
DEPARTMENT H 4-WHEELIN

Premiums: Purple - \$3, Blue - \$2,
Red - \$1.50, White - \$1

Division 895 4-WHEELIN

900. Poster. Poster should exemplify one of the lessons learned in the 4-Wheelin' project. Posters can be any size up to 28" by 22". Scoresheet SF231.

DEPARTMENT H ROBOTICS

Premiums: Purple - \$3, Blue - \$2,
Red - \$1.50, White - \$1

DIVISION 861 ROBOTICS

Youth enrolled in Virtual Robotics, Junk Drawer Robotics (Levels 1, 2, or 3) 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.

Robotics – Robotic Explorer – Unit 1

1.+ Robotics Poster (SF236) - 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 (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, 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 your pseudo code and screenshots of the actual code with a written description of the icon/command functions. Scoresheet SF238.

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 interview 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. Scoresheet SF239.

5. + Robotics Sensor Notebook – Write a pseudo code which includes at least one rotational sensor activity. Include the code written and explain the code function. Scoresheet SF241.

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. Scoresheet SF243.

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.

DEPARTMENT H

GPS

Premiums: Purple - \$3, Blue - \$2,
Red - \$1.50, White - \$1

GEOSPATIAL

DIVISION 880

1.+ Poster - Create a poster (not to exceed 14" x 22") communicating a GPS theme such as How GPS or GIS works, Careers that use GPS or GIS, How to use GPS, What is GIS, GPS or GIS in Agriculture, Precision Agriculture, or a geospatial topic of interest.

2. + 4-H Favorite Places or Historical Site Poster–

The 4-H exhibitor identifies a favorite place or historical site (including grave sites) in Nebraska. Exhibit should include latitude and longitude, digital picture, and local area map. Poster size should not exceed 14" X 22".

3. + GPS Notebook - Keep a log of at least 5 places visited using a GPS enabled device. At least one site should be from a community other than where you live. For each site, record the latitude, longitude and elevation. Also include a description of the site, a paragraph explaining what was interesting about the site or finding it. Photos of each site and/or cache are optional but encouraged.

4. + Geocache - Assemble a themed geocache. Each geocache should be a water-tight container. It should include a log book and pencil for finders to log their visits and may include small trinket, geocoins, etc. for the finders to trade. Documentation should include a title, teaser description and the geographic coordinates of intended placement. **Register the site at geocaching.com, include a print-out of its registry.** The entry may include a photograph of the cache in its intended hiding place.

5. + GIS Map - Create a GIS map with at least three data layers. The GIS should include both vector and raster data. Data may be obtained by using a GPS-enabled device, downloading data from a reputable web site or digitizing. The GIS should have a theme/purpose and include a title, north arrow, legend,

labels, scale bar and source. Maps may be of any subject of interest to the 4-Hers. Include a 1-3 page report on why you chose the subject and maps(s), how you created the maps(s) and the source of your data (use reliable sources such as the US Center for Disease Control or the US Census Bureau). This project could include Hurricane Tracking maps. {Create a GIS map for Hurricane Tracking with a geographic information system (GIS) computer software application of the Atlantic Ocean, Pacific Ocean, or the Gulf of Mexico. The map should appear similar to the National Oceanic and Atmospheric Administration (NOAA) (<http://www.nhc.noaa.gov/>). } Poster size should not exceed 22" x 30". Place report in plastic cover or notebook attached to the poster.

6. + GIS Thematic Map – Using any GIS software, create a thematic map. Thematic maps can utilize any subject of interest to the 4-Her. Maps could be of Amelia Earhart's journey, Sir Francis Drake's voyage, population density maps, water usage maps, or 4-H projects in Nebraska (examples). Create a GIS Map using data from books and/or the internet. Use reliable data, ex. US Center for Disease Control or the US Census Bureau. Map any size up to 36" x 24" should include Title, Base Map, neat Line, North Arrow and Legend. Identify the source of your information on the back of the map. Scoresheet SF271.

7. + 4-H History Map- Preserve 4-H History: Nominate a Point of Interest for the 4-H History Map Project, include copy of submitted form in folder or notebook. To nominate a site for the 4-H history map, please go to <http://arcg.is/1bvGogV> . For more information about 4-H history go to http://4hhistorypreservation.com/History_Map/. For a step by step video on nominating a point, please go to this link: <http://tinyurl.com/nominate4h>. Write a brief description of historical significance of the 4-H place or person. (a minimum of one paragraph.)

Careers

10. + Careers Interview– Interview someone who is working in a Geospatial field and include research that career. 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.