

Community program grant provides robotics and coding opportunities for youth

AT A GLANCE

Boundary County 4-H provided valuable programming in the areas of robotics and coding to local youth due to a Community Program grant from the Idaho Department of Health and Welfare.

The Situation

University of Idaho Extension, Boundary County, located in northern Idaho, is rural and has limited resources. This restricts the opportunities for youth in the county to participate in STEM-based programming both during and outside of school. Many rural communities do not have adequate resources to implement STEM curricula that is beneficial in preparing students for science and math competency. This deficiency hinders our country's ability to train enough STEM professionals, but it also diminishes educational equity among U.S. students.

Our Response

After recognizing this need for increased STEM learning opportunities in Boundary County, the University of Idaho Extension educator applied for a Community Program grant through the Idaho Department of Health and Welfare. They were awarded a total of \$60,000 in grant funding from September 2021-August 2022.

The grant funding was used to create new programming to enhance young learners' ability to understand STEM-related concepts through hands-on, experiential learning. Boundary County 4-H used these funds



Youth at a day camp programming Dash robots to move cups in a pattern.

to purchase the materials and equipment needed to provide education opportunities utilizing KIBO, Robot Mouse, Dash & Dot Robots and LEGO SPIKE Prime. These programs are designed for a variety of ages, therefore providing the opportunity to educate youth between the ages of five and 13. Enough materials were purchased for each program to accommodate one full classroom of approximately 24 students.

The University of Idaho Extension office in Boundary County did not have adequate staffing to fully implement the program, so two part-time employees were hired to carry out the robotics programming. They also chose to partner with other organizations in the community to help reach more children outside of the youth currently enrolled in the traditional 4-H

impact University of Idaho Extension

programs offered by UI Extension. These organizations included both the Boundary County School District #101 and the Boundary County Library.

Through these partnerships, Boundary County 4-H was able to provide five-week long robotics sessions to each Kindergarten-fifth grade classroom in Boundary County School District. All classes participated in one five-week session, with a little over half of them being able to participate in a second session. They also implemented several sessions on Fridays during the school year to reach kids not enrolled in the public school system. During the summer, they had several sessions each week and even held a day-long robotics camp.

Program Outcomes

One of the main goals of the program was to reach at least 100 youth each of the three grant periods. Another goal was to expand the program reach to new audiences, especially girls. The table below shows the number of youths participating in the program during each period of the grant.

Youth Participants in Robotic Programming

Grant Period	Male	Female	Total Youth
9-1-21 to 12-31-21	52	72	124
1-1-22 to 4-30-22	406	343	749
5-1-22 to 8-31-22	261	220	481
TOTAL	719	635	1,354

The youth impacted by this program, as well as the teachers and administration at their schools, found the program to be very positive. The youth looked forward to the program each week and were excited to tell their families about what they had learned. Boundary County 4-H has had nothing but positive reports about this program from teachers, principals and even the school district superintendent.

Through this program, they were able to reach many youth with no prior 4-H experience during their out-of-school programming, especially in the summer. A few of the children had special needs and the instructors were able to adapt the program and find ways for them to successfully participate. One mom, who has a son with special needs, posted this on Social Media: "Boundary County 4-H has amazed us this summer. So many free, enriching programs for local kids! ***** (her son) decided to draw all three robots he had used in the Robotics classes from the last two weeks, in detail, from memory. Proud of both my boys with their penchant for engineering."

The Future

This program has been extremely successful and well received by the whole community. Due to this success, Boundary County 4-H applied for a second year of funding from the Idaho Community Program grant. The application was successful, and they plan to continue partnering with the schools and other organizations to implement more robotics and coding programming. They plan to incorporate the materials and curriculums already purchased, as well as include new programs such as Sphero robots, LEGO Essentials and drones.

FOR MORE INFORMATION

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