



ECOLOGY, NATURAL RESOURCES
Division 6026 – ECOLOGY, NATURAL RESOURCES
Blake Newton - Staff Consultant

1. See General Rules applying to all 4-H exhibitors and 4-H exhibits other than livestock listed previously in this catalog.
2. **Each county may have 1 entry per class. An exhibitor may enter only one class in Entomology and no more than two entries in Honey (one extracted, one chunk).**
3. Specifications for pinned-insect exhibits 687A, 688A, 689A, and 691 (see below for insect photography exhibits, 687B, 688B, and 689B):
 - a. 9" x 13" folding cardboard insect-collection boxes available through UK College of Agriculture, Department of Entomology, should be used. Homemade or purchased wooden exhibit boxes may be used instead. They must be approximately 18" x 24" and not more than 3 1/2" thick with Plexiglas or glass covers and cellotex pinning bottoms (or plastazote or polyethylene pinning bottoms available from entomology supply stores such as Bioquip.com). Boxes must be easily opened (for instance; if a screw is used to secure Plexiglas tops, use a thumbscrew fastener instead of a fastener that requires a tool).
 - b. Specimens are to be arranged so the box can be exhibited horizontally. 4-H'ers may attach wires to the back of wooden boxes to help make them easier to display.
 - c. Identification labels available from your County Extension Office must be used, or custom labels may be printed if they conform exactly to the font, font size, and font color of the official labels. Labels should be printed onto white cardstock. The exhibit identification card should be placed on the front of the box (each box). Instructions for pinning and labeling are included in your project literature.
 - d. One half of the specimens may be from the previous year's collection or from anywhere in the United States; one half or more must be Kentucky insects collected since the last Kentucky State Fair. No insects that were originally collected from countries outside of the United States will be judged.
 - e. For the first through fifth year projects, a display collection catalog must be in an envelope attached to the back of the display box. Envelopes should be attached to permit their being opened easily to remove catalogue from them without moving the exhibit.
 - f. Most specimens in the display cases should be pinned, and the use of vials is discouraged. If vials are used, they may account for no more than 2% of a collection. Vials must be securely wired or pinned to the pinning bottoms.
4. Entomology exhibits are judged on the following categories: Orders, Species, Common Names, Labels, Condition of Specimens, Overall Appearance, Life Cycle Representation, Catalog of Specimens. Check with county 4-H Agent for point distribution on score sheet.
5. Exhibits will be penalized if they do not:
 - a. Use insect pins for pinning insects.
 - b. Use the 4-H Entomology identification labels.
 - c. Use display boxes that are not the official 9" x 13" cardboard boxes acquired through the Dept. of Entomology, or wooden boxes that are approximately 18" x 24" x 3 1/2".
 - d. Fulfill the requirements of the particular exhibit under which it is entered.
 - e. Have the insects arranged so the box can be exhibited horizontally.



- f. Have the display collection catalogue in an envelope attached to the back of the display box through fifth year projects.
- 6. No extra credit will be given for specimens exhibited beyond the numbers listed in the current project books.
- 7. 4-H'ers entering fifth year cannot use the same exhibit that has been judged in any previous State Fair.
- 8. 4-H Entomology exhibits will be divided into the following classes:

687A First year project (Up to three 9" x 13" official cardboard boxes, or up to two 18" x 24" wooden boxes, with minimum of 25 insects, maximum 50 insects, from at least four orders. Identification beyond order not necessary. All specimens must have date and locality label.)

687B First year project (minimum of 25 insect photographs, maximum 50 photographs, from at least four orders. Identification beyond order not necessary. All photographs must have notation field.)

Specifications for insect photography exhibits:

- a. Images will be submitted on a USB memory device (such as a "thumb drive") with no other data except for the images and folders. The USB device must be identified externally with a tag or label, showing "4-Her's last name-County-Lot Number-Class Number-Entry Number." The single root folder will be labeled with the same information. Images will be contained inside this folder. Example folder name: Doe-Fayette-6026-687a-24531
 - b. Each image will be .jpg format, 1920X1080 pixels. Vertical or horizontal black bars may be present to allow for cropped images.
 - c. Each image will have a filename that matches the following: "lastname-county-#.jpg," where "#" indicates the number of the image inside the folder. Example filename: Doe-Fayette-1.jpg
 - d. Each image will include a 400X300 pixel (or larger if necessary) white notation box with important information about the photo. This notation field may be placed anywhere inside the image, including inside black bars (if present). Fonts may vary based on the 4-Her's software, but we recommend Ariel, 18pt, black, non-bold, or larger. The notation field will include the following information, with one space between each line:
 [4-Her's Name, County, Lot Number, Class Number]
 [Date of original photograph]/[Location of original photograph. Location may be in the form of a street/city/zip code address or GPS coordinates.]
 [Brand and type of camera or camera phone]
 [Settings, including type of lens, relevant camera settings, and "flash" or "no flash"]
 [Insect Order – Common Name]
1. First year entomology photography exhibits are judged on the following categories: Orders, Species, Common Names, Labels, Quality of Photograph. Check with county 4-H Agent for point distribution on score sheet.
 2. Digital insect collections will be penalized if they:
 - a. Consist of images that were created by someone other than the 4-Her
 - b. Are not submitted and labeled according to guidelines
 3. No extra credit will be given for photographs submitted beyond the numbers listed in the current project books.

688A Second year project (Up to three 9" x 13" official cardboard boxes, or up to two 18" x 24" wooden boxes, with minimum of eight orders and not less than 50 insects, nor more than 100 insects.) Half of the insects should be identified with a common name.

688B Second year project (40-50 photographs total, representing 2 kinds of insect eggs, 8 nymphs, 8 larvae, 2 pupae, and a minimum of 20, maximum of 30, images showing insect adaptations and/or behaviors). Specifications for exhibits are the same as for 687A except:

- Each image will include a 400X300 pixel (or larger if necessary) white notation box with important information about the photo. This notation field may be placed anywhere inside the image, including inside black bars (if present). Fonts may vary based on the 4-Her's software, but we recommend Ariel, 18pt, black, non-bold, or larger. The notation field will include the following information, with one space between each line:
 - [4-Her's Name, County, Lot Number, Class Number]
 - [Date of original photograph]/[Location of original photograph. Location may be in the form of a street/city/zip code address or GPS coordinates.]
 - [Brand and type of camera or camera phone]
 - [Settings, including type of lens, relevant camera settings, and "flash" or "no flash"]
 - [Insect Order – Common Name (if applicable)]
 - [Brief description of life stage, behavior, or adaptation]
- Second year entomology photography exhibits are judged on the following categories: Diversity, Identification, Description of life stage, behavior, or adaptation, Labels, Quality of Photographs. Check with county 4-H Agent for point distribution on score sheet.
- Identification to order (or class for non-insect arthropods) is necessary for any eggs, nymphs, larvae, pupae, and adult insects in the project; common name identification is necessary for at least one-half of adult insects in the project.
- No images from the first-year insect photography project may be reused for this project.

689A Third year project (Three 9" x 13" official cardboard boxes, or two 18" x 24" wooden boxes, with a minimum of 10 orders and 100 insects, a maximum of 150 insects.)

689B Third year project (50-100 photographs total, with images showing insects and other arthropods that impact humans). Specifications for exhibits are the same as for 687A except:

- Each image will include a 400X300 pixel (or larger if necessary) white notation box with important information about the photo. This notation field may be placed anywhere inside the image, including inside black bars (if present). Fonts may vary based on the 4-Her's software, but we recommend Ariel, 18pt, black, non-bold, or larger. The notation field will include the following information, with one space between each line:
 - [4-Her's Name, County, Lot Number, Class Number]
 - [Date of original photograph]/[Location of original photograph. Location may be in the form of a street/city/zip code address or GPS coordinates.]
 - [Brand and type of camera or camera phone]
 - [Settings, including type of lens, relevant camera settings, and "flash" or "no flash"]
 - [Insect Order – Common Name (if applicable)]
 - [Brief description of impact that the depicted arthropod has on humans]
- Third year entomology photography exhibits are judged on the following categories: Diversity, Inclusion of life stages, Identification, Description of impact, Labels, Quality of Photographs. Check with county 4-H Agent for point distribution on score sheet.
- Identification to order (or class for non-insect arthropods) is necessary for any eggs, nymphs, larvae, pupae, and adult insects in the project; common name identification is necessary for all adult arthropods in the project.
- No images from previous insect photography projects may be reused for this project.

690 Fourth year project (Three 9" x 13" official cardboard boxes, or two 18" x 24" wooden boxes, with minimum of 12 orders and 150 insects, no maximum) An addition cardboard or wooden box with an example of insect damage, the stage of the insect causing the damage and any other stage of

the insect that helps identify the problem. Include information in the display that tells how the insect is controlled. Life cycle of two insects may be displayed if desired.

- 691 Fifth year project (may be repeated for successive years of eligibility but must be a different exhibit. No exhibit that has been judged in any previous State Fair may be entered.) Any type of display that pertains to experiences beyond those of previous projects. Special collections of native and/or exotic butterflies, beetles to some other insect order; a study in depth of one insect or small group of insects: a display of insect camouflage: a display of plastic embedded insects: a collection of insect larvae and nymphs are examples. Charts, photographs, models or any other visual aids may be used. 4-H'ers are encouraged to write a short (1 or 2 paragraphs) statement developing the theme of their fifth year display.

HONEY

Honey will show better in oval, flat sided to square clear glass containers. 4-H'ers **must** use standard honey jars. **Wide-mouth mason jars or wide-mouth honey jars may be used**. The jars and lids must be **clean**. **Fill jars to the "fill line"**. The "fill line" is the continuous ring that circles the jar and not necessarily the threads that help hold the lid. **Note: Two jars must be submitted for the following classes.**

Display cases for capped honey may be made by 4-Hers or bought from a store, but they must be bee-proof and have a removable top in order for the judge to check moisture. One frame per container.

Observation hives shall be secure from opening to the satisfaction of the Bees and Honey superintendent. This shall include the top of the observation hive and all holes and openings. Openings should be secure by screws or locks. Observation hives may be picked up after the end of judging on Tuesday August 13, 2019.

- 692 Two one pound glass Queenline or Classic jars of white extracted honey
693 Two one pound glass Queenline or Classic jars of light amber extracted honey
694 Two one pound glass Queenline or Classic jars of amber extracted honey
695 Two one pound glass Queenline or Classic jars of dark amber extracted honey
696 Two wide mouth pints or Classic jars of chunk honey, any color.
697 Any frame of capped honey suitable for comb honey (Light)
698 Any frame of capped honey suitable for comb honey (Amber)
699 Any frame of capped honey suitable for extraction (Light)
700 Any frame of capped honey suitable for extraction (Amber)
701 Best display of **one-frame** observation hive of honey bees consisting of worker bees, a properly marked queen, and brood.

A Grand Champion and Reserve Champion will be selected for the Entomology Division and also for the Honey Division.