

## ENVIRONMENTAL EDUCATION & EARTH SCIENCE

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

Premier 4-H Science Award is available in this area. See General Rules for more details.

### CONSERVATION, WILDLIFE & SHOOTING SPORTS

Conservation, wildlife and shooting sports gives 4-HJ members an opportunity to share their knowledge and field experience about conservation, wildlife, and shooting sports. When creating an exhibit make sure to take close account of the rules while taking into account the different laws that surround those areas.

#### RULES

- 1. Show what you did and learned:** All exhibitors must show evidence of their personal field experiences, study or observations that relate to their exhibit. This helps judges understand what the 4-Her did and learned in the process that led to the exhibit.
- 2. Proper Credit:** Show proper credit by listing the sources of plans or other supporting information used in exhibits.

Example to attach to your exhibit

**Name:** Chris Clover

**County:** Clover County

**Age:** 10

**Field Experience, Study, or Observations:**

I attended a 4-H workshop where we put out a food plot, and then made turkey calls. We played a game about attracting turkeys. Sometimes we acted like a female to draw in a tom turkey.

Sometimes we acted like a lost baby turkey to call in a whole flock. I was able to use my turkey call and play the game successfully. While I never turkey hunted in person, I went on-line to research more turkey calls. I hope to turkey hunt someday, and I want to use a box call to hunt fall turkeys.

**Credits/Source:**

Information was obtained from Nebraska Game & Parks website

- 3. Whose Exhibit?** The exhibitor's name, county and age must be on the back or bottom of all displays. One exhibit per class number.
- 4. Wildlife and Wildlife Laws:** "Animal" or "wildlife" in the following classes includes wild fish, amphibians, reptiles, birds or mammals. Please make sure you are following all wildlife laws.
- 5. Project Materials:** Related project booklets include Exploring Your Environment Series, 4-H Shooting Sports, Amphibians, Bird Behavior (EC 59381), Fishing for Adventure Project Manuals, Wildlife Conservation (4-H 125), Geology, and Outdoor Adventure. Other resources include: Outdoor Skills::Learning Science in the Outdoors series (Science Signature Outcome Program) [outdoornebraska.gov/afterschool/](http://outdoornebraska.gov/afterschool/) and [www.whep.org](http://www.whep.org).
- 6. Board and Poster Exhibits** –Mount all board exhibits on ¼" plywood, Masonite, or similar panel no larger than 24" high by 24" wide. Poster exhibits should be on regular poster sheets, no larger than standard size (22 by 28 inches) but half size 22 by 14 inches, is recommended.

#### WILDLIFE

Wildlife and How they Live (Classes 1-4) are board or poster exhibits. Display may show any aspect of wildlife, wildlife habitat or related conservation. Examples: life history or other facts about one type of wildlife; how to manage wildlife on a farm or in town; managing habitat for one kind of wildlife; life requirements for one kind of wildlife during one season or through the year; wildlife behavior and habitats. For more ideas, refer to project booklets. Remember to look at general rules for this area.

**SF) D340001** Mammal Display (SF154)

**SF) D340002** Bird Display (SF154)

**SF) D340003** Fish Display (SF155)

**SF) D340004** Reptile or Amphibian Display (SF156)

**SF) D340005** **Wildlife Connections** – (SF157) Board or poster exhibit. The purpose of this display is to show interconnections and related aspects among animals, plants and other habitat components. All displays should show two or more interactions (connections) that occur between/among animals or between animals and their habitat. Displays might show how animals interact with other animals, with people or with their habitat. Examples: Food chain display. Use pictures, drawings or other items to illustrate the source of food energy and where it goes - who eats who or what. Use arrows to show the direction of the energy (food) flow; Show the role of predators, scavengers, insect eaters or others in nature. Show how wildlife numbers (populations) change through the year; Show predation, competition or other behavioral interactions of wildlife; Choose one kind of wildlife and make observations through a season or year, keep notes of interactions, then make a display of what you saw.

- SF) D340006** **Wildlife Tracks** – (SF158) Board or diorama-type box exhibit. Make a display of animal tracks using plaster-of-paris casts. There are 3 options. For all options, include a brief description of your experiences in making the tracks so the judges better understand what you did and learned. Positive casts (impressions as they would be in nature) are preferred. -Option 1 should show plaster-of-paris tracks of five or more kinds of wildlife along with a picture or illustration of each kind of animal. (OR) -Option 2 should show two or more plaster-of-paris tracks of one specific kind of wildlife and should include a picture of illustration of the animal, what the animal may eat and what may eat the animal. (OR) -Option 3 should show two tracks and include the animal's habitat needs including preferred food, shelter, water, and space in addition to picture or illustration of the animal.
- SF) D340007** **Wildlife Knowledge Check** – (SF159) Use electrical circuits, pictures or other methods of teaching wildlife identification or other wildlife conservation or shooting sports related knowledge. Plan size and shape to fit transportation and display; maximum size 24 x 24 inches.
- SF) D340008** **Wildlife Diorama** – (SF160) Exhibit must be no larger than 24" x 24". The exhibit might show a grassland, prairie, agricultural, woodland, riparian (stream or river corridor), wetland and/or other area with wildlife habitat. Example: show an area interspersed with several habitats such as windbreaks, farm fields, woods, waste areas, ditches and pastures for edge-adapted species such as white-tailed deer, Northern bobwhite, mourning doves, cottontail rabbits, fox, squirrels, Northern cardinals or blue jays. Label the habitats displayed and show at least five kinds of wildlife in their proper habitats.
- SF) D340009** **Wildlife Essay** – (SF161) Learn how to share educational information by writing. Choose a conservation or wildlife topic that interests you and write an essay about it. For example, write about a particular species of wildlife that you have observed or about the values of wildlife. You might write about wildlife on a farm, in town, in a backyard, at a backyard feeder or at other places. You might write about ethics, proper behavior in the outdoors, hunting or fishing. The essay is between 100 and 1000 words long and typed, double spaced, on 8 ½" x 11" paper. You might use books, magazines or personal interviews as resources, but you must give credit to all sources by listing them.
- SF) D340010** **Wildlife Values Scrapbook** – (SF162) Make a scrapbook about the various values of wildlife. This would include aesthetic, scientific, commercial, game, genetic, and/or ecological. One resource would be the Wildlife Conservation project booklet (4-H 125).
- SF) D340011** **Wildlife Arts** – (SF163) The purpose of this class is to allow artistic exhibits that contain educational information about conservation and wildlife. Examples might include paintings, photographs, and wood carvings, painted duck decoys of songs or poems written by the exhibitor. Entries must be appropriate for fair display and no larger than 24" x 24". For example, paintings or photographs should be displayed in notebook format or mounted on a sturdy display panel. All entries must include a title and a brief explanation of the purpose or message (what is the exhibit meant to show).
- C) D340901** **County Only** - Other Item Made in this Project
- C) D340902** **County Only** - Other Item Made in this Project

## WILDLIFE HABITAT

- SF) D342001** **Houses** – (SF165) Make a house for wildlife. Examples: bird house (bluebird, purple martin, wood duck, kestrel, barn owl, etc.) or bat house; no insect houses. Make the house functional so that dimensions, hole size, etc. are appropriate to fit the intended species' needs. Include the following information: 1) the kinds of animal(s) for which the house is intended, 2) where and how the house should be located for best use 3) any seasonal maintenance needed, and 4) any evidence of your personal observations or experiences. Tips: See NebGuide on bird houses and shelves.
- SF) D342002** **Feeders/Waters** – (SF166) Make a bird bath or feeder. Examples: seed, suet or nectar feeders. Squirrel feeder okay; no insect feeders. Include the following information: 1) the kinds of animal(s) for which the feeder or waterer is intended, 2) where and how the feeder or waterer should be located for best use and 3) any seasonal maintenance needed, and 4) any evidence of your personal observations or experiences. Tips: NebGuide on feeding birds.
- SF) D342003** **Wildlife Habitat Design Board or Poster Exhibit** – (SF167) Choose a backyard, acreage or farm and design a habitat plan to meet the food, water, and shelter and space needs of at least three kinds of animals you would like to attract. Draw an outline of the area and show what plants or other habitat will be provided. Indicate how the various parts of your plan provide the desired habitat needs. You might include an aerial photo of the area if you have one.
- C) D342901** **County Only** - Other Item Made in this Project
- C) D340902** **County Only** - Other Item Made in this Project

## HARVESTING EQUIPMENT

- SF) D343001** **Fish Harvesting Equipment** – (SF168) Board exhibit. Display of equipment used in fish harvesting. Examples: fishing knots, hooks (with corks over ends for safety), and lures. Label all items displayed. Include in your exhibit the following information: the purpose of each item, when or where each item is used and any personal experiences you've had with the item(s).
- SF) D343002** **Build a Fishing Rod** – (SF169) Rod building kits with instructions are available for this purpose. A fishing rod educational exhibit may not exceed 96 inches length. Exhibit must be mounted on a board. Include with the exhibit: explanation of cost of materials/components, where materials/components were purchased, and how many numbers of hours required for construction. Label all parts. Necessary components which must be included are grip, line guides (based on manufacturers specifications), guide wraps, and hook keeper. Reel seat needs to be aligned with guides, and

guides aligned accurately down rod. Guide wraps of size A to D, nylon or silk thread. Exhibit will be judged on: workmanship, labeling of parts information, and neatness.

- SF) D343003 **Casting Target** – (SF170) Make a casting target for exhibit and use, Target must be under 48” x 48”. The bulleyes must be 2 feet, outer band must be 1 foot in diameter and can have up to 3 rings. The exhibit must be easy to store, durable, and weather resistant. Include the purpose and rules of using your casting target.
- SF) D343004 **Wildlife Harvesting Equipment Board Exhibit** – (SF171) Display of equipment used in harvesting wildlife. Examples: expanded ammunition casings (no live ammunition permitted), steel traps, hide stretchers, fleshers, etc. For displays of shotguns, rifles or bows, use drawings or pictures. Label all items displayed: the purpose of each item, when or where it is used in relation to other equipment and any personal experiences you’ve had with the item(s)
- SF) D343005 **Inventing Wildlife/Fish Harvesting Equipment, Aid or Accessory** – (SF168) Use engineering principles to invent or adapt equipment that helps you harvest fish or wildlife. This could include wildlife calls, adapted fishing pole for shallow water, a blind, decoys, etc. Share your drawing (or adapted plans), how the equipment works, how you tested it, and the results of testing your prototype and any adjustments you made.
- C) D343901 **County Only** - Other Item Made in this Project
- C) D343902 **County Only** - Other Item Made in this Project

## TAXIDERMY

- SF) D346001 **Tanned Hides** – (SF172) Any legal fish, bird or other wild animal properly processed by the member. No requirement as to size or mounting. Include the following information: the animal’s name - information about the exhibitor’s personal field experiences, study, or observations that relate to the exhibit.
- SF) D346002 **Taxidermy** – (SF172) – Any Legal fish, bird, or other wild animal properly processed by the member. No requirement as to size or mounting. Include the following information: - the animal’s name-information about the exhibitor’s personal field experiences, study, or observations that relate to the exhibit.
- C) D346901 **County Only** - Other Item Made in this Project

## SHOOTING SPORTS

4-H Shooting Sports requires youth to be under the direct leadership of a certified 4-H Shooting Sports Leader in either shotgun, rifle, bbgun), archery, pistol, black powder/muzzleloader, and/or hunting skills. No firearms can be entered as an exhibit, nor live ammunition: however information can be shared through pictures. Classes 004 – 009 can be entered by anyone in the conservation and wildlife area.

- SF) D347001 **Shooting Aid or Accessory** – (SF253) Any item which helps the shooter/hunter better perform their sport, examples: rifle sling, kneeling roll, arm guard, shotgun vest, target boxes, shooting stick, etc... Include your design, or plans you adapted, what the item is and used for.
- SF) D347002 **Storage Case** – (SF254) an item with the purpose to safely hold a firearm, bow, ammunition, and/or arrows, examples: soft sided shotgun case, quivers, firearm safe, include your design, or plans you adapted. Explain how the storage case is used.
- SF) D347003 **Practice Game or Activity** – (SF255) invent or adapt an activity to practice or teach a project skill. Include pictures of youth playing the game, testimonials for 4-H members who played the game, what skill is being worked on, and directions for the game. Explain how you came up with the game or adapted it to fit the needs of your group members.
- SF) D347004 **Science, Engineering, Technology Advancements of Shooting Sports, Conservation, or Wildlife Essay or Display** – (SF256) Choose a specific area of shooting sports and share how it has advanced. Include a timeline and photos or illustrations. Keep your topic narrow and manageable. Essays are limited to 1000 words and should be on 8 ½ x 11 paper.
- SF) D347005 **Healthy Lifestyles Plan** –(SF257) Include a shooter’s (hiker’s, camper’s, angler’s) diet and exercise plan, and how the 4-H member will benefit or improve from following the plan. Ideally, the 4-H member would follow the plan and include some journal entries about adaptations or improvements made while following the plan
- SF) D347006 **Citizenship/Leadership Project** –(SF258) Share a display on a citizenship project or leadership project the 4-H member took on individually or with a group to improve some aspect related to 4-H Shooting Sports, Conservation, or Wildlife. Examples could be range development, conservation planting to attract wildlife, a camp, 4-H recruitment event. Include who benefitted from the project, what the 4-H member’s role was, and any results.
- SF) D347007 **Career Development/College Essay, Interview or Display** – (SF252) Research opportunities for careers related to this area or opportunities for college majors or college activities to help discover using project skills beyond a person’s 4-H career. Essays are limited to 1000 words and should be on 8 ½ x 11 paper. Interviews need to include a picture of the interviewee in their work setting, questions asked, and a transcript of answers.
- SF) D347008 **Community Vitality Display** – (SF251) Explore the difference shooting sports and hunting make in keeping Nebraska vibrant especially in rural areas. Present facts and research in an interesting way for the public to learn from.
- SF) D347009 **Ag Literacy-Value Added Agriculture Interview or Research Project** – (SF250) Explore how traditional ag producers are adding value to their production agriculture operations through conservation efforts, hunting, raising pheasants, shooting sports related tourism, etc. Present findings in an interesting way for the public to learn from.
- C) D347901 **Educational Safety Poster** – Concerning archery, rifles, pistols, shotguns or wildlife and/or hunting lore as part of the Shooting Sports project.
- C) D347902 **County Only** – Any other item made in this project.

## OTHER NATURAL RESOURCES

**SF) D361001** **Design your Own Exhibit in Natural Resources, Conservation, Geology, or Ecology.** (SF164) This class is for educational exhibits about natural resources, conservation, wildlife or ecology that do not fit into other categories. Entries must be appropriate for fair display and no larger than 24" x 24". All entries must include a title and should be clear (a brief explanation or other method) about the intended purposes or message – what the exhibit is meant to show. Think about accuracy, creativity, educational value for viewers and evidence of exhibitor's personal experiences and learning.

### Rules

Display posters must be made of material, e.g. foam board or poster board and measure no larger than 22" x 28". Poster material should be sturdy enough to hold display items. Display exhibits other than poster to be no larger than 18" x 24". Journal/Binder exhibits measure no larger than 16" x 16". Consider neatness and creativity.

*NEW PROJECT IN 2022*

## OUTDOOR ADVENTURES – Level 2

**SF) D341001** **Poster** – (SF281) Create a poster display no larger than 22" x 28". Topics may include, but not limited to one or more of the following; how to pitch a tent, knot tying, cooking over a campfire, how to start a campfire, wildlife and plants identification while camping, how to set up an emergency shelter, dealing with the weather, collection of photos from camping trips, "Leave No Trace" and how that was followed while camping, plan a camping trip, camping essentials, environments issues/protecting natural resources, park or trail cleanup, sanitation/hygiene while outdoors or use of GPS.

**SF) D341002** **Journal/Binder** – (SF281) Written report of virtual or virtual camping/hiking trips with observations, OR field journal (notes of actual experiences, sights, sounds, smells, etc.). OR camping and hiking trip diary. Explain growth in project, leading the hikes, planning the camping trip, now being able to identify the wildlife and nature around you and how identified (sight/sound/shape/smell/color). Feathers/leaf/flower pressings must be securely attached, if included. Photos of drawing of observations encouraged. Exhibits measure no larger than 16" x 16".

**SF) D341003** **Camping/Hiking Safety** – Must include explanation of use of item and why selected/purpose, how it fits hiking/camping needs. May include, but are not limited to, one of the following: travel sized poisonous plants guide, camping first aid kit, weather/water safety or hand hygiene kit. Exhibits measure no larger than 18" x 24".

**SF) D341004** **Digital Media** – Use digital media to show video/slideshow/presentation of setting up a tent (include why site is chosen) or protecting natural resources or environmental issues or computer video camping/hiking game. Submit a USB drive or DVD inside a report cover or notebook. If using a slideshow, include printed slides inside report cover or notebook.

**SF) D341005** **Other Camping Items** – Must include what inspired the creation of the item, and its purpose. May include, but not limited to one of the following: nature art, nature haiku poem, spider web sketches or knot display. Exhibits measure no larger than 18" x 24".

## OUTDOOR ADVENTURES - Level 3

**SF) D341006** **Poster** – Create a poster display, no larger than 22" x 28". Topics may include but not limited to one of the following: Topographic map, backpacking trip plan, camp layout, plan an expedition (can be dreamed or lived), collection of photos from your expedition, trails hiked, cost comparison of rental vs purchase or using GPS/compass.

**SF) D341007** **Journal/Binder** – Written report of actual, virtual or imagined expedition/camping/hiking, OR field journal (notes of actual experiences, sights, sounds, smells, etc.). Explain growth in project, challenges in leading a group, teaching others about wildlife and nature identification and "Leave No Trace". Exhibits measure no larger than 16" x 16".

**SF) D341008** **Expedition Safety** – Must include an explanation of use of items, why selected/purpose of item, how it meets hiking/camping/expedition needs. May include, but are not limited to; travel sized edible plants, creepy crawly guide, tent repair kit, travel first aid kit or weather/water safety. Exhibits measure no larger than 18" x 24".

**SF) D341009** **Digital Media** – Use digital media to show video/slideshow/presentation of one of the following, but not limited to; building a non-tent shelter(include why needed), packing your backpack/equipment and getting it on to you, teaching others about environmental issues or a computer video backpacking expedition game. Submit a USB drive or DVD inside a report cover or notebook. If using a slideshow, include printed slides inside report cover or notebook.

**SF) D341010** **Other Expeditions Items** – Must include what inspired the creation of the item, and the purpose of the item. May include, but are not limited to; nature art, nature cinquain poem, backpacking food recipes, hiking/expedition conditioning plan, charcoal etching, dehydrated meal or snack (at least 1 cup displayed in a re-sealable plastic bag with ingredients, instructions, and nutritional facts included). Exhibits measure no larger than 18" x 24".

**C) D341901** **County Only** - Other Item Made in this Project

**C) D341902** **County Only** - Other Item Made in this Project

# ENTOMOLOGY

## ENTOMOLOGY

Entomology exhibits give 4-H'ers the opportunity to demonstrate their knowledge about insects and insect displays.

**The INSECT OF THE YEAR for 2023 is the Grasshopper.**

### RULES

1. Specimens in display collections should be mounted properly and labeled with the location, date of collection, name of collector and order name. Follow mounting and labeling instructions in the Nebraska 4-H Entomology Manual. Boxes are preferred to be 12" high x 18" wide, and landscape orientation, so they fit in display racks at State Fair. Purchase of commercially-made boxes is allowed. All specimens are to be pinned and labeled by the exhibitor. No purchased specimens allowed. No project over 50 pounds allowed.
- SF) H800001** **Entomology Display – First Year Project** – (SF186) Collection to consist of 25 or more different kinds (species) of insects representing at least 6 orders. Limit of one box.
- SF) H800002** **Entomology Display – Second Year Project** – (SF186) 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 previous year. Limit 2 boxes.
- SF) H800003** **Entomology Display – Third Year or More Project** – (SF186) 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.
- SF) H800004** **Special Interest or Advanced Insect Display** – (SF187) 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, and species). A speciality 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).
- SF) H800005** **Insect Habitats** – (SF186) 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. Report should include placement, target insect, why materials were chosen, functional design, and indicators of success. See the following resources for reports:
- \***Nebraska Extension NebGuide:** Creating a Solitary Bee Hotel (G2256)
  - \* University of Minnesota: Wild Bees and Building Wild Bee Houses
  - \* National Wildlife Federation: How to provide Water in Monarch Gardens
- SF) H800006** **Macrophotography** – (SF189) Subjects should be insects, spiders or other arthropods, or any nests, webs, or constructions they make. All exhibit prints should be either 8"x10" or 8 ½"x 11" and mounted on rigid, black 11" x 14" poster or mat board. Either orientation is acceptable. No frames or mat board farming is allowed. A caption of a few sentences should explain the subject and be printed on white paper and glued below the print on the posterboard
- SF) H80007** **Insect Poster/Display Exhibits** – (SF190) 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.
- SF) H80008** **Reports or Journals** – (SF191) 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, insect 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 in kinds of 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.
- SF) H810001** **Special Entomology Project** Educational exhibit based on what was learned from the project. Present information on a poster no larger than 22" x 28" either vertical or horizontal arrangement or in a clear plastic report cover. The 4-H member's name, age, full address, and county must be on the back of the poster or report cover. Reports may include life cycle, distribution of the insect, insect behavior (ex. nesting, finding food, mobility, defenses, etc.); habitats (e.g. forests, grasslands, wetlands, rivers, or lakes). May include a certain species or broad overview of the family or group of insects.
- SF) H8110002** **Special Entomology Project Display** The current years' Special Entomology Project pinned species along with a one to two report of what was learned from researching the insect type. Reports may include life cycle, distribution of the

insect, insect behavior (ex. nesting, finding food, mobility, defenses, etc.); habitats (e.g. forests, grasslands, wetlands, rivers, or lakes). May include a certain species or broad overview of the family or group of insects.

- **The insect of the year for 2023 is the grasshopper.**

- C) **H800901** County Only – Other Item Made in this Project  
C) **H800902** County Only – Other Item Made in this Project

## **FORESTRY**

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

This category provides 4-H'ers an opportunity to prepare displays that show their expertise in many aspects of forestry. Involvement in this category will lead to expansion of seed, twig, wood, leaf, and tree knowledge for 4-H'ers. In addition, participants would learn more about common Nebraskan trees.

### **RULES**

1. The official reference for all forestry projects is Tree Identification Manual (4-H 332) which was recently revised and is available for purchase from UNL Marketplace. Other helpful forestry reference include Trees of Nebraska (EC 92-1774-X), Leafing Out (4-H 431) and Plant a Tree (EC 17-11-80).
2. Display "boards" must be made from wood or wood composite, i.e., plywood, fiberboard or masonite, ¼" – ½" thick and no larger than 24" x 24". Display boards may be coated, e.g., painted or varnished, on both sides to prevent warping.
3. Display "posters" must be made from a material, e.g. foam board or poster board that will stand upright without buckling, and be no larger than 24" x 24".
4. Display "books" must measure no more than 16" x 16".
5. At least 5 of the 10 samples in Classes 2, 3, 4, and 5 must be from the list of 60 species described in 4-H 332. Samples must be from 10 different tree species. For example, Emerald Queen Maple and Crimson King Maple are both varieties of the same species (Norway Maple) and thus have the same genus and species name, i.e. *Acer platanoides*. All samples must be from trees, NO shrubs. If more than 10 samples are included in a display, only the first 10 samples of the current year will be judged.
6. Due to emerald ash borer infestation, no true ash species (Green Ash, White Ash, Black Ash, or Blue Ash) may be included in any collection. Inclusion of a true ash species will result in the project being disqualified.
7. Remember that other general labeling standards apply. For example, scientific names are always italicized or underlined. Also, the first letter of a Genus name is always capitalized. The first letter of a species name is always lower case. When required, always indicate complete scientific names (Genus and species) and common names, (e.g. Norway Maple) even when "variety names" are included. For example, the scientific name of Emerald Queen Maple is *Acer platanoides* and the common name is Norway maple. "Emerald Queen" may be included as the variety name, but variety names are not required.
8. How well the exhibitor follows written directions is an important factor in judging.

**SF) D320001** **Design-Your-Own-Exhibit** - Prepare an educational exhibit about some aspect of trees, forests, or forestry that is of special interest to you. Possible topics include paper recycling, wildfire, forest products, forest wildlife, or forest pests. The only requirement is that the display must be no larger than 24" X 24" X 24". Photographs, drawings, samples, charts, posters, etc. can be used, but include enough information to adequately explain the topic. Your display should be substantially different from other display classes. Be as creative as you like.

**SF) D320002** **Leaf Display** – The leaf display must include samples of "complete leaves" from at least 10 different trees species. The display must include at least two samples of simple leaves, compound leaves, and conifer leaves. Leaves should be pressed, dried and mounted.

**Collection:** Whenever possible, collect leaves from mature trees. Collect leaves any time after they have reached full size, usually beginning in early summer. Leaf samples should be in good condition and representative of the average leaves on the tree. Keep in mind that shaded leaves often are much larger than normal. Carefully remove-leaves from the twig with the entire petiole or rachis intact. After collection, fresh leaf samples can be temporarily stored within the pages of an old magazine, but they should be properly pressed and dried for display. Be sure to record pertinent information during collection. All collection must be done by the exhibitor.

**Mounting:** Leaves may be displayed in a notebook or on a display board. Any method may be used to mount leaves, e.g. wire, glue, tape, staples, plastic bags, but be sure all their features can be clearly identified.

**Labeling:** The label for each sample must include: **1.** common name, **2.** scientific name – italicized or underlined, **3.** leaf type, **4.** leaf arrangement (for broadleaf trees) **5.** leaf composition (for broadleaf trees) **6.** collector's name, **7.** collection date, **8.** collection location (be specific, state and county at a minimum) If a twig is included with a sample, indicate "twig included" on the label. For example, the twig may be included with an eastern cedar sample because the leaves are very small and difficult to remove from the twig. Supplemental information, e.g. general uses, common products, fall color, etc., may be included to enhance its educational value.

**SF) D320003** **Twig Display** – The twig display must include twig samples of at least 10 different trees species. The display must include at least two samples of opposite and alternate leaf arrangements from broadleaf trees.

**Collection:** Twig samples should be collected during the dormant season (November – April) when the buds are mature. Twig samples must be at least 6 inches long and exhibit buds. Leaves must be removed, and side branches must be trimmed to less than 1 inch in length. All collection must be done by the exhibitor.

**Mounting:** Twigs must be mounted on a display board. Any method, e.g. wire, glue, tape, staples, plastic bags, etc., may be used to mount twigs, but be sure all features can be clearly identified. The non-terminal end must be cut at a slant so the pith can be seen.

**Labeling:** The label for each sample must include: **1.** common name, **2.** scientific name- italicized or underlined, **3.** leaf arrangement (for broadleaf trees) **4.** collector's name, **5.** collection date, **6.** collection location (be specific, state and county at a minimum)

Supplemental information, e.g. general uses, tree characteristics, etc., may be included to enhance educational value

**SF) D320004**

**Seed Display** – The seen display must include seed samples from at least 10 different tree species.

**Collection:** Tree seeds should be collected at the time of year when they mature, which varies widely depending upon tree species. For example, Silver maple seeds mature in May while red oak acorns do not mature until September. Seed samples should be free of insect or disease symptoms. Remember to display seeds, not fruit. For example, the seed of honeylocust is enclosed in a pod. Remove and display the seed, not just the pod. It is acceptable to display the fruit with the seed, but clearly label each. All collection must be done by the exhibitor.

**Mounting:** Seeds may be displayed in a variety of ways, e.g. mounted on a display board, displayed in jars in a rack, etc. but they must be securely mounted and easily viewed. Be as creative as you like.

**Labeling:** The label for each sample must include: **1.** common name, **2.** scientific name- italicized or underlined, **3.** type of fruit, if known (e.g. samara, pod, nut, legume, etc.) **4.** collector's name, **5.** collection date, **6.** collection location (be specific, state and county at a minimum)

Supplemental information, e.g. maturity date, average number of seed in the fruit, etc., may be included to enhance educational value.

**SF) D320005**

**Wood Display** – The wood display must include wood samples from at least 10 different tree species.

**Preparation:** Samples may be of any shape, e.g. sections from a board, wood cylinders turned on a lathe, horizontal or vertical cross sections of a small log with bark attached, etc., but all samples should be the same shape, e.g. all wood cylinders or all sections of a board. Each sample can be no larger than 4 inches X 4 inches X 4 inches. Cut surfaces should be sanded to show the grain. Treating samples with a clear finish (no stain) is optional. All collection must be done by the exhibitor.

**Mounting:** Samples may be displayed in a variety of ways, e.g. mounted on a display board, displayed in a box or rack, etc., but they must be securely mounted and easily viewed. Be as creative as you like.

**Labeling:** The label for each sample must include: **1.** common name, **2.** scientific name- italicized or underlined, **3.** wood type (soft or hardwood) **4.** collector's name, **5.** collection date, **6.** collection location (be specific, state and county at a minimum)

Supplemental information, e.g. common products, wood density, etc., may be included to enhance its educational value.

**SF) D320006**

**Cross Section Display** - a disc cut from a tree, species listed in 4H 332. The sample must be collected by the exhibitor within one year of the state fair judging day. The disc must measure 6 to 12 inches in diameter and 1 to 3 inches thick. The bark should be firmly attached, which may be difficult if the tree was dead when the disc was cut. Sand at least one side of the disc so the grain can be easily seen. If the disc is treated with a clear finish, both sides must be treated to minimize warping. As the disc dries some cracking or checking can be expected and is allowed.

**Labeling Front:** The following parts must be clearly and accurately labeled on the cross section with pins, paper tags or some other form of identification. **1.** Pith, **2.** Heartwood, **3.** Sapwood, **4.** One growth ring (beginning and end) **5.** Cambium, **6.** Bark.

**Labeling Back:** A separate label attached to the back of the disc must include: **1.** common name, **2.** scientific name **3.** tree classification (softwood or hardwood) **4.** age (of the cross section) **5.** collector's name, **6.** collection date, **7.** collection location (be specific state and county at a minimum)

**SF) D320007**

**Parts of a Tree - This project is only for ages 8 – 11.** Prepare a poster, no larger than 24 inches x 24 inches that clearly identifies the main external parts of any tree: **1.** Trunk, **2.** Crown, **3.** Roots, **4.** Leaves, **5.** Flowers, **6.** Fruit, **7.** Buds, **8.** Bark Identifying other internal parts, e.g. phloem, xylem, cambium, annual ring, pith, etc., is optional. Attach a separate label on the back of the poster that includes the exhibitor's name and age.

**SF) D320008**

**Living Tree Display** - a living tree seedling grown by the exhibitor from seed in the display container. The seed must be from a species listed in 4H332. The seedling must be 60 days to 1 year old (on State Fair judging day). The display container must contain at least 8 inches of soil (potting mix or suitable natural soil); have drainage hole(s), and a drain pan to catch drainage water.

**Labeling:** A waterproof label must be attached and include: **1.** common name, **2.** scientific name – italicized or underlined, **3.** seed treatments (if any) **4.** planting date, **5.** emergence date, **6.** collector's name.

**Supplemental information about the tree:** e.g. where the seed was collected, growth measurements, uses for that species, etc., may be included in an attached notebook, poster, etc., to enhance educational value. Supplemental information will be an important factor in judging.

**SF) D320009**

**Forest Product Display** – Prepare a visual display and/or collection tracing the origin of one non-lumber products that comes from trees and /or forests. The display must be no larger than 24 inches by 22 inches by 28 inches. Photographs, drawings, samples, charts, posters, etc. can be used. Poster submitted may be no larger than 22" x 28" and may be either vertical or horizontal. The contestant must identify what species of trees the product is derived from and where the product is harvested, grown, or otherwise collected. The product listed must be partially or fully derived from trees; if partial the approximate percentage should be articulated in the display.

\*The goal of this exhibit is for students to learn that many products come from trees and forests and to explore one of these products through in-depth study.

\* Information about the tree or forest product: e.g. information about harvesting, processing, industry information, and environmental or other benefits may be included to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

\* Personal interviews with industry professionals are encouraged as a source of information.

SF) D320010

**Forest Health Display** - Prepare a visual display outlining a specific forest health issue such as a tree disease, insect pest, animal-or human-caused damage, or an abiotic issue such as a weather damage. The display must be no larger than 24 inches x 24 inches x 24 inches. Original photographs, drawings, samples, charts, posters, etc. can be used. Actual specimens are strongly encouraged but must be properly preserved, i.e. insects pinned or placed in vials of alcohol, leaves pressed and dried. Posters submitted may be no larger than 24 inches x 24 inches.

\* Explain through the display what species of trees the health issue affects, diagnostic features of the issue (symptoms in trees, identifying features of the pest, etc.) and management options. \* Include common and scientific names of trees and pests.

\*Supplemental information about the tree or forest health issue: e.g. origin, proliferation in Nebraska/United States, and physiological effects on the tree may be included to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information

\* Attach a separate label on the back of the display that includes the exhibitor's name and age. SF)

D320011

**Wildlife Prevention Poster** – Prepare a poster, no larger than 24 inches x 24 inches that promotes wildfire prevention strategies. Strategies articulated in the poster can include personal and/or land management actions. Attach a separate label on the back of the poster that includes the exhibitor's name and age.

\* Supplemental information about wildfires prevention should be attached to the poster: e.g. frequency of wildfires in Nebraska/United States, financial cost of wildfires, environmental factors that contribute to wildfires, etc. to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

SF) D320012

**Sustainable Landscape Diorama** – Box must be no larger than 24" x 24". The exhibit must show a Nebraska landscape that includes elements such as windbreaks, fields, pastureland, CRP, public lands, community/municipal landscapes. The goal of this exhibit is for students to articulate conservation and sustainability best-practices that can be implemented on a landscape, while addressing landowner and other stakeholder interest.

\* Label point/nonpoint sources of pollution, carbon sequestration, water-wise practices, wildfire prevention strategies, renewable energy sources, and other conservation practices as well as at least 10 species of plants included in the diorama.

\*Attach to the exhibit a brief report including supplemental information describing the diorama, defining conservation practices, and outlining opportunities for landscape improvements to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

SF)D320013

**Tree Planting Project Display** - Plant a tree in your community. Prepare a visual display where the student articulates proper tree planting techniques, why the individual tree species was chosen, as well as steps taken to continue care for the tree after initial planting. The display must be no larger than 24 inches by 24 inches. Photographs, drawings, samples, charts, posters, etc. can be used. Posters submitted may be no larger than 24 inches x 24 inches. The tree must have been planted 60 days to 1 year before State Fair judging day. Students must obtain permission from necessary authorities and property owners before planting any trees.

\* Labeling: the following information about the tree must be included in the display: 1. common name 2.scientific name 3.planting location 4.planting date 5.tree source 6.planter's name 7.proper tree planting steps 8. tree care (after planting)

\* Supplemental information about the tree: e.g. why the species was chosen, growth measurements, uses for that species, etc., may be included in an attached notebook, poster, etc. to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.