2010 Nebraska State Fair

Department F – Science, Engineering and Technology Contests

Division 500

Superintendent – Bradley Barker, Lincoln

General Rules for all Classes:

- Participant Qualification:
  - Participant must be 10 years old on January 1, 2010.
  - Participant must be enrolled in a related 4-H project.
    - 4-H Robotics and You
    - GEAR-Tech-21
- Participants are required to pay a non-refundable fee of $5/person.
- Entries that are entered as another fair exhibit (ex. built robot presentation in 4-H Science, Engineering and Technology Department) are not eligible to compete in the State Fair 4-H SET Contests.
- All classes require the presence of the contestant(s).
- Each participant is required to wear the 4-H emblem or Nebraska State Fair pin during the competition.
- Only contestants and contest officials will be permitted in the preparation area; no relatives or friends, please. The showcase held at the end of the competition is open to spectators.
- Participants will be notified of the location of the contest prior to State Fair.
- Schedules for the 4-H SET Contests will be sent electronically to UNL Extension Offices in all counties as soon as possible after Nebraska State Fair entries are due.
- Participants are expected to clean-up the areas in which they work.

Class F500080-Robotic Mission

Youth teams will design, build and program a robot to face a themed challenge. They will also research a topic related to this theme as it impacts their local communities. At the Nebraska State Fair, they will test their design and programming to meet the challenge and give their presentation.

Additional Rules for Class 80:

- The Class 80 event will take place (see master schedule at 4h.unl.edu/programs/statefair/fairbook.htm for times and dates) during the Nebraska State Fair.
- The challenge will be issued electronically to Extension offices and registered GEAR-Tech-21 clubs as well as published on the GEAR-Tech-21 web site by June 1, 2010.
- Contestants can enter in teams of 2-7 youth.
- The event will have two components:
  - A robotic challenge
  - A team presentation on a theme-related topics
- Teams should bring their own robot built for the challenge. Challenge board materials, one or more computers with the current version of the LEGO NXT-G software and Power Point, and an LCD projector will be provided. It is recommended that teams bring a USB drive or CD with their robot programs loaded if they want to make any adjustments to their programs.

- Each team will have two non-competitive, calibration rounds after registration but before the competition begins. During the competition, they will have three opportunities to complete the challenge.
- Contest officials will be available to answer technical questions throughout the competition.

Class F500081-Geospatial Mission

Explore the new Nebraska State Fair through GPS and GIS! Youth participants will be given ample time to gather GPS data and digital imagery through photography and videography. Once they have collected data, they will import that data into a Geographic Information System (GIS). Participants will give presentations sharing these products at a public showcase (see master schedule at 4h.unl.edu/programs/statefair/fairbook.htm for times and dates) throughout the fair in the 4-H Exhibit Hall.

Additional Rules for Class 81:

- The Class 81 event will take place *(see master schedule at 4h.unl.edu/programs/statefair/fairbook.htm for times and dates)* during the Nebraska State Fair.
- Contestants will work in teams of two individuals. 4-Hers may enter as a team or individually. Those that register individually will be paired with another participant for the event.
- The event will have three components:
    - Data Collection using handheld GPS units and digital photography/videography
    - GIS construction using collected data and provided layers
    - A short oral presentation to share the team's work during the event showcase
- All equipment will be provided by contest officials including GPS units, photo/videography devices, cabling, computers with appropriate software, and an LCD projector for the presentation.
- Contest officials will be available to answer technical questions throughout the competition.