

H900006

Other Nebraska Alternative Energy (Scoresheet SF305)

Notebook should explore Nebraska an alternative energy source besides wind, water, and solar power. Include information on type of power chosen, infrastructure for distribution, what resources are needed to create this alternative resource, cost of production, and potential uses of bio-products. Examples include geothermal, biomass, ethanol, bio-diesel, methane reactors, etc.

STEM ROBOTICS

This category involves the many different aspects of Robotics. Participants will learn more about how robots are designed and developed as well as the mechanical and electronic elements of robots. Involvement in STEM Robotics gives participants a first-hand experience in modern technology.

RULES:

1. 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 the exhibit may be identified if the entry tag is separated from the exhibit.
2. 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.
3. Posters can be any size up to 28 inches by 22 inches when ready for display. Example: tri fold poster boards are not 28 inches by 22 inches when fully open for display.
4. **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.
5. Creating a video of your robot in action would be helpful for the judges but is not mandatory. Videos should be uploaded to a video streaming application and exhibitors should provide a hard copy QR code for viewing. State Fair qualified videos should be submitted to <https://go.unl.edu/2024nesfset> by August 10. Or videos can be uploaded to a video streaming application and exhibitors MUST provide a hard copy QR code for viewing. Exhibitors are encouraged to test their codes or links on several devices to check for appropriate permissions for public viewing.

Entries per Individual - One entry per exhibitor per class. Limit of 4 entries per exhibitor per project.

All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.

Scoresheets and additional resources can be found at <https://go.unl.edu/ne4hrobotics>.

ROBOTICS CLASSES

PREMIUMS: Purple: \$4.00; Blue: \$3.00; Red: \$2.00; White, \$1.00

H861001

Robotics Poster (Scoresheet SF236)

Create a poster (28 inches x 22 inches) communicating a robotics theme such as “Robot or Not”, “Pseudocode”, “Real World Robots”, “Careers in Robots”, “Autonomous Robotics”, “Precision Agriculture” or a robotic topic of interest to the 4-Her.

H861002

Robotics Notebook (Scoresheet SF237)

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, programming skills, calibration, sensor exploration, or any of the topics suggested in Class 1.

H861004

Robotics/Careers Interview (Scoresheet SF239)

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 such as a short video uploaded to a cloud sharing service. Include a QR code with your project to allow for judging access. State Fair qualified videos should be submitted to <https://go.unl.edu/2024nesfset> by August 10. Or videos can be uploaded to a video streaming application and exhibitors MUST provide a hard

copy QR code for viewing. Exhibitors are encouraged to test their codes or links on several devices to check for appropriate permissions for public viewing. Written interviews should be in a notebook. Written reports should be 3 to 5 pages, double spaced, 12-point font, and 1-inch margins. Multimedia reports should be between 3 to 5 minutes in length.

- H861005 **Robotics Sensor Notebook (Scoresheet SF241)**
Write pseudo code which includes at least three sensor activities. Include the code written and explain the code function. Codes can be submitted as a multimedia format uploaded to a cloud sharing service. Include a QR code with your project to allow judging access. Multimedia presentations should be 3 to 5 minutes in length. State Fair qualified videos should be submitted to <https://go.unl.edu/2024nesfset> by August 10. Videos can also be uploaded to a video streaming application and exhibitors MUST provide a hard copy QR code for viewing. Exhibitors are encouraged to test their codes or links on several devices to check for appropriate permissions for public viewing.
- H861007 **Kit Labeled Robot (cannot be free programmed) and Notebook (Scoresheet SF243)**
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 notebook with the robot the youth has constructed. Included in the notebook should be (1) a description of what the robot does, (2) pictures of programs the robot can perform, (3) why they chose to build this particular form, and (4) how they problem solved any issues they might have had during building and programming. A picture story of assembly is recommended. If the robot is more than 15 inches wide and 20 inches tall they may not be displayed in locked cases (at State Fair).
- H861008 **3D Printed Robotics Parts (Scoresheet SF244)**
This class is intended for youth to create parts through 3D printing that help create their robot or aid the robot in completing a coded function. Project should include notebook describing the process used to create the project, describe the success of your designed piece (did it work), intended use of the product and the modifications made to the item.
- **H861901 **Junk Drawer Robotics Exhibit** – Not eligible for State Fair.
H861902 **County Only Robotics Exhibit – This exhibit does not fall into any of the State Fair Classes.

ROPE

Each rope exhibit must be mounted on a board that is 1/4" thick x 24" high x 32" wide. All items placed on boards must be made according to instructions found in the 4-H Rope Manual, E.C. 7-01-79. Either manila or synthetic rope may be used. When halters are exhibited, the tie rope, plus a required second piece of rope must show any three of the following items: 1) end whipping; 2) eye splice; 3) crown splice; 4) rosebud knot; 5) Matthew Walter knot; or 6) diamond knot.

Entries per Individual - One entry per exhibitor per class. Limit of 4 entries per exhibitor per project.

ROPE CLASSES (**Denotes NOT State Fair Eligible)

PREMIUMS: Purple, \$4.00; Blue, \$3.00; Red, \$2.00; and White, \$1.00

- **H898901 **Rope Display – Scoresheet CF223**
At least 10 and not more than 12 knots, hitches, and splices (include two splices) made of 3/8" rope. Include appropriate board title and item labels. The end of all ropes must be whipped.
- **H898902 **Single Loop or Double Loop Halter – Scoresheet CF70579**
Sheep and goats use 3/8" rope. See above requirements for halter exhibits.
- **H898903 **Single Loop or Double Loop Halter – Scoresheet CF70579**
Cattle and horses use 5/8" or 3/4" rope. See above requirements for halter exhibits.

VETERINARY SCIENCE

The purpose of a Veterinary Science exhibit is to inform the public about a common health problem of animals, a veterinary science principle or public health/zoonotic diseases.

RULES:

1. A Veterinary Science exhibit may consist of a poster, notebook, or display. The exhibit may represent material from any of the Veterinary Science projects including entry level exhibits from Unit 1.