The School Makerspace & Community Connections

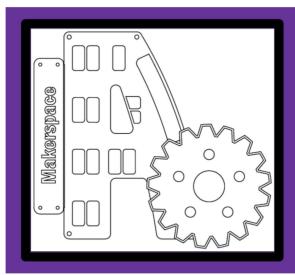
Emily Burk & Ted Mackey
Anna ISD Makerspace

Who We Are

- Public School Makerspace in North Texas
- Opened in Oct. 2018
- 40 minutes north of Dallas
- 1240 students
- Title 1

*We believe that all students should have equitable access to makerspace technologies & experiences.

ANNA ISD MAKERSPACE



Innovate.Design.Make.

Preparing for Opening & Roll-out

Creating a Maker Community Culture & Research

Creating A Community of Makers in the Library

On the Library side:

- Library Media Specialist created a space that offered opportunities for students to make with purpose.
- After observation & interaction, I found key students interested in tinkering & started the STEAM club.
- Red Carpet Community Event w/cross-curricular ELAR/Art/Graphic Design(Integration)
- Worked w/CTE & Invited Guest Speakers



Student-made award for 2018-19 Hour of Code winner! #HourOfCode (Donated 3D printer!)

ELECTRONICS

TEXTILES







March Maker Care
When: March
What: Students & teachers
can make beanies for
babies & crafts for others in

Where: The DEN

Why: In conjunction with Yarns of Hope in McKinney, hats and other knitted crafts will be donated to those in need.























#PROJECTPICKUP

Makerspace Club 2018-19







Red Carpet Event: ELAR/Graphic Design/Art 1(cardboard building, electronics, coding projects narrating literature & student writing)
*Invited the Community in to view projects.



RESEARCH & SITE VISITS

On the Administrative side:

- Director of Curriculum & CTE
 Director visited various fablabs &
 makerspaces at colleges, charter
 schools, & STEAM academies
- Researched equipment & best rollout practices through various entities

Makerspace Integration Stakeholder Team

Admin: Jennifer Kelley & Ted Mackey

Science: Braden Bunting; ESL: Cindy Lewis; Art: Haleigh Hite;

Math: Amy Kelley; Library/ELAR: Emily Burk



AnnaISD Makerspace Integration Team



Site Visit at UTA FabLab!





PRIOR TO OPENING

On the Administrative side:

- Researched & ordered equipment & worked with construction & facilities
- Developed a vision & mission tied to the district vision & mission
- Created a role for Makerspace
 Integration Technology
 Specialist

Our Makerspace consists of...

- ☐ Five 3D
 Printers(Makerbot & Polyprinter)
- ☐ 1 Set of AR/VR Glasses
- Two Laser

 Engravers(Epilog)
- ☐ Two Sewing Machines(Brother)
- ☐ Three saws
- □ Wide Format Poster, Banner, & Vinyl Printers(Roland)
- ☐ T-Shirt Printer(Roland)
- □ CNC Mill(Roland)
- □ Router
- ☐ Plasma Cutter
- Small Tech: Spheros,Ozobots, Bloxels, Cricut
- Devices for design



Developinga Vision: Makerspace Purpose & Goals

- Prepare students with critical 21st century skills in the fields of science, technology, engineering, art, and math (STEAM)
- Help students with critical thinking skills and even boost self-confidence
- Supporting students by fostering entrepreneurship interests
- Support staff in innovative project-based learning & cross-curricular planning
- Making learning come to life
 Increased handson learning
- Increased hands-on learning
- More personalized versus adaptive learning
- Developing industry skills
 Validation through industry based gradentialing
- Validation through industry-based credentialing
 - To invest in our students to inspire invention, creation, dreaming, engineering, experimenting, enrichment

My Role & How I Can Support Anna ISD!

Makerspace Integration Technology Specialist (MITS)

- Write curriculum & policies for equipment
- Train teachers on equipment & design software
- Brainstorm ideas related to cross-curricular, PBL, & Makerspace
- Work with teachers & instructional coordinators to support PBL & cross-curricular lessons that use the makerspace
- Coordinate & schedule your Makerspace Events
- Oversee & approve Makerspace use or project production
- Invite Makerspace related speakers in to jumpstart a project



How we Integrate?

Question: How can I help support the school community?

- Curricular
- Co & Extra Curricular
- Staff Appreciation

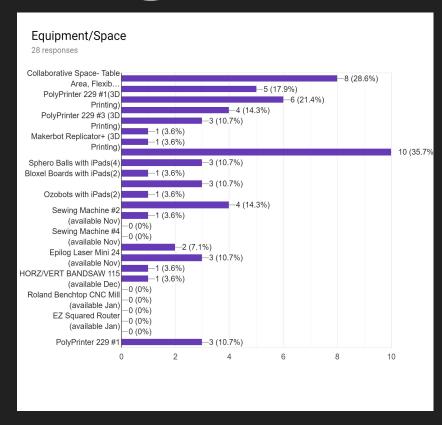
Anna ISD Makerspace Stats/Data







Integration Stats



Curricular:

- PreAP English I
- Art I
- AP Art
- Law Enforcement/Criminal Justice
- AP Spanish
- Spanish I
- Principles of Human Service
- Principles of Education & Training
- Graphic Design
- AV
- Principles of Tech
- Physics
- Science
- PLTW

Co & Extra Curricular

- Robotics
- Sports Medicine
- Band
- Athletics
- Upcoming: Beta Club

Staff Appreciation

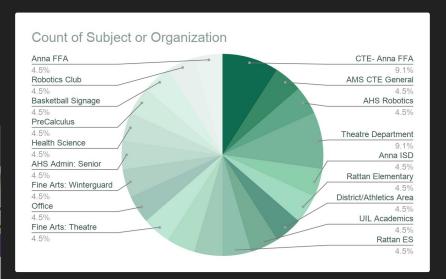
- 540 AISD Ornaments(designed & made by Central)
- Board Appreciation(designed & made by Central)
- Science Department(designed & made by teacher)

Makerspace Print Center

Print Orders fulfilled by Graphic Design Practicum students/MIT staff

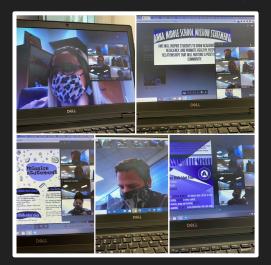
- CTE posters
- Spanish project posters
- Ag competition posters
- AV prop project
- AP Art project for portfolio submission
- Robotics poster
- Science instructional posters
- PLTW posters
- Makerspace signage
- Athletic Banquet programs
- Band concert programs
- Sports Medicine t-shirts





Print Team students develop industry skills while gaining confidence using their talents!

Anna ISD Student Print Team consultation with Mrs. Bridges about AMS Wall Mural design!





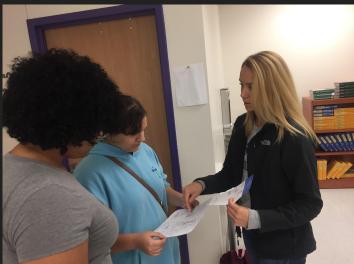
Print team doing maintenance & inventory! The students created these schedules themselves.



Print Team students develop industry skills while gaining confidence using their talents!

Anna ISD Student Print Team consultation with Ms. Fredrick about Sports Medicine t-shirt

design!



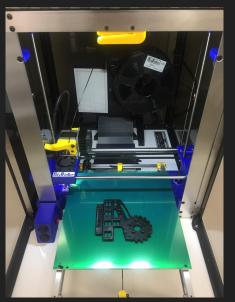
Print team fulfilling the athletic program order and delivering!

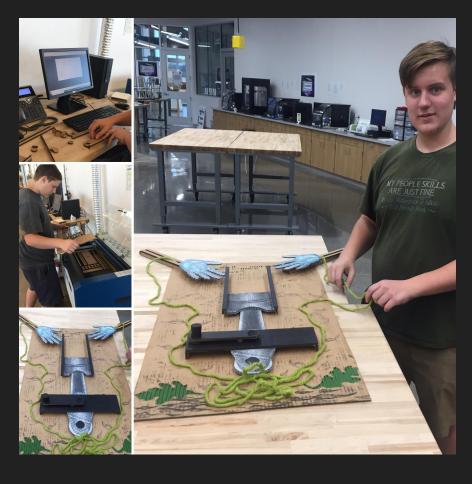


AP Art I

Contest winners





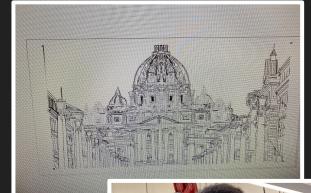


Use of laser & fusion 360 for AP Art submission

AP Art

Illustration imported into CorelDRAW then laser cut







Teachers training on new tech & taking risks to bring innovative opportunities to students!



AR/VR







Laser

High Level Curricular Integration

Spanish I

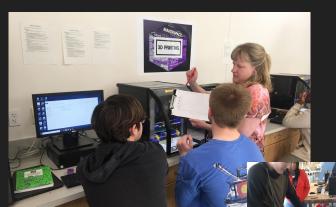
 Research, writing, Spanish, culture, application through designing & making on garment printer & sewing machine, SEL, interpersonal skills











ELA 1

 Reading, writing, application through designing & making on laser/3D printer, SEL, interpersonal skills



Teachers aka facilitators training on new tech & taking risks to bring innovative hands-on learning opportunities to students! This learning is student-driven & Geometry









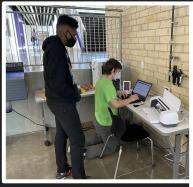
Click to the right to see the winning bridge that held 170 pounds!

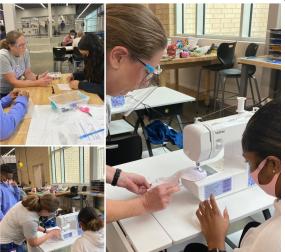
Principles of Tech House Project

Grace Hebert Curtis Group Architects donated materials for this electric house project!



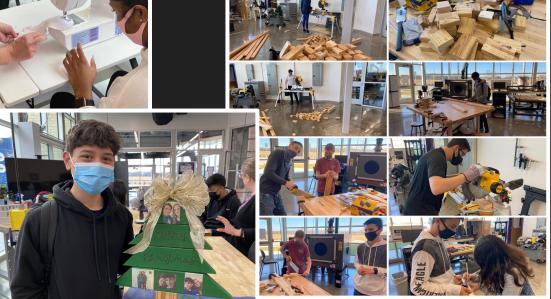
Curricular Integration meeting SEL Needs





Interpersonal & Counseling Classes

 SEL & Interpersonal skill application through designing & making using textiles & woodshop



- Project Hope with Textiles & Design Thinking
- Project Giving with Textiles & Design Thinking

Community Outreach Algebra 2 EDC 2050 Map Project

We partnered with our City of Anna Economic Development Corporation to present a project problem for Algebra 2 students to solve.

Lesson & Prompt





Judging Sheet





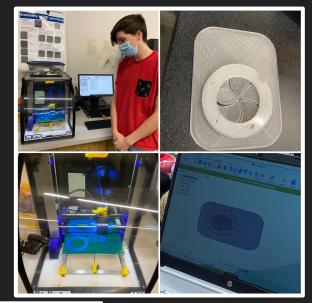


Afterschool Club & Sessions

Individual Projects & Goals





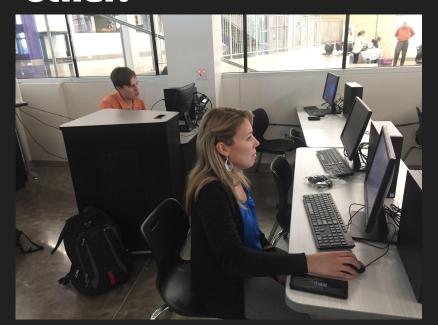




Time Capsule designed in CAD then 3D printed and lasered! Colton was able to use & develop his engineering skills more! ELAR classes wrote PSAs to place in the time capsule.

Student-led Crochet club! Cassie reached out to ask if she could lead sessions to share her passion! These students said that crocheting helps them de-stress after a long day!

Staff & Students Learning from each other!



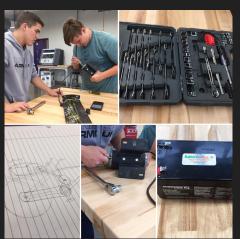
Student shines and teaches teacher Fusion 360 so she can design keychains to 3D print for staff appreciation!

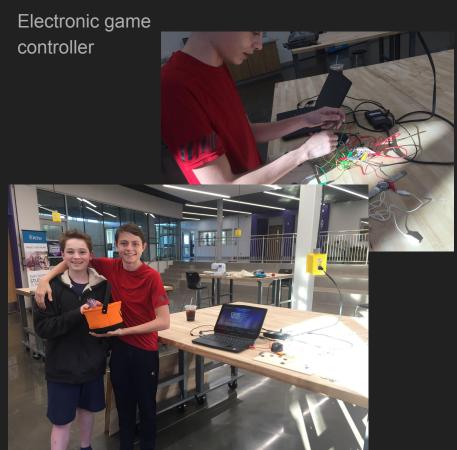
District Communications Officer teaches students design tips so they can design for the laser while she is designing and printing ornaments for staff appreciation!



Individual Projects & Goals







Sewing club

Outside Experts training students!



Plasma Training by an expert! Here you see an engineering student, ag/mech student, & an art/graphic design student working together. As they were training I saw 3 students who would normally not hang out or work together, collaborating & encouraging each other!

Other cool community moments





The Makerspace invites other staff members to teach their skills to students. Above you see our IT Mr. Talbott teaching a woodshop session on how to make a wooden cell phone stand. To the right you see IT Mrs. Underwood teaching a cricut session on how to design a towel.



Workbench Project Session led by IT Techy Ted!









ANNA ISD MAKERSPACE

COVID Shutdown

What to do?

Goal

To use the Makerspace with purpose to help & keep students & staff involved

- Continue MakerCare
- Set up curbside pickup & sewing machine/3D printer checkout
- Reach out to our community advisory healthcare providers & first responders

School & Community PPE Project









Students & teachers sewed masks & 3D printed mask extenders & face shields & we made deliveries!

What Now?

Keep it going & expand!

- Add Makerspace Technology
 Assistant Student Staff who will
 train others & teach sessions,
 assist w/inventory, & equipment
 maintenance
- Add 6th Grade Makerspace
 Teacher & Class
- Transition Makerspace Print
 Team over to Graphic Design
- Begin Makerspace Store
- Continue Community Outreach& Maker Integration

TOTAL Equipment & Safety Trainings since opening Oct 2018

Trainings 10/2018 through 09/2021

557

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Makerspace Technology Assistant

Katherine Cordova

Katherine loves learning new things, challenging herself, designing logos, art, & creatively collaborating

Makerspace Focus: Cricut, Laser, 3D Printers, & Garmen Career Goal: Real Estate w/Interior Design



2021-2022 Makerspace Technology Assistant

Emma Dotson

ne & accessory design, cor art. & donating to people in need.

Makerspace Focus: 3D printing & Woodshop Learning & Teaching Career Goal: Creative Writing, Profiler, & Costuming



Makerspace Technology Assistant

Danny Hammack 11th Grade

He loves helping people, learning new things, & getting better at the things he already knows. Makerspace Focus: Laser, Woodshop, all Makerspace areer Goal: Welding & Woodworking



Makerspace Technology Assistant

Colton Huggins

10th Grade loys spending time w/family, friends, & challenging

Makerspace Focus: CAD, CNC, Plasma, Wide Forma Career Goal: Engineering & Animal Science



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Makerspace Technology Assistant

Kemareyon Mack

oth Grade general-whether with items or people.

Makerspace Technology Assistant

Jacy San Martin

He loves golf, basketball, playing games, building computers, & simracing.

akerspace Focus: Plasma Cutting & Design, Welding

Makerspace Focus: 3D Printing & Design & all equipmen



2021-2022 Makerspace Technology Assistant

Nicholas Ponce

He loves band, robotics, his family, &

Makerspace Focus: Technology Lingo, 3D Printing, & all Career Goal: Surgeon & Technology



Makerspace Technology Assistant

Jack Reed

10th Grade nd, music, computers, & making a positive

Makerspace Focus: Electronics, Project Design, Making Various Things, Sharing & Generating Ideas



2021-2022 Makerspace Technology Assistant

Abigail Reeder

She likes helping people & enjoys learning because it's part of the process of life.

Makerspace Focus: Sewing & Making to Help Career Goal: Community Outreach Work & Public



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Makerspace Technology Assistant

Bellarayn Simmons 9th Grade

akerspace Focus: Making to De-stress & Don. ing, Fabric Upcycling areer Goal: Floral & Graphic Design/Leadership



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Makerspace Technology Assistant Bryce Simons

Makerspace Focus: 3D Printing, Design, all Equipment. Career Goal: Graphic Design for Fashion Merchandise &



Makerspace Technology Assistant

Raina Stewart

Makerspace Focus: Maker Collaboration, Co 3D Printing, Laser, & Woodshop



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Makerspace Technology Assistant

Kyle Terral

He loves illustrating, all art, &

Makerspace Focus: CNC Milling, 3D Printing, Design, & Makerspace Business Career Goal: Graphic Design, Machining, & Design in



Makerspace Technology Assistant

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Reveau Uribe she loves engineering, math, organizing, & helping

Makerspace Focus: 3D Printing, Design, & STEM Career Goal: Engineering & Leadership



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Makerspace Technology Assistant

Isabella Wassom She loves learning new things & inter-

Makerspace Focus: Training others, 3D Printing, Laser, & Sticker Design Career Goal: Teaching, Fine Arts, & Educational

MTA Staff are in the process of getting training & establishing roles!









MTA Staff are in the process of getting training & establishing roles!







Contact

Emails

- Emily Burk, Makerspace Integration Specialist
- Theodore Mackey III, Director of Career & Technical Education
- Social Media
 - Twitter: @AISD_Makerspace
 - Instagram: @AISD_Makerspace
- Website
 - Anna ISD Makerspace
 - Anna ISD CTE

