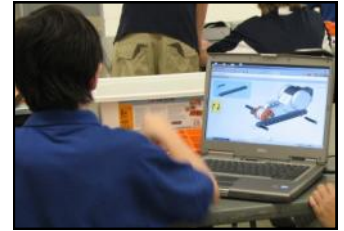




Delaware ETE Flash

Delaware's Most Comprehensive
Resource for Technology
Education.



Special points of interest:

- TSA State Conference
- Resource Round Up
- DETSA Calendar



Features inside this issue include...

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January 2012

Delaware TSA State Conference



On behalf of the State Officers and the Management Team, we are excited to share with you that registration for state conference has started! We look forward to another great conference for your students!

This year the registration fee will be \$40 per participant (advisor, chaperones, students) make checks payable to "Delaware TSA."

The TSA State Conference will be held on April 26 & 27. Registration will be from 8:00-8:30 a.m. on both days with events starting at 8:30 a.m. The conference will end by 5:30 p.m. Wednesday and 3:00 p.m. Thursday. Awards will be presented each day. Please arrive 15 minutes prior to the published start time on both conference days in order to check in and get your students ready for their event.

Registrations will be due by the close of business on February 24, 2012; registrations and/or contest changes received after February 24, but before March 9 will be subject to a \$10 per person late fee. All registrations and/or changes must be received by close of business on March 9, 2012. It is preferred that payment be made prior to conference; however, purchase orders or a check may be brought with the advisor to the conference.

Off-site events and a static events will be due March 23, 2012 at the Collette Education Resource Center, 35 Commerce Way, Suite 1, Dover, DE 19904.

Lunch will be provided on both days. Parents, administrators, and special guests are welcome to come to the TSA State Conference, but they must be registered and provide the required forms. Thank you for your support of TSA; we look forward to seeing you and your students at the state conference!

We are recommending one adult per ten students. TSA business casual dress is the minimum expectation. And please remind all participants that school/district behavior codes will apply. As a requirement of Fairground management, you must have permission slips with you and include emergency information for each student and adult.

Complete and email all Registration Forms to mfitzgerald@doe.k12.de.us and hdavis@doe.k12.de.us. You are not registered unless we receive your forms by email and no On-Site registrations will be accepted. Please contact us by email or at 302-857-3320 if you have any questions.

Please review the guidelines for each event and prepare your students for their competition by following the rules and regulations found in the newest "Total TSA" CD's for Middle School and High School events.



Registration forms and details
can be downloaded from
DETTA.ORG

Delaware TSA - Date Watch



February 13	TSA Advisors Meeting
February 24	Early Registration Due—State officer Applications Due
March 9	Late Registration Due
March 19	Off-Site "Live" problems e-mailed to Advisors (8 a.m.)
March 23	Static Events Due & State officer Interviews



Free Creo Elements 3D CAD



Techdirections is a magazine and website for technology, career/technical, and applied science education.

Expanded Digital Edition now available. Click to view. For the free subscription form, click here.



Smart Draw is the ideal floor plan software

Start with the exact template you need—not just a blank screen. Add your information and Smart Draw does the rest, aligning everything and applying professional design themes for great results every time.
download our floor plan software for free.



PTC Academy

The PTC Education Program enables educators to obtain a site license of Creo Elements/Pro (formerly Pro/ENGINEER) for their

school. after completing free online professional development.

<http://www.ptcacademy.com/>



HoverKid.com

Easy to build models for students. Our projects have been successful for thousands of young adults interested in

building technical projects with inexpensive materials and minimum tools.

Grade school, middle school, high school and universities can all apply these projects into current curriculum to help increase student interest.

Scouts, after school programs and engineering clubs, have all used our projects to keep young minds interested in their respective programs. Our projects are based on using simple tools and extremely inexpensive materials to create stimulating projects such as hovercrafts, rockets, air cars, airplanes, paddle boats, sail boats, spin copters and water rockets.

Bridge Design Contest

West Point Bridge Designer 2011 will introduce you to engineering through an authentic, hands-on design experience. Students can use this tool to model, test, and optimize a steel highway bridge, based on realistic specifications, constraints, and performance criteria.





Google SketchUp Pro Statewide K-12 Licensing Grants

Delaware is now offering Google SketchUp Pro at no cost for Delaware schools.

Google SketchUp Pro is 3D modeling software for professionals. SketchUp is easy and intuitive, allowing anyone to model in 3D quickly and accurately. Using 3D models, designers can make more informed decisions, communicate project details, and share ideas with colleagues and customers to reach a common goal.

SketchUp Pro includes LayOut, a 2D documentation and presentation tool for professionals. LayOut combines 3D models with text and 2D drawing elements to create design documents, construction drawings and compelling digital presentations.

Google SketchUp Pro is a simple but powerful tool for exploring and presenting your ideas in 3D. SketchUp Pro is everything traditional CAD software isn't -- quick to learn and intuitive to use.

Features include

- **Create 3D Models** Using SketchUp Pro, you can create 3D models, either by starting from scratch or by using existing data. Import drawings, CAD plans, photos, aerial imagery and other information, then use the modeling tools in SketchUp Pro to develop your ideas into 3D.
- **Add data to your model** Within SketchUp Pro, you have the ability to add attributes to your model with Dynamic Components. At any point, create a report summarizing the attribute data in your model. Use these reports to extract quantities and take-offs throughout the evolution of your model.
- **Export and Share** Some projects require the use of traditional CAD applications or rendering applications to develop construction drawings, photo-realistic images or to share information. SketchUp Pro can export your 3D model in a number of 2D and 3D formats for use with other applications.
- **Present and Document** For many of your projects, SketchUp Pro, which includes LayOut, is all you will need. LayOut is the 2D companion to SketchUp Pro for creating deliverables like permit and construction drawings, presentation documents and full-screen digital presentations.

REQUESTING GOOGLE SKETCHUP PRO 8 FOR YOUR SCHOOL: Ask your district technology coordinator to request the license codes from **Wayne Hartschuh** by sending an e-mail to **whartschuh@doe.k12.de.us** with the following information: district, school, type of install (network lab, laptop, stand-alone), the platform (Windows or Mac), and number of computers. The information on where to download the software and license codes will be sent to the district technology coordinator for installation at the requested school.

PLEASE HELP SPREAD THE WORD! Please distribute to anyone who might be interested in using Google Sketchup Pro at their school in Delaware!



Dragster Design is the a fun and exciting activity that allows students to explore the design process, while learning the basic principals of **aerodynamic design** and **Newton's Laws of**

Motion. Students start by brainstorming ideas through thumbnail sketches, then develop their ideas into hand sketched orthographic projections. Students then design a 3D model of their dragster using Autodesk Inventor technical design software. Throughout the process of creating a dragster, students must follow specific design requirements and utilize

basic measuring skills. After actual hands on creation of their design, students test their car design in actual class racing competition. Finally the students complete a feedback writing assignment on the unit, and complete an assessment on the design principals learned throughout the unit.



Web Wings

The free WebWings website uses Single-Concept Learning Modules (SCLMs) to teach principles relating to flight. Each SCLM consists of **Pre-Lab, In-Lab and Post-Lab** areas.



City of Materials

Did you ever ask yourself what things are made of, and why? Airplanes,

artificial hearts, automobiles, mp3 players, musical instruments, and so much more? All of these things are made from materials developed by materials scientists and engineers.

This field explores the production, properties,

and utilization of ceramics, composites, electronic materials, metals, polymers, and textiles. Take a look around you - it's easy to see materials engineers play a vital role in our increasingly complex technological society every day.

Explore the wonders of materials science and engineering!



Recycle your old CD-ROM collections

CDs are going the way of the cassette tape, but we've all still got them, and old discs are as common as grass. Don't fret: there are countless ways for you to up-cycle your CDs, from looking on Google for a place to recycle them, to turning them into fun and unique art projects. Here we'll show you seven of the latter, most of which are DIY projects with instructions for how you can replicate the result.



100 Awesome Engineering Projects for Kids

Engineering and fun aren't always two things that kids naturally associate with one another, but there are hundreds of ways to make engineering, physics and design fun

and challenging for kids.

Here are 100 great experiments that will let kids **construct**, play, learn and grow, all while they study the fundamentals of engineering.

Examples include:

Build a confetti launcher. Make any day a party with this fun and engaging project.

Design a simple

machine. Show how machines can make work easier with this flexible project.

Create your own light bulb. Are your kids curious about how light bulbs are made? This project will let them make their own and see how the whole process works.



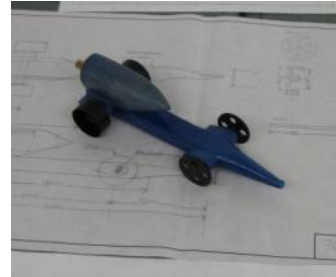


Technology Education 2.0

This technology education web site was designed to provide technology education teachers and

students with a one-stop source for technology, engineering, design, and multimedia related content, concepts, and

resources. This site was designed to supplement laboratory and classroom activities and to promote technological literacy.



Technomoodle is a virtual learning environment that allows students to extend

classroom or laboratory activities online. This 21st century learning environments support

communication and resource sharing between teachers and students.



City Technology

We are a collaboration of college faculty in Engineering and Education, public elementary teachers and children. Our goals are to engage children in exploring the designed world, and in designing new things themselves. Design is the key activity in

engineering and technology, just as inquiry is at the core of science.

When you design something, you learn not only the processes and concepts of engineering - you also draw upon your entire repertory of knowledge and abilities. In other words, engineering design provides contexts for integrating engineering, math, and science.



Feature: Wastewater Engineering

Bathrooms create as well

as dispose of waste: The average person flushes the toilet five times a day, and uses as much as 35 gallons of water. Tom

Broadbent, an industrial design graduate from De Montfort University in Leicester, UK, has designed a way to turn bathrooms into power generators by harvesting energy from water discharged from showers, toilets, and sinks in high-rise apartments. He got his idea after seeing how quickly and forcefully his hotel bathtub drained.



Quizlet is a FREE website where you can generate the **quizzes, flash cards, and study games.** There are over 7 million free sets of flashcards covering every possible subject. It's the best place to play educational games, memorize vocabulary and study online. Features that support technology and engineering include: [Circuits Test](#), [Engineering](#), [Architecture](#), [Design](#) and more!



Backpack Designer Relies on Measurement & Geometry

An essential part of any student's gear is a good backpack. But have your students ever stopped to think about who designs them and how? Introduce them to Columbia Sportswear Designer Chris Araujo. Whether he's measuring the shoulder straps for comfort, calculating the backpack's volume, or designing the shape of the front pouch, math is critical to a good design. Download the classroom activity.



What is an Industrial Designer?

The result of their work is all around us in practically every product we use, but how many students recognize that this is a rewarding, creative career field that will always be in demand? Introduce your students to Hilgard Muller, the Industrial Design Manager at Giro responsible for designing an entire line of sport-performance sunglasses, and give them an inside

look at what Industrial Design is all about. This video also features a companion classroom activity that puts students in role of industrial designers who need to combine design with geometry and statistics to create new wristwatch styles. Watch the movie and download the classroom activity.

Teacher Resources



Technology Teacher Resources

This technology teacher's web site was designed to

help technology education teachers with curriculum design, program justification, unit design, and assessment design. This site also offers,

technology education and STEM news, free teaching resources, an online community, and links to useful sites.



Junk Box Wars

Based on the popular TLC program Junk Yard Wars is the teacher adaptation titled Junk Box Wars



A **Junk Box Wars** challenge pits classroom teams against each other

to build projects from **junk box** objects.

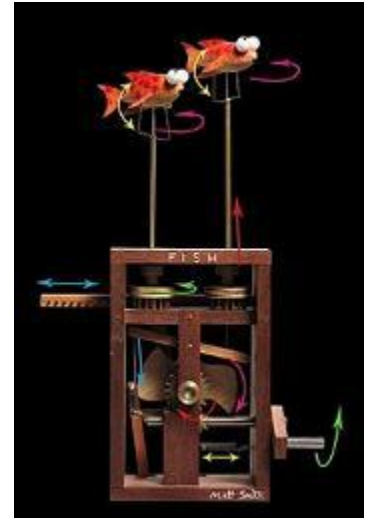


spaghetti structure that can support a marshmallow. They learn how engineers collaborate to design, test, and improve on their ideas, as well as to examine hidden assumptions that can derail the creative process and final product.

Lesson: Marshmallow Design Challenge

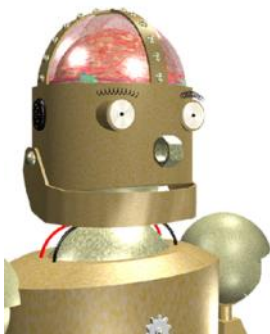
In this lesson, student

teams have a limited period of time (18 minutes) to build the tallest free-standing



Understanding Motion

We hosted a workshop inspired by [Cabaret Mechanical Theatre](#). We focused on the motion of automata to begin understanding the mechanisms. Here are a few of the explorations and ideas that surfaced during the workshop.



Blender Animation
3D Computer Animation Utilizing "Free" Software

allows the user to create photo realistic graphics or 3D animated videos. Blender is an open-source software provided free of charge from the Blender foundation. For more information please visit www.blender.org.

Blender Animation: 3D Computer Animation Utilizing Free Software

Blender is 3D computer animation software that



PhET Blast a Buick out of a cannon! Learn about projectile motion by firing various objects. Set the angle, initial speed, and mass. Add air resistance. Make a game out of this simulation by trying to hit a target.

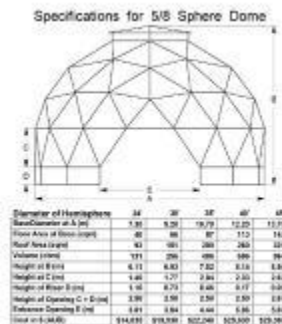
Inventing with Polygons

Chuck Hoberman's inventions are more than just technological marvels; they're works of art. See how basic principles of geometry help him create extraordinarily strong, expandable structures.



Several math extensions include, **Polygon Percent Patterns** Subject: Mathematics Topics: Geometry; Percents and,

Triangles in Architecture Subject: Mathematics Topics: Geometry (polygons)



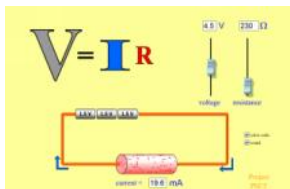
Architect Studio 3D

Design a House with Frank Lloyd Wright



Design Studio

On this Web site, you can design a house, walk through it in 3D, and then share it with the world. You can also learn more about architecture, past and present, and explore Frank Lloyd Wright's life and work.



PhET provides fun, interactive, research-based simulations for free! See how the equation form of Ohm's law relates to a simple circuit. Adjust the voltage and resistance, and see the current change according to Ohm's law. The sizes of the symbols in the equation change to match the circuit diagram.

Squishy Circuits



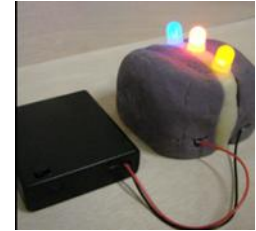
Squishy Circuits

You can use anything that conducts electricity to make an electrical circuit—copper, pencil

lead, fruit, even play dough!

Adding salt to the dough helps electricity move through the material. With enough power, the

electrical current can light LEDs and sound a buzzer!



[More ideas are here!](#)

Interactive Energy Simulations and More

The University of Colorado PhET program has developed research base physics, chemistry, biology, earth science, and math simulations that are free to use in your classroom.

situations and the unseen scientific phenomena behind it.

Check out the great simulations related to energy under the physics tab at:



<http://phet.colorado.edu/index.php>

They also include teacher tested lessons to go along with the simulations. This can help students make connects between real world

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Delaware TSA – Middle School 2012 State Conference Events

2012 Delaware TSA Contests: Advisors, please note the following. Registration for State DETSA Conference will begin in January and due on February 24. Please begin to organize your chapters and begin planning for state and national conference early. Trophies/medals (1st, 2nd, 3rd) will be awarded by both the actual score earned in competition and/or by the recommendation of judges and state advisor.

Off Site Events Emailed to Advisors March 19 @ 8 a.m.	Static Events Due March 23 @ 5–7 p.m. Collette Center - Room A	“Live” Events TSA State Conference April 26, 2012	“Live” Events TSA State Conference April 27, 2012
*Career Prep - (Written) 3 individuals	Community Service Video - 3 teams, 1-2 members per team	Dragster Design - 10 individuals	Chapter Team - 2 teams, 6 members per team
*Chapter Team - (Written) 2 teams, 6 members per team	Digital Photography - 3 individuals	Electrical Applications - 4 individuals	Challenging Technology Issues -3 teams, 2 members per team
*Communication Challenge - (Design Problem) 2 individuals	Video Game Design - 3 teams, 2 members per team	Flight - 5 individuals	Prepared Speech - 2 individuals
*Electrical Applications - (Written) 4 individuals	Inventions & Innovations - 2 teams, 3 members per team	Problem Solving - 3 teams, 2 members per team	Techno Talk - 2 teams, 2 members per team
*Technology Bowl - (Written) 6 individuals	Promotional Design - 4 individuals	Structural Engineering - 3 teams, 2 members per team	
*Technical Design (Design Brief) - 4 individuals	Website Design - 3 teams, 3 members per team	System Control Technology - 2 teams, 3 members per team	
		Technology Bowl - 1 team, 3 members	
		Transportation Systems - 4 individuals	
		*** Maglev Vehicles - 6 individuals	
		*** Model Rocketry - 10 individuals	



1/03/12


* NOTE: Off site events turned in with static events

*** NOTE: Delaware only event

Delaware TSA – High School 2012 State Conference Events

2012 Delaware TSA Contests: Advisors, please note the following. Registration for State DETSA Conference will begin in January and due on February 24. Please begin to organize your chapters and begin planning for state and national conference early. Trophies/medals (1st, 2nd, 3rd) will be awarded by both the actual score earned in competition and/or by the recommendation of judges and state advisor.

Off Site Events Emailed to Advisors March 19 @ 8 a.m.	Static Events Due March 23 @ 5–7 p.m. Collette Center - Room A	“Live” Events TSA State Conference April 26, 2012	“Live” Events TSA State Conference April 27, 2012
*CAD 2D, Architecture - (Design Problem) 4 individuals	Digital Video Production - 3 teams, 2-3 members per team	Construction Renovation - 3 teams, 2 members per team	Extemporaneous Speech - 2 individuals
*CAD 3D, Engineering - (Design Problem) 4 individuals	Engineering Design- 2 teams, 3 members per team	Dragster Design - 10 individuals	Chapter Team - 2 teams, 6 members per team
*Career Comparisons - (Written) 3 individuals	Fashion Design - 2 teams, 3 members per team	Flight Endurance - 5 individuals	Prepared Presentation - 3 individuals
*Chapter Team - (Written) 2 teams, 6 members per team	Future Technology Teacher - 3 Individuals	Structural Engineering - 3 teams, 2 members per team	Debating Technological Issues - 3 teams, 2 members per team
*Desktop Publishing (Design Problem) - 2 individuals	Music Production - 3 teams, 1-3 members per team	System Control Technology - 2 teams, 3 members per team	
*Technology Bowl - (Written) 6 individuals	Photographic Technology - 2 individuals	Technology Bowl - 1 team, 3 members	
**Technical Sketching & Application - (Written & Design Problem) 4 individuals	Promotional Graphics - 3 individuals	Technology Problem Solving - 3 teams, 2 members per team	
	Webmaster - 3 teams, 3 members per team	Transportation Modeling - 4 individuals	
	Video Game Design - 3 Teams, 2 members per team	*** Maglev Vehicles - 6 individuals	
		*** Model Rocketry - 10 individuals	



1/03/12

* NOTE: Off site events turned in with static events

** NOTE: Sketching only! - Drafting tools prohibited.

*** NOTE: Delaware only event

TSA State Conference — Planning Draft 1/9/12

APRIL 26, 2012— Delaware Technology Student Association—State Conference

Time	Abbreviation	Level	Event	Location
8:00 - 8:30	-	Advisor	Registration	Dover Building
9:00 - 10:00	DD / DDMS	HS / MS	Dragster Design	Dover Building
9:00 - 10:00	MR / MRMS	HS / MS	Model Rocketry (Launch @ 1pm)	Ex. Hall
9:00 - 10:00	TSMS	MS	Transportation Systems	Ex. Hall
9:00 - 10:00	TM	HS	Transportation Modeling	Dover Building
9:00 - 4:00	-	ALL	To Be Announced	Kent
9:15 - 11:30	SE / SEMS	HS / MS	Structural Engineering	Ex. Hall
9:30 - 11:30	FE / FLYMS	HS / MS	Flight Endurance / Flight	Dover Building
11:30 - 1:00	-	ALL	Lunch	Kent
12:00 - 12:30	-	HS / MS	TSA Voting Delegates	Board Room
1:00 - 2:00	EAMS	MS	Electrical Applications	Dover Building
1:00 - 3:00	SCT / SCTMS	HS / MS	System Control Technology	Dover Building
1:00 - 3:00	MV / MVMS	HS / MS	Magnetic Levitation Vehicles	Ex. Hall
1:00 - 3:00	TPS / TPSMS	HS / MS	Technology Problem Solving	Ex. Hall
1:00 - 3:00	CR	HS	Construction Renovation	Dover Building
3:30 - 4:00	TB / TBMS	HS / MS	Technology Bowl - Live	Dover Building
4:00 - 5:00	-	ALL	General Session/Awards	Dover Building
5:00 - 5:30	-	All	Pick-up your Work/Items	All areas

APRIL 27, 2012— Delaware Technology Student Association—State Conference

Time	Abbreviation	Level	Event	Location
8:00 - 8:30	-	Advisor	Registration	Dover Building
8:30 - 9:30	CT	HS	Chapter Team	Dover Building
8:30-9:30	CTIMS	MS	Challenging Technology Issues	Dover Building
9:30 - 10:30	CTMS	MS	Chapter Team	Dover Building
9:30-10:30	DTI	HS	Debating Technological Issues	Dover Building
8:30- 9:30	PSMS	MS	Prepared Speech	Dover Building
9:30 - 10:30	ES	HS	Extemporaneous Speech	Dover Building
9:30 - 11:30	TTMS	MS	Techno Talk	Dover Building
10:30-11:30	PP	HS	Prepared Presentation	Dover Building
11:30 -12:30	-	ALL	Lunch	Dover Building
12:30 - 1:00	-	All	General Session/Awards	Dover Building
1:00 - 1:30	-	All	Pick-up your Work/Items	Dover Building



**Delaware Technology Student Association
Planning Calendar**

“My daughter began as a child who could barely plug in a toaster. By the time she finished high school she was testing circuits, creating valves and pressure devices and using tools from machine shops. She may not become an engineer by vocation, but she is so much better for having learned these principals.”

D. Layne - parent of former North Carolina TSA Member, Kristen Layne

February

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	1	2	3	4
5	6	7 DE TSA Business Meeting	8	9	10	11
12	13 DE TSA Advisor's Meeting	14	15	16	17	18
19	20	21	22	23	24 State Officer Applications & EARLY Conf Reg Due	25
26	27	28	29	1	2	3

DE TSA was honored in 2011 for raising nearly \$47,000 for the American Cancer Society as part of its national service project. February is a great month to show your heart! Begin planning a service project to raise money to help fund the vital research, education, advocacy, and patient services for the American Cancer Society.

