

Entomology

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INSECT COLLECTION OPTION

1. If you choose to exhibit an insect collection, see the table at the end of the packet for requirements listed by grade level.
2. Collect, mount (pins or vials) and identify insects personally collected in the U.S. only.
3. Display your best specimens in an 18" x 24" box(es), orientated horizontally, with your personal identification (name, grade, and county) in the lower right hand corner.
4. Display boxes
 - a. Boxes are expected to include the specified number of insects, and orders-see chart at bottom of page.
 - b. When multiple boxes are used: list the box order (i.e., "box 1 of 3 boxes") and include your name in each box.
5. Labeling insects:
 - a. All insects must be accompanied by a label that includes collection date, location and collector.
 - b. All insects must be identified using a second label that includes common name and, depending on grade level, order and family.
 - c. 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.
6. 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.
7. One educational box, based on the theme given, below, is required for grades 9-12, in addition to the insect collection boxes.
8. Reference: "How to Make an Awesome Insect Collection," ID 401, How to Study, Collect, Preserve, and Identify Insects, 4-H 764.

POSTER REQUIREMENTS

1. If you choose to exhibit a poster, see general poster guidelines and requirements in the rule book.
2. Choose one 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.

Level 1: Grades 3-5

Display a poster based on the following activities:

1. Big Mouth Bugs -- Show the four (4) different mouth types that you studied. Create a chart listing the four mouth types, an insect with this mouth type, food they eat, and where these insects might be found.
2. Pit Stop -- Make two 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.

3. Buz-z-zing Around -- Present three to five ways that insects communicate. Include an insect, or picture of each insect that communicates in each of the ways you are describing.
4. FACETnating! -- Show how insects see (compound eyes) and explain how they see colors.
5. 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.
6. Chirp, Chirp -- Watch and listen to the crickets for five minutes, three times a day, for three days. Include day and night observations. Record what you see and hear.

Level 2: Grades 6-8

Display a poster based on the following activities:

1. Collecting Insects – Use two 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.
2. Spread Your Wings and Fly – Make and use a spreading board. Exhibit two pictures of your spreading and three butterflies or moths that you prepared using your board.
3. Insect Experiments – Complete one 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 disapproved).
4. Invasive Species Investigations – Create an informational exhibit about one (Indiana) invasive insect. Include the information requested in the activity for this insect (first eight (8) questions on page 29).
5. A Sticky Situation – Make and use sticky traps for four weeks as described in Activity 13. Exhibit your data sheet and the answers to “Talk It Over” questions.
6. Footprint Clues – Study the tracks of 3 different species of insect and one arthropod as described in Activity 14. Exhibit your data sheet and the answers to “Talk It Over” questions.

Level 3: Grades 9-12

Display a poster based on the following activities:

1. The Scientific Method - Use the scientific method to complete one of the problems listed in Activity 3. Describe what you did to complete the five scientific method steps and include your data and drawings or pictures of your experiment. Transecting for Insects - Compare three 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.
2. Please Drop In -- Create your own hypothesis and collect insects in five 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.
3. Aliens Among Us -- Complete the “Natives vs. Non-natives Survey Data Sheet” by checking two boxes (Native or non-native and damage or no damage) for five native and five non-native insects as shown in Activity 9. Answer the “Talk It Over” questions.
4. IMP -- Learning and Teaching - Make an informational flier and use it to teach younger 4-H members about five 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.
5. 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.

Independent Study: Grades 9-12

1. **Advanced Topic** - Learn all you can about a topic of your choice and present it on a poster. 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.”
2. **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”.

STATE FAIR ENTRY-- each county may send one Insect Collection and one Poster for each level (grades 3-5, grades 6-8, and grades 9 and up) for a maximum of 6 exhibits per county.

Grade	Display	Max. # Collection 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, exhibit a minimum of 8 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.	3
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	3
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.	3
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.	3