

- C. Grain exhibits must be one gallon per sample. Grain exhibits harvested in the fall (e.g. corn or soybeans) may be from the previous year's project.
- D. Plant exhibits, with the exception of ears of corn, must be the result of the current year's project.
- Corn - 10 ears or 3 stalks (cut at ground level with no roots or soil and bound together);
 - Grain Sorghum - 4 stalks (cut at ground level and bound together);
 - Soybeans - 6 stalks (cut at ground level and bound together);
 - Small grains (oats, barley, wheat, triticale) - sheaf of heads 2 inches in diameter at top tie with stems about 24 inches long.
 - Other crops (alfalfa, millet, etc.) - sheaf of stems 3 inches in diameter at top tied with stems cut at ground level or half size small square bale.

G-750-001 Corn (includes yellow, white, pop, waxy, or any other type)

G-750-002 Soybeans

G-750-003 Oats

G-750-004 Wheat

G-750-005 Any other crop (includes grain sorghum, alfalfa, millets, barley, rye, triticale, amaranth, dry beans, sugar beet, mung bean, canola, forage sorghum, safflower, etc.)

Division 750 – Displays

- A. The purpose of the display is to tell an educational story to those that view the display. The display is a visual representation (pictures, charts, graphs) no larger than 28" wide by 28" tall on plywood or poster board. The display should be neatly titled. Make sure to label display with exhibitor's name, address, and county on back side. Explain pictures and graphs clearly and concisely. Consider creativity and neatness. Refer to Scoresheet SF259
- B. Each display must have a one page essay (minimum) explaining why the exhibitor chose the area of display and what they learned from their project. Include any references used. The essay should be in a clear plastic cover with the exhibitor's name outside.

G-750-006 Crop Production Display - The purpose of this class is to allow original and creative exhibits that contain educational information about crop production aspects, such as crop scouting, alternative crops, pest management, etc.

G-750-007 Crop Technology Display - Display information about aspects of technology used in crop production, such as genetic engineering, crop breeding, GPS, yield mapping, computers, etc.

G-750-008 Crop End Use Display - Display information about the final product or end uses for a crop, such as food, feed, fuel or other products. (i.e. corn can be processed into livestock feed, ethanol, plastics, etc. or soybeans can be processed into bio-diesel, pet bedding, crayons, oil, etc.)

G-750-009 Water or Soil Display - Display information about water or soils, such as how soils are being used for crop production, range, conservation, wildlife, or wetland use, or ways to protect or conserve water and soil resources.

G-750-010 Career Interview Display - The purpose of this class is to allow youth to investigate a career in agronomy. Youth should interview one person that works with crops about such topics as what parts of their job do they enjoy or dislike, why did they choose that career, what was their education, etc. Include a picture of the person interviewed.

Division 751 – Weed Science

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

- A. Any individuals in the Conservation, Environment 1, 2 or 3, Range, Reading the Range 1 or Using Nebraska Range 2, or Crop Production, Field Crops projects may exhibit a weed book or weed display. The book cover and at least 15 of the specimens must represent this year's work. For assistance identifying plants, participants can use the Nebraska Department of Agriculture's "Weeds of Nebraska and the Great Plains" (1994) or "Weeds of the Great Plains" (2003).

Division 751 – Books

- A. Display one plant on the book cover (no label required on cover specimen). Plants must be mounted on sheets that are no larger than 14" wide x 14" high. Proper plant mount should include root as well as stem and leaf tissue. Plants should be glued rather than taped and the mounts should be protected with a clear cover.
- B. Exhibits will be judged based on completeness of plant mount, accuracy of identification, label, neatness and conformity to exhibit requirements. Refer to Scoresheet SF261.
- C. Each completed mount must have the following information (see example below) in the lower right corner of the mounting sheet: 1. Scientific name (in italic or underlined), with authority, 2. Common name, 3. County of collection, 4. Collection date, 5. Collector's name, 6. Personal

collection number, indicating the order that plants were collected in your personal collection. 7. Other information depending on class selected, i.e., noxious, life form. This information should be typed or printed neatly.

Scientific name: <i>Abutilon theophrasti</i> Medik. Common name: Velvetleaf County of collection: Hall County Collection date: 6 July 2019 Collector's name: Dan D. Lion Personal collection number: 3 Life Cycle: Annual

G-751-001 Weed Identification Book - A collection of a minimum of 15 plant mounts and including at least two of the following prohibited noxious weeds (Canada thistle, musk thistle, plumeless thistle, salt cedar, leafy spurge, purple loosestrife, diffuse knapweed, spotted knapweed, Japanese knotweed, Bohemian knotweed, giant knotweed, sericea lespedeza, or phragmites), and at least five weeds that are a problem primarily in lawns.

G-751-002 Life Span Book - A collection of 7 perennials, 1 biennial, and 7 annual weeds.

Division 751 – Displays

A. The purpose of the display is to tell an educational story to those that view the display. The display is a visual representation (pictures, charts, graphs) no larger than 28" by 28" on plywood or poster board. The display should be neatly titled. Make sure to label display with exhibitor's name, address, and county on back side. Explain pictures and graphs clearly and concisely. Refer to Scoresheet SF 259.

B. Each display must have a one page essay explaining why the exhibitor chose the area of display and what they learned from their project. Include any references used. The essay should be in a clear plastic cover with the exhibitor's name outside.

G-751-003 Weed Display - The purpose of this class is to allow original and creative exhibits that contain educational information about weeds, such as interesting information about a weed species, the effects of weed control, herbicide resistant weeds, what makes a weed a weed, or uses for weeds.

DEPARTMENT D – RANGE

Division 330 – Range Management

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

- Individuals in the Reading the Range Unit 1 project may exhibit Classes 1-8, and 10.
- Individuals in the Using Nebraska's Range Unit 2 project may exhibit in Classes 1-10.
- Each exhibit must be properly identified with Unit and Class.
- All plant displays and display covers must be the result of the current year's work.
- Plant identification and lists of appropriate plants in each category (grasses, forbs, shrubs and grass-like plants) can be found in the Range Judging Handbook and Contest Guide (EC150, Revised July 2009) and Common Grasses of Nebraska (EC 170) and Common Forbs and Shrubs of Nebraska (EC 118).
- The purpose of these exhibits is to demonstrate to the public the benefits from the study and application of crop, weed, range and soil sciences to solving problems in management, conservation, sustainability and environmental protection. For guidelines on specific projects, refer to appropriate project manuals.

Division 330 – Books

- For books, plants must be mounted on sheets that are no larger than 14" wide x 14" high. Plants should be glued rather than taped and the mounts should be protected with a clear cover. Proper plant mount should include root as well as stem and leaf tissue.
- Exhibits will be judged based on completeness of plant mount, accuracy of identification, labeling, neatness and conformation to project requirements. Refer to Scoresheet SF260.
- Each completed mount must have the following information (see example below) in the lower right

corner of the mounting sheet: 1) Scientific name (in italic or underlined), with authority, 2) Common name, 3) County of collection, 4) Collection date, 5) Collector's name, 6) Personal collection number, indicating order that plants were collected in your personal collection and 7) Other information depending on class selected, i.e., value and importance, life span, growth season, origin, major types of range plants. This information should be typed or printed neatly.

Scientific name: *Schizachyrium scoparium (Michx.) Nash*
Common name: Little bluestem
County of collection: Hall County
Collection date: 6 August 2018
Collector's name: Joe Smith
Personal collection number: 37
Value & Importance: Livestock Forage: High, Wildlife Habitat: High,
Wildlife Food: Medium Or Life Span: Perennial
Or Season of Growth: Warm Season Or
Origin: Nature

D-330-001 Value and Importance for Livestock Forage and Wildlife Habitat and Food Book – A collection of 12 different plant mounts with 4 classified as high value, 4 as medium value and 4 as low value for livestock forage, wildlife habitat or wildlife food. Value and importance classifications can be found in the Range Judging Handbook and Contest Guide (EC150, Revised July 2009) on pages 3 through 6. Plants can consist of any combination of grasses, grass-like plants, forbs or shrubs. Assemble plant mounts in order of high, medium and low value and importance. Label each plant mount with its value and importance classifications for each of the three areas: Livestock Forage, Wildlife Habitat, Wildlife Food.

D-330-002 Life Span Book – A collection of 6 perennial plant mounts and 6 annual plant mounts selected from grasses or forbs.

D-330-003 Growth Season Book – A collection of 6 cool-season grass mounts and 6 warm-season grass mounts.

D-330-004 Origin Book – A collection of plant mounts of 6 native range grasses and 6 introduced grasses. Introduced grasses are not from North America and often used to seed pastures.

D-330-005 Major Types of Range Plants Book – A collection of plant mounts of 3 grasses, 3 forbs, 3 grass-like and 3 shrubs.

D-330-006 Range Plant Collection Book – A collection of 12 range plant mounts with something in common (i.e. poisonous to cattle, or historically used as food by Native Americans, or dye plants, or favorite antelope forage, etc.) Include a short paragraph in the front of the book which describes what the plants have in common and why you have chosen to collect them.

Division 330 – Displays

A. The purpose of the display is to tell an educational story to those that view the display. The display is a visual representation (pictures, charts, graphs) no larger than 28" by 28" on plywood or poster board. The display should be neatly titled. Make sure to label display with exhibitor's name, address, and county on back side. Refer to Scoresheet SF 259.

D-330-007 Parts of a Range Plant Poster – Mount a range plant on a poster board. Label all the plant parts. Include the plant label in the lower right corner. Put your name and 4-H county on the back of the poster.

Division 330 – Boards

A. Boards should be no larger than 30" wide by 36" tall or if hinged in the middle a maximum of 60" wide by 36" tall. Boards should be adequately labeled. Refer to Scoresheet SF 260.

D-330-008 Range Plant Board – Will include 25 range forage species important to a particular county and should include:

1. Scientific name (in italic or underlined), with authority
2. Common name.
3. County of collection.
4. Collection date
5. Collector's name.
6. Personal collection number, indicating order that plants were collected in your personal collection.
7. Other information as needed

D-330-009 Special Study Board – A display of the results of a clipping study, a degree of use study,

range site study, etc.

D-330-010 Junior Rancher Board – This exhibit should include the ranch map with record book or an appropriate educational display on some phase of rangeland or livestock management.

DEPARTMENT H – ENTOMOLOGY

Division 800 – Entomology

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

Specimens in display collections should be mounted properly and labeled with location and date of collection, name of collector, and order name. Follow mounting and labeling instructions in the Nebraska 4-H Entomology manual online as a pdf file. (<http://4h.unl.edu/web/4hcurriculum/entomology>). Find scoresheets and resources on web under State Fair Scoresheets (<http://4h.unl.edu/web/4h/statefair4h#entomology>)

Boxes are preferred to be not more than 12" high x 18" wide, and landscape orientation so they fit in State Fair display racks. Purchase of commercially-made boxes is allowed. All specimens must be from the collector.

H-800-001 Entomology Display, First Year Project

Collection to consist of 25 or more different kinds (species) of insects representing at least 6 orders. Limit of one box. Scoresheet SF 186

H-800-002 Entomology Display, Second Year Project

Collection to consist of a minimum of 50 kinds (species) of insects representing at least 8 orders. Replace damaged or poorly mounted specimens. At least 25 species must be present from after July 1 of the previous year. Limit 2 boxes. Scoresheet SF186

H-800-003 Entomology Display, Third Year or more project

Collection to consist of minimum of 75 kinds (species) of insects representing at least 10 orders. Replace damaged or poorly mounted specimens. At least 25 species must be present from after July 1 of previous year. Limit of 3 boxes. Scoresheet SF186

H-800-004 Special Interest or Advanced Insect Display

Educational display developed according to personal interests and/or advanced identification capability. This also is an opportunity to highlight favorite insects in a creative arrangement. Insects should conform to pinning and mounting standards as in Classes 1-3 and be protected in an insect box. Each specialty display should include names of the insects, interesting information about them, and why the display was made. Advanced identification collections should have insects grouped with labels that correspond with identification level (e.g. family, genus, species). A specialty collection may consist of insects by taxonomic group (e.g. butterflies, grasshoppers, dragonflies, scarab beetles) or by host, subject or habitat (e.g. insect pests of corn, aquatic insects, insect mimicry, insect galls, insects from goldenrod, insect pollinators, etc.). Scoresheet SF187

H-800-005 Insect Habitats

Habitats consist of any hand-crafted objects, made of natural or artificial materials, placed outdoors, which promote or conserve insects in the environment. Insects may include bee pollinators, butterflies, beneficial insects, etc. A one-page report describing activities must accompany the exhibit. Scoresheet SF188

H-800-006 Macrophotography

Subjects should be insects, spiders or other arthropods, or any nests, webs or constructions they make. All exhibits prints should be either 8"x10" or 8½" x 11" and mounted on rigid, black 11" x 14" poster or matt board. Either orientation is acceptable. No frames or mat board are allowed. A caption of a few sentences should explain the subject, and be printed on white paper, glued below the print on the poster board. Scoresheet SF189

H-800-007 Insect Poster/Display Exhibits

Exhibits can be posters or three-dimensional displays, and artistic creativity is encouraged. Posters should be no larger than 22" x 28". They should be instructional and can be attractive and have pictures, drawings, charts, or graphs. Posters and displays may show any aspect of insect life, habitat, or related conservation or management. Examples include life history and other facts about an insect; insect anatomy; how to manage insects in a farm, home, lawn, or garden setting; experiences rearing one kind of insect; survey of an important insect; insect behavior (ex. nesting, finding food, mobility, defenses, etc.); habitats (e.g. forests, grasslands, wetlands, rivers, or lakes) and what insects are found there, etc. Three-dimensional displays, such as dioramas, sculptures, models or decorative boxes should have a page of explanatory information accompanying them and fit within a 22" x 28" area.

H-800-008 Reports or Journals

Reports and journals should be in a 3-ring binder. A report may be informational, that is, an original article about a favorite insect, a history of insect outbreaks, diseases caused by insects, insects as food, etc. Or, it may be a research report about an investigation or experiment done in a scientific manner. It then should have a basic introduction of the insect studied, methods used, observations, and results of the project. Tables, graphs and images are helpful to include. A journal is an observational study over a period of time with personal impressions. It may cover watching changes of kinds in butterflies over the summer, rearing a specific insect from egg to adult, managing a bee hive, observations of insects in a specific habitat, accounts of insect behavior in a forest or flower garden, etc.

DEPARTMENT H – VETERINARY SCIENCE

Division 840 – Veterinary Science

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

The purpose of a Veterinary Science exhibit is to inform the public about a common health problem of animals or a veterinary science principle. Do not confuse veterinary science exhibit topics with animal husbandry, history or production topics.

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

If photographs are to be part of the exhibit, remember that they will be viewed by the public. Make sure that the photographs are in good taste and will not be offensive to anyone. Graphic photographs of excessive bleeding, trauma or painful procedures are not appropriate. For exhibits related to veterinary surgical procedures, aseptic techniques need to be shown, for example, use of drapes, use of sterile procedures, wearing of gloves, and other appropriate veterinary medical practices.

First-Aid Kits: Because of public safety concerns and risk of theft of first-aid kit contents (veterinary drugs/equipment) with perceived potential for drug abuse, NO ANIMAL FIRST AID KITS WILL BE PERMITTED.

Animal first aid kits submitted will be immediately disqualified and not shown.

Veterinary Science Posters: This exhibit presents the viewer with a design that is simple and direct, unlike a display that usually presents more information. A poster should not exceed 22" x 28" and may be either vertical or horizontal.

Veterinary Science Display: A display may include but is not limited to: a 3-dimensional exhibit, a scale model, the actual product (for example skeleton; teeth; samples of leather, fur or dried skin damaged by disease or parasites) or a notebook. A display is not a poster. A display may be mounted on poster board not to exceed 22" x 28" or on 1/4" plywood or equivalent that does not exceed 24" high or 32" wide or in a three ring binder or another bound notebook format.

Appropriate Veterinary Science Topics:

- Maintaining health
- Specific disease information
- Photographic display of normal and abnormal characteristics of animals
- Animal health or safety
- Public health or safety
- Proper animal management to ensure food safety and quality
- Efficient and safe livestock working facilities
- Or a topic of the exhibitors choosing related to veterinary medicine or veterinary science

*Remember, since these are science displays, all references and information needs to be properly cited.

Proper sources included but are not limited to: Professional journals and publications, professional AVMA accredited websites, interviews with Veterinarians and excerpts from Veterinary Educational Literature.

H-840-001 4-H Veterinary Science Large Animal Poster, Notebook, or Display

H-840-002 4-H Veterinary Science Small Animal/Pet Poster, Notebook, or Display

SCIENCE, ENGINEERING, TECHNOLOGY AND AEROSPACE

GENERAL INFORMATION FOR DEPARTMENT H, DIVISIONS 850, 860, 861, 870, 880, 890, 900, 911, 920:

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

- B. Each individual is limited to one exhibit per class.
- C. Several classes require a display board which should be a height of 24 inches and not to exceed 1/4 inch thickness. A height of 23 7/8 inches is acceptable to allow for the saw kerf width if two 24 inch boards are cut from one end of a 4 foot x 8 foot sheet of plywood. Nothing should be mounted within 3/4" of the top or bottom of the board. (Example: woodworking, and electricity)
- D. Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
- E. Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
- F. Demonstration boards should include an overall title for the display, plus other necessary labeling.
- G. 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.

DEPARTMENT - SCIENCE, ENGINEERING, TECHNOLOGY (SET)

Division 930 - Science Engineering Technology (SET) Careers

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

H-930-001 Careers Interview

Interview someone who is working in any field associated with science, engineer and technology and research that career (i.e. computer programmer, architect, engineer, pilot, etc.). 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. Scoresheet SF239

DEPARTMENT H – AEROSPACE/ROCKETS

Division 850 – Aerospace/Rockets

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

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. Each individual is limited to one exhibit per class. All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.
3. Several classes require a display board which should be a height of 24 inches and not to exceed 1/4-inch thickness. A height of 23 7/8 inches is acceptable to allow for the saw kerf (width) if two 24 inch boards are cut from one end of a 4 foot by 8-foot sheet of plywood. Nothing should be mounted within 3/4 inch of the top or bottom of the board. (Example: Woodworking & Electricity.)
4. Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
5. Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
6. Demonstration boards should include an overall title for the display, plus other necessary labeling.
7. 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.

Refer to General Information. Rockets must be supported substantially to protect the rocket from breakage. Rockets are to be mounted on a base that has dimensions equal or less than 12" x 12" and the base should be 3/4" thick. No metal bases. If the rocket fins extend beyond the edges of the required base (12" x 12"), then construct a base that is large enough to protect the fins. The base size is dictated by the size of the rocket fins. The rockets must be mounted vertically. Please do not attach sideboards or backdrops, figures, legos, etc. to the displays. In addition a used engine or length of dowel pin is to be glued and/or screwed into the board and extended up into the rocket's engine mount to give added stability. Rockets must be equipped as prepared for launching with wadding and parachute or other recovery system. Rockets entered with live engines, wrong base

size or sideboards will be DISQUALIFIED. A report protected in clear plastic cover, must include: 1) rocket specification (include original or photo of manufactured packaging stating rocket skill level), 2) a flight record for each launching (weather, distance, flight height); 3) number of launchings; 4) flight pictures, 5) Safety (how did you choose your launch site? Document safe launch, preparations, and precautions), 6) objectives learned and 7) conclusions. The flight record should describe engine used, what the rocket did in flight and recovery success. Points will not be deducted for launching, flight or recovery failures described. This includes any damage that may show on the rocket. Complete factory assembled rockets will not be accepted at the County or State Fair.

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.

Judging is based on display appearance, rocket appearance, workmanship, design or capabilities for flight, number of times launched and report. Three launches are required to earn the maximum launch points given on the score sheets. For scoring for the State Fair, only actual launches count, misfires will not count towards one of the required three launches.

The 4-H'ers name, address, county, age, and years in rocket project should appear on the bottom of the base and on the report.

4-H'ers may visit with the judge on Wednesday, July 17th between 1:15 p.m. to 2:00 p.m. about their rocket.

Skill level of project is not determined by number of years in project. Skill level is determined by the level listed on the manufacturing packaging.

4-H Rocket project levels are not intended to correspond to National Association of Rocketry model rocket difficulty ratings or levels.

High power rockets (HPR) is similar to model rocketry with differences that include the propulsion power and weight increase of the model. They use motors in ranges over "G" power and or weigh more than laws and regulations allow for unrestricted model rockets. These rockets are NOT appropriate for 4-H projects and will be disqualified.

Lift Off - Unit 2

H-850-001 Rocket: Any Skill Level 2 Rocket with wooden fins painted by hand or air brush. Scoresheet SF92

H-850-002 Display: Display exemplifying one of the principles learned in the Lift Off Project. Examples include: display of rocket parts and purpose, interview of someone in the aerospace field, or kite terminology. Include a notebook containing terminology (definition), and what was learned. Display can be any size up to 28" x 22". Scoresheet SF93

H-850-003 Rocket: Any Skill Level 2 Rocket with wooden fins painted using commercial application. Example: commercial spray paint. Scoresheet SF92

Reaching New Heights - Unit 3

H-850-004 Rocket: Any Skill Level 3 Rocket with wooden fins painted by hand or air brush. Scoresheet SF92

H-850-005 Display: Display exemplifying one of the principles learned in the Reaching New Heights Project. Examples include: airplane instrumentation, kite flying, or radio-controlled planes. Display can be any size up to 28" x 22". Include a notebook containing terminology (definition), and what was learned. Scoresheet SF93

H-850-006 Rocket: Any Skill Level 3 Rocket with wooden fins painted using commercial application. Example: commercial spray paint. Scoresheet SF92

Pilot in Command - Unit 4

H-850-007 Rocket: Any Skill Level 4 Rocket with wooden fins or any self-designed rocket. For self designed rockets only, please include a digital recorded copy of one flight. In the documentation, please include a description of stability testing before the rocket was flown. Scoresheet SF92

H-850-008 Display: Display exemplifying one of the principles learned in the Pilot in Command Project. Examples include: flying lessons, or careers in aerospace. Display can be any size up to 28" x 22". Scoresheet SF93

Drones - Unit 5

H-850-009 Drone Poster: Exhibit must be designed to educate yourself and others on one or more of the following topics: drone technologies, uses of drones, the different types of drones, types of

training needed to operate drones, and the laws and regulations users must follow. Posters can be any size up to 28" by 22"

DEPARTMENT H – COMPUTERS

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

Division 860 – Computers

Refer to Engineering General Information.

Rules

- A. 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.
- B. Each individual is limited to one exhibit per class. All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.
- C. Demonstration boards should include an overall title for the display, plus other necessary labeling.
- D. 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.
- E. Please refer to the General Rules for the policy regarding firearms, items with a blade, and other related items.

Team Entries: To qualify for entry at the Nebraska State Fair team materials entered in H-860-009 - Digital Fabrication is 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.

Booting Up - Unit 1

H-860-901 Create a poster on a lesson learned in Unit 1. Examples might include: hardware, software programs, how to take care of a computer and operating systems.

Computer Mysteries - Unit 2

H-860-001 Computer Application Poster

4-H exhibitor should use computer application to create a graphic notebook utilizing computer technology. 4-H'er may create any of the following: greeting card (5 different cards should as a birthday, wedding, anniversary, sympathy get well or other); a business card (3 cards for 3 different individuals and businesses); menu (minimum of 2 pages including short description of foods and pricing); book layout (I-book); promotional flyer (3 flyers promoting 3 different events); newsletter (minimum 2 pages); or other: examples such as precision farming or family business logo etc. This exhibit consists of a notebook (8.5x11 inches) which should include a (1) a detailed report describing: (a) the task to be completed, (b) the computer application software required to complete the task, (c) specific features of the computer application software necessary for completing the task (2) print out of your project. Project may be in color or black and white. Scoresheet SF???

H-860-002 Produce a Computer Slideshow Presentation

Using presentation software. All slide shows for state fair should be emailed to Amy Timmerman atimmerman2@unl.edu before August 15. Files must be saved in a PC compatible format with county name and last name of participant before emailing. A notebook with a printout of all the slides should be submitted. Slideshow should include a minimum of 10 slides and no more than 25. Incorporate appropriate slide layouts, graphics and animations and audio (music or voice over and transition sounds do not count). Each slide should include notes for a presenter. All slide shows must be uploaded. Scoresheet SF277

Computer Mysteries - Unit 3

H-860-004 Produce an Audio/Video Computer Presentation

Using presentation software a 4-H exhibitor designs a multimedia computer presentation on one topic related to youth. The presentation should be at least 2 minutes in length and no more than 5 minutes in length, appropriate graphics, sound and either a video clip, animation or voice over and/or original video clip. The presentation must be able to be played and viewed on a PC using

Windows Media Player, Real Player, iTunes or QuickTime Player. Scoresheet SF276

H-860-005 How to STEM (Science, Technology, Engineering and Math) Presentation

Youth design a fully automated 2 to 5 minute 4-H "how to" video. Submissions should incorporate a picture or video of the 4-H'er, as well as their name (first name only), age (as of January 1 of the current year), years in 4-H and their personal interests or hobbies. Videos should be designed for web viewing. Any of the following formats will be accepted: .mpeg, .rm, .wmv, .mp4, .ov, .ppt, or .avi. Scoresheet SF276

H-860-006 Create a Website/Blog or App

Design a simple website/blog or app for providing information about a topic related to youth using either software programs such as an HTML editor like Microsoft's FrontPage or Macromedia's Dreamweaver, and image editor like IrfanView or GIMP OR online using a WIKI such as Google Sites. If the website, blog, or app isn't live include all files comprising the website, blog or app should be submitted on a CD-ROM in a plastic case along with the explanation of why the site was created. If developed using a WIKI or other online tool include a link to the website in the explanation of why the site was created. Scoresheet SF275

H-860-007 3-D Printing Unique Items

3D printing uses plastic or other materials to build a three-dimensional (3D) object for a digital design. Youth may use original designs or someone else's they have re-designed in a unique way. Exhibits will be judged based on the motivation and/or problem identified. For example, 3D objects printed as part of the design process for robot or other engineering project or cookie cutter. Must include design notebook with motivation or problem statement the prototype was 3D printing will include a notebook with the following: a) Define motivation/problem solved, b) Software used, c) Document purpose of material and print settings, D) Material choice (PLA, PVA, ABS, etc.) E) In-fill density, and f) Moving parts. Scoresheet SF???

H-860-008 3D Pen Creation:

3D Pens rapidly melt and cool plastic filament allowing the 4-H'er to draw in 3D. Youth may use original designs or use a template to create their 3D item. Exhibits will be judged based on the complexity of the design and shape. 3D pen creation will include a notebook with the following: a) Copy of the template if used and description of any changes the youth created. b) If no template used - an explanation of how the creation was build. c) Must include paragraph of what the youth learned while creating their project (i.e. way to improve their next creation) d) Paragraph on how 3D pens impact Science Engineering and Technology. Scoresheet SF???

H-860-009 Digital Fabrication:

This project is a computer generated projected created using a laser cutter, vinyl cutter, heat press or CNC router. Vector or 3D based software such as corel draw or Fusion 360 would be an example of an appropriate software used to create your finished project. Project should include a notebook with the following: a) What motivated you to create this project, b) Software and equipment used, c) Directions on how to create the project, d) Prototype of plans, e) Cost of creating project, f) Iterations or modifications made to original plans, and g) Changes you would make if you remade the project.

Division 880 – Geospatial

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. Each individual is limited to one exhibit per class.
3. Several classes require a display board which should be a height of 24 inches and no to exceed 1/4-inch thickness. A height of 23 7/8 inches is acceptable to allow for the saw kerf (width) if two 24 in boards are cut form one end of a 4-foot by 8-foot sheet of plywood. Nothing should be mounted within 3/4 inch of the top or bottom of the board. (Example: Woodworking & Electricity.)
4. Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
5. Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
6. Demonstration boards should include an overall title for the display, plus other necessary labeling.
7. 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.

Youth enrolled in Geospatial or GEAR TECH 21 may exhibit in any class within this division.

H-880-001 Poster - Create a poster (not to exceed 14"x22") 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. Scoresheet SF299

H-880-002 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"x22". Scoresheet SF272

H-880-003 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. Scoresheet SF300

H-880-004 Geocache - Assemble a themed geocache. Each geocache should be a watertight container. It should include a log book and pencil for finders to log their visits and may include small trinket, geo-coins, 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 printout of its registry. The entry may include a photograph of the cache in its intended hiding place. Scoresheet SF301

H-880-005 Agriculture Precision Mapping - 4-Hers will assemble a notebook that will include a minimum of 2 digital copies of various data layers that can be used in precision agriculture to identify spatial patterns and/or correlations (printed copies of websites were applications can be purchased is acceptable) A report of how the analysis of the various data will be used to make a management decision. Scoresheet SF302

H-880-007 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/1bvGovV>. 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 4-H place or person. (a minimum of one paragraph)

H-880-008 GIS Thematic Map - Using any GIS software, create a thematic. Thematic maps can utilize any subject of interest to the 4-H'er. Example map would be Amelia Earhart's or Sir Francis Drake's voyage population density maps, water usage "x11" maps or 4-H project in Nebraska. Create GIS Map using data from books, and or internet. Use reliable data, (U.S. Center or U.S. Census Bureau etc.) Map any size from 8.5" x 11" 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 map.

Careers

H-880-010 Careers Interview - Interview someone who is working in a Geospatial field and include research of 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. Scoresheet SF239

DEPARTMENT H – PHYSICS/POWER OF WIND

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

Division 900 – Physics/Power of Wind

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. Each individual is limited to one exhibit per class.
3. Several classes require a display board which should be a height of 24 inches and no to exceed 1/4-inch thickness. A height of 23 7/8 inches is acceptable to allow for the saw kerf (width) if two 24 in boards are cut from one end of a 4-foot by 8-foot sheet of plywood. Nothing should be mounted within 3/4 inch of the top or bottom of the board. (Example: Woodworking & Electricity.)
4. Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
5. 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.

H-900-001 Create and Compare Energy Resource Poster - Poster should explore 2 alternative/renewable energy resources. Compare and contrast the 2 resources including two of the following information: amount of energy created, cost of production, usability of the energy, pros/cons of environmental impacts, etc. Posters can be any size up to 28" x 22" Scoresheet SF???

H-900-002 Experiment Notebook - Notebook will explore the scientific method involving alternative/renewable energy sources. Information required. 1.) Hypothesis 2.) Research 3.) Experiment 4.) Measure 5.) Report or Redefine Hypothesis. Scoresheet SF???

H-900-003 Solar as Energy Display - Item should be the original design of the 4-H'er. Include the item, or a picture if item is in excess of 6' tall or 2' x 2'. Include a notebook of why the item was designed and how it harnesses the power of the sun. Examples include solar ovens, solar panels, etc. Scoresheet SF???

H-900-004 Water as Energy Display - Item should be the original design of the 4-H'er. Include the item, or a picture if item is in excess of 6' tall or 2' x 2'. Include a notebook of why the item was designed and how it harnesses the power of water. Scoresheet SF???

H-900-005 Wind as Energy Display - Item should be the original design of the 4-H'er. Include the item, or a picture if item is in excess of 6' tall or 2' x 2'. Include a notebook of why the item was designed and how it harnesses the power of wind. Scoresheet SF???

H-900-006 Other Nebraska Alternative Energy - 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. Scoresheet SF???

Resources

<https://4-h.org/parents/national-youth-science-day/wired-for-wind/>

<https://4-h.org/parents/national-youth-science-day/biofuel-blast/>

<http://web.cals.uidaho.edu/biodiesel/4-h-curriculum-for-ages-8-12/>

<http://extension.oregonstate.edu/clackamas/energy-education-curriculum-lessons>

- Additional project resource can be found at 4hcurriculum.unl.edu.

DEPARTMENT H – MODEL BUILDING

Purple \$2.50, Blue \$2.50, Red \$2.00, White \$1.50

Division 865 – Model Building

Model Building general requirements.

Read and study the information contained in the project manual. Use this information as a guide in constructing your model. A completed model information sheet must be exhibited with the model. ALL MODELS MUST BE MOUNTED ON A FIRM BOARD OF WOOD, HEAVY CARDBOARD, ETC. OR IN AN ACRYLIC CASE. The board should be no larger than 1" around the model. Dioramas must be on a 24" x 24" board. Models may be exhibited only one year and must be completed in the current 4-H year. Models should be more complex in design than what was assembled in the previous year. NO metal models are acceptable for exhibit at the Dawson County Fair. Lego models are limited to 8 & 9 year olds only.

H-865-901 Level 1 Model Building. Build a simple model that is a snap together type or a model that requires limited glue or paint. Use only the parts furnished in the kit. Use only plastic or wood models. Decals are optional. Members who are 8 -10 years old may use Lego or Lego type model kits or an original design from basic bricks. No model information sheet needed for this Level 1 class.

H-865-902 Level 2 Model Building. Build a model that requires glued assembly and exterior painting. Use only the parts that are furnished with the kit. Decals are required if furnished with the kit. Complete a model information sheet and include it with your model.

H-865-903 Level 3 Model Building. Build a model that is more complex than the previous year. This model should be glued construction and must be painted on all surfaces other than chrome, glass, and tires. Decals are required if furnished with the kit. Complexity elements might include moving