# Think Make Create
## LABS

## CAREER SPOTLIGHT: EQUIPMENT TECHNICIAN

If you teach students who enjoy problem-solving, building, or tinkering with electronics, they may have a bright future as an Advanced Packaging Technology Development (APTD) Equipment Technician. This job at Micron Technology in Boise, Idaho, supports semiconductor manufacturing by maintaining and improving high-tech packaging equipment.

These technicians play a key role in ensuring machines run smoothly. They perform preventative maintenance, troubleshoot and repair mechanical issues, and work closely with engineers to enhance tool performance. Technicians often wear cleanroom suits and use diagnostic tools, software, and hands-on skills to ensure precision and quality. An associate degree in electronics, mechatronics, or relevant military experience can get them started.

You can help prepare future technicians by encouraging STEM learning in electronics, robotics, and algebra. Games like Tetris, Circuit Maze, and tools like Snap Circuits, micro:bit, or Arduino help students explore circuits and systems thinking in fun, accessible ways. If your students love to build, fix, and improve systems, this could be the career path that turns their passion into purpose.

*~Sarah Jones, Idaho STEM AC Extern at ION*

# Spotlight on TMC Works at Union School

## Think Make Create
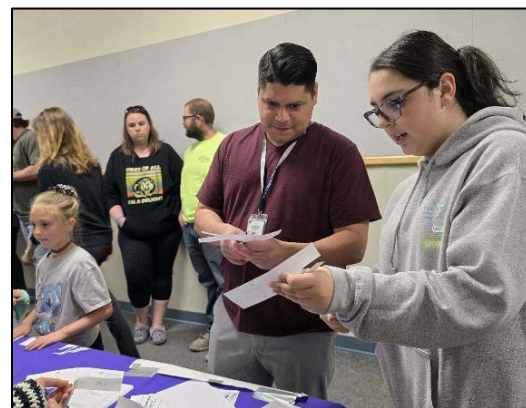
## WORKS

Students at Union School in the Nampa School District take charge of their education through TMC Works, a career development program led by the Idaho Out-of-School Network. In the program, teens learn to facilitate STEM activities for younger kids, gaining STEM knowledge and foundational workplace skills

The 8th and 10th grade participants underwent extensive training in planning, preparing, and leading STEM activities using a Think Make Create (TMC) Lab. To further enrich the participants' experience, Dr. Pickelstein, a seasoned STEM educator from Boise State University, visited the students. He shared his insights on teaching STEM, the importance of embracing failure as a learning opportunity, and making the material accessible for all youth in attendance. To provide practical experience, the participants took field trips to places like the zoo, a children's hospital, and the local science museum where they were able to facilitate STEM-related activities with an authentic audience. These experiences not only enriched their learning but also allowed them to apply their skills in real-world settings.

One of the most exciting aspects of the program is the construction of a state-of-the-art STEM lab at Union School. This lab—built, coordinated and staffed by the students themselves—will serve as a hub for STEM education for the entire school district, offering a space for teachers to bring their classes for field trips. The lab is equipped with advanced tools, including VR, drones, and woodworking equipment, all selected and planned by the students. TMC Works at Union School is a testament to the power of student-led initiatives. By giving students the tools and opportunities to lead, the program not only enhances their educational experience, but also prepares them for future success.

*~Henry Stoddard and Amy Post, Idaho Out-of-School Network*

# Give It A Try: Balloon Bust



Here's a summer STEM challenge to spark curiosity and get students moving, thinking, and collaborating—Balloon Bust. It's an exciting, interactive activity that blends creativity, engineering, and a splash of fun. The premise is simple: What happens when you drop a water balloon from a height of 25 feet? Is there a way to keep it from bursting?

In this challenge, students are tasked with designing a device or structure—using everyday materials—that can protect a water balloon when dropped from a second-story window, balcony, or even the tallest playground equipment. Through this process, they'll explore key concepts like gravity, impact force, and energy absorption, all while working together to solve messy, real-world problems.  Plus, who doesn't love water balloons? This free activity can be found here: https://discovere.org/engineering-activities/balloon-bust-2/

*~Alana Pearson, Nebraska Beyond School Bells*

# Put it Into Practice: Student-Centered Learning

Student-centered instruction is focused on guiding and empowering students to take steps to take ownership of their own learning, ask themselves questions, and promote problem-solving skills, as opposed to teacher-centered instruction, where the facilitator models or explicitly shows answers.

Using a student-centered approach helps students develop skills of independence and creativity while providing deep engagement. An example that you may have seen is a collaborative invention challenge. With this strategy, students work in teams to design and build solutions to a posed problem or question, like creating or building a model that can launch a ball across the room. A second example could be posing a real-world problem and inviting students to collaborate to create a solution. With this format, students start with a problem that matters, then they work together to create their own solutions using collaboration and design thinking. Examples of this could include reducing lunchroom waste, local accessibility issues, or local environmental issues.

*~Caitlin McLeod, Idaho STEM AC Extern at Idaho Out-of-School Network*

## Tips and Tricks: Effective Questioning to Deepen Student-Centered Learning

Using effective questioning is a key component to success with student-centered learning. Preparing open-ended questions before the lesson helps students think critically and reflect deeply. Questions like "Why do you think that happened?" or "Can you think of a different strategy to try?" will encourage exploration without providing students with an answer. You can also ask students to explain their reasoning, compare ideas, or predict outcomes of changes. For even deeper learning, have students generate their own questions during activities. This strategy increases ownership, adds meaning, and promotes genuine curiosity.       *~Caitlin McLeod, ION*

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