



4-H ROBOTICS PROJECTS

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Recently there has been a push to encourage youth to pursue science and math related professions. This is not without good reason, as only 18% of American high school students are considered proficient in science, while only 5% go on to pursue degrees in science and math. If our nation hopes to continue to hold its technological edge, it is critical that we equip youth with the skills needed to attain the careers of tomorrow. 4-H is committed to equipping the next generation of scientists and engineers through hands-on educational programs.

JUNK DRAWER ROBOTICS

(Ages 8—18)



The Junk Drawer Robotics curriculum was created by National 4-H Council thanks to funding from Lockheed Martin Co. and the JC Penney After School Fund. It was intended to teach youth fundamental robotics knowledge using basic household materials. The series features three books whose content progressively increases in complexity. Youth will explore robotic arms, locomotion, and programming over the course of completing the project. Included is an engineering notebook that allows youth to document their learning as the project progresses. For more information visit: <http://www.4-h.org/resource-library/curriculum/4-h-robotics/>



FIRST FLL ROBOTICS

(Ages 9—14)

This program introduces youth to real world challenges in an exciting competition that combines robot design, programming, research, and public speaking. Participants work in teams to design and construct a robot that completes tasks on a thematic playing surface. Past competitions have addressed issues such as water quality, food safety, and elder care. For more information visit: <http://www.usfirst.org/>



For more information on Orange County 4-H robotics programs visit <http://clubs.oc4-h.org>



FIRST FTC ROBOTICS (Ages 12—18)

In this competition youth work alongside adult volunteers to design, build and program robots for competition. While the competition changes from year to year, the robotics kit is reusable. The season culminates in a series of team competitions that recognize robot performance, design, presentation skills, community service, much more. For more information visit <http://www.usfirst.org/roboticsprograms/ftc>



FIRST FRC ROBOTICS (Ages 14—18)

In this, the highest level of FIRST Robotics, youth work in teams to design and construct a robot. Participants raise funds, design a team brand, and build and program a robot to perform prescribed tasks against a field of competitors. The season culminates in a series of team competitions that recognize robot performance, design, presentation skills, community service, much more. For more information visit:

<http://www.usfirst.org/roboticsprograms/frc>



References

Florida Robotics Education (2013). *Floirda FIRST Robotics League*. Retrieved from www.flrobotics.org/

National 4-H Council (2011). *Junk Drawer Robotics*. Retrieved from <http://www.4-h.org/resource-library/curriculum/4-h-robotics/junk-drawer-robotics/>

U.S. FIRST (2013). *FIRST robotics programs*. Retrieved from <http://www.usfirst.org/>

ORANGE COUNTY 4-H ROBOTICS CLUBS	
CLUB NAME	PROJECT
4-H Exploding Bacon	FIRST FLL, FRC
Apopka Robotics Club	FIRST JFLL, FLL, FTC
Dent in the Universe	FIRST FTC
Engineers Mentoring Students	FIRST FRC
Orlando Robotics	4-H Robotics
RecycleBots	4-H Robotics
Sonic Boom	FIRST FLL
West Orange Robotics	FIRST FTC
Winter Garden Robotics	FIRST FLL

For contact information visit <http://clubs.oc4-h.org>