

SCIENCE, ENGINEERING & TECHNOLOGY

DEPARTMENT H

► ALL STATIC EXHIBITS MUST HAVE RECEIVED A PURPLE RIBBON AT THE COUNTY FAIR TO ADVANCE TO THE STATE FAIR.

GENERAL INFORMATION

The name and county of each exhibitor should appear separately on the back of each board, poster or article and on the front cover of the notebooks so owner of exhibit may be identified if the entry tag is separated from the exhibit.

Each individual is limited to one exhibit per class.

Several classes require a display board which should be a height of 24" and not to exceed 1/4" in thickness. A height of 23 7/8" is acceptable to allow for the saw kerf (width) if two 24 inch boards are cut from one end of a 4' X 8' sheet of plywood. Nothing should be mounted within 3/4" of the top or bottom of the board. (Example: Woodworking, Small Engines, & Electricity.)

Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.

Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.

Demonstration boards should include an overall title for the display, plus other necessary labeling.

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. All reports should be computer generated and enclosed in a clear plastic cover. The reports should be attached securely to the display.

ROBOTICS

Department H - Section 861
Premium Schedule B

Youth enrolled in Virtual Robotics, Junk Drawer Robotics (Level 1, 2, or 3), Robotics Platforms or GEAR TECH 21 may exhibit in any class within this division.

Team Entries: To qualify for entry at the Nebraska State Fair team materials entered in robotics classes that are clearly the work of a team instead of an individual must have at least 50% of all team members enrolled in 4-H. Additionally all enrolled 4-H members on the team should complete and attach an entry tag to the materials. A supplemental page documenting the individual contributions to the project should be included. The entry will be judged as a team, with all team members receiving the same ribbon placing.

Creating a video of your robot in action would be helpful for the judges but is not mandatory present as a CD Rom with your robot entry.

ROBOTIC EXPLORER - UNIT 1

- *1. **Robotics Poster** - Create a poster (14" x 22") 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.
- *2. **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.

- *3. **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 you pseudo code and screenshots of the actual code with a written description of the icon/command functions.
- *4. **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.
- *5. **Robotics Sensor Notebook** - Write psuedo code which includes at least one sensor activity. Include the code written and explain the code function.
- *6. **Build a Robot** (may use kit) - Include a robot and notebook including the pseudo codes for at least one program you have written for the robot, the robots purpose, and any challenges or changes you would make in the robot design or programming.
- *7. **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.