

ENVIRONMENTAL ED & EARTH SCIENCES

Conservation & Wildlife Department D

Superintendent: Clint Phillips

Junior Superintendents: Garrett Tollman, Bailey Sellman, & Miranda Betson

General Rules:

- A. **Show What You Did & 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-H'er did and learned in the process that led to the exhibit.
- B. **Proper Credit.** Show proper credit by listing the sources of plans or other supporting information used in exhibits. An example is provided in the State 4-H Fairbook.
- C. **Whose Exhibit.** -The exhibitor's name, county and age must be on the back or bottom of all displays.
- D. **Wildlife & 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. Domestic animal (i.e. domestic livestock or house pets) and insect exhibits are not appropriate for this area.
- E. **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/ and www.whep.org.
- F. **Board & Poster Exhibits.** Mount all board exhibits on ¼ inch plywood, masonite, or similar panel no larger than 24 inch x 24 inch wide. Poster exhibits should be on regular poster sheets, no larger than standard size (22 inch x 28 inch), but half size (22 inch x 14 inch), is recommended.
- G. **Exhibit Size:** Exhibits other than poster/display board should not exceed 48 inches x 48 inches and be able to be moved by two people.
- H. All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.

DIVISION 340: WILDLIFE AND HOW THEY LIVE

Wildlife and How They Live (Classes 1-4)

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 study methods; wildlife behavior (example: when nesting, finding food, moving, etc.); habitats (examples: grasslands, wetlands, river or stream corridors) and what wildlife is found there; habitat needs for a specific kind of wildlife. For more ideas, refer to project booklets.

D340001. Mammal Display. (SF154)

D340002. Bird Display. (SF154)

D340003. Fish Display. (SF155)

D340004. Reptile or Amphibian Display. (SF156)

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:

1. Food chain display. Use pictures, drawings, or other items to illustrate the source of food energy and where it goes - who eats whom or what. Use arrows to show the direction of the energy (food) flow.
2. Show the role of predators, scavengers, insect eaters, or others in nature.
3. Show how wildlife numbers (populations) change through the year or with their habitat.
4. Show predation, competition, or other behavioral interactions of wildlife.
5. 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.

6. For more ideas, refer to project booklets.

D340006. Wildlife Tracks. (SF158) Board or diorama-type box exhibit. Make a display of animal tracks using plaster-of-paris casts. There are three options. For 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.

1. 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
2. Option 2 should show two or more plaster-of-paris tracks of one specific kind of wildlife and should include a picture or illustration of the animal, what the animal may eat, and what may eat the animal.
3. 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.

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 inches x 24 inches. Example: prepare a list of animals and questions about where each would most likely live. Rabbits' brushy areas along field borders; ducks-marshes, etc.

D340008. Wildlife Diorama. (SF160) Exhibit must be no larger than 24 inches x 24 inches. The exhibit might show 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.

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. For other ideas, refer to project booklets. The essay should be between 100 and 1000 words long and should be typed, double spaced, or written so that it can be easily read. Standard size paper (8 ½" x 11") format is preferred. You might use books, magazines, or personal interviews as resources, but you must give credit to all sources by listing them.

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).

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, woodcarvings, painted duck decoys, or songs or poems written by the exhibitor. Entries must be appropriate for fair display and no larger than 24 inches x 24 inches. 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 brief explanation of the purpose or message (what is the exhibit meant to show).

Rules

Classes 1-4 are board or poster exhibits. Display may show any aspect of wildlife, wildlife habitat, or related conservation. No domestic livestock, pets, or insects allowed. For more ideas, refer to project booklets. Remember to look at General Rules for this area.

DIVISION 341: OUTDOOR ADVENTURES

Rules:

1. 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.
2. Display exhibits other than posters to be no larger than 18" x 24".
3. Journal/Binder exhibits measure no larger than 16" x 16".

DIVISION 341: OUTDOOR ADVENTURES LEVEL 1 (County Only)

D341011. Poster. Create a poster or display no larger than 22" x 28". Topics may include one of the following, but not limited to: trail map(s) you have hiked, hiking essentials, your hiking adventures, wildlife, or plants observed while hiking (birds, animal prints, butterflies, etc. plan a hike, explain "Leave No Trae" and how this was followed during hiking, collection of photos from your hikes.

D341012. Journal/Binder. Written report of actual, virtual or imagined trail(s) hiked with observations, or field journal (notes of actual experiences, sights, sounds, smells, etc.) or camping trip diary. Feathers/leaf/flower pressings must be securely attached if included. Photos or drawings of observations encouraged.

D341013. Hiking Safety. Must include explanation of use of item, why selected/purpose of item and how it meets hiking needs. May include, but are not limited to, one of the following: a compact hiking safety kit, homemade compass or homemade water purifier.

D341014. Hiking Adventure Game. Create a game of trails of outdoor adventures. Must be educational on one or more aspects of hiking, must include clear instructions as to the purpose and what can be learned by playing the game.

D341015. Other Hiking Items(s). Must include what inspired the creation of the item(s) and its purpose. May include but are not limited to one of the following: hiking backpack, nature art, nature poem or story, homemade hiking snack mix displayed in a re-sealable plastic bag (include why ingredients were selected and nutritional value).

DIVISION 341: OUTDOOR ADVENTURES LEVEL 2. (SF281)

D341001. Poster. Poster material should be sturdy enough to hold display items. 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 identified while camping, how to set up emergency shelter, dealing with weather, collection of photos from camping trips, "Leave No Trace" and how that was followed while camping, plan a camping trip, camping essentials, environmental issues/protecting natural resources, park or trail clean up, sanitation/hygiene while outdoors or use of GPS.

D341002. Journal/Binder. Written report of actual, virtual or imagined camping/hiking trips with observations or field journal (notes of actual experiences, sights, sounds, smells, etc.), or camping or 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 inches x 16 inches.

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.

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.

D341005. Other Camping Items. Must include what inspired the creation of the item, and its purpose. May include, but are not limited to one of the following; nature art, nature haiku poem, spider web sketches or knot display.

Rules

See General Rules for more information.

DIVISION 341: OUTDOOR ADVENTURES LEVEL 3. (SF281)

D341006. Poster. 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.

D341007. Journal/Binder. Written report of actual, virtual or imagined expeditions/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 inches x 16 inches.

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.

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 onto 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.

D341010. Other Expedition Items. Must include what inspired the creation of the item, and its purpose. May include, but are not limited to one of the following; nature art, nature haiku poem, spider web sketches or knot display. Exhibits measure no larger than 18 inches x 24 inches.

Rules

See General Rules for more information.

DIVISION 342: WILDLIFE HABITAT

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: check NebGuide on birdhouses and shelves.

D342002. Feeders/Waters. (SF166) Make a birdbath 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 water/feeder is intended, 2) where and how the water/feeder should be located for best use, 3) any seasonal maintenance needed, and 4) any evidence of your personal observations or experiences. Tips: check NebGuide on feeding birds: <https://wildlife.unl.edu/pdfs/feeding-birds.pdf>

D342003. Wildlife Habitat Design Board or Poster Exhibit. (SF167) Board or poster exhibit. Choose a backyard, acreage, or farm, and design a habitat plan to meet the food, water, 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. For ideas, check the Wildlife Habitat Evaluation Handbook, Participant’s Manual (NE 4H4300).

Rules

Please refer to General Rules for more information.

DIVISION 343: HARVESTING EQUIPMENT

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:

1. The purpose of each item
2. When or where each item is used
3. Any personal experiences you’ve had with the item(s)

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:

1. Explanation of cost of materials/components, where materials/components were purchased, and number of hours required for construction.

2. 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.

D343003. Casting Target. (SF170) Make a casting target for exhibit and use. Target must be under 48" x 48". The bullseyes 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.

D343004. Wildlife Harvesting Equipment. (SF171) Board exhibit. Display of equipment used in harvesting wildlife. Examples: expended 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:

1. The purpose of each item
2. When or where it is used
3. Any personal experiences you've had with the item(s)

D343005. Inventing Wildlife/Fish Harvesting Equipment, Aid or Accessory. 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.

Rules

Please refer to General Rules for more information.

DIVISION 346: TAXIDERMY

D346001. Tanned Hides. (SF172) Exhibit of a wild animal hide properly processed by the member. No requirement as to mounting but must meet the size requirement listed under General Rules. Include the animal's name and the following:

1. Information about the exhibitor's personal field experiences, study, OR observations that relate to the exhibit

Rules

Please refer to General Rules for more information.

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.

DIVISION 347: 4-H SHOOTING SPORTS *State Fair Eligible*****

4-H Shooting Sports requires youth to be under the direct leadership of a certified 4-H Shooting Sports Leader in either shotgun, rifle (BB gun), archery, pistol, black powder/muzzleloader, and/or hunting skills. No firearms can be entered as an exhibit; however information can be shared through pictures.

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.

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.

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 of 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.

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 1,000 words and should be on 8 ½ x 11 paper.

D347005. Healthy Lifestyles Plan. (SF257) Include a shooter's (hiker's, camper's, anglers) 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.

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.

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 1,000 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 transcript of answers.

D347008. Community Vitality Display. (SF251) Explore the difference shooting sports, conservation, fishing, 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.

D34709. 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 finding, in an interesting way for the public to learn from.

DIVISION 361: OTHER NATURAL RESOURCES

D361001. Design Your Own Exhibit in Natural Resources, Conservation, Geology, or Ecology. 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 inches x 24 inches. All entries must include a title and should be clear (a brief explanation or other method) about the intended purpose or message – what the exhibit is meant to show. Think about accuracy, creativity, and educational value for viewers, and evidence of exhibitor's personal experiences and learning.

Rules

Refer to General Rules for more information.

ENVIRONMENTAL ED & EARTH SCIENCES

Entomology Department H

Superintendent: Clint Phillips

Junior Superintendents: Garrett Tollman, Bailey Sellman, & Miranda Betson

General Information: Insect Collections

- A. 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. Boxes are preferred to be 12 inches high x 18 inches wide and landscape orientation, so they fit in display racks. Purchase of commercially made boxes is allowed. All specimens are to be pinned and labeled by the exhibitor. No purchased specimens allowed.
- B. No projects over 50 pounds allowed.
- C. All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair. Exhibitors may, and should, correct and update collections for competition at the State Fair.

DIVISION 800: ENTOMOLOGY

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.

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. About 25 species should be present from after July 1 of the previous year. Limit 2 boxes.

H800003. Entomology Display, Third-Year or More Project. (SF186) Collection to consist of a minimum of 75 kinds (species) of insects representing at least 10 orders. Replace damaged or poorly mounted specimens. About 25 species should be present from after July 1 of previous year. Limit of 3 boxes.

H800004. Special Interest 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 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.).

H800005. Insect Habitats. (SF 188) Habitats consist of any hand-crafted objects, made of natural or artificial materials which are 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

H800006. Macrophotography. (SF 189) Subjects should be insects, spiders or other arthropods, or any nests, webs or constructions they make. All exhibit prints should be 8 inches x 10 inches or 8 ½ inches x 11 inches and mounted on rigid, black 11 inches x 14 inches poster or mat board. Either orientation is acceptable. No frames or mat board framing is allowed. A caption of a few sentences should explain the subject, and be printed on white paper, and be glued below the print on the poster board.

H800007. Insect Poster / Display Exhibits. (SF 189) Exhibits can be posters or three-dimensional displays, and artistic creativity is encouraged. Posters should be no larger than 22 inches x 28 inches. 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 behaviors (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 inches x 28 inch area.

H800008. Reports or Journals. (SF 189) 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, 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 with personal impressions. It may cover watching changes of kinds of butterflies over the summer, rearing a specific insect from egg to adult, managing a beehive, observations of insects in a specific habitat, accounts of insect behavior in a forest or flower garden, etc.

ENVIRONMENTAL ED & EARTH SCIENCES

Forestry Department D

Superintendent: Clint Phillips

Junior Superintendents: Garrett Tollman, Bailey Sellman, & Miranda Betson

General Information:

- A. The official reference for all forestry projects is the Tree Identification Manual (4-H 332) <https://marketplace.unl.edu/ne4h/4h332.html> which was recently revised and is available for purchase from UNL Marketplace. Other helpful forestry references include Trees of Nebraska (EC 92-1774-X), Leafing Out (4- H431) and Plant a Tree (EC 17-11-80). <https://marketplace.unl.edu/ne4h/leafing-out.html>
- B. Display "boards" must be made from wood or wood composite, e.g., plywood, fiberboard, or masonite, ¼ inch to ½ inch thick and no larger than 24 inches x 24 inches. Display boards may be coated, e.g., painted or varnished, on both sides to prevent warping.
- C. 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 inches x 24 inches.
- D. Display "books" must measure no more than 16 inches x 16 inches.
- E. At least 5 of the 10 samples in Class 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 the display, only the first 10 samples from the current year will be judged.
- F. Due to emerald ash borer infestation, no true ash species (Green Ash, White Ash, Black Ash, or Blue Ash) may be included in any collections. Inclusion of a true ash species will result of the project being disqualified.
- G. 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.
- H. How well the exhibitor follows written directions is an important factor in judging.
- I.

DIVISION 320: FORESTRY

D320001. Design-Your-Own Exhibit. (SF31) 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 inches x 24 inches x 24 inches. 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.

D320002. Leaf Display. (SF32) The leaf display must include samples of "complete leaves" from at least 10 different tree 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 are often 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. **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
3. Leaf type
4. Leaf arrangement (for broadleaf trees)
5. Leaf composition (for broadleaf trees)
6. Exhibitor'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 red 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 educational value.

D320003. Twig Display. (SF33) The twig display must include twig samples from at least 10 different tree 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" long and exhibit buds. Leaves must be removed, and side branches must be trimmed to less than 1" in length. **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
3. Leaf arrangement (for broadleaf trees)
4. Exhibitor'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.

D320004. Seed Display. (SF34) The seed 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 honey locust 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. **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
3. Type of fruit, if known (e.g., samara, pod, nut, legume, etc.)
4. Exhibitor'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.

D320005. Wood Display. (SF36) 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. **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
3. Wood type (softwood or hardwood)
4. Exhibitor'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 educational value.

D320006. Cross Section. (SF38) Display a disc cut from a tree species listed in 4-H 332. The sample must be collected within one year of the state fair judging day. The disc must measure 6" to 12" in diameter and 1" to 3" 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:** The following parts must be clearly and accurately labeled on the cross section with pins, paper tags, or some other form of identification:

- A. Pith
- B. Heartwood
- C. Sapwood
- D. One growth ring (beginning and end)
- E. Cambium
- F. Bark

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. Exhibitor's name
6. Collection date
7. Collection location (be specific, state and county at a minimum)

D320007. Parts of a Tree. (SF39) (This project is only for ages 8 – 11) Prepare a poster, no larger than 24" x 24" that clearly identifies the main external parts of any tree: a) Trunk b) Crown c) Roots d) Leaves e) Flowers f) Fruit g) Buds h) 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.

Class 8-13: Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

D320008. Living Tree. (SF40) Display a living tree seedling grown by the exhibitor from seed in the display container. The seed must be from a species listed in 4 H 332. 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
3. Seed treatments (if any)
4. Planting date
5. Emergence date
6. Exhibitor'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.

D320009. Forest Product Display. Prepare a visual display and/or collection tracing the origin of one non-lumber product that comes from trees and/or forests. The display must be no larger than 24 inches x 22 inches x 28 inches. Photographs drawings, samples, charges, posters, etc. can be used. Posters submitted may be no larger than 22 inches x 28 inches and may be either vertical or horizontal. The contestant must identify what species of tree 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 tress; 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-dept 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.

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 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 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.
- Attach a separate label on the back of the display that includes the exhibitor's name and age.

D320011. Wildfire 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 wildfire prevention should be attached to the poster: e.g., frequency of wildfires in Nebraska/United States, financial costs of wildfires, environmental factors that contribute to wildfires, etc. to enhance educational value.

D320012. Sustainable Landscape Diorama. Box must be no larger than 24 inches x 24 inches. 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 interests.

- 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.

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 x 24 inches x 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.