In the spring of 2011, National 4-H Council launched the first ever, comprehensive robotics curriculum for youth from 4th to 12th grade, titled Robotics: Engineering for Today and Tomorrow. Developed in partnership with the University of Nebraska–Lincoln, this interactive curriculum focuses on physical science concepts related to robotics, engineering design processes and the exploration of possible careers in the field. In addition to hands-on, team atmosphere learning, it offers youth an online space to experiment with robotic components and programming using virtual robotic tools. The professional development curriculum offers adults the education and support needed to build their capacity for guiding 4-H’ers through the organization’s 4-H Robotics program.

Robotics Program: The First Three Years

The 4-H Robotics program launched in April 2009 when the organization formed a strategic partnership with FIRST Robotics. Together, 4-H and FIRST were able to further a shared pursuit of reaching American young people with more opportunities to explore science, technology, engineering and mathematics (STEM) careers through hands-on, team-based experiences in the design, building and programming of robots. In the last three years, 4-H has established 100 competitive FIRST Robotics teams nationwide, created a comprehensive robotics curriculum for youth and developed a training curriculum for adult volunteers.

4-H Robotics for Every Child

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Nearly 400,000 4-H youth nationwide now participate in robotics and engineering programs through 4-H clubs. Ten states are able to offer this unique opportunity through an additional strategic partnership with the jcpenney Afterschool Fund. This support helps fund not only after-school programs for robotics, but also activities for nearly 40 of the 4-H FIRST Robotics Teams. Funding from Lockheed Martin has made it possible for six additional states to organize 4-H Robotics Clubs that engage Lockheed Martin employees as project leaders, mentors, and coaches for 4-H youth.

Engineering for Tomorrow

There is proof that 4-H’s science programs have a positive impact on youth. According to research conducted by the Institute for Applied Research in Youth Development at Tufts University, young people involved in 4-H perform better in science, engineering and technology subjects and are more likely to pursue science careers. At a time when the US is falling behind other countries in these fields, 4-H is uniquely preparing America’s youth to step up to the challenges of a complex and changing world.

4-H Robotics Teams Step Up to the Challenge

Since the partnership with FIRST Robotics in 2009, 4-H’s competitive robotics teams continue to excel at competitions at the regional and state levels. The excitement for robotics drives 4-H’ers to success even at the national level, where 11 of the 100 4-H FIRST Robotics teams from across the country competed in the national 2011 FIRST Robotics Competition finals in St. Louis. All of the teams performed well, and AIR Strike 78 of Rhode Island represented 4-H through the semi-final rounds.