WHAT’S IT ALL ABOUT?
Exploring 4-H Robotics is an ideal way to introduce science, math, engineering and technology while teaching life skills. Through hands-on activities, the 4-H Robotics projects teach basic concepts related to robotic subsystems such as structure, power, sensors, control and programming. These concepts are the foundation for building robots and robotic subsystems from a variety of materials and packaged kits. 4-H Robotics has projects and resources for a wide variety of interests.

HERE’S WHAT YOU CAN LEARN...

STARTING OUT
✦ Explore the world of robotics and how robotic systems are used in everyday life
✦ Learn to identify the important parts of a robot and use problem solving to design and program a robot to do basic tasks

LEARNING MORE
✦ Fine tune your robot’s design to perform specific tasks, including creating versatile attachments to grasp, grab and move objects
✦ Learn to use robotic sensors to detect sound, objects and to track and follow lines

GOING FURTHER
✦ Learn to use advanced programming strategies to perform more complicated tasks
✦ Explore different types of robotics systems including making your own through “Junk Drawer Robotics”

RESOURCES
✦ *Robotics Engineering Volume 1*
✦ *Robotics Engineering Volume 2*
✦ *NXT Video Trainer*
✦ *Junk Drawer Robotics*
### TAKE AEROSPACE FURTHER!
- Take a field trip to a facility that uses robotics (manufacturing, processing etc)
- Explore robotics careers using online resources
- Learn about what robotics design engineers do
- Attend a robotics camp
- Complete the robotics challenge at Showcase Showdown
- Do a presentation on how robotics is used in medicine (da Vinci robotic surgery)

### EXHIBIT IDEAS
- Make a poster of robot parts and describe how they work
- Make a poster or an exhibit of the robot you designed and include information on what the robot does and how it is programmed
- Demonstrate how your robot performs and include information on how you programmed it
- Make a display that describes a field trip you took to learn about robotics

### ENHANCE YOUR COMMUNICATION SKILLS
- Do a presentation on how robotics is used to make things for our everyday life
- Demonstrate your robot in action and describe how you designed it and programmed it
- Demonstrate the use of sensors on your robot and how they can relate to sensors used in robotic controls in manufacturing processes

### GET INVOLVED IN CITIZENSHIP AND SERVICE
- Organize a robotics demonstration for your community
- Organize a workshop to teach others about robotics
- Create a display showing what you can do in the 4-H robotics project and place it in a public location like a library, museum or at a school

### LEARN ABOUT LEADERSHIP
- Teach younger members about robotics
- Attend a cloverbud meeting and let the members work with a robot you have designed
- Organize an open house in your community to promote the robotics project

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Issued in furtherance of extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture.

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