



LABS

The Makerspace Playbook

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CAREER SPOTLIGHT: ROBOTICS ENGINEER

Do the youth you work with enjoy building, problem-solving, and working with technology? Introducing them to a future career as a Robotics Engineer could spark their interest in STEM! Robotics engineers design and develop robotic systems used in industries such as healthcare, manufacturing, aerospace, and even entertainment.

These professionals typically earn a bachelor's or master's degree in robotics, mechanical engineering, electrical engineering, or computer science. Their studies include courses in coding, physics, artificial intelligence, and automation.

Robotics engineers use their skills to create machines that improve efficiency, safety, and quality of life. They may design robotic arms for surgery, self-driving vehicles, or even robots for space exploration. As technology advances, the demand for robotics engineers continues to grow, offering exciting career opportunities in cutting-edge industries.

To incorporate this into a STEM activity, consider having students design and build simple robotic models using household materials or basic coding programs like Scratch or LEGO Mindstorms. Encouraging hands-on experimentation helps reinforce engineering concepts and problem-solving skills.

By exposing youth to robotics engineering, you can inspire them to explore innovative careers in STEM!

*~Megan Studebaker, University of Idaho
Extension AmeriCorps Member*



Spotlight on You: INSPIRE in Taos, NM

In spring 2024, New Mexico received its first TMC Lab! Thanks to a private donation, an unused TMC Lab was recycled and retrofitted to meet the needs of [INSPIRE Bilingual Early Learning Center](#) in Taos, NM. The [New Mexico Out-of-School Time Network](#) (NMOST) coordinated with Nebraska's [Beyond School Bells](#) to move the TMC Lab to its new home in northern New Mexico. INSPIRE runs afterschool programs for 4- to 11-year-olds at three locations in Taos. These programs focus on exploration, creativity, and collaborative learning and take the children's interests and feedback into consideration to ensure continued engagement. The addition of the TMC Lab enhances INSPIRE's ability to offer STEM activities to their students and gave them the ability to incorporate STEM learning activities into community pop-up events.

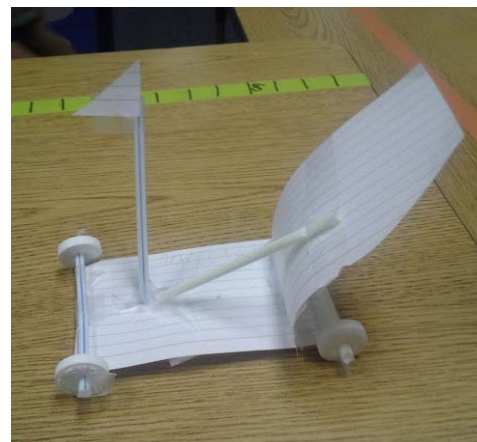
INSPIRE was founded in 2012 to meet the critical need for high-quality early childhood education that adapts to the linguistic and cultural needs of the area. Today, INSPIRE has four main locations: two in Taos, one in Arroyo Seco, and one in Red River, along with IMAGINE, a children's museum in Taos. The TMC Lab is a natural addition to INSPIRE's Reggio-inspired programs which focus on open-ended and natural materials to encourage children's exploration and self-expression. The mobile TMC Lab enables INSPIRE to engage children in the out-of-school time programs at all of their locations in hands-on STEM activities.

As New Mexico's first TMC Lab host, INSPIRE is setting the standard for the state and showing the possibilities and promise of early STEM learning opportunities for children in rural New Mexico. NMOST hopes INSPIRE's success will inspire other providers to host their own TMC Labs throughout rural New Mexico in the near future.

~Sarah Pratt, Director of Operations, New Mexico Out-of-School Time Network

Give It A Try: Puff Mobile

Finding quality STEM lessons that engage students in the design process while encouraging teamwork, physical activity, and affordability can be a challenge. This TMC lesson combines all these elements by exploring renewable energy sources. Participants will design and build a wind-powered car using simple materials like straws, Lifesaver candies, paper, and tape. The goal? To get their car across the finish line using as few puffs of air as possible, an exciting way to spark creativity and problem-solving skills! To find this lesson and learn more about FREE Discover Engineering curriculum, visit this [LINK](#). These lessons also separated by time, careers, grade level, and topic. Clicking on "Challenge Video" connects you to a video that features Million Girls Moonshot flight crew members demonstrating how to complete the activity.



~Alana Pearson, TMC Labs coordinator, Nebraska's Beyond School Bells

Advancing STEM Through TMC Labs & Local Collaboration in Rural Georgia

Twiggs County Public School's work with several local STEM partners is making significant strides in STEM education for its students. Think Make Create (TMC) Labs foster hands-on learning and innovation. At [Georgia Youth Science & Technology Centers](#) at Mercer University, students engage in interactive science and technology experiences. [STARBASE Robins](#) enhances STEM exposure with aerospace and engineering programs in the school, while [Georgia Tech CEISMIC's](#) partnership with Twiggs County Middle/High School equips students with cutting-edge computational skills.

Additionally, Twiggs County students participate in the [Museum of Aviation's](#) STEM Camps and the STEM Academy, gaining real-world insights into aviation and technology. The [Georgia Statewide Afterschool Network](#) (GSAN) has played a crucial role in supporting TMC Labs, recognizing the initiative as the first step in Georgia's STEM Ecosystem. These partnerships empower students with 21st-century skills, preparing them for future careers in STEM fields. Twiggs County continues to lead the way in rural STEM education, fostering curiosity and innovation for the next generation.

~Anthony Wilkes & Gregory Doss, Georgia Statewide Afterschool Network

How to Build Strong Local Collaboration for TMC Labs

Successful Think Make Create (TMC) Labs thrive on strong local partnerships. In rural Georgia, engaging STEM partners, schools, and community leaders is key to finding funding, volunteers, participants, materials and other essential program resources. Start by identifying local libraries, universities, and businesses willing to support hands-on learning. Host community showcase events to highlight student projects and attract new partners. Leverage existing school programs to integrate STEM initiatives seamlessly. Encourage local businesses to sponsor materials or mentorship opportunities. Most importantly, foster ongoing communication with partners; regular meetings and shared goals ensure long-term impact. Collaboration fuels creativity, empowers students with real-world STEM skills for future success.

~Anthony Wilkes & Gregory Doss, Georgia Statewide Afterschool Network

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