ENTOMOLOGY

PROJECT SUPERINTENDENT:	Nicole Hendrickson, 765-810-4768, nikkihendrick12@yahoo.ca
EXHIBIT CHECK-IN:	Sunday, July 11, 4-6 PM
JUDGING:	Monday, July 12, 8:30 AM Closed Judging
RELEASE:	Tuesday, July 20, 9-11 AM, and 5-7 PM
STATE FAIR ENTRIES:	Three (3) Collections, three (3) Posters, one (1) Independent Study, and one (1) Mentoring entry

Project Description:
If you like bugs you'll love the 4-H Entomology project. Participants will learn about different classes of insects, how they help people, and all of the amazing things insects can do. In this project you can start an insect collection, plant a butterfly garden, or explore careers in entomology. Create an exhibit that shows the public what you learned in the entomology project this year. State Fair Exhibits- each county may send one (1) Insect Collection and one (1) Poster for each level (grades 3-5, grades 6-8, and grades 9 and up) for a maximum of six (6) exhibits per county. Follow the "Notes" under each section (Insect Collection and Poster).

Levels:

Beginner	**Grades 3-5**
Intermediate	**Grades 6-8**
Advanced	**Grades 9-12**

Project Guidelines:
Each year, members are required to complete a minimum of three (3) different manual activities (required or optional) and one (1) leadership experience.

Exhibit Requirement Options:

A. Insect Collection Option

- **References:** One (1) of the following:
  -4-H 764, How to Study, Collect, Preserve, and Identify Insects
  -How to Make an Awesome Insect Collection, ID-401

  TITLE:

  Collection- Insect Collection, Grade x (where x = your grade in school)

  Poster- Choose one (1) of the topics listed below, appropriate for your grade in school, and use that topic for your exhibit title.

- Use the orders listed in the reference material (above), which are found on page 57 in ID 401 and the Table of Contents in 4-H 764.
- Collect, mount (pins or vials), and identify insects personally collected in the U.S. only.
- Display your best specimens in a 18" x 24" box(es), orientated horizontally. When multiple boxes are used: list the box order (i.e. box 1 of 3 boxes) and include your name in each box.
- Cards A-F (for grades 3-8) are to be placed inside the display box in an attractive manner. ID 401 I cards, (for grades 9-12), should be placed in the lower right hand corner of box #1.
- Collection display boxes are expected to contain the specified number of insects and orders specified (see chart below). Collection display boxes are available at the Extension Office for purchase.
- All insects must be in the adult stage and be properly mounted on insect pins or be contained in vials as directed.

Exhibit Requirement Options:

- **Pin Labels**: Each pin or vial must contain two (2) labels: 1) Top label is to include collection date, location, and collector name. 2) Bottom label is to include common name and other optional identification data.
- **Box Labels:** Box labels (computer generated or neatly printed) are used for orders and families as required (see chart below) and are to be placed flat against the bottom of the box. Insects must be properly grouped directly under the correct order and family box label. For example, all insects belonging to a particular order must be placed under that order label. Orders to be used are listed in the reference book ID- 401. If family level identification is required, the insects should be further grouped together under that family label.
- All insects must be accompanied by a label that includes collection date, location, and collector.
- All insects must be identified using a second label that includes common name and, depending on grade level, order and family.
- Insects must be properly grouped for display, based on your grade. For example, 4-H members in grade 5 should group the insects identified to order. If your insects are identified to order and family, first put all insects of the same order together, then group those in the same family, and then group insects with the same common name.
- **Educational Box:** One (1) additional box (educational), based on the specific theme (see chart), is required for grades 9-12, in addition to the insect collection boxes. This box can be created in any manner chosen (without the mounting, pinning or identifying restrictions specified above).
- If you choose to add the insect scientific name (this is not required) they must be written properly: either in italics or underscored. The Genus (first name) must have the first letter capitalized. The species (second name) has no capitalization.

***Max. # collection boxes**- The number in this column indicates the maximum number of insect boxes that may be used for the insect collection. Educational boxes are in addition to the insect boxes.

*Educational box – The educational box (grades 9 - 12) is in addition to the insect display box(es). This box should be created in such a way as to teach something about the assigned theme to the general public.

Grade	Display	Max. # Boxes
3	10 insects, identified and pinned on cards (ID 401A)	1
4	20 insects, mounted (pins or vials) Identify all insects by common name and identify five (5) to order. Include card ID 401B.	1
5	30 insects, mounted (pins or vials) Identify all insects by common name and identify 15 to order. Include ID 401C.	1
6	40 insects, exhibit a minimum of 6 orders ,mounted (pins or vials). Identify all insects by common name and order. Include ID 401D.	2
7	50 insects, exhibited a minimum or 6 orders, mounted (pins or vials). Identify all insects by common name and order. Identify ten (10) to family. Include card ID 401E.	2
8	60 insects, exhibit a minimum of 10 orders, mounted (pins or vials). Identify all insects by common name and order. Identify 30 to family. Include card ID 401F.	2
9	70 insects, exhibit a minimum of 12 orders, mounted (pins or vials). Identify all insects by common name, order, and family. One educational box; theme: insect behavior. Include card ID 401 G	3 +1*
10	80 insects, exhibit a minimum of 14 orders, mounted (pins or vials). Identify all insects by common name, order, and family. One educational box; theme: insect pest management. Include card ID 401 G	3 +1*
11	90 insects, exhibit a minimum of 16 orders, mounted (pins or vials). Identify all insects by common name, order, and family. One educational box; theme: insects in the environment. Include card ID 401 G	3 +1*
12	100 insects, exhibit a minimum of 18 orders, mounted (pins or vials). Identify all insects by common name, order, and family. One educational box; theme: benefits of insects. Include card ID 401 G	3 +1*

B. Poster Option

Posters must be displayed horizontally, sized 22" x 28", mounted on a firm backing (foam-core board or other), and covered in clear plastic or other transparent material. Be sure to include a label with your name, grade, and county. Choose one (1) of the topics listed below, appropriate for your grade in school, and use that topic for your exhibit title, so the judges know which activity you completed. You can also use a creative subtitle if you wish. All posters, notebooks, and display boards must include a reference list indicating where information was obtained, giving credit to original author.

Entomology 1: Grades 3-5 (BU-6853 **OR** BU-8440)

Display a poster based on one (1) of the following activities:

- **Big mouth bugs**- Show the four (4) different mouth types that you studied. Create a chart listing the four (4) mouth types, an insect with this mouth type, food they eat, and where these insects might be found.
- **Buz-z-zing around**- Present three (3) to five (5) ways that insects communicate. Include an insect, or picture of each insect, that communicates in each of the ways you are describing.
- **Pit stop**- Make two (2) pit traps and use them to collect insects. Exhibit your completed record sheet. You can use the format given for your data collection, or make your own. Include some of the insects, or pictures of your trap and insects collected.
- **FACETnating!**- Show how insects see (compound eyes) and explain how they see colors.
- **Ants and Uncles**- Compare insects with their non-insect relatives by completing the chart in your book (copy or make your own). Include some of the insects and their non-insect relatives, or pictures of them, on your poster.
- **Chirp, Chirp**- Watch and listen to the crickets for five (5) minutes, three (3) times a day, for three (3) days. Include day and night observations. Record what you see and hear.

Entomology 2: Grades 6-8 (BU-8441)
Display a poster based on one (1) of the following activities:

- **Collecting Insects**- Use two (2) of the insect collecting traps described in Activity 2 (Berlese Funnel, Indoor Insect Trap), Activity 3 (Modified Wilkinson Trap), Activity 4 (Fruit Bait), or Activity 5 (Light Attractor) to collect insects. Exhibit a picture of your traps and an Insect Collection Data Chart that gives the trap location (for example, in the basement or in the back yard), date collected, and insects collected.
- **Spread Your Wings and Fly**- Make and use a spreading board. Exhibit two (2) pictures of your spreading board and three (3) butterflies or moths that you prepared using your board.
- **Insect Experiments**- Complete one (1) of the following activities: Activity 8 (Color My World), Activity 9 (Sowbug Investigations), or Activity 10 (Life's Stages). Exhibit your data sheet and answers to the "Talk It Over" questions. For activities 8 and 9, include your hypothesis and a conclusive statement about your hypothesis (indicate if it was proved or disproved).
- **Invasive Species Investigations**- Create an informational exhibit about one (1) (Indiana) invasive insect. Include the information requested in the activity for this insect (first eight (8) questions on page 29).
- **A Sticky Situation**- Make and use sticky traps for four (4) weeks as described in Activity 13. Exhibit your data sheet and the answers to "Talk It Over" questions.
- **Footprint Clues**- Study the tracks of three (3) different species of insect and one (1) arthropod as described in Activity 14. Exhibit your data sheet and the answers to "Talk It Over" questions.

Entomology 3: Grades 9-12 (BU-8442)
Display a poster based on one (1) of the following activities:

- **The Scientific Method**- Use the scientific method to complete one (1) of the problems listed in Activity 3. Describe what you did to complete the five (5) scientific method steps and include your data and drawings or pictures of your experiment.
- **Transecting for Insects**- Compare three (3) habitats using the scientific method to determine which one has the most terrestrial insect activity. Display your transect data sheet for each habitat and answer the "Talk It Over" questions.
- **Please Drop In**- Create your own hypothesis and collect insects in five (5) pitfall traps to prove or disprove your hypothesis, as described in Activity 7. Display how you completed your experiment (including each step in the scientific method) and your data for each habitat.
- **Aliens Among Us**- Complete the "Natives vs Non-natives Survey Data Sheet" by checking two (2)boxes (Native or non-native and damage or no damage) for five (5) native and five (5) non-native insects as shown in Activity 9. Answer the "Talk It Over" questions.
- **IMP**- Learning and Teaching- Make an informational flier and use it to teach younger 4-H members about five (5) insect pests that might be found in a home or school in your county. Exhibit your flier, lesson plan, and photograph of you teaching. Answer the "Talk It Over" questions.
- **Meal from a Worm**- Use the scientific method to study how mealworm larvae grow. Include your hypothesis, data charts, and conclusions. Answer the "Talk It Over" questions from categories 2,3, or 4.

Independent Study: Grades 9-12

- **Advanced Topic**- Learn all you can about a topic of your choice and present it on a poster or in an Entomology box. Include a short manuscript, pictures, graphs, and list the works cited to describe what you did and what you learned. Title your poster, "Advanced Entomology - Independent Study".
- **Mentoring**- Exhibit a poster that shows how you mentored a younger 4-H member. Include your planning, the time you spent, the challenges and advantages of mentoring, and how the experience might be useful in your life. Photographs and other documentation are encouraged. Title your poster, "Advanced Entomology - Mentor".