



#makerspace

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★AWARD WINNING ARCHITECTURE & PRODUCT INNOVATION & DESIGN PATHWAYS★

ARTS, MEDIA & ENTERTAINMENT | BUILDING & CONSTRUCTION TRADES | ENGINEERING & ARCHITECTURE | MANUFACTURING & PRODUCT DEVELOPMENT



THINK + *Design* + BUILD = Create

**CTE- BRINGING INDUSTRY INTO YOUR CLASSROOM
WITH REAL WORLD PROJECTS & SKILLS**



**PRODUCT INNOVATION & DESIGN
#makerspace**



Meet Your Presenter



Peter Wachtel

Architecture & Product Design
Adolfo Camarillo High School



OUR PEDAGOGY:



**THE TEACHING TECHNIQUES THAT WE USE IS IMAGINATION.
WHAT EVER IS AROUND YOU IS WORTHY OF EXPLORATION.
THE DESIRE AND LOVE FOR WHAT YOU DO•MAKE IT PART OF YOUR LIFE,
AND THE SKILLS, EXPERIENCE, AS WELL AS THE WISDOM WILL COME.**

THINK + *Design* + **BUILD** = *Create*

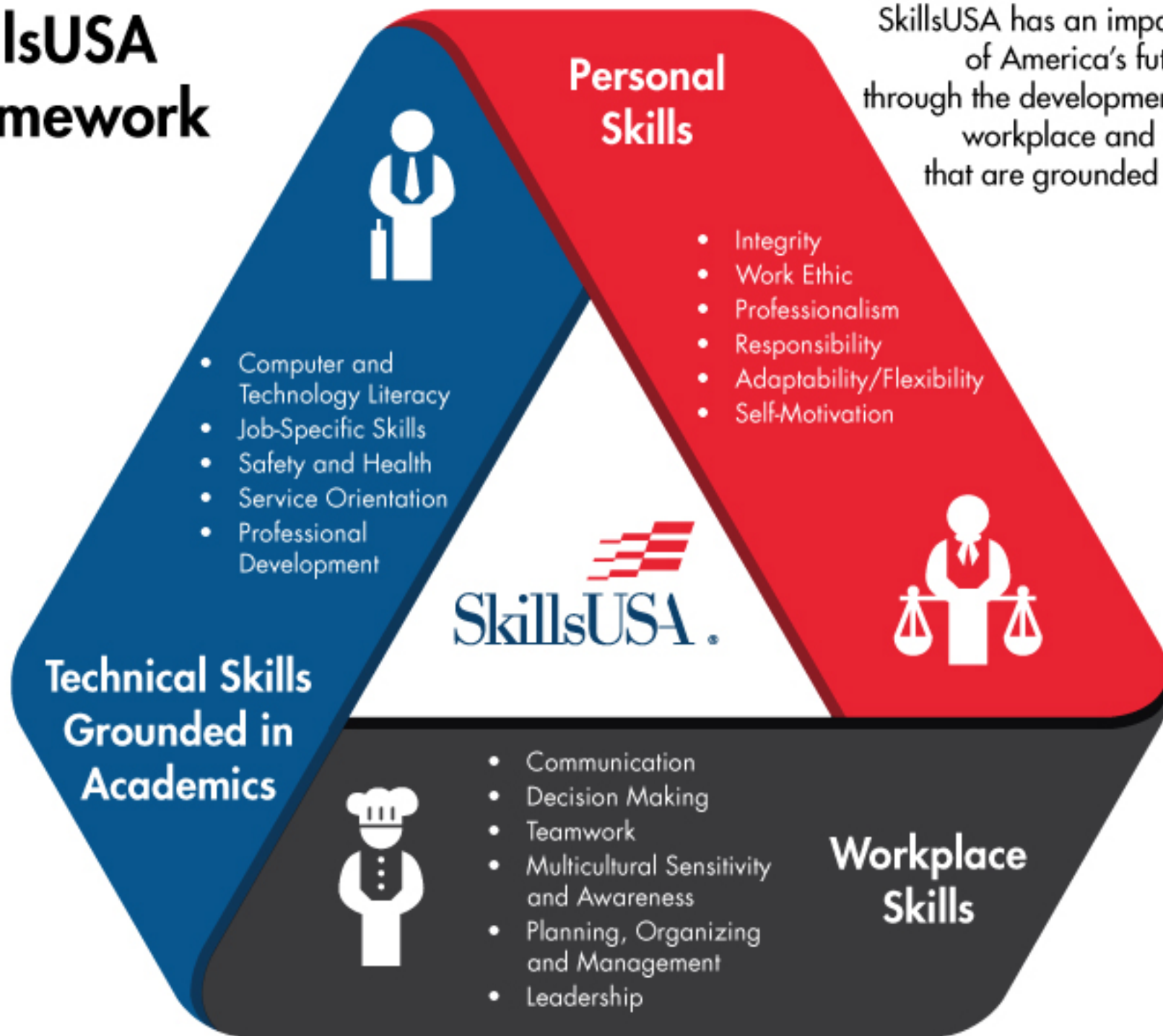
IKIGAI

A Japanese concept meaning 'a reason for being'



SkillsUSA Framework

SkillsUSA has an impact on the lives of America's future workforce through the development of personal, workplace and technical skills that are grounded in academics.





RECORDS

SPOTLIGHT

BOOKS

BUSINESS SOLUTIONS

NEWS

ABOUT US



Students break record with colossal charcuterie board longer than two blue whales

By Ana Rahlves | Published 11 April 2023









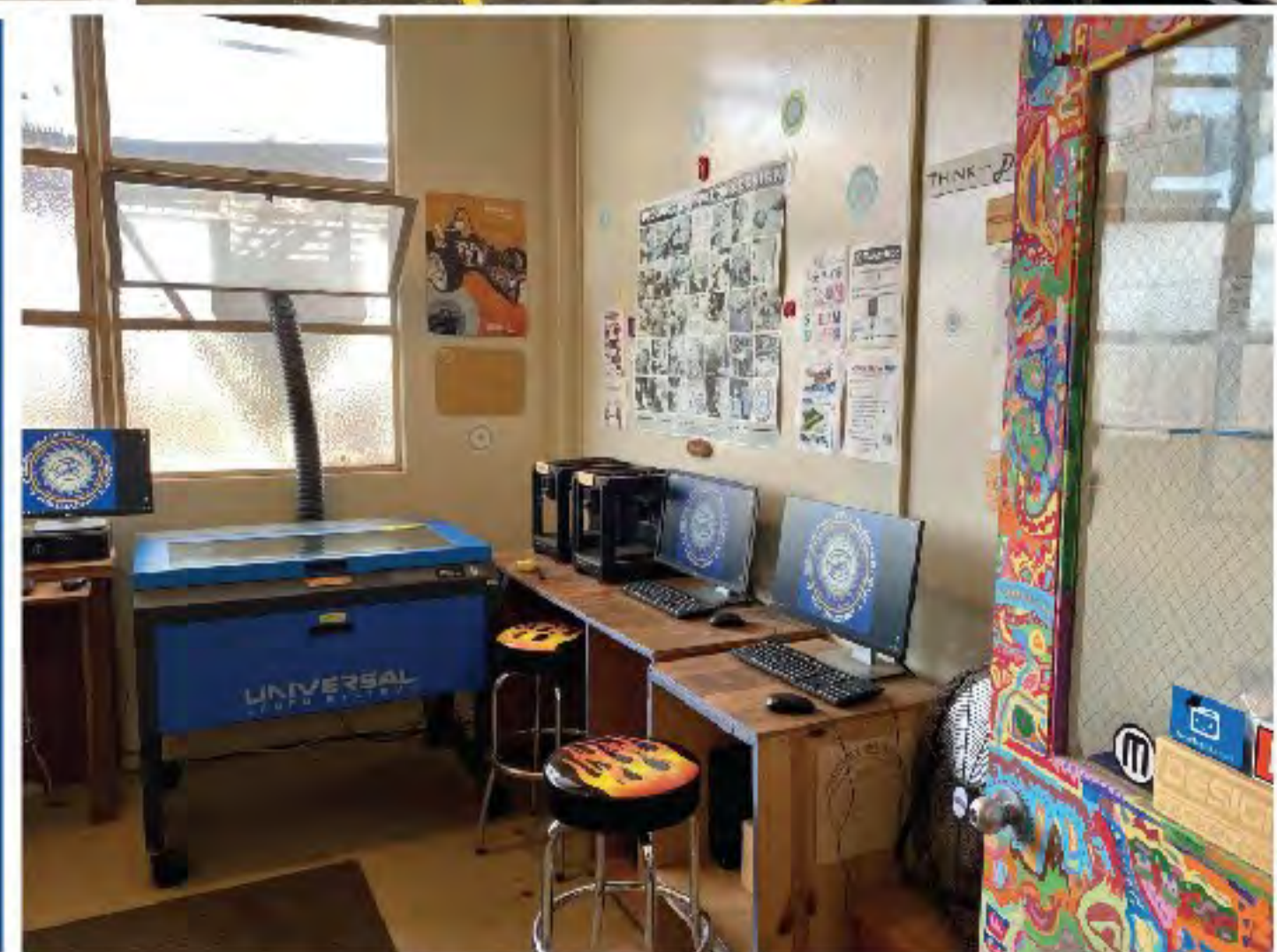
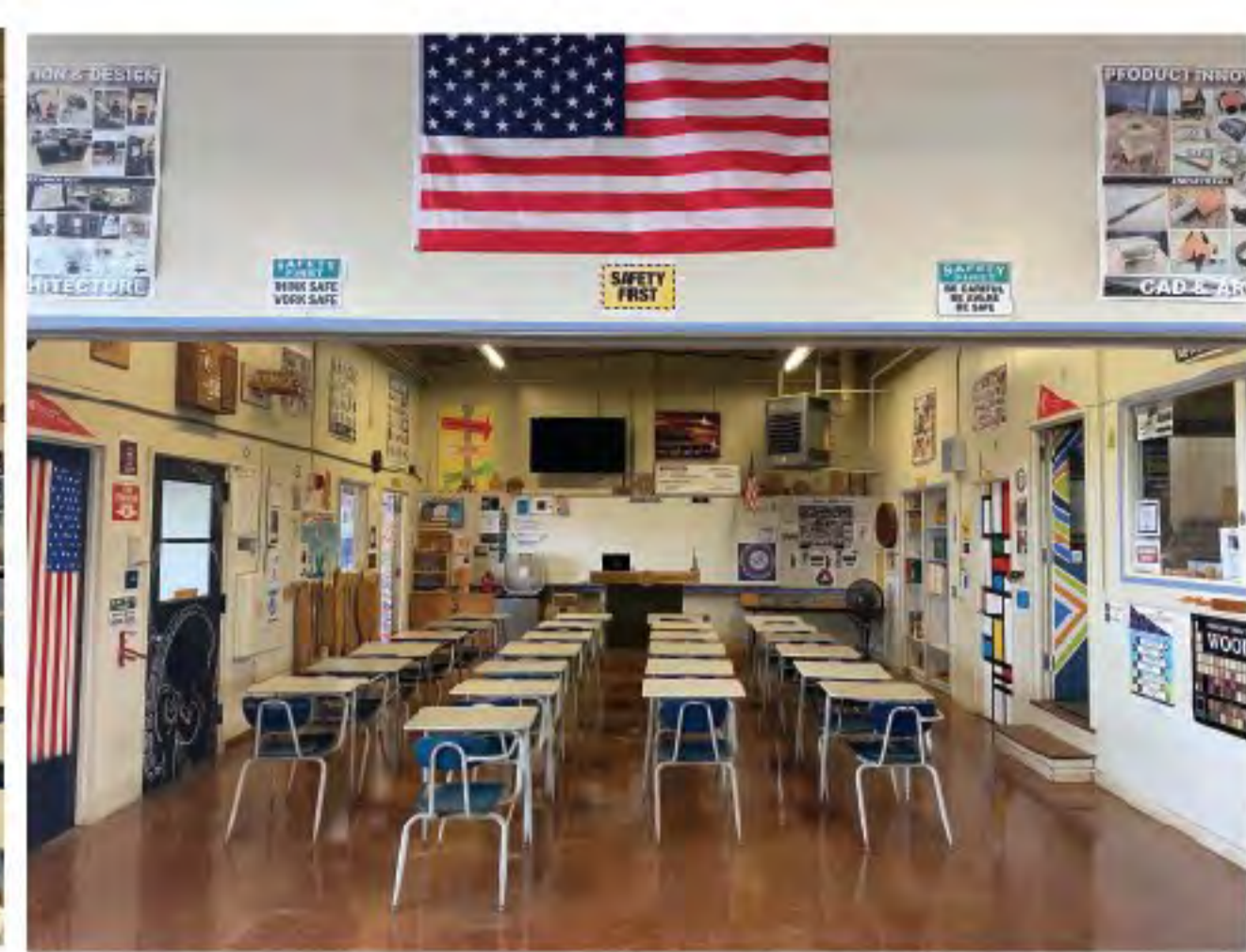
Think + Design + Build & Create

*I've always been a kid at heart, and what brought me to teaching is that I am **always curious about things, how they work, how they were made, and if I could make a difference.** We get to be ourselves, think, explore, design, build and create things that never existed before.*

Began my teaching after earning a master's degree from Pratt Institute. A Dean there agreed to let me teach a course in toy design, and I was hooked. From there, went on to teach at *Parsons School of Design, Otis School of Art & Design and Massachusetts Institute of Technology* while also working as a *designer and inventor for Mattel, Six Flags, Universal Studios* and other companies.

In 2019 we Won Harbor Freight Tools for Schools Prize for Teaching Excellence & \$50,000!





ARCHITECTURE PRODUCT INNOVATION & DESIGN ADOLFO GAMARILLO MAKERSPACE

PRODUCT INNOVATION & DESIGN



Band Saw



Router



Scroll Saw



SOFT SKILLS



Power Tools



Measuring



Dremel



Laser



3D Printing



Drill Press



Jointer



Nail Gun



Collaboration



Hand Tools



Power Hand Drill



Responsibility



Chop Saw



WOODSHOP SAFETY



Hand Tools



Hole Punch



Hand Circular Saw



Community



Table Saw



Sanding



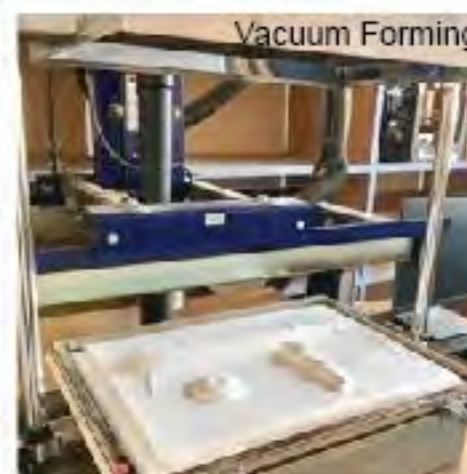
Lathe



Band Saw



Planer



Vacuum Forming



Hand Tools



Radial Arm Saw



Glueing



WOOD SHOP STORE



Hand Sander



Teamwork



INDUSTRIAL TECHNOLOGY

THINK + *Design* + BUILD = Create



PRODUCT INNOVATION & DESIGN #makerspace



PRODUCT INNOVATION & DESIGN #makerspace

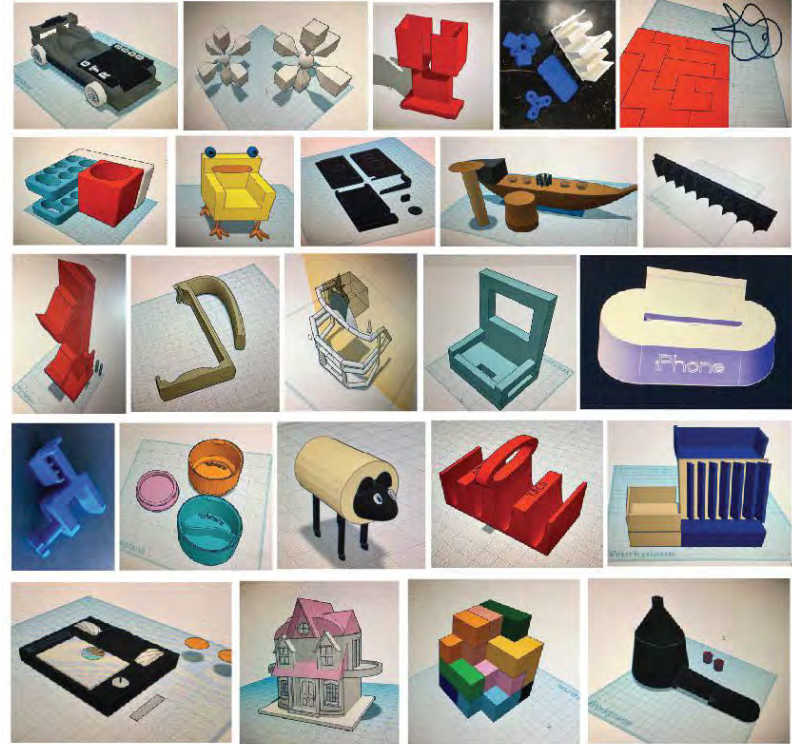


HARBOR FREIGHT TOOLS FOR SCHOOLS



Expand Your Curriculum + how it Prepares Students for the Job Market

- Show them what you can do! **STEAM** everything! Students learn how things are made and are able to *Work, Design & Collaborate with Real World Skills.*
- Our curriculum is a combination of **Manufacturing & Product Development, Arts, Media, and Entertainment, Building Trades & Construction/ STEAM** and is articulated with several community and state colleges, and aligned with the needs of businesses by Creating "**Real World**" projects. **Articulated over 100 Students & 20 Scholarships for College.**
- Students operate a business creating custom-made items. **In 4 Years they have made over 100 custom products and raised over \$20,000!**

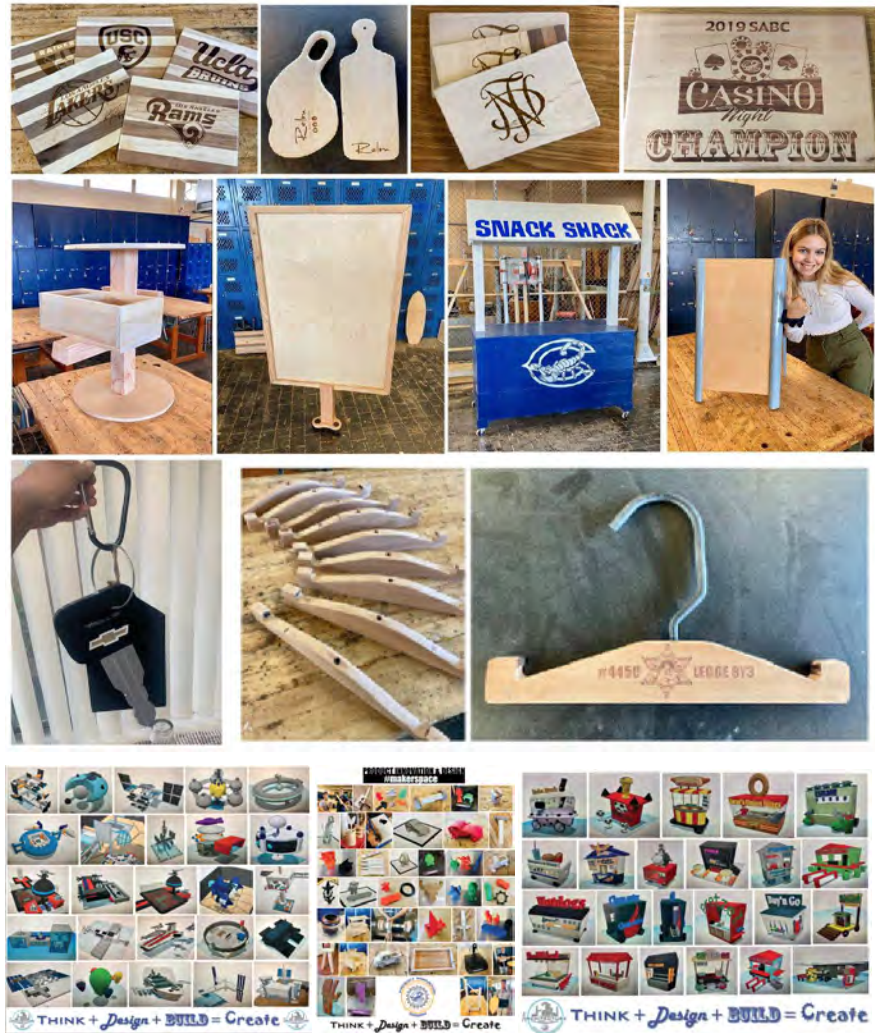


THINK + *Design* + BUILD = Create

Teach Real World Skills

My curriculum program + how it prepares students for the job market

- **Successes:** Students learn how things are made and are able to Work, Design & Collaborate with Real World Skills.
- Created 5 New A-G CTE/ **S.T.E.A.M Classes:** *Product Innovation & Design, Architectural Drafting & Design & Advanced Architecture - Articulated over 100 Students & 20 Scholarships for College.*
- Our Product Innovation & Design Curriculum has been **adopted by over 40 other High Schools** across the country.
- We Cross Collaborate with *Robotics, Art, Agriculture, Business, ASB & Drama Clubs* on Multiple projects.
- **Learning Moments:** Not all students are the same, so not all projects are the same.



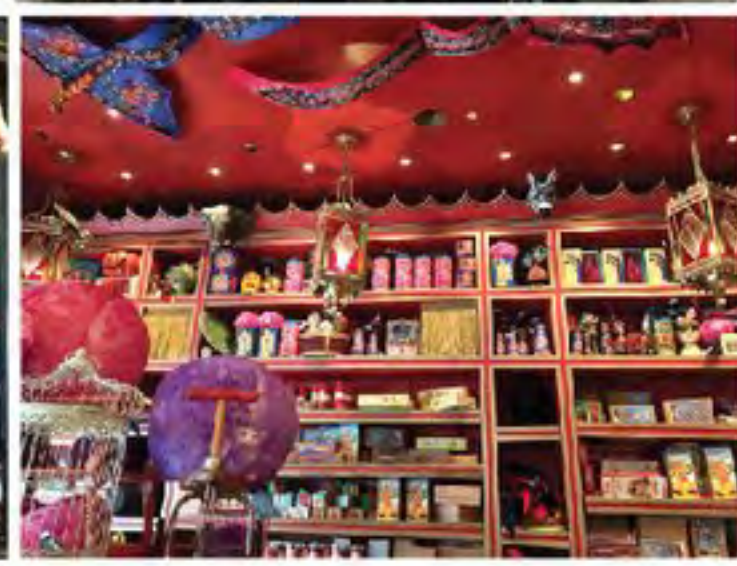
What Student Collaboration with Real World Companies does for Students

Real Companies + Real Projects

Universal Studios Project:

- Students were asked to design the new Harry Potter Themed promo cup for the Universal Studios Hollywood.
- Students met with the Universal Design Team, had a Tour of the Park and were given the guidelines to follow in the designs.
- Students presented their ideas to the park creatives, and were given feedback, ideas and learning points on their designs.





Collaborate with Real Companies

- Students asked if they could design new tools for **Harbor Freight Tools**, since we use them everyday.
- Students met with the Design staff, researched, and design & developed new tools for Harbor Freight Tools.
- Students Presented to Harbor Freight, and it was a big success! In **2019 we Won Harbor Freight Tools for Schools Prize for Teaching Excellence & \$50,000!**



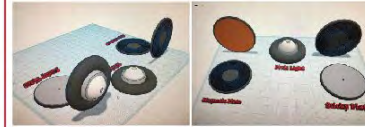
Tyler Morrison & Taron Robinson

Lightup Adjustable Screwdriver-
so you can see in dark tight spots



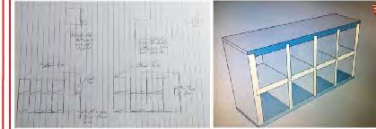
Camden Toisma

Adjustable Magnetic Pivot Light



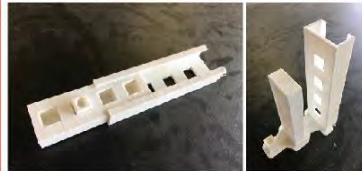
Will Campbell

Adjustable E-Track for Tools:
For storing and moving multiple tools around when needed for a job.



Kenny Hongsermeier & Vishnu Krishnamoorthi

Adjustable Ramp Blocks for loading
& unloading vehicles, etc.



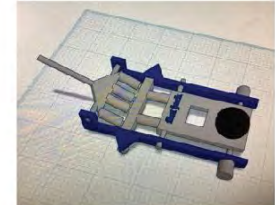
Daniel Moncayo

Ear protection with lights.



Josh Jamelkowski

Mini Jack for lighter items
that is quicker to use.



Teach Real World Skills

Students have Designed "**Real World**" Project for: *Six Flags Magic Mountain, Universal Studios, Mattel, Santa Barbara Zoo, TreeHouse Masters, KidSTREAM & Harbor Freight Tools.*

- Students had a Field trip to the Santa Barbara Zoo, interviewed with Park Staff & Researched, Online.
- Using the existing animal footprint- Students Designed & developed a better environment for the animals and viewing experience for park guests- water, shelter, food, habitat and quality of life.
- Students used Design, drafting, environmental design, space planning, environmental research, communication, graphic design, critical thinking, problem solving, urban planning, applying technology, health & safety, ethics, global understanding, creativity & innovation, legal responsibility, time management, teamwork & leadership.



Teach Real World Skills with Real Companies

Treehouse Masters Project:

- Students were tasked at building a livable Treehouse.
- They watched numerous episodes of Treehouse Masters.
- In the end, students submitted designs to Pete Nelson of Treehouse Masters and got a great reply!
- Students learned how to research an reach out to companies for valuable learning tips.



Dear Peter and students;

Thank you so much for reaching out to Nelson Treehouse and Supply! Congratulations on joining the ranks of treehouse designers!

You have done fantastic jobs designing your treehouses! We are really impressed and thank you for sharing your photos, they are all very unique and exciting!

From all of us here at Nelson Treehouse and Supply, we wish you the best with your exciting project.

Best,
The NT&S Team

Nelson Treehouse and Supply
PO Box 1135
Fall City, WA 98024
w | www.nelsontreehouse.com
e | info@nelsontreehouseandsupply.com



Research

See what companies are in line with what you teach and reach out to them.

Mattel/ Hot Wheels Project:

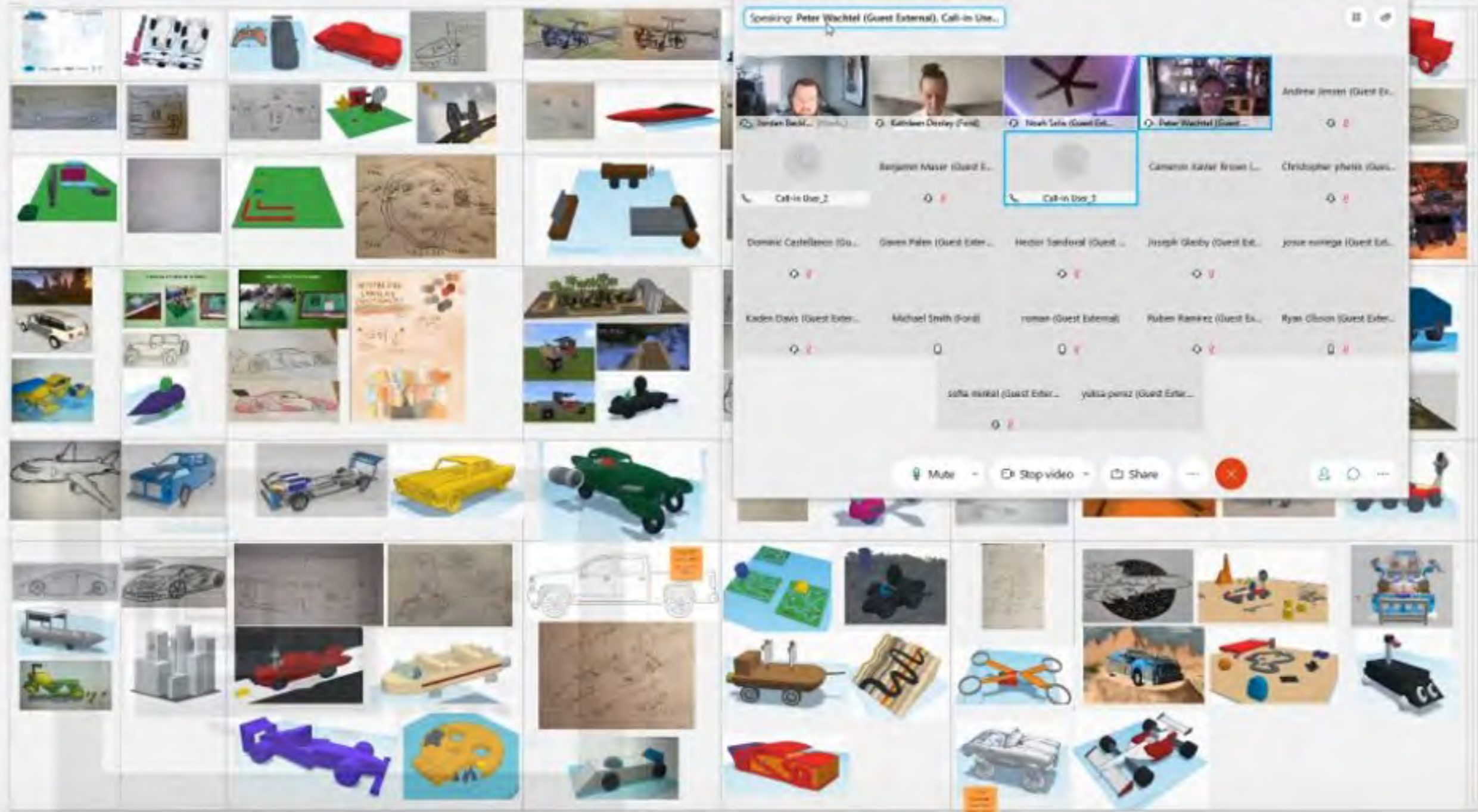
- Student visited Mattel and met with the design staff. They were given a tour of Mattel, and asked to design some space aged sets for their Hot Wheels product.
- Students presented their design to mattel and were given valuable feedback, knowledge and ideas of how to design and develop a product line.
- Mattel showed students the history of their toys as well as a Sneak peek at the Hot Wheels garage!





Sign up to customize and customize the board. Sign up for free

Need more background on the games these are being created for... I can think of some interesting premises, but I'd much rather hear the student's ideas!

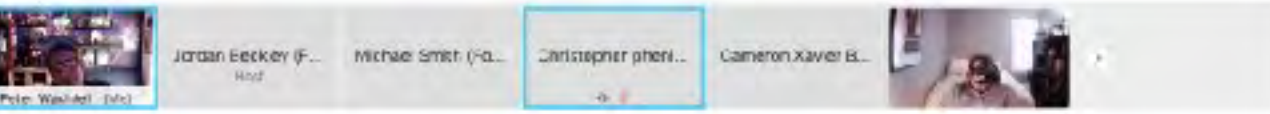
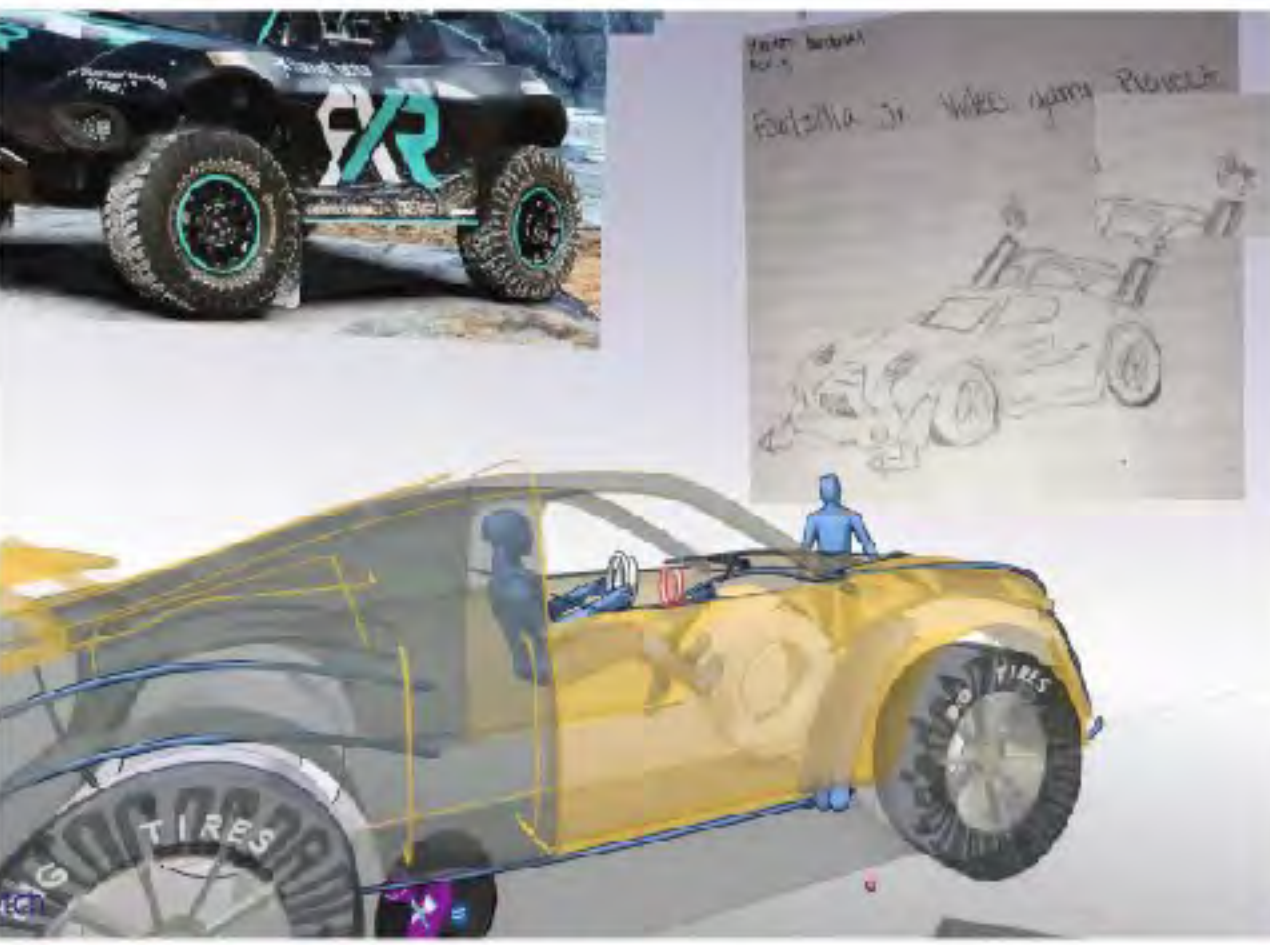
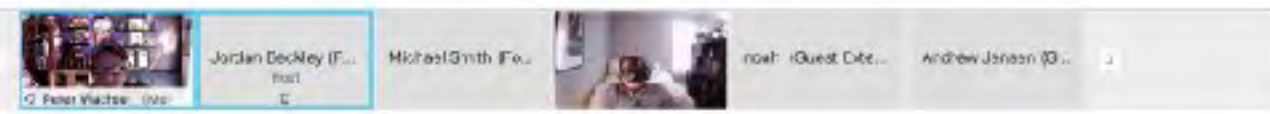
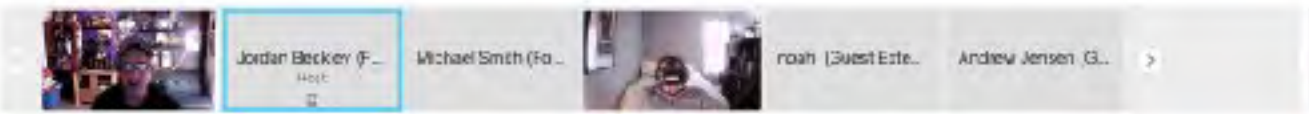
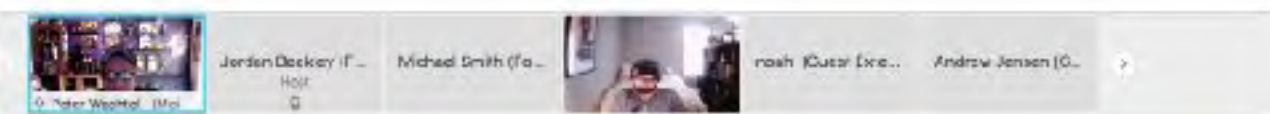


Zoom Meeting Window

Speaking: Peter Wachtel (Guest External), Call-in Use...

Jordan Beck...	Kathleen Desley (Ford)	Nash Saha (Guest Ex...	Peter Wachtel (Guest...
Benjamin Maser (Guest Ex...	Call-in Use_2	Call-in Use_3	Cameron Karlar Brown L...
Christopher phelis (Gues...	Domini Castellanos (Gu...	Gwen Palen (Guest Exter...	Hector Sandoval (Guest ...
Joseph Glasby (Guest Ed...	Josee vanige (Guest Ed...	Kaden Davis (Guest Exter...	Michael Smith (Ford)
roman (Guest External)	Ruben Ramirez (Guest Ex...	Ryan Gibson (Guest Exter...	safa markal (Guest Exter...
yulka penz (Guest Exter...			

Mute Stop video Share



Develop Student Opportunities for
Work-Based Learning through Real
World Projects

INNOVATION & DESIGN #makerspace



ENGINEER A CAREER IN PRODUCT DESIGN

Do you excel at finding solutions, or have a creative mind and want to see your ideas blossom into reality? A career in product innovation and design can be your opportunity to create something remarkable and maybe even world-changing! This pathway will teach you product design, concept sketching, CAD development, modeling, and many more real-world industry applications. Reel in the opportunity to learn, build, and refine the knowledge needed to achieve your dream. Think, Design, Build, CREATE!

Get a jump start on your college future by earning college and real-world skills you can use for your career.



BUILD YOUR DREAM CAREER

The Product Innovation and Design Pathway gives students the opportunity to explore their creativity by designing projects using real-world tools and technologies. Students will learn to think as designers through project-based learning, presentations, discussions, and critiques. This course incorporates the full power of "STEAM" - a cross-curriculum collaboration between Science, Technology, Engineering, Art, and Mathematics. Students will use and learn various 3D computer programs, tools, and machines for designing, rendering, inventing, model-making, CAD, 3D printing, 3D modeling, lasers, manufacturing, and development. This integrated, intensive, multi-year sequence of career guidance, coursework, and work-based learning gives students knowledge and experience for a competitive advantage in their career. Career Pathways help students explore their talents and use their experiences in the classroom to select a career path they're passionate about.

PREPARE IN THE CLASSROOM
Build a strong foundation with A-G

GET REAL EXPOSURE
Take what you learned out into the real world

DESIGN A CAREER IN ARCHITECTURE

Whether you have a vision of an idea you know could be built into something extraordinary, or the high city skyline of a beautifully built home inspires you, the Architecture Pathway could be your start to a rewarding career as an architect. Follow your passion by learning the necessary skills needed to build your dream into a vibrant reality. This pathway teaches students the use of tools, computers, and equipment to enable them to translate an idea into a finished project.

PREPARE IN THE CLASSROOM
Build a strong foundation with A-G

GET REAL EXPOSURE
See what you learned in the classroom

BUILD YOUR DREAM CAREER

The Adult Certificate Pathway will give students an opportunity to explore their talents and use their experiences in the classroom to select a career path they're passionate about. The Adult Certificate Pathway is a cross-curriculum collaboration between the disciplines of Science, Technology, Engineering, Art, and Mathematics (STEAM), all of which are integrated into the real world of architecture. Career Pathways help students explore their talents and use their experiences in the classroom to select a career path they're passionate about.

PREPARE IN THE CLASSROOM
Build a strong foundation with A-G

GET REAL EXPOSURE
See what you learned in the classroom



DISTRIBUTE pts TO
POWER UP YOUR P-38

- ▶ OFFENSIVE PWR
 - DEFENSIVE PWR
 - ENERGY LEVEL
 - SPEC'L WEAPON
 - SW TIME LIMIT
- REMAINDER 3pts
MAY BE DISTRIBUTED



The Effect on Students

Engagement Level: Students express their creativity by designing projects using *real-world tools and technologies*, and learn to think as designers through project-based learning, presentations, discussions, and critiques, and learn *various 3D computer programs, tools, and machines for designing, rendering, inventing, model-making, CAD, 3D printing, 3D modeling, lasers, manufacturing and development.*

Commitment to Students: This integrated, immersive, multi-year sequence of career guidance, coursework, and work-based learning gives students knowledge and experience for a competitive advantage in their career, and *classes are articulated with college for credits.*

It's not just a Grade: Helps students explore their talents and use their experiences in the classroom to select a career path they're passionate about: *Industrial & Product Design, Automotive Design, Furniture Design, Set & Exhibit Design, Interior Design, Engineer or Architect in college with a starting salary between \$55-\$85 per year!*

Building Confidence: Class projects include “Real World” design projects inspired by *guest speakers, industry field trips, possible internships, work experience, and opportunities for employment.*



CAL POLY



Student Engagement in the Classroom: How, Why and What to do with your Students to get the Best Results!



TEN ELEMENTS OF GOOD THINKING:

Have students use this Checklist to help them think creatively, create and improve their work.

1. Is it fun.
2. Is it interesting.
3. Is it durable and memorable.
4. Does it stimulate creativity and imagination.
5. Does it Encourages inquisitiveness and resourcefulness.
6. Is it a tool for learning.
7. Is it challenging, yet not frustrating.
8. Does it invite new & repeated use.
9. Does it involve interaction.
10. Does it addresses developing needs.

A+



Jay wuz here!

Created by: Peter Wachtel

THINK + *Design* + BUILD = Create

How to get in contact and work
with real industries and companies

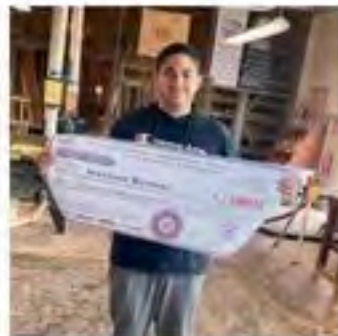
Reach Out & Connect

Student Collaboration with Companies

- Reach out locally & nationally
- Builds student **Creativity**
- Uses **STEAM** (Science, Technology, Engineering, Art & Math)
- Creates **Real World Skills**
- Mimics **Work Based Learning** because Students have **Direct interaction with what they're learning.**
- Opens up **Collaboration & Teamwork**
- More Employment Opportunities & **Workforce preparation**
- **Critical Thinking Skills** - being **involved** in the design thinking process, students get more **motivated** and **engaged**
- **3D Printing becomes an everyday tool** - if you think it, you can print it!







\$1000 WACHTEL CTE SCHOLARSHIP WINNERS!





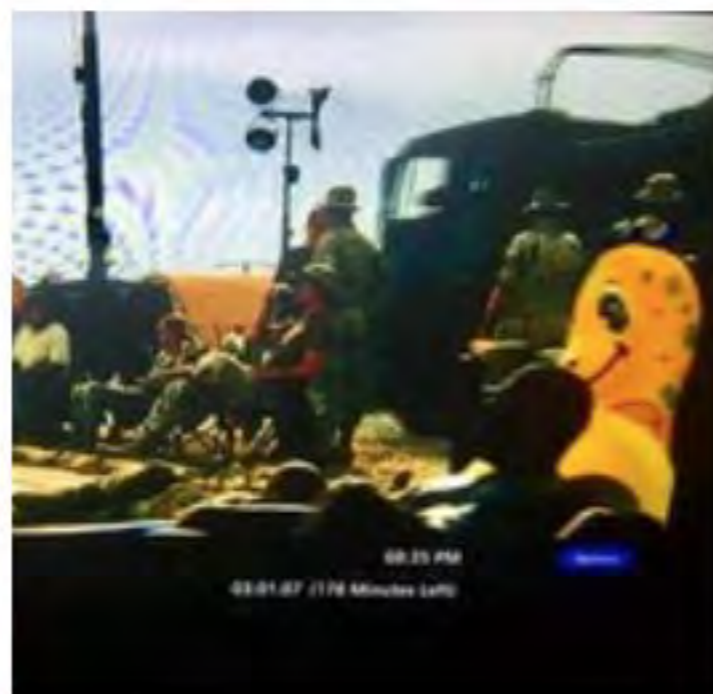
The Toy Box

Episode 104 | **Season 104** | **Episode 104** | **Season 104**

The Toy Box - Show #104 - Air Date: 5/15/17 - In each episode of ABC's top-competition series, "The Toy Box" inventors present their toy concepts to a group of mentors that include Tyler's Candy Bar owner Dylan Lauren, toy guru Sir Silver and Pixar Creative Director of Consumer Products Ken Tan. If the toy makers get past the mentors, they will move on to The Toy Box, where a panel of young, non-biased judges that include Sophia Grace Browne, Adolph Goldberg, Toby Gray and Heidi Altier decide which toy moves on to the final and is eventually crowned the winner. The eight-episode series is hosted by Bill Swanson ("Modern Family") on the ABC Television Network.

Add to Cart

Copy Caption



GENE STIMMONS' FAMILY JEWELS Episode Guide



SEASON 111 112 113 114 115

It's a terrifying moment for America's most traditional, non-traditional family. Shannon has a 112 - Waiting is the Hardest Part
The days leading up to Shannon receiving her biopsy result proves to be excruciating as the 77 - Smarty Pants
Gene attempts to inflate his ego by accepting Mark Burnell's invitation to compete on "Are You Smarter Than A 5th Grader?" and uses a college marketing class to help him develop ideas for a potential client.

95 - The Demon Turns 60
Shannon is convinced the Genes' peak to not celebrate his 60th birthday are just ones for 96/97 - KISSastrophe
Shannon travels to NY to join the KISS tour and spend quality time with Gene only to learn he has 98 - Pest Control
Gene becomes obsessed with a mystery creature scurrying around the house that only he can.

77 - Smarty Pants

Gene attempts to inflate his ego by accepting Mark Burnell's invitation to compete on "Are You Smarter Than A 5th Grader?" and uses a college marketing class to help him develop ideas for a potential client.

Plan in decades.
Think in years.
Work in months.
Live in days.

- Via (The Minds Journal)

A person is walking away from the camera on a wooden bridge that spans a deep valley. The bridge has wooden railings and a dirt path. The valley below is lush with green vegetation, and the background shows misty hills under a grey, overcast sky.

Thy

Think of 3 Companies
you can contact
to start a Collaboration/ WBL
with your Students!