves to create, problem solve and analyze for a strong and better tomorrow?

I thank you for the opportunity to represent our organization and I challenge all of you the keep the embers aglow! We are the WTEA and we will continue to stir, ignite and educate the future of this great Badger State! Enjoy your classrooms and stay in touch!

With deep affection and best regards,

Pete McConnell, WTEA Past-President

WTEA

Plan now to attend

The 44th WTEA Annual Conference

"Connecting the Future"

March 14 & 15, 2013 • Chula Vista Resort

DISTRICT NEWS

District B

Brian Schiltz

What a fantastic time was had by all at this past WTEA conference. I can speak for myself that I had a great time networking with old and meeting new friends. A special thank you goes out to Mr. Steve Johnston from Logan High School, the program coordinator for the WTEA Spring Conferences for organizing the greatest conference for providing professional development for our profession. The breakout sessions were fantastic and the guest speakers delivered messages that will impact the technology world for years to come. Also, another thank you goes out to the board of directors and their continued dedication and commitment for striving towards excellence every year. And lastly, THANK YOU, WTEA membership. Without your attendance at the conference and willingness to present at the conference we would not exist. You are a valuable asset to the organization, as well as, a great impact on the society in this nation.

There has been some exciting involvement and recognition from a local school district for the WTEA District B (Nicolet Tech College & Northcentral Tech College districts). Past President Mr. Pete McConnell from Merrill High School steps off the president stool and we welcome Greg Groom from Badger High School. Mr. Pete McConnell has done an excellent job, in what he would call a "goofy" time, by taking the bull by the horns and steering our future in the right direction. I personally would like to thank him for his leadership and steadfast commitment to the education of our youth.

The Merrill School District was also represented when Mr. Tom Andreska was nominated by the WTEA as the Technology Teacher of the Year. Tom is the Graphic Design instructor at the high school where he has formed a functioning partnership with Reindl Printing Inc., also of Merrill, in which, both the school and the printing facility feed each other with resources such as human power, materials, and expertise. Tom and his students are responsible for printing many of the flyers and pamphlets sent around the district, as well as, the creation and production of the annual yearbook. Congratulations to you, your family, and the entire Merrill community for your efforts and accomplishments.

But wait, there is more coming from this little northern school district. Pete and Tom also were presenters at the WTEA conference. In addition, Merrill teachers Mr. Marty Schield from the high school and Mr. Mark Pugh from Prairie River Middle School offered to share their experiences from the classroom in breakout sessions. They discussed woodworking, engineering, and using a laser in the technology classroom. A thank you and congratulations goes out to some of the greatest professionals found in education, as well as, some great personal friends.

District H

Tom Martin

"Are we going to applaud, push, or even permit our schools (including most of the private ones) to continue the safe but ultimately doomed strategy of churning out predictable, testable, and mediocre factory workers?"

This challenge from Seth Godin in his latest manifesto, Stop Stealing Dreams (http://www.squidoo.com/stop-stealing-dreams) could certainly be applicable to our discipline, but here's why I don't see this happening.

Predictable – In the programs I work with most, your colleagues work very hard to revamp, renovate or just throw out antiquated curriculum for rigorous and relevant learning plans that will best benefit 21st century learners and society. Now is the time, with the Common Core State Standards, Smarter Balanced Assessment and Teacher Effectiveness models upon us, to shed outdated curricular hides for a wardrobe that's cutting edge. Is it time for a new suit?

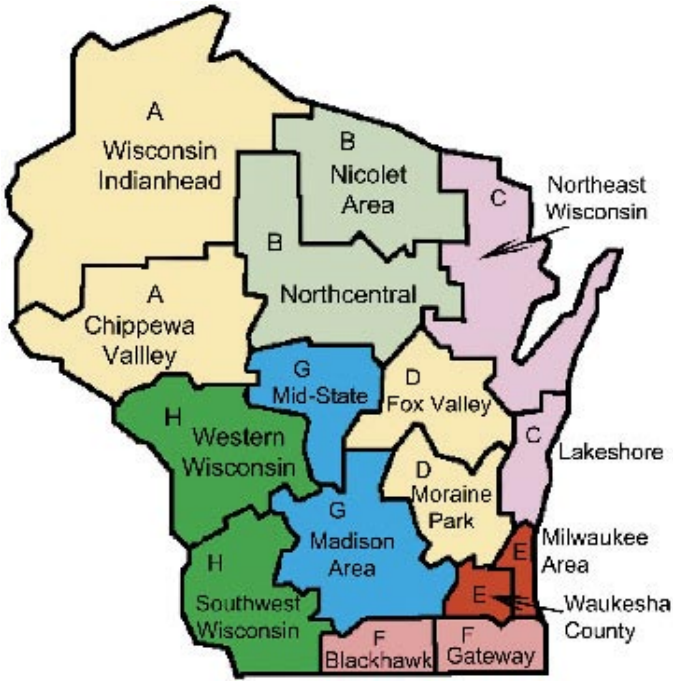
Testable – When your metrics are implemented they are no longer student driven paper and pencil batteries. Project based assessments, community service projects and collaborative missions are becoming a predominant part of our landscape which promote critical thinking, interpersonal and work-based learning skills. Are you immersing your students in authentic learning environments?

Mediocre – I must admit we can constantly improve. With that said, I see a great deal of progress made in our programs. Could more be accomplished? Yes! We need to have SkillsUSA chapters in every Technology & En-

gineering Program to embellish technical and leadership skills, an advisory council that meets reliably, resulting in action plans that align program outcomes with community expectations, as well as courses that offer dual credit in order to prove our worth.

This year has been rough, there's no doubt. With that said, let's continue to guide our students, to collaborate with our community members and to network with our colleagues in order to grow our programs, communities and society.

Check out the WTEA Home Page www.wtea-wis.org



IN MEMORIAM

Howard J. Brooks

October 9, 1941 - March 11, 2012

Howard J. Brooks, 70, of Platteville, died on Sunday, March 11, 2012, at Southwest Health Center Hospital, Platteville. Funeral services were held Saturday, March 17, 2012 at St. Mary's Catholic Church, Platteville.

Howard was born on October 9, 1941 in Beaver Dam, Wisconsin, the son of Gilbert and Helen (Vorpahl) Brooks. He was united in marriage to Catherine Welsch August 29, 1964 at St. Peter's Catholic Church, Beaver Dam. He graduated from Beaver Dam High School. Howard received his BS in Industrial Arts from University of Wisconsin-Platteville in 1965. In 1970 he received his MS in Industrial Education from the University of Wisconsin-Platteville. Howard received his Ed. D in Practical Arts and Vocational Technical Education from the University of Missouri in 1974. He began teaching in 1969 as a Faculty Assistant and retired in 2004 as Professor Emeritus of Industrial Technology from UW-Platteville. Before pursuing his education he worked for Square D. He did consulting for several companies over the years. He wrote several grants, including one for the Incubator building project in Platteville and for UW-Platteville's business outreach program. He was active in many organizations; Optimist where he was past Lieutenant Governor and Past President, Knights of Columbus, Cub Scouts and St. Mary's Catholic Church. He volunteered his time with the Platteville Youth Baseball, Southwest Health Center Greeter service, and Volunteer Income Tax Assistance. He received the Certified Manufacturing Technologist, awarded by the National Association of Industrial Technology. Howard recently found out he was going to be honored as Fan of the Year by Coaches vs. Cancer.

Howard is survived by his wife, Catherine of Platteville; four children, Christine (Hugh) Zuengler of Middleton, WI; Andrew (Eva) Brooks, MD of Mequon, WI; Colleen (Larry) Brooks Johns of Milwaukee, WI; Benjamin (Julie) Brooks of Denver, CO; six grandchildren, Zachary, Hannah, Andrew, Isabella, Alejandro and AnaMaria; and his mother Helen Brooks of Beaver Dam. He was preceded in death by his father, Gilbert, and sister, Karen.

Memorials may be made to the Howard J. Brooks Memorial Fund.

WTEA VICE-PRESIDENT

Accepting the Challenges

by Mike Cattelino, WTEA Vice-President

At this year's annual WTEA conference in March, we had the pleasure of hearing from Miller Electric Manufacturing President Mike Weller as the keynote speaker. I have had the opportunity to work with Mike on several occasions and I have learned something every time. His leadership, like many corporate executives, focuses on his company's people as the core to the business' success. His ability to build a following in his vision of the mission of the business can be seen in every aspect of the company.

Shortly before the conference this year, I took some time to talk with Mike regarding the make-up of the WTEA membership, my view of the trends in technology education, and what the conference was about. My hope was that it would help him with his message for his keynote address. He had already prepared the majority of his content, so my input was not going to change that, but what our conversation did was help him better connect with what the atmosphere would be at the conference. One thing that I learned very early on with Mike is that he is a person of action. I was anticipating that he would challenge the WTEA membership to take some sort of action to help build Wisconsin strong and I think he delivered. He reached out to everyone as a business person and offered to assist or support your program in some fashion.

I know that if Mike could see everyone that was at the conference today, he would ask how things are going regarding the challenges that he put out in his remarks. Have you reached out? Did you talk with your administrators about supporting a career night in your shop? Have you contacted a local business to see if you can connect with them? If so, did you invite them to your school for a visit and have some students present some of the projects that they designed and built? If you answered no to most of these, then I would ask you why? What is holding you back? How can I help you? Employers cannot afford to wait; they have demands for products or services that cannot be put off. They will not wait for your students; you should take your students to them! As we all consider that tech-ed classes are electives, I would hope that actions like these would build credibility for your program both in your school and in your community.

You will find an article written by Mike Weller in this publication on pages 28 - 29. It summarizes and adds to his message from the conference. I ask that you consider how you will meet the challenges that he put out there.

- Calendar -

April 17 - 18, 2012	**SkillsUSA State Conference**	Wisconsin Dells
June 23 - 27, 2012	**SkillsUSA National Conference**	Kansas City, MO
Nov. 29 - Dec. 1, 2012	**ACTE Conference**	Atlanta, GA
March 7 - 9, 2013	**ITEEA Conference**	Columbus, OH
March 14 - 15, 2013	**44th WTEA Conference**	Wisconsin Dells

District G "South" Tours Apprenticeship Training Center

by Ryan Ubersox, Director at Large

The District G "South" (otherwise known as Madison Area Technology Teachers) met on March 14th at the Wisconsin Apprenticeship Training Center on highway 19 and the interstate.

We were given an overview of the union apprenticeship training program and a tour of the facility. The training center offers 35 courses in these areas:

- Heavy Equipment and Highway Maintenance
- Commercial and Industrial Building Construction
- Utility Construction
- Environmental Remediation
- Building Demolition
- Asbestos Removal
- Nuclear Decontamination and Demolition
- Tunnel Work
- Trenchless Technology

The program is uniquely designed to provide classroom instruction, hands-on experiences, and technical skills training required for providing industry with safe and productive workers. This benefits both the employees and the employers. They offer rigorous training throughout the year. The main session starts in January and continues through late June and then is followed up in late fall with a series of more specialized classes.

The facility has multiple classrooms, a welding shop, and three large bays in which students learn anything from pipe laying and surveying to insulating techniques and masonry.

Any students or teachers interested in more information can contact the center at 608-846-8242.

After the tour we gathered at a restaurant and networked about things in the Madison area including updates on WTEA, WEEVA, SkillsUSA, job openings, and new technologies that we are using to improve our offerings to our students.

Our next meeting will be hosted by James Buchanan at Madison West High School on Tuesday October 9th at 5:00. Hope to see you there!

If you are in the Madison area or District G and would like further information, please contact me at rubersox@waunakee.k12.wi.us

ARTICLE

Disciplinary Literacy - How to Effectively Teach Literacy in Your TEE Classroom

A Presentation by Greg Granberg, Madison East High School, and Angela Arneson, Denmark Middle School

Article submitted by Tom Martin, District H Director

Greg Granberg and Angela Arneson led a very practical workshop by asking colleagues, at the onset, to answer questions, in teams, about how they teach literacy. Granberg then spoke to what Disciplinary Literacy is: In today's ever-changing global economy, "literacy" describes a broad range of skills necessary for individual success in various aspects of education, careers and life. At its most fundamental level, literacy represents the ability to read, write and communicate—the ability to understand and use language to achieve one's goals.

What Granberg stressed, and what finally clicked for me, is that "literacy" is not just reading, but writing, speaking, and drawing, whether that is a graphical or cultural representation. I must admit that I forgot about the value of writing until I read a recent LinkedIn article speaking of writing as the "new softskill".

Arneson carried the writing theme speaking about the three modes of writing that are defined in the Common Core State Standards: Expository/Informative, Narrative and Argumentative. While defining these modes, Arneson gave concrete examples that she's used this past year.

One key point Arneson made was the role of the Technology & Engineering Instructor educating students about research. Her approach, particularly for the middle school student, was concise but impactful. While Technology & Engineering instructors should not worry about whether to use the APA or MLA style of research documentation, they should work in concert with English/Language Arts (ELA) colleagues to stress the necessity of using credible data and to give proper credit where necessary.

Granberg transitioned to reading and the types which we would model in our classes: 1) to learn, 2) to understand, 3) to do and 4) for pleasure. They unveiled a five step process of reading they both used:

1) Accessing prior knowledge on the topic(s)
2) Preview the reading
3) Read
4) Review
5) Understanding

They also shared five strategies to teach reading. One key resource Arneson stressed was her cooperative efforts with her ELA colleagues. Her experiences with colleagues were positive, which allowed for future collaboration and professional respect.

What made this workshop work for me was Granberg's and Arneson's willingness to receive from the audience as much as they gave. Some presenters are hesitant in receiving information from the audience, but both professionals wrote several suggestions down. This benefitted both parties. If these presenters return next year to present an update on this program it is definitely a must see for the conference in 2013.

Break-out sessions were outstanding at the

43rd Annual WTEA Conference

"Building Wisconsin Strong"

March 8 & 9

at Chula Vista Resort

Wisconsin Dells

ARTICLE

Digitally Tooled

by Brian Schiltz, District B Director

It is inevitable the information age is upon us and there is no stopping it. There were two specific breakout sessions at this past WTEA conference, which I attended, that addressed the concern for digital media in the classroom. The first was the Middle School Roundtable and the second was a presentation by Nick Berens of Antigo High School . What I gained from both of these sessions is the fact that digital media is here and it is going to stay. Things are going to change whether we are ready for it or not, but where do we start?

As with any shift, there are going to be some exciting lessons learned from the experience of discovering new tools, however, how do we decide which media tools, apps, programs, or resources we use? Some of us may already be experiencing this phenomenon in the school we are at. You may have administrators implementing school wide initiatives to remain "state-of-the-art" and intriguing to potential future students. There are schools that are sending out Twitter messages or are allowing parents and students to "Like" their facebook page. As I write this article, a 6th grade student of mine asks me if I have seen the "almighty virtual cloud." In the past, much of the paperwork to be filed can now all be done online. Students can read books, take tests, work on group projects all from the digital device they hold in their hand.

Our children and students are now growing up with a small digital device dangling from their jaws or tucked in a pocket and are able to access information on anything they want in a matter of seconds. This technology is a new form of entertainment and education, if it is used for that purpose. I know from experience. Rattles, blankets, and teddy bears entertain toddlers for years, yet my iphone app called Pocket Pond can entertain my almost year old twin boys for a great spell until I put on a virtual animal zoo.

You might be asking, but there is so much out there to access, where do I start? Out of all the possible things to use and implement about 10% of it is worthwhile, the rest is what we don't need or will never use. You might also say, I don't have the time to do this. I think there are great resources out there for us to use in the classroom, but I still feel that you and I are the best resources available. If you run across something that you use and feel it would benefit others, share it. To better close the technology gap, I am calling out for all the pioneers, such as Nick, to help spread the word to the rest of the technology education world and share the information you have found. Whether it is a great app, software, resource, or implementation of a school wide initiative, get it out there, either on the Listserve (technologyed@lists.dpi.wi.gov) or inform WTEA (http://www.wtea-wis.org/wordpress/). All of us working together is better than one of us working alone.

Check out the WTEA Home Page www.wtea-wis.org

ARTICLE

Racing To Learn

by Tom Barnhart, District C Director

As teachers we've all been there before - working with students on a project that's both an educational opportunity and satisfying to them, parents, the school district, and business partners in education. The stress of working under all this pressure is one of the most difficult challenges a teacher can face in his or her career. It's enough to make or break a great opportunity for students. Jeremie Meyer, a technology education teacher at Preble High School in Green Bay, knows this pressure all too well. He is also the coordinator of Formula High School - a project that's educational and satisfying to all stakeholders, including the instructor. The following is a brief interview with him on the foundations and vision of the Formula High School program.

Briefly, what is Formula High School?

FHS is a STEM based project designed by Mike Besel, Tom Barnhart and myself to allow students to build and test their own replica race vehicle. Students get to work with actual race components used in the SCCA Formula First race series. All teams use a spec engine (Briggs & Stratton 16 HP Vanguard V-twin). Due to the increase in horsepower and to meet track safety requirements, all teams work from a required chassis design. This ensures that the chassis is properly braced and roll bars are correctly located. Teams are allowed on the track, one at a time, to see which team achieves the lowest lap times. Since this is a team event, the team with the lowest lap times of three different drivers is named the "winner." No trophies are given out - just bragging rights. We want the teams to concentrate on their design, driving technique, car set-up and teamwork.

How does FHS compare to other great Wisconsin project programs?

FHS is just another addition to all the great programs that are available to students, just a different "flavor" to excite the students. There are so many great student programs available to us in the state, pick one and get involved! It's a great way to tie what you teach in the classroom to a real-world problem.

How does FHS fit into the curriculum and school day?

FHS has been incorporated into many schools a few different ways. Some use it as a club, while others are using it as a capstone project for their engineering curriculum. Other schools have used it within their automotive classes as a fun way to tie automotive skills taught in class to race car set-up and design. There are even some schools utilizing FHS within their advanced welding and machine tool courses. The vehicle design lends itself well to customization to fit the needs of each school.

FHS combines the "old school" traditional technology education with the "new school" engineering education programs sweeping the state. It also facilitates a positive collegial team experience in a competitive environment among students and educators. The best part of the track day event is watching how all the students, teachers, parents and sponsors work together.

What do students get out of Formula High School?

A question from people looking at getting involved in FHS is always, how will FHS help the students later in their careers? I have many stories of former FHS students working on various college teams, but the best story I can relate is from a student involved in the second year of FHS. This student continued on to a UW college to pursue engineering. As a freshman, he applied for an internship and placed his FHS experience on his application. This student was later offered an internship with a large Wisconsin manufacturer, which he accepted. Later, this student found out that the officials of this manufacturer offered him the internship after they viewed the FHS website. The company officials were impressed by the teamwork and professionalism displayed by that team, which had a major impact in offering the student the internship.

What will this program look like ten years from now? Will the design constraints of the car change?

Each year the FHS officials sit down and look at how to make the program better, increase safety, or how to meet sponsor recommendations. This year we changed the required safety equipment after the track safety officials suggested a better neck restraint. Ten years from

now? Who knows, maybe there will be a national FHS event held at the Indianapolis Speedway or Daytona. The officials will listen to any suggestion as long as it is safe, doesn't drastically increase costs to the teams, and stays within the spirit of the competition. For example, we had a rule banning teams from using race slicks. We did not want teams purchasing very expensive race slicks. Due to a wonderful partnership, we were able to purchase used slicks from a race tire supplier at a significantly reduced price. We now allow slicks, but just like the professional teams, if there is water on the track, treaded "wet" tires are mandatory.

Will FHS grow and do you want it to?

Every year the number of teams participating almost doubles. Last year we had a team join from Indiana. This year we have three more teams from Indiana. As long as we can ensure the safety for the students, we welcome more teams.

Why push the envelope?
It seems that every year you're working on something "top secret"?

In FHS, we're always trying to push the students to critically think about their designs. What could make the vehicle more efficient with the given engine? What could make the vehicle handle better on the track? Each year students come up with different ways to achieve the same goal. Using a spec chassis design allows teams to spend more time working on new ideas rather than designing a complete chassis from scratch. Just like the professional race series, if teams just recreate what they did last year, most likely they won't be competitive. Plus, it keeps the students interested in the program year to year. Each year it's fun for the teams to see what the other teams have created.

If every school in the state built an FHS car - can you help every teacher in the state?

I'm just one person. I try to help as much as I can. What is unique to FHS is that all the instructors help each other out. Some teams have gone so far as to open their own shop to a competing team to help fix a problem. That has been the best part of FHS, each team, advisor and student helps each other out. We had one team loan their clutch from their disabled car to another team. Another team helped push a competing team's disabled car. That's been refreshing to see - good old fashioned teamwork. Now don't get me wrong, we still have our bragging rights to who is fastest!

Who is Mike Besel? Is he a better driver than you?

Mike Besel was the main reason for FHS. He was the one that said "My students want to race. How can we let them?" Mike and I prototyped five FHS vehicles in 2008 with our students. He's been involved from the beginning. He is also an instructor at Road America, which is great to have such an experienced individual involved with the program. Who's the better driver? Even though Mr. Besel has MANY hours at the track, I always seem to better his times year by year. Well, that's my story and I'm sticking to it!

I heard Joe Janicek built a driving simulator. Can you tell us about that?

Joe Janicek from Sheboygan South took the FHS program in another direction to help get students excited about the program. I had given Joe an old FHS chassis as a model to help his students build their own chassis. Well, Joe took that chassis and created a driving simulator. Some people might ask how does this relate to the real world? I was fortunate to attend the 2011 national SkillsUSA competition. While walking through the sponsor displays, I came across a gentleman running a computer driving simulator. I struck up a conversation with this individual. It turned out that this individual was a co-owner of three Indy car teams! He explained that their drivers use the computer simulators to get prepared for their upcoming races. So Joe's training the future Indy car drivers!

Where and when can we see or participate in an event?

Our track events are listed on our website home page at www.Formulahighschool.com

Another great addition to our program is Jeremy Hodkiewicz from Shawano. Jeremy has been instrumental in getting our first Fall track event at the USA International Raceway in Shawano. This is an awesome race facility. We hope to have another Fall event this year, so keep an eye on our webpage. It's a great way to preview a track event with a new team.

43rd Annual Spring Conference & Trade Show

Plan Now to Attend the 44th Annual Conference

March 8 & 9, 2012 **Chula Vista Resort - Wisconsin Dells**

"Building Wisconsin Strong"

Highlights

"Connecting the Future" March 14 & 15, 2013

AWARDS

2012 WTEA Awards

Presented at the Awards Banquet March 8, 2012

WTEA 25 Year Award

"For 25 Years of Service to Education"

Wes Glenna
John Schindhelm
Sylvia Tiala
Michael Waldschmidt
Thomas Juran
Jon Sowl
Brian Thompson
Martin Wenig

• • •

WTEA Future Teacher Educator Scholarship

Lucas Jandrin, UW-Stout
Paul Seidler, UW-Stout

• • •

WTEA Award of Excellence

"For Exemplary Achievement in Technology Education"

Nick Gilles - Spring Valley
Chris Strzok - Cudahy
Rodney Osterhaus - Pardeeville

• • •

ITEEA Program Excellence Award

Presented on March 15, 2012 in Long Beach, CA

Hartford Union High School

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WTEA Special Recognition Award

"For Contributions and Service to the WTEA"

Ray Pedersen - WATDA
Wisconsin K-12 Energy Education Program

• • •

Special Thanks

The WTEA would like to thank First Technologies, Inc. for sponsoring the 25 Year Award.

Middle School Program of the Year

"Outstanding Middle School Technology Education Program"

Templeton Middle School
Sussex, WI

Technology Educator of the Year

"For Outstanding Contributions to Technology Education"

Tom Andreska
Merrill High School

Lifetime Achievement Award

"For Distinguished Achievement & Leadership in Technology Education"

Dennis Skurulsky
Waukesha

THANK YOU

The WTEA sends a big

Thank You

to the exhibitors

for making the Trade Show a success!

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Woodcraft
Youngblood Lumber Co.

LIFETIME ACHIEVEMENT AWARD

Lifetime Achievement Award Recipient

Dennis Skurulsky

On March 8, 2012 Dennis Skurulsky became the sixth recipient of the WTEA Lifetime Achievement Award. The award was presented to Dennis by Past-President Pete McConnell and Joe Ciontea, Executive Director. The presentation was the grand finale of the WTEA Awards Banquet, held in conjunction with the 43rd annual Conference at The Chula Vista Resort and Conference Center in Wisconsin Dells.

Dennis served as WTEA president from 1996-1998. His list of accomplishments and previous awards was over four pages long. Dennis was instrumental in the development of engineering curriculum for technology education in Wisconsin. He presented at countless state, regional and national conferences including ITEEA, Cray Academy, U.W. Futurist Conference, WEAC, WI-DPI Summer Conference, WTEA Conference, and the Sally Ride Academy. He has served as a curriculum consultant for WI-DPI and numerous other school districts. His career has been dedicated to promoting our profession and sharing his expertise with others.

Dennis has provided the following message to members of the WTEA upon his acceptance of this honor.

Wow, I am humbled, grateful and extremely appreciative for receiving the WTEA Lifetime Achievement Award. I'd like to thank the WTEA and it's executive board for choosing me to receive this prestigious recognition. I'd also like to thank my family for their continual support and for always being there for me. Without these people, and their understanding, love and support, I would not of have been able to achieve the things that I have.

I have been very fortunate in my life. I have been one of the lucky ones that have truly enjoyed their chosen profession. I have gone to work almost everyday of my career with a smile on my face eager to attack the challenges of the day. My students have kept me young at heart throughout the years and they have taught me many life lessons. I have also been lucky to be surrounded by caring professionals that I have been able to call friends and mentors. At the risk of possibly offending those not mentioned, I'd like to recognize and call out just a few. There is a special place in my heart for: Len Sterry, Ken Welty, Al Gomez, Denny Nelson, Pete McConnell and Brian Albrecht. Thank you for touching my life and heart.

When Joe Ciontea asked me to write a brief message for the Interface, the first thing I asked myself was "what could I write that hasn't been written before?" What words of wisdom could I bestow onto others that will walk the path I chose? What have I learned throughout the years that may help those that follow. I hope that in my little way, you will find something in the words that follow, that you can carry with you down your career path . . .

10 things I wish someone would have told me 30 years ago

10. Keep your classroom a place where students want to come and stay. Do your students feel safe? Do they trust you? You are not their friend nor their parent. But you are their guide for an experience that hopefully none of them will forget.

9. Get involved. Do something with extra-curriculars. There are just too many choices out there now to list them all, but start investigating: Skills USA, FIRST Robotics, VEX robotics battle bots, HMV, Rube Goldberg, Future Cities, Science Olympiads. The list goes on and on. Choose one of these activities and promote it as YOUR varsity sport for your program. You will get more out of he experience than what you put into it. Guaranteed!

8. Promote, promote, promote. Never assume that the students will mysteriously find you and your program. If you do not sell your program, no one else will.

7. Get parents involved. They are your ambassadors and your customers. Always use them as a barometer of how things are going.

6. Don't be the sage on the stage. Let your students become the experts. Empower them to take ownership for their own learning. This only happens in a safe, trusting and fun environment. Many teachers like the power associated with being the all knowing expert in the classroom. Become the facilitator of knowledge not the dispenser of facts and figures.

5. Smile and recognize every student you know as you walk the hallways. You may be the only person that recognizes that they are alive today.

4. We live in a world where you are continually asked to do more and more with less and less. Make sure that you take time for yourself and family every day.

3. Recognize a student. Catch your worst students doing something great and make a big deal out of it. Catch your best students when they need to push themselves but do not make it a big deal.

2. Teach every lesson every day with the idea that your own son or daughter is sitting in your classroom.

1. Stay current. Keep abreast of the latest technologies in your area of expertise, educational trends and your community activities. Never stop learning. Expect more from yourself than what you expect from your students.

Thank you for all that you do! There was a time when the two most important people for you to get to know in the school were the head custodian and the principal's secretary. Today the list has expanded to the school psychologist, school social worker, security officer and psychiatrist. This is also a time when some may call you thugs and bullies because you ask for a decent wage. You are continually asked to do more and more for less and less. You are my heroes.

History of the WTEA Lifetime Achievement Award

The WTEA Board of Directors established the association's Lifetime Achievement Award in the fall of 2001. The award is presented to individuals whose careers demonstrated a commitment to technology and engineering education that went beyond the classroom and their students. Their leadership, dedication and service to our profession have made a difference to all of us. Below is a list of the award recipients:

Len Sterry April 2002	**M. James Bensen** March 2004	**Jeff Dowd** March 2005
Fred Schroedl March 2007	**Doug MacKenzie** March 2008	**Dennis Skurulsky** March 2012

WTEA EDUCATOR OF THE YEAR

WTEA Technology Educator of the Year

Tom Andreska

Merrill High School

The WTEA is proud to honor Tom Andreska as our 2012 Technology Educator of the Year. Congratulations!

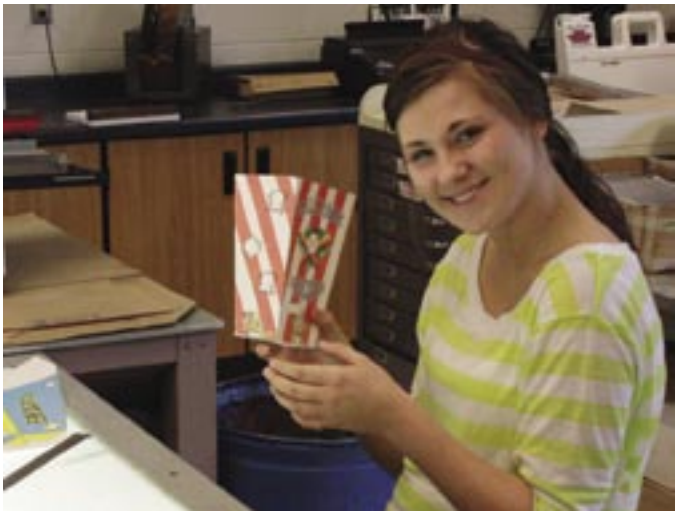
Since I started teaching way back in 1983 some beliefs still hold true today. My philosophy for teaching technology education is that technology education is the most important subject a student can and should have taken while in high school. It doesn't matter what interests or career goals a student has, technology education can help them achieve success and realize their goals. Everything we do is intertwined in some form to technology education. As a teacher my goal is to get my students to be excited about a career in technology. While I know that may never be true 100% of the time, as a teacher I believe that's an important goal to strive for. If I'm teaching and I have no effect on my students I must be doing something wrong. The type of effect will be different for every student. Some will need me to have a huge effect on them while others will need only a small effect but both are equally important. As the years have gone by I believe my teaching goals have had to change because of two reasons. One is that students have changed. Today they come to school having to learn not only the subject matter but the social skills as well. The second reason, which directly affects my goals, is how technology has changed.

Merrill Tech Ed teachers
Mark Pugh, Pete McConnell, Tom Andreska, and Marty Schield

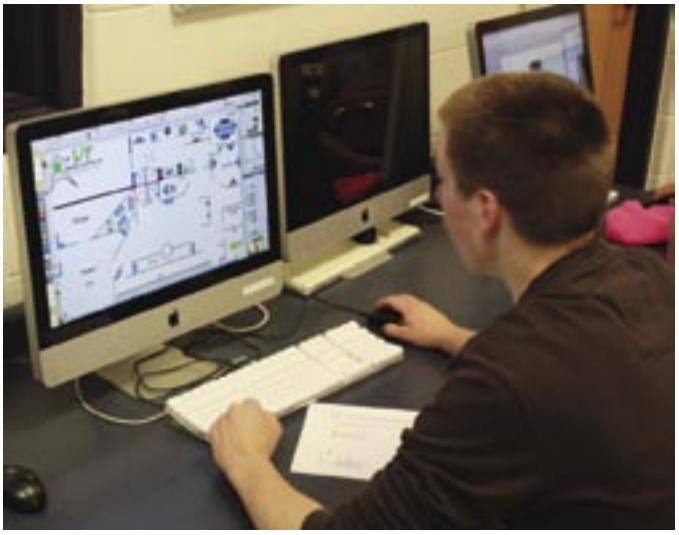
One of my favorite sayings is "the only constant in Technology Education is change."

To that statement, since I started teaching I always try to stay abreast of changes taking place in technology education. Technology changes rapidly, it may be only a few months before the next generation is introduced. Because of this, it can be a challenge to keep current hardware accessible and be knowledgeable about the newest versions of popular software. As a teacher I face especially difficult obstacles because of budget restraints and the time needed to research and learn new software and hardware. The best way is to stay current with advances in technology through reading and research and my own approach, which is to learn on my own. I develop lesson plans that show students how to approach new and unfamiliar software and hardware. Most software applications do not change dramatically from one version to the next; many improvements are slight and are only so many ways to set up a spreadsheet or create a document. New hardware usually just adds more memory and faster response time along with a few "bells and whistles." The basics do not change.

Every activity that students undertake in my classes starts with creativity.I always give some basic foundations



that the final outcome needs to contain, but everything in between is up to the student's creative mind. I believe that is why students do well in my classes as they can place a personal touch on every activity and make it "their own." No two final products are the same as opposed to other areas that every student build the same product or create the same drawing. There becomes competition among students to become creative and have a design that is better than the other students in class.



In today's world, technology is a word that to most people means a computer. I always emphasize to my students that technology is so much more than a computer. When I look at the impacts of technology, I get my students to know that computers are a small part of technology. In the graphics area, technology has had a major impact going from many hands-on intensive procedures to automated procedures. This automation has changed careers in the field and also has allowed many consumers to supply some pre-press procedures to be done at home and supplied to the printer which years ago never took place. While technology has been good it also has led to less people being needed to do more since the technology allows this.

I have been fortunate to work with a terrific team of technology educators at Merrill. I have also been lucky to be able to build and expand a graphic communications program under the Technology Education umbrella.

Merrill High School has a long and impressive history of graphic communications classes. Long ago there were three courses - Printing I, Printing II and Advanced Printing. Since that time the courses have changed to reflect the current state of graphic communications.

Presently Merrill High School offers the following courses:

Graphic Communications-Desktop Publishing I (Semester)

Graphic Communications-Desktop Publishing II (Semester)

Graphic Communications-Printing Processes (Semester)

Graphic Communications II (Semester)

Advanced Graphic Communications (Year)

Printing Youth Apprenticeship (one or two year)

Merrill High School works closely with local printer Reindl Printing in helping students become interested in Graphic Communications Careers. Since 1993 Merrill High School graphics students work at Reindl Printing through the Wisconsin Youth Apprenticeship Program.

Students in the Advanced Graphic Communications class earn 5 credits through transcripted credit with North-Central Technical College by completing the following courses at Merrill High School.

These courses are:

Intro to Printing (1 credit)

Intro to MacIntosh (2 credits)

Photoshop/Image Manipulation (2 credits)

My classroom is a very open classroom in which students can work at their own pace to complete the activities assigned to them. At any time I will have students working on anywhere from three to five different activities. This is done so all students are always on task with having something to do while they are waiting for a piece of equipment to use, waiting for something to print, collaborating with fellow students, etc.

WTEA PROGRAM OF THE YEAR

2012 WTEA Middle School Program of the Year

Templeton Middle School

Introduction

Templeton Middle School is part of the Hamilton – Sussex School District and enrolls approximately 1050 students from grades six through eight. TMS Technology and Engineering curriculum integrates STEM (Science, Technology, Engineering, Math) based learning into each unit through a blend of Gateway to Technology-PLTW (Project Lead The Way) traditional technology education, and collaborative projects. All seventh grade students enroll in a mandatory quarter long Technology and Engineering course that focuses on engineering design, while eighth grade students have the option of enrolling in a year-long elective Technology and Engineering course. Since the implementation of STEM based curriculum in the fall of 2006, student interest in elective technology and engineering has exploded, and enrollment in elective technology and engineering courses has increased from 44 students in 2006 to 110 in 2011. Female technology and engineering elective enrollment has increased from 2% in 2006 to 16% in 2011.

Seventh grade students show off their cutting boards.

Course Structure

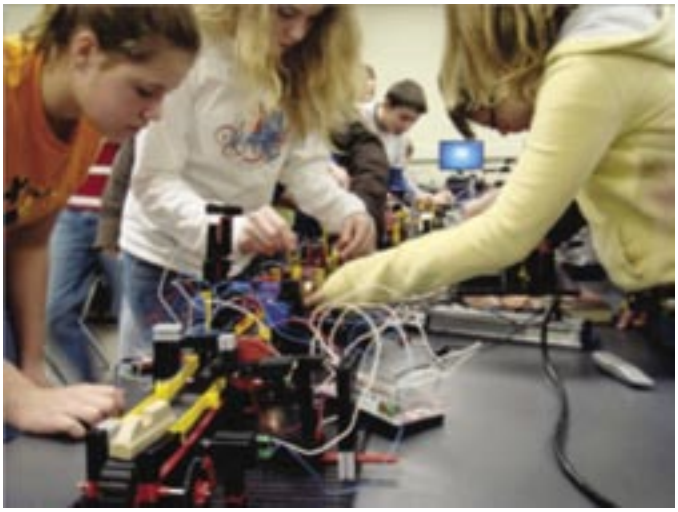
All seventh grade students are required to enroll in a quarter long technology and engineering course – "Gateway to Technology and Engineering." Seventh grade students study background concepts in technology such as technological resources and categories of technology, measurement, and drafting styles. Students use Autodesk Inventor to develop designs for their individual projects – cutting boards, plastic air dragsters, and keychain casting molds. Through these three projects, all Templeton students are able to gain adequate exposure to a variety of material processing techniques and processes – wood processing, computer aided design, CNC programming, vacuum thermoforming, injection molding, and casting.

Eighth grade students have the option of enrolling in an elective technology and engineering course that meets every day for the entire year. Nearly one third of our eighth graders enroll in this course. Eighth Grade Technology and Engineering is broken into four large units.

Keychain casting molds and key chains designed by 7th graders.

The first unit, Concepts in Technology and Engineering, is broken into four sub-units: *What is Engineering, Computer Aided Drafting and Design, Production Materials and Processes, and Principles of Electricity*. In the *What is Engineering?* unit students research and present on the engineering design process as well as on career fields in engineering. The *Computer Aided Design and Drafting* unit consists of sketching and views, measurement, and reverse engineering. Students use Inventor to develop their designs. The *Production Materials and Processes* unit focuses on

An eighth grade student balances the armature of his motor.



Two sections of eighth grade students collaborate to develop an automated assembly line.

materials engineering and materials design. Students also study plastic and wood fabrication procedures and techniques. In the *Principles of Electricity* unit eighth graders learn the science behind electricity as well as circuit construction and Ohm's law.

During unit two, Automation Engineering and Programming eighth grade students learn how power is transferred in common gear mechanisms, use Fischertechnik kits to develop robots, and use MIT Scratch to develop their own video games and customized controllers.

Civil and Structural Engineering focuses on the forces that act on structures. Students design, build, and test bridges and earthquake-resistant towers. Eighth graders also work in teams to develop a model residential structure.

A Red Baron inspired model tri-plane prepares for takeoff.

During the Transportation Engineering unit, students research, design and test vehicles to perform specific tasks across the modes of transportation. Eighth graders develop crash safe vehicles, Styrofoam airplanes, paper rockets, and vacuum formed boat hulls.

Bulldog Club members show off the cedar bench they made for the Hamilton Education Foundation auction.

Extra Curricular

TMS Technology and Engineering is also active in after school clubs.

The **Bulldog Club** is an afterschool club designed for students that need to make positive connections with the school community. The group meets once a week after school during the spring months and works on community service projects. Past Bulldog Club projects have included cedar patio furniture donated to the Hamilton Education Association auction, and a tree bench donated to the EAA in Oshkosh.

Maunfacturing Entrepreneur Club students show off the acrylic locker organizer they designed.

The **TMS Manufacturing Entrepreneur Club** is designed for eighth grade students and runs after school two days a week. Students research, develop, market, and sell a product. The club is run like a business, where students are placed in separate departments – business, marketing, quality control, and production. Each department has a department head that is responsible for maintaining a log book of work-hours, and reporting back to the CEO. The CEO is responsible for reporting back to the instructor.

The **TMS STEM Advantage** program invites classroom teachers to enhance their curriculum with STEM learning activities. It allows accessibility to the technology and engineering teacher and facilities for students and classrooms that otherwise would not have easy access to STEM based materials.

Sixth grade students study Egyptian Shadufs in the technology and engineering lab as part of their Social Studies unit on Ancient Egypt.

ARTICLE

Manufacturing - As Easy As Tic Tac Toe

by Ryan Ubersox, Waunakee High School and Brad Burgess, Waunakee Middle School

In an attempt to design a project that would align with technology standards showing both the manufacturing process and the technology design process, Brad Burgess from Waunakee Middle School, went back to all our childhoods to a simple game of Tic tac Toe to teach students technology education. Says Brad, "I wanted to allow students the opportunity to maximize experience on nearly every machine in the shop, allowing them to strengthen their kinesthetic skills."

Brad took what we all know, the manufacturing process, and made it fit his 8th grade program. The following is an overview of the project. The entire lesson can be seen at the WTEA website http://www.wtea-wis.org/cur_access.html.

He approaches the beginning of the project by introducing manufacturing systems and with the following problem, "You have spent all your money on your iPod and realized at the last minute, you forgot to buy a present for your sister, brother, Dad or Mom. Luckily, technology education is here to help you out!"

SAFETY

It is assumed that anyone attempting this project is currently licensed in the state of Wisconsin with a 220 teacher's license and all safety precautions are taken with students on each individual machine prior to beginning the project.

To ensure safe machine operation, students are required to keep their hands away from cutting surfaces. Mr. Burgess designed jigs to help hold the boards securely. Often students will be a little overaggressive and remove too much material, leaving the boards loose in the jig. The hardest part for the students is fabricating a board that will fit properly into the jigs.

MATERIALS AND MACHINES

This is a very affordable project as seen by the materials below:

Pine 2x4s – many of which are free left overs from previous projects (Pine is not ideal as it's prone to chipping, flaking, and cracking. Oak, cherry, walnut, etc. will give a better end product.)

1/8" dowel

Wood toy wheel axles

Sandpaper

Brad's 8th grade shop is equipped with the following machines used in the project: band saw, planer, jointer, compound miter saw, radial arm saw, scroll saw, drill press, router table, disk sander.

CONSTRUCTION

1. Steps A to F require that students work in teams.
   - A. FIND A BOARD: Get a board 12" to 24" long.
   - B. COMPOUND MITER SAW and RAMS:
     - i. If the board is too long (greater than 24" in length), cross cut the board on the RAMS or the Compound Miter Saw. If starting with an 8' long board, it is recommended that boards are cut to 14" in length to start.
     - ii. Board must have sections along its length that are at least 31⁄4" that are free from knots, holes, or other imperfections.
     - iii. Board must be true, without cupping, twisting, crooking or bowing. This allows for time to discuss milling and how lumber is made.
     - iv. Feed the stock through the jointer to square an edge. Make sure to use the push sticks to feed the material into the jointer.
   - C. BANDSAW:
     - i. If board is greater than 1/2" in thickness, it must be resawn in the bandsaw. A preset fence works well for students.
     - ii. Work in teams of two to feed the stock through the blade of the band saw.
     - iii. Place the longer planed edge against the fence on the band saw and use push blocks to feed the stock through the band saw blade.
   - D. PLANING and JOINTING THE BOARD:
     - i. Feed the stock through the planer to the proper thickness.
     - ii. Apply pressure near the end of the cut.

E. PLANING THE BOARD (AGAIN): Feed stock through the planer to get the board to the correct thickness shown on the plans. Note: remember to keep hands away from infeed and outfeed. Plane the side with the band saw teeth marks from the resawing operation (rough side up).

F. JOINTING THE BOARD (MAYBE...) If needed (consult the working drawings!) feed the stock through the jointer to get the board to the correct height as shown on the plans. Plane the only unfinished edge along its length (NEVER JOINT THE ENDGRAIN!).

2. CMS and RAMS: Use the compound miter saw or radial arm miter saw to cross cut the board slightly larger than the plans (Add 1/16").
3. SCROLL SAW: Use the band saw or scroll saw to "clip" the corners as per the working drawings.
4. DISK SANDER: Use the disk sander miter gauge to "touch" the edges of the stock.
5. ROUTER TABLE: Use a jig to send the stock though the router table to ensure the safety of the students. (See figures A and B)

Fig. A: Router Jig

Fig. B: Router Jig in use

6. TABLE SAW: Use a jig to send the stock through the table saw, cutting the kerfs. (See figures C and D)

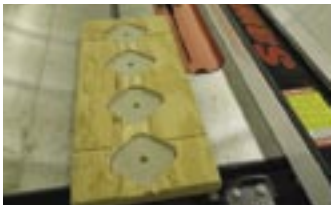
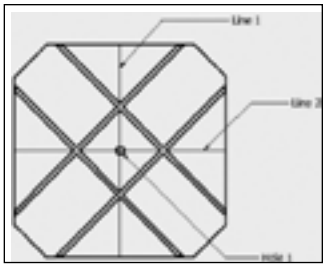


Fig. C: Table Saw Jig

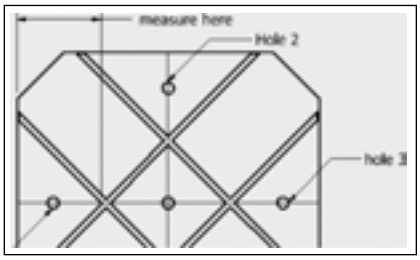
Fig. D: Table Saw Jig in use

7. MITER BOX: Cut 9 pegs to 1⁄2" in length
8. DRILL PRESS: Use the drill press to drill holes in the top face of the Tic Tac Toe board as specified in the working drawing.

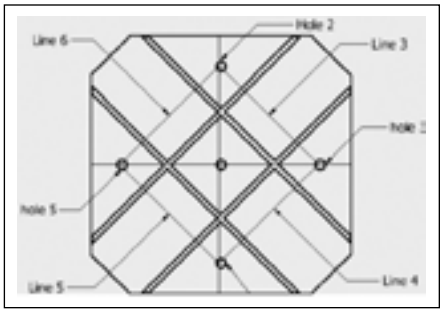
A. HOLE LAYOUT PROCESS: Find center of the board. Align the straight edge of a ruler with opposite corners of the center square. Draw lines 1 and 2.



B.The drawn lines cross the center square and four triangles. Measure the distance from the edge of the board to the point of the triangle. Use math to determine 1/3 of that distance. Measure that distance from the edge and mark the center of holes 2, 3, 4, and 5.



C. Use a straight edge to draw a line from the center of hole 2 to hole 3. (Line 3) Draw another line from the center of hole 3 to hole 4. (Line 4) Draw another line from the center of hole 4 to hole 5. (Line 5) Draw another line from the center of hole 5 to hole 2. (Line 6)



D. Find and mark the center of lines 3, 4, 5, and 6. This will be holes 6, 7, 8, and 9.

FINISHING:

Painting, staining, and finishing are all options.

A. For paint, spray paint to desired color.

B. For stain, sand surfaces, use stain and rag to saturate stock. Coat with polyacrylic finish.

C. For finish, sand to a smooth finish (similar to what most do for CO2 cars). Use paint thinner and polyurethane mix to saturate stock. Let it stand for a day, sand, and repeat the process.

TEACHER'S REFLECTIONS:

Brad has modified the instruction manual to incorporate a more detailed description of the hole layout in the top of the board. In the past the hole layout was modeled at the front of the room. With varying abilities in the classroom, some students were ready for the instruction, but those that needed the most help were not. He found that he needed to continually re-teach a large percentage of the students how to layout their boards.

He is hopeful that the modifications this year will help those with varying abilities. In the future he plans to modify the manual to be in more of a book format to model a technical manual. He also plans on providing additional safety detail within the manual.

ARTICLE

Project Lead the Way: "Engineering for All"

by Jeff Thielke, Germantown Kennedy Middle School

In its first year of offering the nationally accredited pre-engineering PLTW-Gateway to Technology Middle School Program, Germantown has moved from traditional to present. The Technology-Plastics-PLTW Programs annually enroll approximately 960 students. Although it is encouraging to see 29% females involved in the Technology Education programs, there are only 19% females enrolled in PLTW. Instructor Jeff Thielke knows how important it is to encourage girls to get involved in the PLTW Program, which has become a focus. Thielke's programs over the years have highlighted nearly 50% female involvement, well above the state enrollment average for Technology Education. Working in conjunction with technology instructor John Parish, Thielke feels there is much potential to achieve even higher enrollment expectations for the new PLTW Program.

6th - 8th Grade (960 students)	**Males:**	**Females:**
All Tech Ed Programs	**686 (71.0 %)**	**274 (29.0%)**
8th Grade (208 students)	**Males:**	**Females:**
PLTW Program	**169 (81.0 %)**	**39 (19.0%)**

A two year implementation plan has been implemented, with year one (2011-12), offering PLTW in the areas of Design & Modeling and Automation & Robotics, with applied activities in Science of Technology, for one semester in 8th grade. Year two (2012-13) would add 7th grade for one semester and add an additional semester for 8th graders. This would enable the entire PLTW-GTT curriculum to be covered through 7th & 8th grade.

The area of Design & Modeling leads into the Germantown High School PLTW course, Introduction to Engineering Design (IED), and Automation & Robotics into Principles of Engineering (POE). The application of activities in these pre-engineering areas is done in the PLTW-Gateway to Technology Science of Technology units. These are accomplished through activities involving problem solving, critical thinking, design, and prototype development, testing and re-designing.

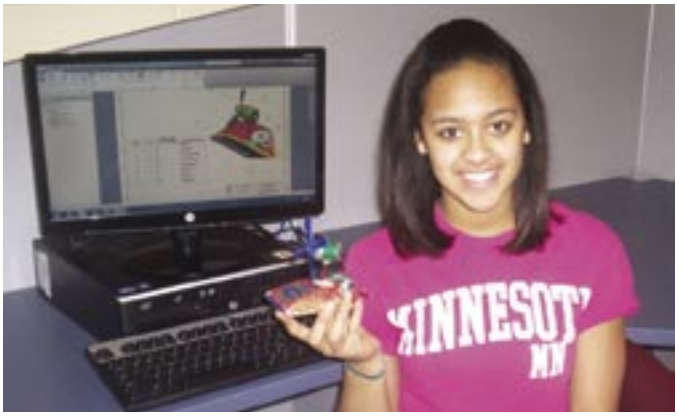
With a more specific direction in curriculum and applied activities, students have become more "fluent" in this study of Engineering. In turn, this has allowed a higher level of knowledge, skill and experience from the learners, before they enter the PLTW High School Program. The utilization of the PLTW-Gateway to Technology curriculum, with relevant applied activities, demonstrates a continued application of knowledge, skill and experience learned.

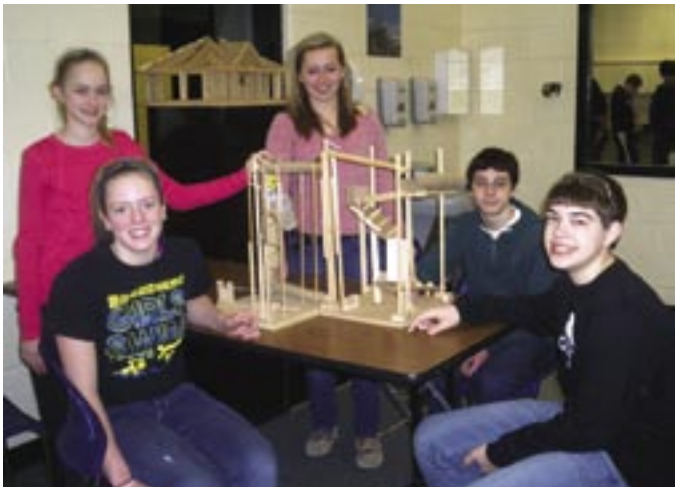
Design & Modeling (8th Grade)

Students perform Engineering Design activities, utilizing the PLTW 3-D modeling software, through-out the design process. Supporting Standard, Assembly and Exploded View Drawings are developed. Students design, fabricate, test and re-design Transportation, Construction and Manufacturing related activities, in order to solve industry simulated problems.

Automation & Robotics (8th Grade)

Students learn how to design and build machines that can follow instructions. They first construct various mechanisms to familiarize them with gears and other systems of power transfer. Students design and build larger projects that combine mechanisms. They study and practice programming in order to use sensors to control motors that will power the mechanisms. Students will create several robotic projects to meet criteria. The course culminates with small groups designing, constructing, and programming individual operation cells in a robotic assembly line.





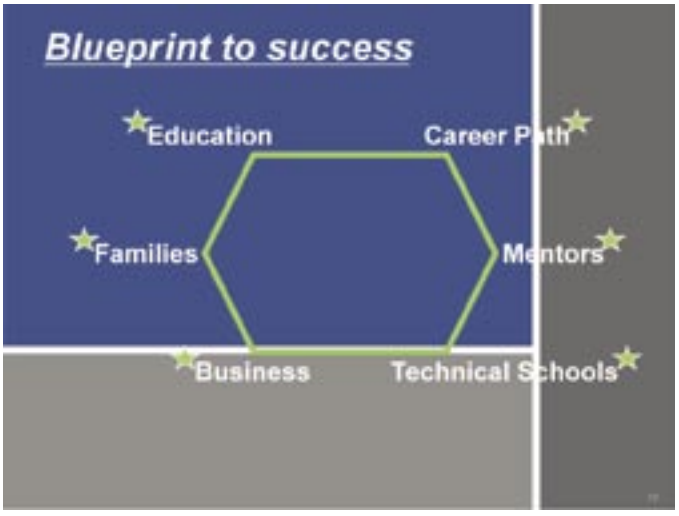
With emphasis being placed on the importance of Project Lead the Way, the Technology Education Program has incorporated PLTW units in all of its more traditional courses. New Plastics Technology curriculum has also been added to the program; which is being supported by the Society of Plastics Engineers and Wisconsin Plastic Manufacturers. With a supporting renovated facility, Kennedy Middle School's Technology Education Programs is moving in the right direction, to "offer something for everyone."

ARTICLE

Your Students, Our Future, Linking Business and Education

by Mike Weller, President, Welding North America - Miller Electric Mfg. Co.

At the March 8, 2012 WTEA meeting in Wisconsin Dells, I had the opportunity to present to the membership my holistic approach to engaging businesses in the education arena. Equally as beneficial is having educators exposed to the business environment thereby benefitting the long term interests of the student. The "Blueprint to Success" highlighted the key pillars of success that will contribute to the plan, starting with the family, educators, career paths, mentors, technical schools, and business. (see chart below).



Skills for tomorrow:

At Miller Electric, these are some of the skills we'll look for when we consider hiring candidates immediately out of high school:

1. Interpersonal skills
2. Teamwork
3. Passion
4. Technical skills
5. Strategic thinking
6. Analytical skills
7. Creativity
8. "Can do" Attitude
9. Strong Work ethic

A key challenge for educators is to understand why these type of skills are important. The avenue to understanding the "why" is to spend some quality time inside businesses to understand the skill sets they will need--but know that these are the universal blocking and tackling skills that all will need--and your understanding will help your students to be prepared.

Business leaders have a strong desire to be involved in contributing to the education of our students--their future workforce. I would encourage educators to invite business leaders in to talk with them and get to know one another--establishing trust between the stakeholders involved. As an educator, change the paradigm--ask the business community into your school--you'll be pleased with the business community response.

As educators gain insight into various businesses' strategic directions, their focus, and their challenges - you will be able to incorporate a more holistic view in your curriculum to share with the students. Educators should ask business leaders as to how they feel they can assist the educators and their students. Likewise, inquire as to what degree do they want to be involved. Capitalize on the business leaders' areas of interest or the goals of their companies when asking for involvement.

Ideas shared on March 8th regarding engagement of business leaders included:

- Get Human Resource leaders to your schools to give your students some insight about:
  a. Expectations
  b. Skills required
  c. Future career paths
  d. Mock interviews
- Reach out! Sponsor Group dialogues. Round table dialogue with business leaders and educators about the challenges and opportunities to work together.
- Sponsor a career night (not college related). Give educators and students an opportunity to interact and explore career opportunities and to learn about key employers in the area.
- 1 week business symposium for educators--enabling educators to gain insight into the strategic issues, how business works and the key decisions facing leaders each day.
- Mentors--business leaders will relish the opportunity to mentor a student.
- Inquire about summer business internships for educators.
- Co-op learning opportunities for students.

This type of interaction will lay the foundation as you form strategic partnerships. Educators should request financial assistance only after a strong strategic partnership exists--lay the foundation first! You have the opportunity to make a difference and I would encourage you to reach out to the business community.

Call to action:

My goal in this presentation was to stimulate action that leads to greater interaction between the business community and educators--both key stakeholders in shaping the foundation of our future workforce. I'd encourage you to start with a plan--but challenge the status quo--reach out and start slowly--build relationships first--don't ask for money upfront--that type of support will occur once you bring the leaders into your world.

The Challenge:

What will you do differently to help your students succeed? Tap into all the resources available, it's only a phone call away. Good luck!

Contact me with your thoughts, ideas, successes or questions, as I am interested:

Mike Weller
President of Miller Electric Mfg. Co
mike.weller@millerwelds.com, 920.735.4209.

There was standing room only during
Mike Weller's keynote address
at the
43rd Annual WTEA Conference
"Building Wisconsin Strong"

Taking a New Path

by Doug Kugler, District E Director

It was January 28, 2011. I went to see the hearing specialist for my one year check-up. The news came back that I lost even more hearing than what is considered acceptable. The doctors recommended a change in my lifestyle and of course that also meant a change in my job as a Technology Educator. This came as a shock to me because I loved teaching for the past 25 years. I looked at my options and to make a long story short, I decided to work with troubled youth in the Waukesha Juvenile Center.

Some of these students come with very little success in a regular school setting for a variety reasons from broken homes to criminal activity. As the school year began, I was trying to think of some positive reinforcement activities that I could use with the students. My supervisor gave me the O.K. to try exotic wood lathe pen projects. I found a lathe from one of the high schools, repaired it, and bought all the necessary equipment needed to begin turning pens. Since I also taught English in the classroom, students first had to write a one page report on the exotic wood they picked for the project. Students conducted research for information on where the wood came from, it's uses, characteristics, color, and any other interesting facts. Once they finished their report and a short safety sheet, students were ready to begin designing and turning their pens.

The first pen was given to students at no cost. They had an option to purchase additional pens to create for family and friends. We also participated in the Freedom Pen Project from Pen State Industries. Students processed additional pens that are sent back to Pen State Industries. The pens are then shipped overseas to military personnel. Students were so successful at creating/designing pens that the positive behavior transferred over to the other subjects we taught them at the center. Students saw the success they can have with the proper motivation and support. The pen activity was so well received that I brought in additional activities that many students have enjoyed. Other activities include; 3D drawings using Prodesktop, architectural house design, notepads, and a rocket engineering project. Next year, we applied for a grant for STEM activities that include solar car design, wind generation, and fuel cell cars.

I have had to make some major changes in my life and job situation, but they seem to have turned out for the best. I still get to make a difference in young peoples' lives, hopefully giving them a positive outlook on life.

Freedom Pen Project

Pens were on display in the Waukesha County Courthouse

Plan now to attend

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"Connecting the Future"

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ARCHIVES

Editor's note: *Over the last several years, the WTEA Presidents have provided insights, opinions, challenges, and directions. Each issue of the Interface carries a message from the President of the WTEA. The following are excerpts from those published messages from each of the past eight presidents.*

Words of Wisdom

We must be working together to offer our students the best educational opportunities, regardless of the fact that we may consider ourselves contemporary or traditional. We must all be sharing ideas and keeping the dialog open, so all of us can continue to service our students and the communities in which we live.

Dennis Skurulsky
President 1996 – 1998

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A tremendous shortage exists in the technically skilled population compared to the current and projected needs of business and industry. A shift in emphasis in education is necessary to encourage the technical occupations and the technology related fields of applied academics. Our importance as technology educators, and the role we serve, is recognized as one of the most vital links in providing this needed work force.

Fred Beyer
President 1998 – 2000

• • • • • • • •

It is essential for all technology education teachers to be proactive in maintaining and improving the perception of Technology Education. You, the classroom teacher, are the most important influence, with the many positive influences on students, business and industry, and the community in which you continue to demonstrate your dedication to the profession.

Vern Jordan
President 2000 – 2002

• • • • • • • •

Our inventive past influences our future direction. Ben Franklin once said, "Energy and persistence conquer all things." We need to remember this as we continue to press on.

Steve Johnston
President 2002 – 2004

If we are not pro-active, then we are at the mercy of those making changes. Most of you have already established good working relationships with your building and district administrators. Use the relationship with your administrators to inform them of the role that Technology & Engineering plays in the education of today's students.

Dennis Nelson
President 2004 – 2006

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I believe we need to prepare some of our students for the critical shortage in engineering and related & emerging technologies. But I also believe we need to prepare some of our students for the technical and skilled trades, the technical service industries, manufacturing, etc. We need to focus our curriculum on where our students may go when they leave high school.

Mike Roth
President 2006 – 2008

• • • • • • • •

Technology and Engineering programs need to guarantee that our students evolve and grow with enough knowledge to be viable employees and informed citizens. Our curriculums have to reflect the thoughts and needs of the communities we live in and the businesses that reside in those communities.

Al Gomez
President 2008 – 2010

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I am suggesting that by collaborating we become aware of how we can manipulate other curriculum to enhance and stimulate the learning opportunities by our students across the learning areas. If we validate our programs with data and rigorous curriculum, the collaboration should only validate us that much deeper.

Pete McConnell
President 2010 – 2012

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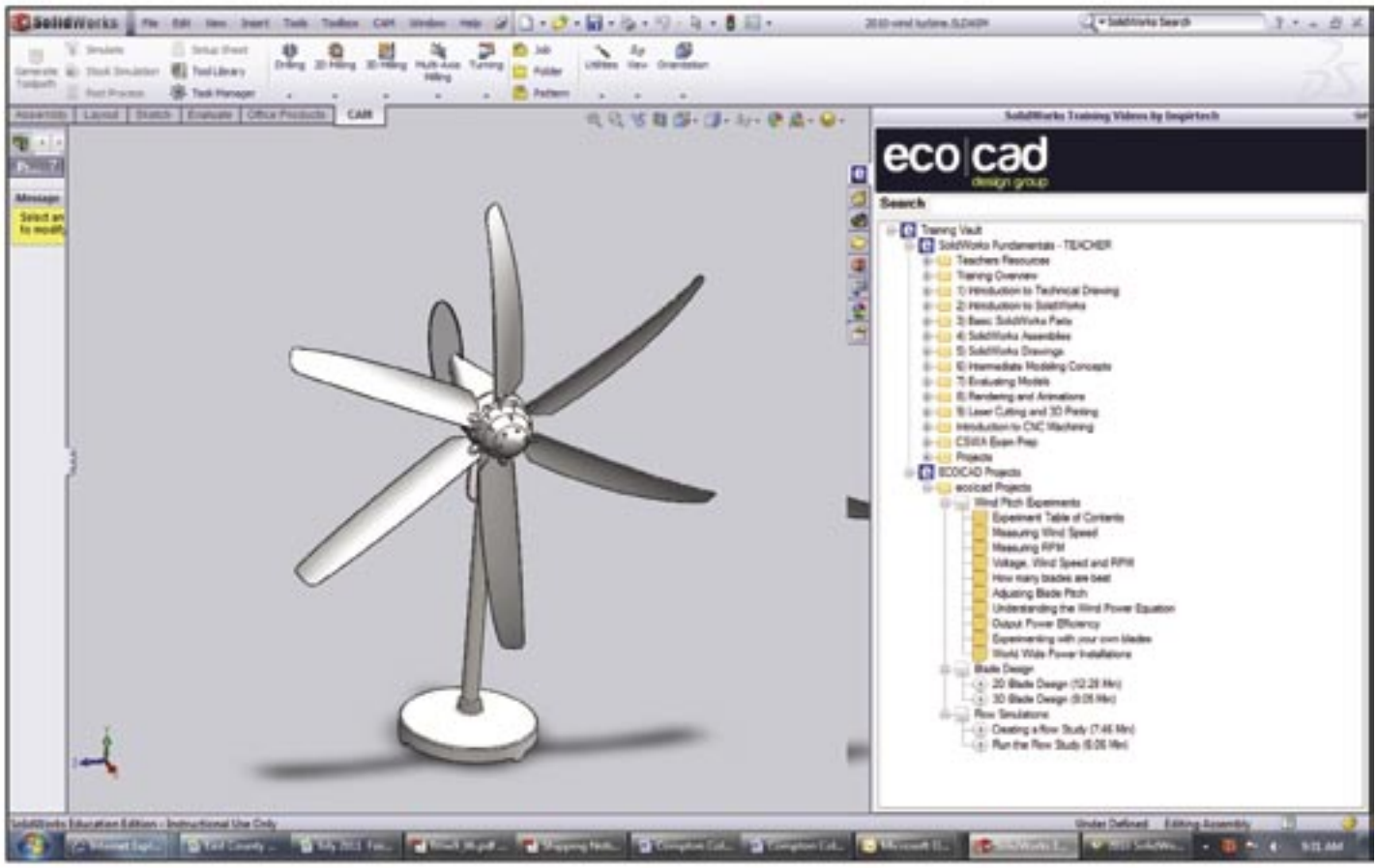

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