

## ROBOTICS

The name and county of each Science, Engineering and Technology exhibitor should appear separately on the back of each board, poster or article and on the front cover of the notebooks. One exhibit per class unless otherwise noted. Several classes require a display board which should be a height of 24" and not exceed 1/4" in thickness. A height of 23 7/8" is acceptable to allow for the saw kerf (width) if two 24" boards are cut from one end of a 4'x8' sheet of plywood. Nothing should be mounted within 3/4" of the top or bottom of the board. Fabricated board such as plywood, composition board, or particle-type lumber may be used for display boards. Display boards should be sanded and finished to improve their appearance. The finish on a display board will be judged as a woodworking exhibit. Display boards should include an overall title for the display, plus other necessary labeling. All reports should be computer generated, enclosed in a clear, plastic cover, and attached securely to the display. Reports should be written using the scientific method whenever possible (background, the question or hypothesis, what you plan to do and what you did, method used and observations, results, what you learned).

### Division 861: Robotics

Youth enrolled in Virtual Robotics, Junk Drawer Robotics, Robotics Platforms or GEAR TECH 21 may exhibit in any class within this division.

**H861001 - Robotics Poster (14"x22")** communicating a robotics theme such as "Robot or Not", "Pseudocode", "Real World Robots", "Careers in Robots" or "Autonomous Robotics", "Precision Agriculture" or a robotic topic of interest to the 4-H'er.

**H861002 - Robotics Notebook** – Explore a robotics topic in-depth and present your findings in a notebook. Documentation should include any designs, research, notes, pseudocode, data tables or other evidence of the 4-H'ers learning experience. The notebook should contain at least three pages. Topics could include a programming challenge, a programming skill, calibration, sensor exploration, or any of the topics suggested in Class 1.

**H861003 - Robotics Video** – This class should be displayed in a notebook. The notebook should include a video clip on a CD/DVD that demonstrates the robot performing the programmed function. Include your pseudo code and screenshots of the actual code with a written description of the icon/command functions.

**H861004 - Robotics/Careers Interview** – Interview someone who is working in the field of robotics and research the career in robotics. Interviews can either be written or in a multimedia format (CD/DVD). Written interviews should be in a notebook. Written reports should be 3 to 5 pages, double spaced, 12 point font, and 1" margins. Multimedia reports should be between 3 to 5 minutes in length.

**H861005 - Robotics Sensor Notebook** – Write pseudo code which includes at least one sensor activity. Include the code written and explain the code function.

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**Sherman County** • Box 459 • Loup City NE 68853-0459 • 308-745-1518 • [Sherman-County@unl.edu](mailto:Sherman-County@unl.edu)  
**Valley County** • 801 S Suite 1 • Ord NE 68862-1857 • 308-728-5071 • [Valley-County@unl.edu](mailto:Valley-County@unl.edu)

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**H861006 - Build a Robot** (may use kit) – Include a robot and notebook including the pseudocodes for at least one program you have written for the robot, the robot’s purpose, and any challenges or changes you would make in the robot design or programming.

**H861007 - Kit Labeled Robot** (cannot be programmed) – This class is intended for explorations of robotic components such as arms or vehicles OR educational kits marketed as robots that do not have the ability to be programmed to “sense, plan and act.” The exhibit should include a project the youth has constructed, a description of what it does and an explanation of how it is similar to and different from a robot.

\*class exhibited at county fair only – not eligible for state fair