

impact

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

Sky's the Limit with University of Idaho Extension's 4-H program in Valley County

AT A GLANCE

Through the Idaho Community Program Grant, UI Extension 4-H Youth Development program in Valley County provided new drone programming opportunities targeted to youth ages 5-13.

The Situation

UI Extensions' 4-H program in Valley County, along with 4-H I-STEM and local schools, delivered multiple drone programs and training for adults.

Sky's the Limit team identified three unique opportunities for youth to participate in drone programs. Local partners and Valley County 4-H recognized opportunities not only for youth, but also to engage with 4-H volunteers to help deliver programming.

A STEM team was created which worked with stakeholders to identify areas where programming would most benefit the local community. Meetings with Payette Lakes Middle School, Barbara Morgan Elementary, Donnelly Elementary and Cascade schools revealed needs for multiple programs at different locations that lowered attendance barriers for local area youth. Each program had its own measures of success tailored to the audience and the programs duration.

Our Response

The 4-H STEM team adapted curriculum from I-STEM and PCS Edventures and worked with Payette Lakes Middle School, Barbara Morgan Elementary and Donnelly Elementary to host two, single-day mini-camps. Two training opportunities, program support and



Donnelly Drone Camp with STEM 4-H youth and Drone Instructor Rich Stowell. Photo by Alysson Statz.

community STEM interest events were created and coordinated by Sky's the Limit Valley County STEM team. These programs took place at the Cascade School, Payette Lakes Middle School, 4-H facility in Gem County for 4-H volunteers and youth, and McCall Airport.

Program Outcomes

University of Idaho Extension's 4-H in Valley County conducted 18 Drone STEM programs and reached over 350 students ages 5-14 throughout Cascade, Donnelly and McCall.

Using indoor drones, students learned flight safety protocols, operational controls, 3-D operations, drone maintenance, troubleshooting and teamwork. Students

reviewed controls and safety operations weekly through interactive games to help sustain learning.

The Donnelly After-School Program audience consisted of youth ages 5-11 and two instructors Rebecca Levandowski and Alysson Statz. Valley County 4-H adapted the original program to meet the needs of new members who joined weekly. These students began with little-to-moderate drone experience, with most never having seen a drone before.

By the end of this six-week program, students could maneuver in technical obstacle courses. Participants constructed dimensionally accurate obstacles with a LEGO Brick lab for skills courses. This program also provided a unique opportunity for students to take on a mentor role with new participants who could only join for one or two classes.

Alternatively, participants from Cascade Schools previously completed a six-week drone using the PCS Edventures “Ready, Set, Drone” curriculum from PCS Edventures with their Cascade After-School program instructors Krystal Kangus and Trish Status. Those basic fundamentals were the precursor to the PCS Edventure “Drone Designers” program, “Exploring STEAM Careers.” Over the course of four weeks, Rebecca and Alysson worked with students on block coding through an online application that was compatible for drone flight; choreographed drone “dances;” developed troubleshooting skills; learned about set design; and experienced the artistic capabilities drone light shows provided in entertainment. Students used craft supplies and LEGOs to build sets and give their drones unique personalities for performances conducted for younger Cascade Afterschool Program participants.

The drone mini camps conducted by Rich Stowell, Rebecca Levandowski and Alysson Statz during spring break were five hours and included significant hands-on flight time. Students learned common aviation rules and language used in flight to communicate complex operations to teammates.

FOR MORE INFORMATION

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Within the day camp program format and with instructor Rich Stowell, Valley County 4-H prioritized operational controls skills with two types of indoor drones for advanced skills development. The Sanrock and Tello indoor drones provide different experiences for students through varying levels of response time and hovering capabilities. By the end of the mini-camp, most students rated their drone experience an average of two points higher on a scale of one-to-five than they did at the start of the program. They also felt more comfortable communicating with one another as teammates while operating their drones. A few students attended the camp a second time, becoming mentors to the new participants. These repeat students showcased the improvements between the two days, and students gave themselves a rating of five in extensive knowledge after the second day.

The training opportunity for the Gem County 4-H volunteers taught by Rich Stowell and Rebecca Levandowski proved to be a successful model on how to sustain this type of programing. The three volunteers they trained rated themselves on average two points higher in competency at the end of the training compared to the beginning. After demonstrating their knowledge, they could each successfully instruct students individually to provide future drone programs in their county independently.

Demonstrations and displays at McCall Airport Fly-In gathered support and interest from new community partners to continue providing drone programming throughout the county. With continued support and funding, Valley County 4-H continues to teach drone classes in a variety of formats and provides classes working with youth to best serve the community.

Cooperators and Co-Sponsors

Rebecca Levandowski, Sky’s the Limit coordinator/instructor, Idaho Community Program Grant; and Rich Stowell, licensed flight instructor/pilot, Sky’s the Limit drone coordinator/instructor.