

impact

University of Idaho Extension programs that are making a difference in Idaho.

Reaching new audiences with hands-on STEM education

AT A GLANCE

The statewide program, Think Make Create Labs, expands programming to new audiences, reaching more than 15,000 youth in two years.

The Situation

University of Idaho Extension 4-H Youth Development program and the Idaho Out-of-School Network together own and manage Idaho's Think Make Create (TMC) Labs. This statewide program consists of 28 utility trailers that may be set-up as a mobile classroom or used in conjunction with more formal educational settings to increase STEM (science, technology, engineering and mathematics) access, awareness and resources to Idaho communities through direct delivery to youth. Each TMC lab includes curriculum and supplies for 55 STEM activities for use with up to 30 youth, targeting Kindergarten through 8th grade. Activities focus on low-tech, accessible materials and include subjects such as engineering and design, electronics and the arts. However, after three years, the program needed new lessons and activities that would include expanded subject areas, such as agriculture and natural resources, to meet the requests of our users to reinvigorate old topics in a new way.

Our Response

To expand the educational offerings within the TMC labs, 4-H procured two years of funding from the American Rescue Plan Act (ARPA) that would allow the program to hire staff and purchase materials to



Using the TMC On the Go! Seeds to Bees kit, youth construct a flower using a variety of skills and materials.

create, build and ship activities to TMC lab hosts and users.

TMC Lab partners previously shared ideas and suggestions for new lessons. Those recommendations were incorporated into the planning of three TMC On the Go! kits. Ag-ventures! explores farms, the commodities that come from each and the impact of agricultural inventions. Seeds to Bees kit walks youth through seeds, their lifecycle and importance and how seeds can be used to support pollinators. Mystery Science dives into forensics and turns youth participants into science investigators.

The three TMC On the Go! kits were created with three to four lessons each, that includes the lesson plans, handouts, activities, a fiction and non-fiction book,

and the materials for use with 30 youth; each kit is valued at \$500. Kits were then assembled and shipped to youth programs that preregistered.

Program Outcomes

By creating and shipping the TMC On the Go! kits, we were able to expand hands-on STEM education to rural and underserved audiences, as well as working with new partners to TMC labs. These three kits allowed for programs to invest in the delivery of STEM education, without any financial investment. The kits were also made for easy program delivery as all the materials were provided, educators just had to secure a time and location, which we confirmed with them before shipping the kits.

With the \$983,333 funding for two years, Idaho's Think Make Create Labs were able to hire two full-time employees and reach 15,420 youth. TMC On the Go! kits were shipped to 31 counties and two tribal programs, reaching 125 communities. Of the 57 organizations that requested the new curriculum, 72% of them were first time users of TMC labs.

Each kit included youth surveys, assessing STEM interest and learning of participating youth. We had an 89% youth completion rate (and a 35% survey return rate). The average reporting youth age was 9 years old and shared:

- 95% like science
- 80% like to try new things to see how well they will work
- 81% shared what they learned with others
- 91% learned something new during these activities

These high percentages shows that educational learning loss was addressed through TMC On the Go! kits. Youth reported they learned something new, were willing to try new things to see how they work, enjoyed the lessons and shared what they learned with others. By introducing STEM education to youth at a younger age, youth will have a better understanding of what STEM is and will begin building STEM skills and practices that will help them as they grow into young adults.

Additionally, the introduction of the kits welcomed new educators and youth programs to partner with Think Make Create Labs. These new audiences will allow TMC labs to continue increasing access, awareness and resources to Idaho communities through hands-on STEM education for youth and adults.

The Future

TMC On the Go! kits are no longer shipped to youth programs. However, the educational materials and inventory list are available to TMC lab users at no cost for easy replication. If you are interested in these materials, please contact csponseller@uidaho.edu for more information.

FOR MORE INFORMATION

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