



INNOVATION WYRKSHOP

MAKER ACCESS PASS

2023

www.makeraccesspass.com





Senior Makerspace Educator **Brayton Tolman** uses a laser cutter to cut face shields for frontline healthcare workers.

TABLE OF CONTENTS

THE MAKER ACCESS PASS

01 Workshops catered to you

More than **135** in-person or self-guided workshops teaching you everything under the sun — from 3D printing and laser cutting to sewing and soldering. If you can dream it up, we can help you make it.

05 How it works

Learn and earn. Sign up for classes, attend free workshops, deep dive into your favorite 21st century subjects, and put those skills to work at a huge number of statewide locations.

06 Let's talk numbers

6,300 badges and 10,000 machines reserved. That's a lot of maker minds molded! Read on to see our impact on Wyoming communities.

07 Interested in joining?

What are the amazing resources you can expect to have access to if your institution joins the Maker Access Pass?

HARDWARE AND SOFTWARE 101

09 Emergent tech at your fingertips

Let's deep dive into the heart of the MAP: our large library of courses designed to equip you with the skills to master machinery of all shapes and sizes.

CAREER EXPLORATION PATHWAYS

21 Choose your own adventure

High schoolers interested in exploring careers, or pursuing both apprenticeships and pre-apprenticeships can get involved in a number of MAP courses designed to introduce them to the Wyoming working world.

25 Adulting 101

Short courses for the busy Millennial. Take a gander at our "Adulting 101" catalog, and see how we aim to equip recent graduates with critical life skills not often taught in school.

26 Advanced manufacturing for the masses

The MAP program is growing up! Read about where we're breaking ground in industry and research labs.

K-12 COURSES

27 Ambassadors, Junior Maker, and more

Groovy gamified workshops and engaging content for the Gen Alpha crowd. Learn about the exciting ways that we aim to engage our younger makers through games, puzzles, and more.



MAKER ACCESS PASS

Train in one makerspace and instantly gain access to the entire statewide network, including our flagship \$2.1 million facility in Laramie. That's the basic idea behind the training program designed by our Innovation Wyrkshop staff.

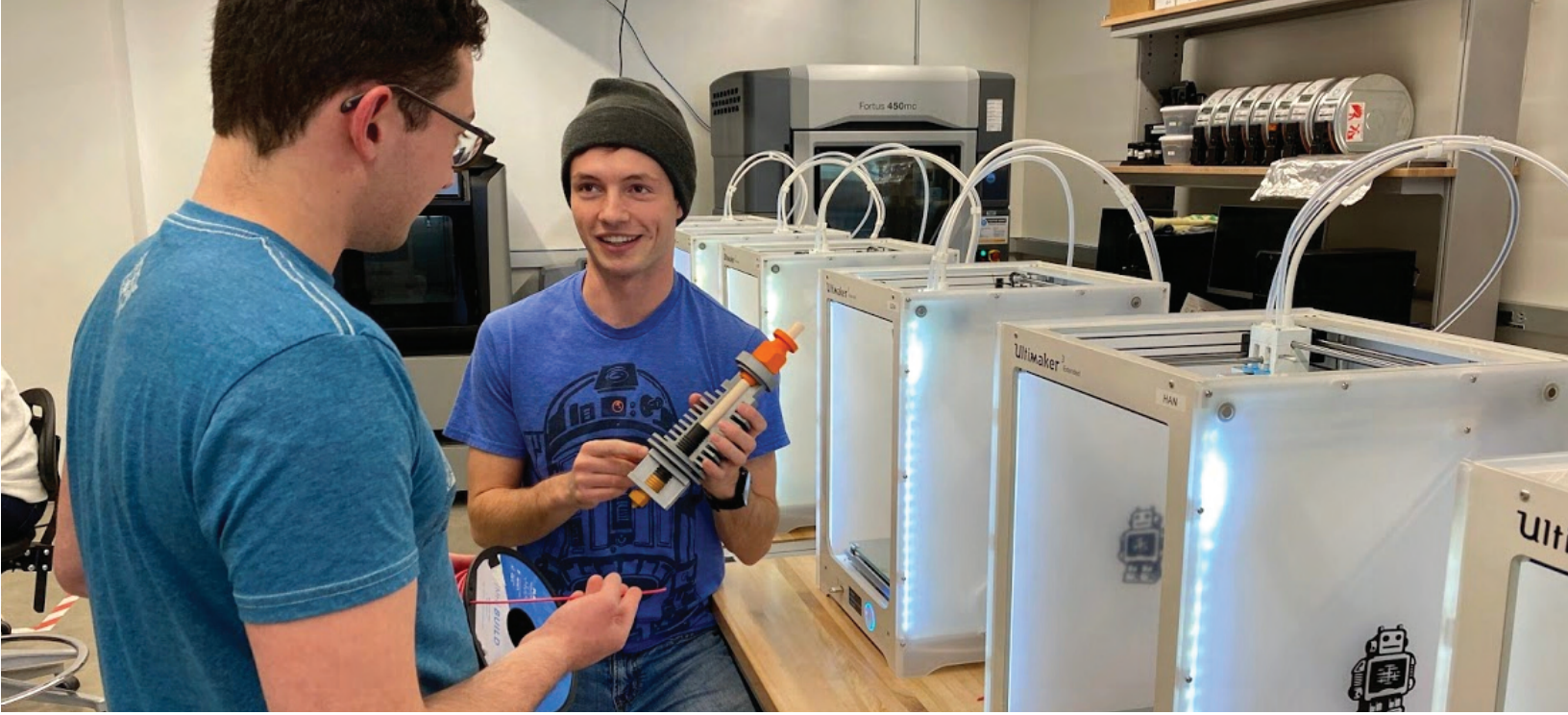
The **Maker Access Pass** is a collaborative, cross-institutional training system created to unify how makers learn to use equipment and machines and learn critical 21st Century skills. This means no more retraining on machines you already know how to use. From 3D printers and laser cutters to CNCs and sewing machines, you can use the Maker Access Pass to gain access to a growing network of makerspaces and machines easily, and with fewer barriers.

Attend workshops, earn badges, play games, learn marketable skills, and work toward exciting rewards.

All for **free**.



Senior Makerspace Educator **Vick Evans** inspects 3D printed face shield visors -- a small handful of the 5,700+ pieces of PPE produced by the Innovation Wyrkshop and distributed around Wyoming.



LET'S GET YOU ON THE MAP



The **Maker Access Pass** is a personalized learning journey customized for each student. Think of it like a journey to machine and CTE mastery, or a 'Choose Your Own Adventure' for the Desktop Manufacturing Age. Students of all ages and abilities can take as many or as few courses as they'd like, and it's entirely up to them to drive their adventure ever onward.

The concept is pretty simple. Nothing is off limits. Find the hardware, software, or skill workshop you want to learn from our list of ten overarching series housing over 135+ different courses. Hunker down with desktop or advanced industrial 3D printers, become more familiar with laser cutters, sewing machines, and woodshop tools, or try your hand at coding, programming, or virtual reality.

Then, simply sign up for an in-person workshop or a self-paced online class. We'll teach you how to use the machines, software, and tools. Take a quick quiz to show us you know your stuff, earn an awesome digital badge to show off to employers, and then you're done! On average, from start to finish, you'll be creating something amazing in less than 90 minutes.

Why did we create the MAP program? Well, at the heart of it, we think having to retrain to use machines that boot up, load materials, and operate the exact same way whether they're in Manhattan or Moscow or Mars is a bit silly. Makers who know how to safely use equipment should be able to access it in any college, library, community center, or orbiting space station without having to go through retraining at each new location.

Furthermore, for administrators, investing months redesigning courses and 'reinventing the wheel' to build custom workshops around their institution's policies, politics, and protocols can prove equally time-consuming.



HOW DOES IT WORK?

It's pretty simple. Attend workshops, learn new skills, and put those skills to use! With over 135 courses from 3D printing and laser cutting to professional speaking and even baking at altitude, if there's an important 21st Century skill you want to learn, there's a good chance we offer it.

ATTEND WORKSHOPS

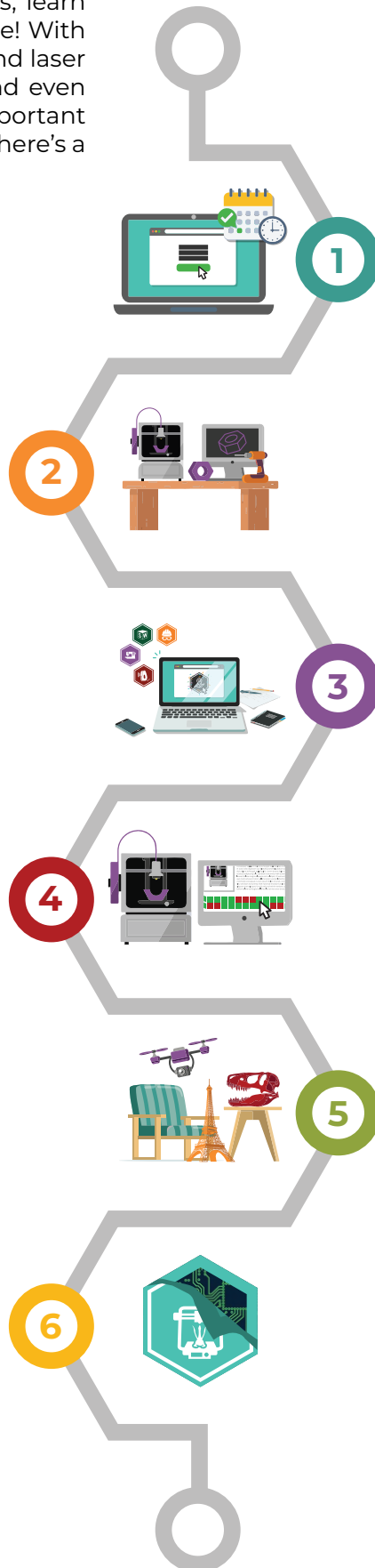
In-person or online, **learn the way you want!** Makers get hands-on experience with the equipment in-person, or learn from the comfort of their couch.

EARN BADGES

Makers **earn their workshop badge** and automatically add it to their portfolio. MAP credentials are recognized by all participating facilities, meaning there's no more need to retake training at each new space.

COLLECT DATA!

MAP administrators can **tap into the incredible amount of associated metadata** collected automatically by MAP to inform and guide their facility's growth and development.



SIGN UP

Anyone in the community can sign up for a free **60-minute workshop**. From hardware and software to career exploration and life skills, there's something for everyone!

QUICK QUIZZES

Makers **pass a brief 10 to 20 question competency quiz** to demonstrate they can operate the equipment safely and effectively.

RESERVE EQUIPMENT

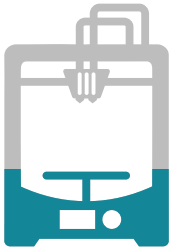
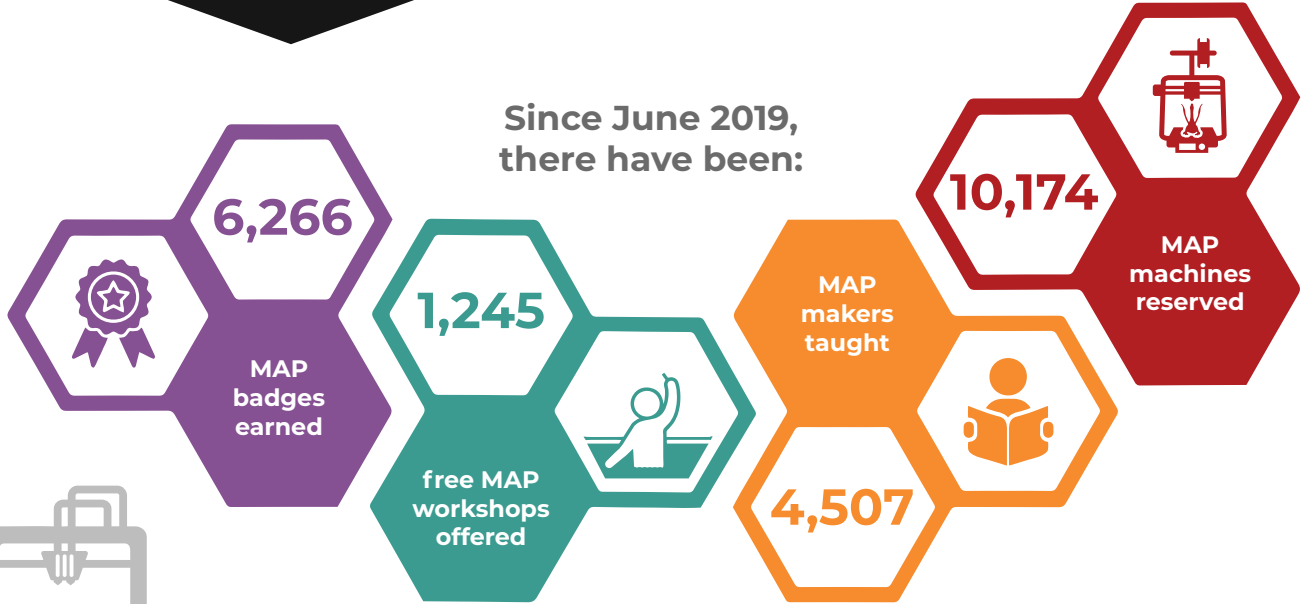
Once a maker has passed the quiz and earned their badge, they can **reserve the machines online**, whenever they want.



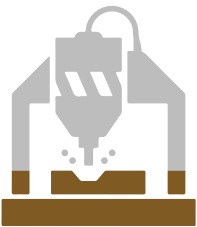
MAKER ACCESS PASS

BY THE NUMBERS

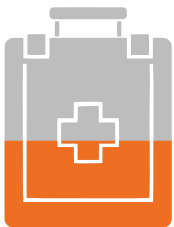
Since June 2019, there have been:



2,058 makers are 3D printing pros.



1,072 makers have mastered the woodshop.



1,809 makers are safety specialists.

Who uses the MAP:



46% of MAP are student makers



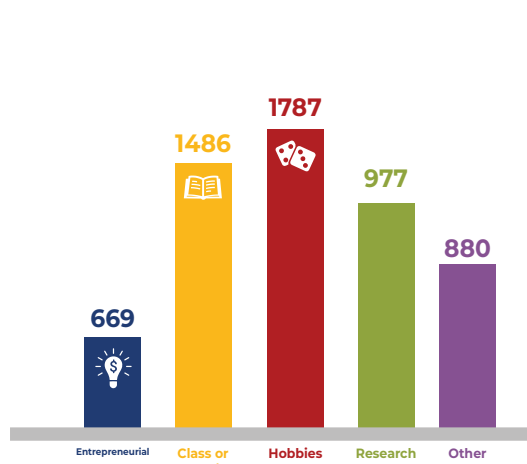
34% are staff members



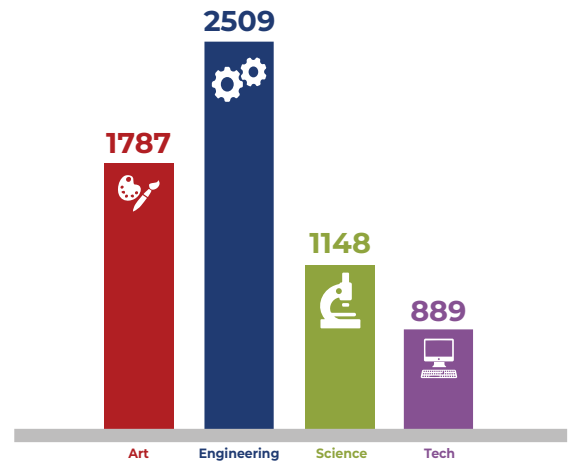
4.6% are faculty members



14.8% come from the community



Types of Projects



Project themes

WHAT DO PARTICIPATING FACILITIES GET?

1

Access to a curated database of **135+** training and CTE workshops.

2

Standardized signage, operating guides, instructor teaching guides, and online instruction and quizzes.

3

A sophisticated **machine reservation and space booking** software suite.

4

An integrated learning experience platform that ensures **only safely trained makers can access equipment.**

5

An **automated badge credentialing and reward system** proven to motivate makers.

6

An enormous wealth of **metadata** to inform and guide a facility's evolution and development.



UI
FDM 3

Ultimaker 3 Extended 3D printers are some of the best desktop 3D printers on the market today. Capable of printing down to 20 micrometer layer heights, Ultimakers 3's are very reliable, easy-to-use workhorse fused-deposit modeling (FDM) 3D printers.

Begin printing today on any one of our Ultimaker machines! Simply attend a **SAF101** (in the CSIC) or **SAF102** (in the EERB SIC) and pass **FDM150: Introduction to 3D printers (Ultimakers)** to get started.

The extruder moves along the Y-axis, forwards and backwards using belts.

The hot end includes two fans and two bonden drive extruders with swappable print cores.



The standard nozzle we use is 0.4 mm. Make sure you select the correct print core when using PLA (or PLA, BB for PLA only).

Ultimaker 3Es have a print volume of 7.75 x 8.4 x 11.8 in, with layer heights ranging from 0.2 down to 0.02 mm high.

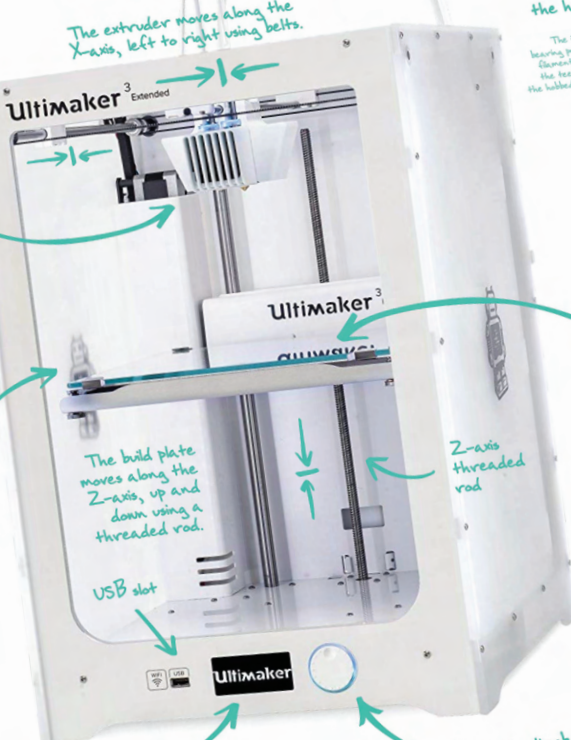
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ULTIMAKER 3E 3D PRINTER OPERATION GUIDE

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Ultimaker 3Es can print two materials at once.

Feeder box assembly #2

All Ultimakers use 3.00mm filament.

Bowden tubes

The extruder moves along the X-axis, left to right using belts.

The feeder box assembly includes the hobbed bolt and an idler.



Ultimakers have active-leveling heated glass build plates that should not be removed.

If your print isn't sticking well, try applying a thin layer of glue with a glue stick.

You can remove your part carefully with a spatula, or wait 20 minutes after your project finishes and the plate has cooled to simply remove by hand.

The build plate moves along the Z-axis, up and down using a threaded rod.

Z-axis threaded rod

USB slot

Printer frame

Navigation Knob

Use the LCD panel menu to load and unload filament and load projects from USB.

ULTIMAKER FDM 3D PRINTER

PPE SAFETY REQUIREMENTS

- ✓ Safety glasses
- ✓ Safety goggles
- ✓ Face shield
- ✓ Apron
- ✓ Respirator
- ✓ Face mask
- ✓ Ear plugs
- ✓ Ear muffs
- ✓ Work gloves
- ✓ Rubber gloves
- ✓ Closed-toed shoes
- ✓ Hair secured
- ✓ No loose or dangling clothing or jewelry

REMINDERS:

- ✓ Remove primer lines before printing and check that the build plate is cleaned.
- ✓ Ensure the extruder nozzle isn't dirty. If it is, clean it gently with a wire brush.
- ✓ When a print starts, monitor your project for the first ten minutes to ensure the print is adhering properly.
- ✓ Avoid putting pressure on the build plate, or touching it with your bare hands.
- ✓ Wait until the build plate has cooled before removing projects.

RISK LEVEL: LOW

FDM150

INTERMEDIATE 3D PRINTERS (ULTIMAKER) TALKING POINTS

- Handling the print bed (Never apply pressure, push or pull, touch with bare hands without cleaning, or remove a print from a hot print bed).

Cura Basics:

- What's a slicer?
- Adding an Ultimaker printer
- What are "shells"? What is infill?
- Why do we use supports?
- Brims and skirts
- What files can Cura read?
- What file types does Cura output?
- What is GCode?

Advanced Cura:

- Enabling two materials and assigning them
- Advanced first layer settings
 - Turning on/off fan
 - First layer %
- Advanced support settings
 - Angle considerations
 - Density considerations
- Advanced infill settings
 - Strength considerations

Preparing a Print:

- Preview mode
- Double-checking settings
- Watching for issues

Notes:

FDM150: Intermediate 3D Printers (Ultimakers)

All participating facilities share a large library of standardized operating procedure (SOP) manuals, comprehensive teaching packets and guides, online content and activities, as well as safety cards influenced by OSHA and NFPA signage.



HARDWARE AND SOFTWARE SERIES

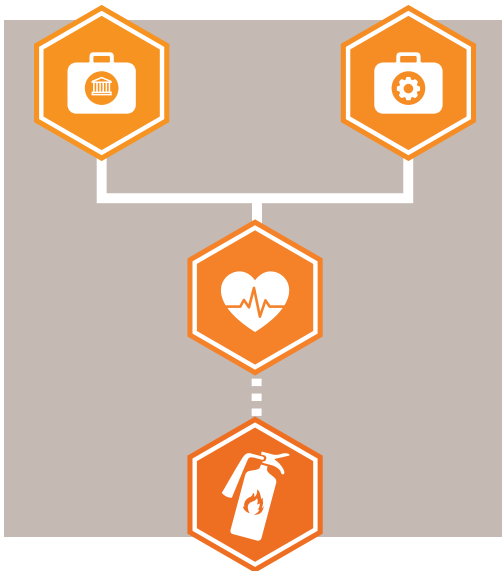


Brayton Tolman and Zach Hunter (right) operate the Artec Space Spider 3D scanner to scan a human subject!



THE SAFETY SERIES

Safety training workshops are the single most important courses offered as part of the Maker Access Pass. All makers are required to take brief makerspace-specific safety training at each new makerspace before accessing equipment, in order to familiarize them with institution-specific rules and regulations. Makers can then sign up for and attend one of the free 60 to 90 minute active learning, hands-on, peer-led workshops and pass a brief competency quiz, after which the automated system awards them the appropriate badge. Because safety typically differs across facilities, safety courses may not be skipped or tested out.



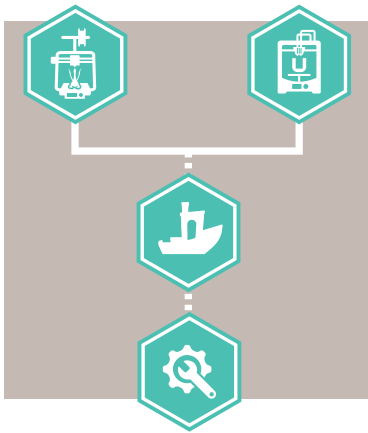
In a typical 100-level SAF course, makers learn the important safety rules of their specific emergent tech facility, including where first aid kits, fire extinguishers, and eye wash stations are; what to do and where to go in the case of an emergency; proper personal protective equipment (PPE) and where it's stored; how to interpret safety cards; and any specific protocol unique to the space. Importantly, 100-level courses of the SAF workshop series are typically not offered individually, as they take no more than 20 minutes. Instead, SAF courses are often included in a maker's first course organically.





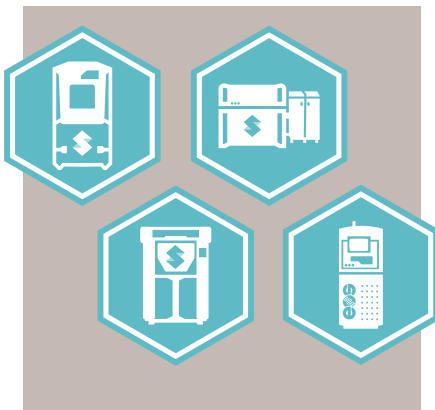
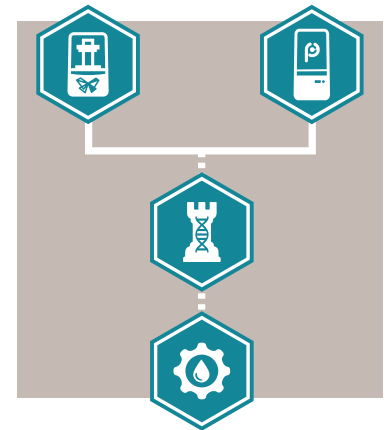
THE 3D PRINTING SERIES

With over 2,000 makers trained, the FDM, SLA, and IND workshops that make up our **3D Printing Series** are easily among our most popular classes. We currently offer 12 workshops that run the gamut from learning to operate machines and troubleshooting common issues to learning how to service and maintain printers.



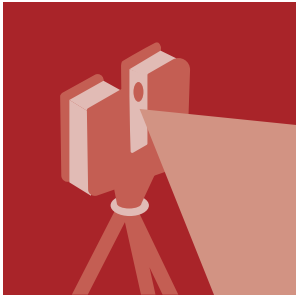
FDM, short for "fused deposition modeling," is a type of 3D printing where an object is built by gradually laying down layer after layer of melted thermoplastic filament. FDM is the most widely used type of 3D printing technology, and is often the first 3DP technology makers are exposed to -- as well as the most affordable. Accordingly, the FDM badge series includes workshops that focus on teaching makers how to use introductory desktop FDM 3D printers. For makers who have little-to-no experience with 3D printers, the FDM badge series is a great place to start!

SLA, short for "stereolithography," is a type of 3D printing where an object is built by gradually curing a liquid photopolymer resin layer-by-layer using an ultraviolet (UV) laser beam. SLA is a bit messier than FDM 3D printing, but is known for its exceptional accuracy, high resolution, water- and air-tight parts, as well as its ability to print materials such as castable wax and ceramic resin. SLA printers are commonly used in fields like engineering, manufacturing, education, dentistry, and healthcare.



Industrial 3D printers range in size and function, but typically offer quality and materials that traditional desktop 3D printers can't, such as printing in TPU rubber, carbon fiber, ultem, full photo-realistic color, and metal alloys.

For makers that wish to produce exceptionally high-resolution parts in a wide range of exotic, high temperature, or high strength materials, we offer up the IND series to provide makers with hands-on experience using state-of-the-art industrial machines.



THE 3D SCANNING SERIES

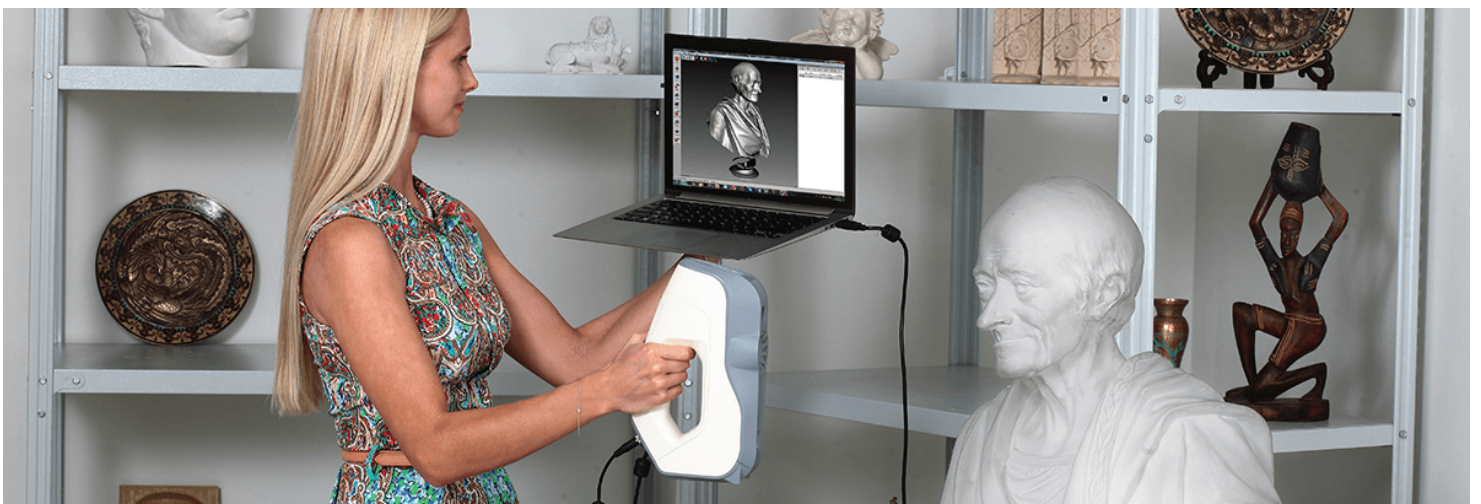
3D scanning is the process of capturing data from a real-world object or environment to record information on its shape, texture, and color. The collected data can then be used to construct digital 3D models. These models are used in a huge array of applications from reverse engineering and prototyping, creating custom-fit orthotics and prosthetics, and entertainment industry CGI, to projects like digitizing scientific and historical collections.

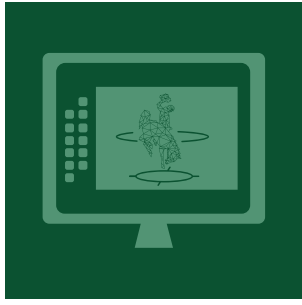


Our **3D Scanning Series** offers makers the chance to get their hands on a number of different types of 3D scanning techniques, from simple photogrammetric scans created with smartphones or DSLR cameras to advanced, powerful structured light and LiDAR scanners that can quickly capture data at extraordinary resolutions and at the scale and size of a football field.

A 3D scanner can be based on many different technologies, each with its own limitations, advantages and costs. The Makerspace Access Pass currently offers four 100-level practical 3D scanning classes that may be taken in any order:

- 3DS101: Intro to Photogrammetry
- 3DS125: Artec Structured Light Scanning
- 3DS150: 360 Cameras (Insta360)
- 3DS175: Leica LiDAR Scanning





THE MODELING & DESIGN SERIES

3D modeling and graphic design are essential to make digital art and models, and even in the film and gaming industries to create extraordinary visual effects. Softwares like those taught in our **Modeling & Design Series** can breathe life into amazing art projects using graphic design software, create realistic models for games and film using 3D modeling software, build functional parts or simulate stress, strain, and environmental effects through computer-aided design software.



Our **3D modeling** workshop subseries introduces makers to the basics of getting started with Sculptris, Blender, Autodesk Maya, and Zbrush, powerful 3D modeling softwares used in movies such as Star Trek, The Lord of the Rings, and Iron Man, or in video games such as Gears of War or Assassins Creed!



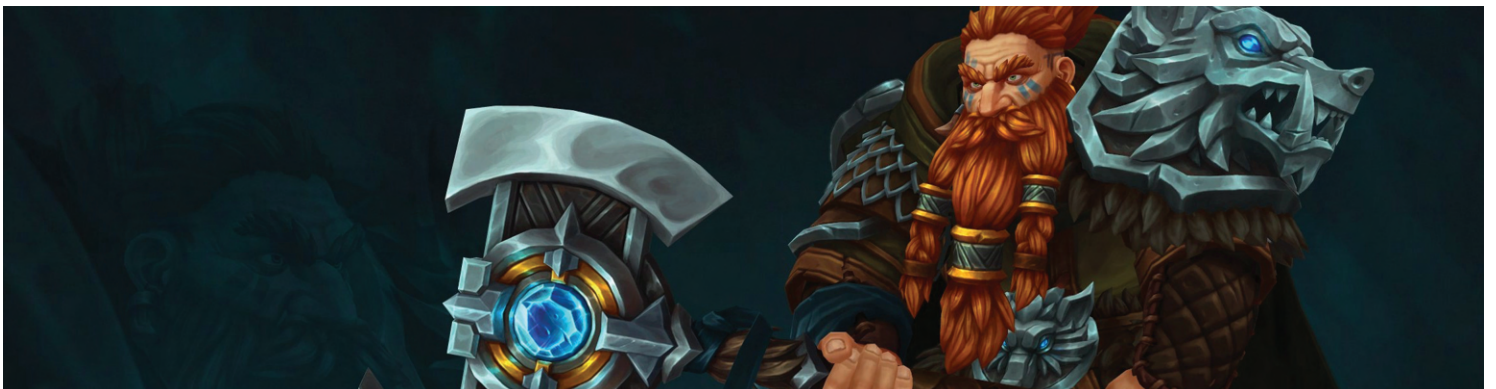
Our **Computer-Aided Design (CAD)** workshop subseries allows makers to become more comfortable with industry standard CAD and simulation software such as SolidWorks, Autodesk Fusion 360, and Onshape.



Our **graphic design software (GDS)** workshop subseries shows makers how to use popular graphic design software such as Inkscape, a free and accessible vector graphics editor, up through industry leaders such as Adobe Photoshop, and Adobe Illustrator.



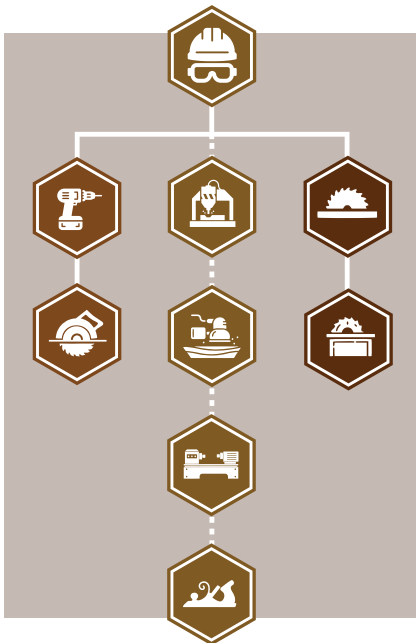
Our new modeling courses, the **Building Information Modeling (BIM)** workshop subseries, teach makers the fundamentals of working with architectural and structural design software such as Autodesk Revit and Rhino.





THE WOODSHOP SERIES

Our **Woodshop Series** provides makers with the tools, skills, and knowhow to make any type of workshop and woodshop project they desire, from canoes and carvings to shelves and skateboards. The WOOD series is another popular hit with makers of all skill levels seeking to make everything from simple pinewood derby cars to traditional Japanese wood joinery and furniture.



Starting first with in-depth mandatory woodshop safety training, makers can learn proper woodshop rules and regulations, how to safely handle tools and equipment, as well as tips and tricks to master machinery. Currently, the Maker Access Pass offers ten badges in the woodshop, including:

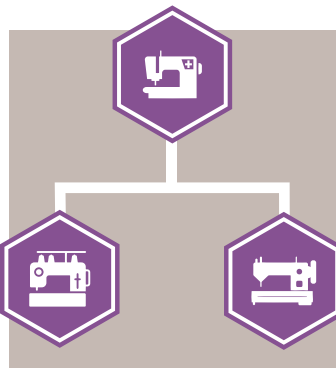
- SAF150: Workshop safety
- WOOD101: Tool best practices
- WOOD102: Handheld power tools
- WOOD103: Sanding tools
- WOOD104: Learning lathes
- WOOD105: Planers, jointers, and material prep
- WOOD106: Learning bench saws
- WOOD107: Advanced bench saws
- WOOD150: Learning Shapeoko CNC routers
- WOOD175: Learning Tormach CNC mills





THE CRAFTING SERIES

Our **Crafting Series** equips makers with the skills necessary to use sewing machines, sergers, and industrial leatherworking equipment as well as commercial and industrial vinyl cutters. For makers who might wish to create clothes, repair backpacks or coats, or those who want to create both indoor and outdoor decals and stencils to engrave or chemically etch material, the CRFT badge series is an excellent place to start!

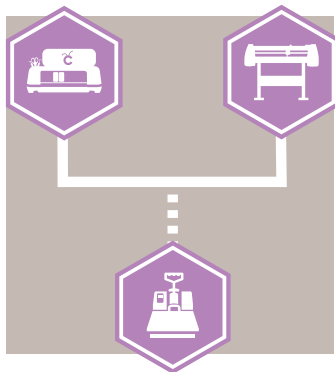


CRFT101: Learning the Cricut Cutting Machine shows makers how to use the Cricut Maker vinyl cutter, how to prepare projects in the Cricut Design Space software, and how to post-process projects using common weeding tools.

CRFT102: Intro to the USCutter Vinyl Cutter instructs makers on best practices for operating USCutter vinyl cutters, how to vectorize and prepare projects in VinylMaster, and how to post-process projects using common weeding tools.

CRFT106: Learning the Cricut EasyPress is designed for intermediate users who have learned to use the Cricut and are looking to augment their work with heat press equipment.

CRFT108: Intro to the FancierStudio Heat Press teaches makers advanced uses for vinyl cut decals, including creating intricate heat-pressed designs on fabric.



CRFT110: Introductory Singer Sewing Machines and **CRFT111: Introductory Janome HD 1000 Sewing Machines** both highlight how to run domestic sewing machines, and teaches makers the basics of sewing, cutting and finishing seams efficiently and with precision.

CRFT115: Mayku Formbox introduces makers to exciting desktop vacuum formers and their applications.

CRFT150: Learning the Brother PE800 Embroidery Machine and **CRFT 175: Advanced Industrial Singer Sewing Machines** both teach makers how to use more advanced sewing machines to embroider and to sew and even repair medium to medium-heavy weight materials such as cloth, synthetics, vinyl, canvas, and leather.





THE LASER SYSTEMS SERIES

Laser cutters and engravers are an increasingly popular way to precisely cut everything from cardboard, wood, cork, fabric, and leather to acrylic and plastics, and engrave metal and glass! They work by directing and focusing a powerful laser beam onto a material, which the laser either cuts or engraves, depending on what the maker wants to do. Laser cutters and engravers are popular in makerspaces, and some of our most popular classes, in part due to their ease of use, speed of production, precision, and versatility to tackle a huge number of different materials. We've seen makers produce a wide number of projects, from laser cut 3D printer chassis to framed art to functional cow tags for use in commercial livestock management.



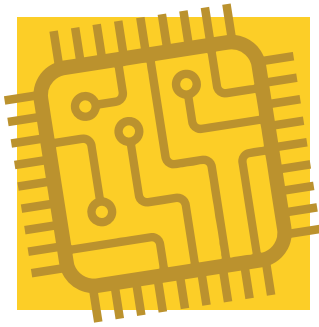
We currently offer three laser cutting workshops as part of our **Laser Systems Series**, where makers learn how to safely and effectively use and maintain both CO₂ and fiber laser cutters, as well as best practices for inspecting materials and operating laser cutter software. Makers get a firm handle on what materials are best used for certain projects, and which materials are dangerous and should never be used near laser cutters. Advanced courses that teach makers how to clean and potentially replace lenses and mirrors, level beds, measure power, and perform full laser system cleaning, are in development. At present, the Maker Access Pass offers the following workshops:

LAS101: Introduction to the Glowforge Laser Cutter

LAS110: Introduction to the Epilog Fusion Pro Laser Cutter

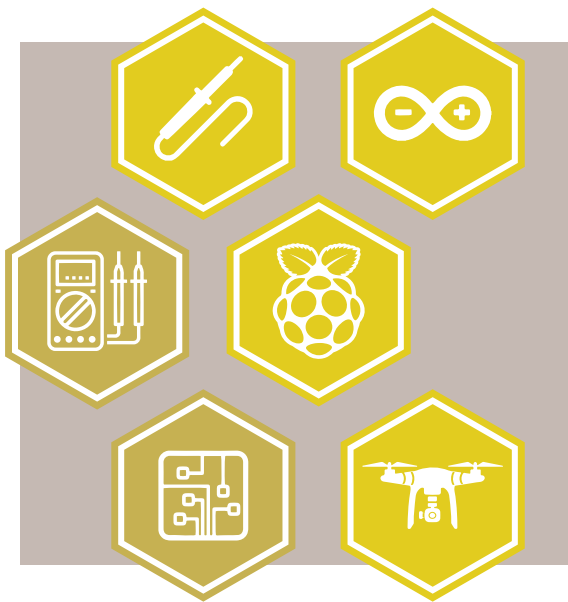
LAS120: Introduction to Full Spectrum Pro-Series Laser Cutter





THE ELECTRONICS & ROBOTICS SERIES

Workshops in the **Electronics Series** offer makers the opportunity to learn how to use equipment commonly found on electronic benches, such as multimeters, oscilloscopes, power supplies, and soldering kits. Makers can learn how to solder, fly drones, or how to begin programming and creating with small microcontrollers, such as Arduinos and Raspberry Pis.

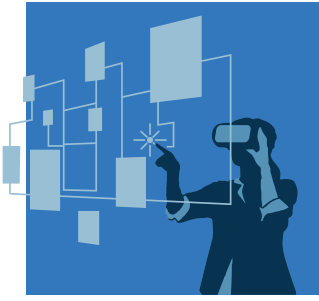


For makers who wish to build out and test their own electronic parts and projects, we recommend diving in to **EE101: Intro to Soldering** followed by the more advanced courses **EE104: Circuitry Components** and **EE105: Analysis Equipment**.

Artists, designers, hobbyists, and anyone interested in creating robots or electronic projects meant to interact with the world through electronic sensors, lights, and motors might consider learning more about microcontrollers through **EE102: Intro to Arduino** and **EE103: Intro to Raspberry Pi**.

Cooler still, aspiring aviators can learn how to pilot affordable commercial drones in **DRON101: Introduction to Drone Piloting**.

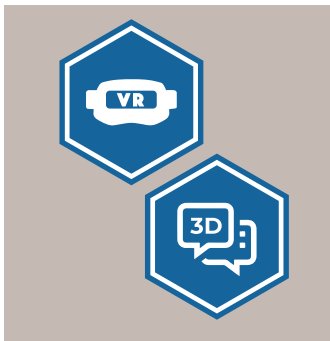




THE EXTENDED REALITY SERIES

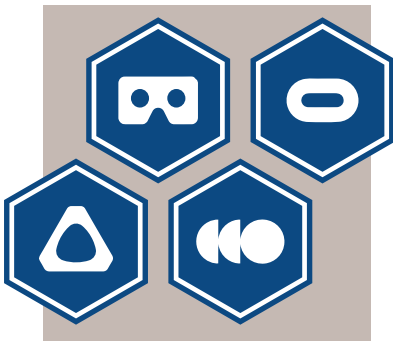
We're excited to announce a new series, coming in Spring 2023!

The **XR** (Extended Reality) **Series** focuses on the wide-ranging applications for virtual reality, augmented reality, and mixed reality systems. Makers can learn the basics of how to operate popular XR equipment, or dive head-first into advanced 200-level theory courses teaching them how to start building XR experiences and solutions for themselves. This series is spearheaded by the **Shell 3D Visualization Center**.



XR101: Intro to VR Systems introduces makers to the fundamentals, including how to use and demonstrate popular VR systems.

XR102: 3D Concept Communication turns makers into skilled communicators, providing them with the tools necessary to convey complex 3D topics in meaningful ways to broad audiences.



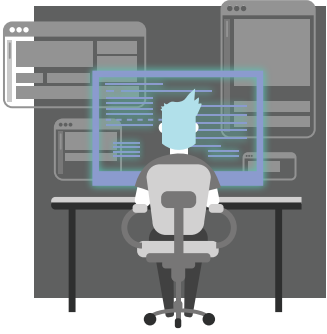
XR103 to **XR106** introduce makers to advanced, in-depth applications and uses for Google Cardboard, Oculus, HTC, and Valve virtual reality systems, respectively.



XR107: Intro to AR teaches makers how to get started with various augmented reality applications.

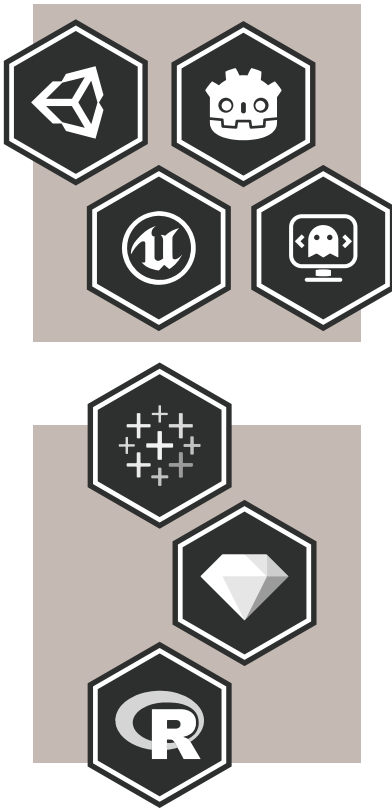
XR107: Advanced AR Applications allows makers to deep-dive into more complex AR applications and uses.





THE DEVELOPER SERIES

Whether you're looking to kick off a career in research or the game industry, or simply curious about the way that developers can code, evaluate data, create games, apps, and content for consoles and VR systems, the **Developer Series** is the best place to start. Makers can learn the basics of how to start using powerful data visualization and coding programs such as R, OpenRefine, and Tableau, begin developing apps and games in Unity or Unreal Engine, or dive into advanced game and app design theory! This series was conceptualized, designed, and is currently run by the **Shell 3D Visualization Center** and the **UW Libraries**.



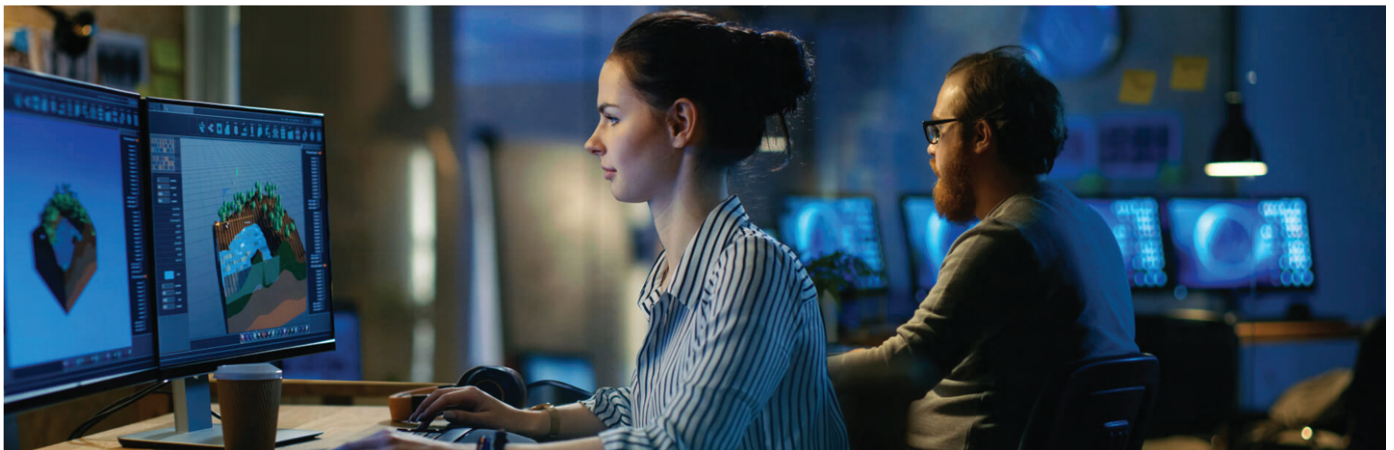
DEV103, DEV104, and DEV105 allow makers to become more familiar with game development software such as Unity, Godot, and Unreal Engine that have been used to make games such as Hearthstone, Borderlands, Gears of War, and Mass Effect, to name a few.

DEV114: Introduction to Data Visualization with Tableau Public is perfect for graduate students and researchers, and provides a great foundation on Tableau Public's uses and applications. Students will learn how to experiment with Tableau Public's user interface, and how to apply Tableau Public's data visualization software to their own data.

DEV116: Introduction to Data Cleaning with OpenRefine is an excellent add-on to Tableau Public. Students will learn the ins and outs of data cleaning.

DEV118: Introduction to Data Visualization with Tableau Public will show folks how to install R and RStudio, navigate the RStudio interface, describe objects and assign them values, solve simple arithmetic operations in R, call functions in R, and understand where to look for help while working with R.

DEV201: Advanced Game Design delves into the depths of how to plan, design, test, and evaluate engaging games and apps for audiences using programs such as Unity.





CAREER EXPLORATION PATHWAYS





CHOOSE YOUR OWN ADVENTURE



Career exploration and workforce development courses, apprenticeships, and pre-apprenticeships for students and young adults

Embark on an exciting journey of discovery with our Career Exploration courses! This unique choose-your-own-adventure style workforce readiness program is designed to help students navigate the vast landscape of potential career paths. Whether they're a recent graduate or on the brink of entering the workforce, Career Exploration is their compass to a fulfilling professional future.

In the program, students will dive into a network of interrelated, immersive 60-minute courses, each one a stepping stone to a new career path. From the intricate world of construction management to the dynamic realms of healthcare and IT, our short courses offer a holistic overview of various industries.

But this is no ordinary career guidance program. In the spirit of adventure, students are in the driver's seat. They choose the courses that pique their interest, allowing them to explore multiple career paths at their own pace. Each course is available in-person or online, providing the flexibility to learn in a way that suits their learning style.



Our courses are meticulously designed to bolster Career and Technical Education (CTE) competencies and technical skills. With Career Exploration, students aren't just learning about a job; they're gaining the practical skills and knowledge that employers value.

APPRENTICESHIPS

Step into the real world of work with our Career Exploration Apprenticeship Program! This innovative program takes the choose-your-own-adventure model of our Career Exploration courses and elevates it to the next level, offering students the chance to gain real-world hands-on experience in their chosen field.

Our apprenticeship program is more than just a learning experience; it's a stepping

stone to future careers. Students have the opportunity to apply the knowledge and skills gained from our Career Exploration courses directly in the workplace with valuable on-site job experience.

These paid opportunities offer full immersion in the day-to-day operations of a growing number of Wyoming industries -- allowing students to forge their own future!



PRE-APPRENTICESHIPS

Introduce your students to the world of work with our Pre-Apprenticeship program. This innovative program is designed to provide younger students, students with disabilities, and those not quite ready to enter the workforce with a comprehensive self-paced introduction to various career paths.

The program offers a safe and supportive environment for students to explore their interests and develop their skills. It's an opportunity for them to gain a taste of what a full apprenticeship entails without the commitment, helping them to build confidence and prepare for the next step in their career journey.

Our Pre-Apprenticeship program equips students with the foundational knowledge and skills they need to succeed in the workplace, setting them up for future success in any type of career they choose.



ADULTING 101

Taxes? 401K? Car payments? *Vegetables?!*

Let's face it, adulting is the worst -- but it doesn't have to be! Our new "Adulting 101" short courses are designed to help you tackle life's everyday challenges with ease (and maybe a dad joke or two). Whether you're a seasoned senior or just starting out on your adulting adventure, our courses are packed with fun, silly tips and tricks to help you level up your adulting game and master the mundane. From the art of gardening to learning how to change a tire like a pro, our courses cover all the basics and then some. So why not join us and learn how to zhuzh your house, plan your meals on a budget, and ace adulthood?

Our pilot curriculum is growing quickly, and currently includes:

- **Adulting 101: Basic Vehicle Repair**
- **Adulting 102: Meal Prep and Planning on a Budget**
- **Adulting 103: Gardening Basics**
- **Adulting 104: Advanced Gardening**





ADVANCED MACHINERY & RESEARCH EQUIPMENT TRAINING PROGRAM

Not all training workshops are created equal, but with the Advanced Machinery and Research Equipment (AMRE) training program, they can be.

The AMRE training program is easily scalable, and was designed first for the University of Wyoming College of Engineering & Applied Science as a means to train all incoming graduate students and researchers safely and effectively. Academic departments, researchers, and outside industry professionals can use AMRE to reduce training redundancy for industrial and advanced manufacturing machinery in both research and advanced laboratories, while ensuring lab safety and operations are taught in a compliant, standardized format.

Graduate students and researchers can attend online workshops designed and vetted by Principal Investigators and Lab Safety Coordinators, and access to machinery can be gated only to those who have effectively passed the appropriate training.





K-12 COURSES

Mobile Makerspace Coordinator
Emily Leinen (right) leading an
introductory UAV workshop for
visiting high schoolers.





MAKERSPACE AMBASSADOR PROGRAM

Thanks to a strong partnership with the Department of Workforce Services Division of Vocational Rehabilitation, our makerspace ambassadors help put makerspace equipment, machines, and tools in the hands of thousands of visitors each year. They point the way, share fascinating facts, ignite innovation, and help our student staff maintain a growing collection of machines, equipment, lessons, and workshops.

Eligible to Wyoming youth with disabilities ages 14-21, every one of our dedicated ambassadors contributes their expertise, passion, and personality to help ensure that our makerspaces are some of the best in the Mountain West. Interested students can be part of our mission to make Wyoming a world-class creative hub too! Whether they've got a few spare hours per week or a few per month to lend a hand, there are plenty of ways to get involved.

In exchange, young folks in the ambassador program learn valuable skills to help them in the working world, such as **critical thinking**, **professional communication**, **leadership**, **responsibility**, **teamwork**, and **workplace professionalism** -- to name only a few!



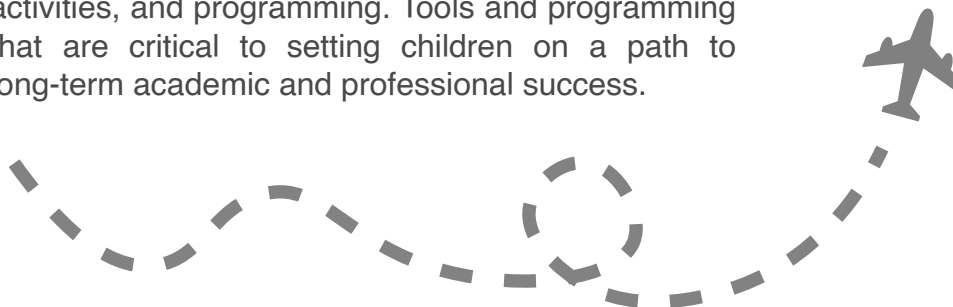


JUNIOR MAKER PROGRAM

Makerspaces are for *everyone*. That's why we offer the Junior Maker program, aimed at engaging the under 13 crowd through in-house exploratory games, take-home activities, and fun prizes.

Studies have shown that the drive to explore, interact, and observe begins in early childhood. When young children enter school, they may already have substantial knowledge of the natural world, can think both concretely and abstractly, use a range of scientific reasoning processes, and are eager, curious, ready to learn.

Our goal is to strengthen these innate abilities by providing access to high-quality STEAM tools, activities, and programming. Tools and programming that are critical to setting children on a path to long-term academic and professional success.





8-BIT ADVENTURES



Meet Barry, our 8-bit bison ambassador. We know that everyone learns differently, which is why we wanted to offer a gamified MAP approach for the young crowd who might prefer to explore core concepts through mysteries, storytelling, and fun puzzles.

Adventure through the Safety Savannah, Crafting Cove, Modeling Mounting, Filament Forests, Coding Caverns, Laser Lurkwoods, and more!



LIFE SKILLS FOR LITTLE ONES

Today's schools are increasingly multicultural and multilingual, with students from diverse social and economic backgrounds. Equipping youth with valuable life skills can help improve academic performance, prevent bullying, reduce dropout rates, and build character. What's more, these skills can provide a great foundation for safe and positive learning, and improve a students' ability to succeed in school, careers, and in life.

Our **life skill lesson plans** are designed to help young folk develop the knowledge and skills to be productive and respectful citizens in a global society. These activities focus on developmental workshops related to self-understanding, respect for self and others, social interaction, decision-making, and safety skills. The five major areas covered in the activities are:

- A. **Self-Awareness,**
- B. **Self-Management,**
- C. **Social Awareness,**
- D. **Relationship Skills,** and
- E. **Responsible Decision-Making.**



Train in one makerspace and instantly gain access to the entire network. That's the basic idea behind the collaborative Maker Access Pass (MAP) program. Attend free hardware, software, CTE, workforce readiness, and life skills workshop. Earn badges, learn marketable skills, and get hands-on experience with world-class equipment.

All for free.



www.makeraccesspass.com