Ashland Christian School students tackle food security challenges

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Congressman Bob Gibbs, center, speaks to second and third grade students about growing food with vegetable scraps and composting. Nancy Earick, left, from the Ashland Solid Waste & Recycling Center provided composting instruction for students. *Submitted photo*

Administrator Bessann Carr harvests vegetables from a tower garden during the #STEMFeedsOhio showcase at Ashland Christian School. *Submitted photo*

Ashland Christian School hosted their #STEMFeedsOhio showcase on April 5 where students participated in the Ohio STEM Learning Network's food security design challenge. According to the United Nations, by the year 2050, farmers will no longer produce enough food to feed the world so students developed prototypes to improve food security Congressman Bob Gibbs talked to students about the importance of farming and STEM education.

"I always like to say that America is the breadbasket of the world," Gibbs said in a news release. "We grow and raise safe, stable and affordable agriculture products that feed hundreds of millions of people. But as the number of farmable acres in the United States shrinks, we have to rely on our entrepreneurial spirit and technological innovation now more than ever. Food security is an important issue and it is reassuring to see so many students take an interest in and dedicate their time to finding solutions. STEM education is so important in ensuring America continues to use innovation to alleviate hunger and build longer-lasting food supplies."

Ashland Christian students provided a showcase with STEM partners to highlight innovative projects that help preserve food and sustain agriculture.

Food security projects specifically involved developing prototypes that helped save bees through seed mats and seed sandwiches being launched in the air by robotic fans or catapults; other projects that focused on making food last longer and students developed innovative dehydrators after learning about how past civilizations preserved food.

Preservation projects further involved students creating smoothies for the refrigerator or freezer with the use of their tower garden, a vertical aeroponic growing system for fruits and vegetables. **The Ashland County Community Foundation funded the tower gardens at ACS through an IMPACT Youth Grant and a Community Grant**. Ashland Christian School also applied for a community grant on behalf of participating schools in Ashland County and 11 school buildings received a tower garden through the grant.

Additional food preservation projects included growing food with recyclable materials and composting; students learned composting helped make plants last longer in the soil, structurally, during extreme weather situations. Student projects also involved working with satellite imagery and drones to examine where fertilizer should be placed in order to save farmers money, and building a barn extreme weather app that helps further sustain agriculture by ensuring animal safety. Invention Convention projects included in the food security showcase included a project using a Raspberry Pi sensor and coding that released a specified amount of feed for animals, as well as a fully patented solution to help cows increase milk production during extreme weather conditions.

At the conclusion of the #STEMFeedsOhio showcase, ACS announced the "Barn Extreme Weather App" project was selected for showcase at the 2019 OSLN STEM Feeds Ohio Design Challenge in Columbus.

"I am so impressed by the depth of thought the students have put into their presentations, and even more impressed by their ability to explain and answer questions about their projects," said Ashland Mayor Matt Miller. "Their projects clearly demonstrate that they are able to see how the lessons that they have learned in their classrooms relate to real-world challenges. It is exciting to see their enthusiasm and the pride they take in the work that they do."

Zac Ames from the Ohio STEM Learning Network through Battelle also attended the event.

“I really enjoyed coming back to my hometown and seeing the work that the Ashland Christian students have put into solving the food security issue. Through their classroom curriculum and time spent with groups, they have realized many of the issues facing the food industry and worked to relieve the pressures through creative means,” Ames said. “They have also shown great community awareness as they have partnered with local farmers and businesses to find an effective solution for the community of Ashland. The students creativity, passion and technical design demonstrates that many of them are ready to embrace a future in STEM careers and create lasting change at a local and global level.”

“The students of Ashland Christian School were eager to explain their projects and it shows that the younger generation will work to keep the food chain under control,” said Dean and Doris Welch from U-Dean Farms.

“STEM has a vital relationship to soil health and regenerative agriculture by providing information on the use of fertilizer and chemicals, and may alleviate practices such as cover crops and no till,” said Esther Welch, an Ashland farmer that attended the showcase.

Special thanks to Allison Durbin of Durbees Honey Farm; Nancy Earick of Ashland County Solid Waste & Recycling Center; Kelly Harris from Tower Garden & Juice Plus; STEM education volunteer Sandy Welch; dron education volunteer John Teevan; ACS computer science teacher Bethany Frazer; and STEM Accelerated Coding.