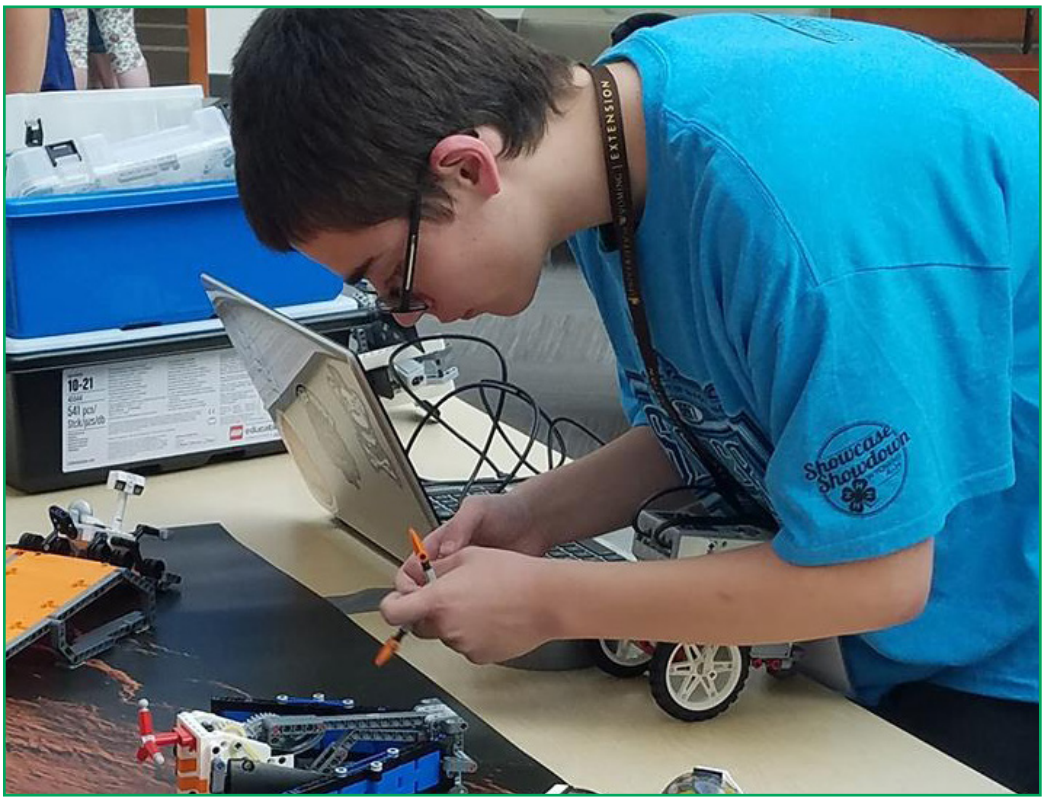
UW | Wyoming 4-H

ROBOTICS



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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