

Entomology Collection



**District & State 4-H O-Rama
Junior & Senior 4-H'ers**



The entomology collection activity is held so that 4-H members can become better acquainted with the most diverse group of life known on earth, the insects. Through collecting insects, participants learn not only how to capture, identify and preserve them, they also will learn about their unique features, where to find them, what they eat, how they move, and how important they are for agriculture and ecosystems. Pollinating plants, decomposing wastes, creating soils, eating pests, spreading disease and feeding other animals are just a few of the important connections humans have with insects. College degree opportunities and career options in entomology will be discussed by the specialist in charge.

OBJECTIVES

Development of Targeted Life Skills:



Critical Thinking

- Deciding where to find, how to capture, and how to properly preserve specimens
- Discerning if an organism is an insect or not

Self-Motivation

- Collecting by hand or developing traps

Self-Esteem

- Gaining knowledge of the world around via collecting and identification accomplishments

Learning to Learn

- Understanding how to properly identify insects
- Learning scientific classifications of insects
- Learning when and where certain insects can be found

Planning/Organizing

- Planning collection methods and locations
- Organizing final collection layout by insect group
- Properly labeling and grouping insects

Problem Solving

- Capturing enough diversity to make minimum requirements
- Learning to identify living things by characteristics

Decision Making

- Deciding what insects to collect, and what to not collect
- Making sure what is collected meets guidelines

Personal Safety

- Some insects can inflict harm via bites, stings, or even disease. Using proper safety protocols when collecting is critical to prevent injury. Never grab stinging species with bare hands or put hands in areas where you cannot see exactly what you are collecting.



ELIGIBILITY

District 4-H O-Rama: Each county may enter two junior (9-13) and two senior (14-19) members at the District 4-H O-Rama.

Arkansas 4-H O-Rama: The Top 7 senior members from the district contests will be eligible to compete at the state contest.

ACTIVITY

Entomology activity at District and State 4-H O-Rama's consists of:

1) Submission of a properly preserved, pinned, identified & curated insect collection (100pts)

Rules for both Junior and Senior collections:

- Collections must consist of insects only and not other non-insect arthropods such as spiders, centipedes, scorpions, isopods, etc. It should also not contain other invertebrates such as worms and slugs.
- Insects must be properly pinned using insect pins (not sewing pins or needles) or preserved in alcohol (some soft bodied insects), and labeled. More information proper pinning and curation can be found in the Arkansas Extension publication MP83, *Making an Insect Collection*: <https://www.uaex.uada.edu/publications/PDF/MP-83.pdf>
- Insect specimens must be mature adults. No caterpillars, larvae, grubs, or immature insects considered.
- Entomology Insect Collection participants in the 4-H District and State O-Rama Completions must have their collections checked by their County 4-H Agent or County Staff Chair as to whether they meet the minimum requirements stated above and below. Competitors with collections not meeting the minimum requirements and entered in District or State O-Rama Competitions will not be disqualified but will receive a participation ribbon only.
- ***NOTE: Monarch butterflies are now an endangered species. If monarch specimens are to be included, they must have been collected prior to fall 2022. For monarchs only, a photo of a participant with a monarch can be used in place of an actual specimen for this species.

Rules for Junior 4-H'ers: Collections must contain a minimum of 15 different adult insects from a minimum of 5 different orders of insects (an order is a scientific classification for specific group of insects, more information on orders can be found in the MP83, *Making an Insect Collection*).

Rules for Senior 4-H'ers: Must contain a minimum of 25 different adult insects from a minimum of 9 orders.

2) An insect identification quiz (20pts)

- **Guidelines for Junior 4-H'ers:** This quiz will consist of 10 insects that must be identified to order (1pt ea correct) and common name (1pt ea correct). This will typically be a multiple-choice quiz.
- **Guidelines for Senior 4-H'ers:** This quiz will consist of 10 insects that must be identified to order (1pt ea correct) and common name (1pt ea correct), and will be fill in the blank with no word bank provided.



AWARDS

District 4-H O-Rama: One trophy will go to the Senior winner and one trophy to the Junior winner. For Senior 4-H members, the collection used for district judging can be changed and added to between the district and state activity. Ribbons will be awarded to first-, second-, third-, fourth- and fifth-place winners in both Junior and Senior divisions at each district activity.

Arkansas 4-H O-Rama: One trophy will be awarded the Senior winner at the state activity, along with ribbons for the second- through fifth-place winners.

COLLECTION JUDGING

The collection is worth a maximum of 100pts and must adhere to the rules and minimum requirements previously stated to be considered for the competition. The collection will be judged based upon the following scorecard:

Collection Diversity and Condition

30pts

- How many different unique species are presented? Species duplicated?
- Are all specimens intact? Wings, legs, body segments?
- The more different kinds of insects in the collection, the better this score will be!

Identification Accuracy

30pts

- Are insects clearly identified down to order and grouped by order in the collection?
- 1pt deducted for every insect incorrectly identified to order.

Collection Curation

30pts

- Are insects curated using proper technique? (either pinned on insect pins or placed in vial of alcohol)
- Are pinned insects properly pinned through thorax to where they are level and at a uniform height roughly $\frac{3}{4}$ of the way up the pin?
- Are wings of butterflies, moths, or other flying species properly spread?
- Are individual insects properly labelled with collection location information and date collected?

Collection Appearance

10pts

- Are order names properly spelled and labelled?
- Are groups distinguishable from each other in the arrangement of the collection?
- Are insects and labels placed neatly and orderly in the collection?
- Have educational features been added to the collection?



Suggestions for making a good collection

- Use undamaged specimens that have fully intact wings, legs, antennae and body segments.
- Make sure insects are adults (most adults have wings, although sometimes hard to find. Worker ants and walking sticks are two examples of exceptions to this rule of thumb.)
- Spread the wings of butterflies and moths and sometimes other insects can benefit in appearance from this as well.
- Place all insects and labels at the same height on pins
- Use only insect pins!
- Use a light-colored background in your display box
- Incorporate educational components to the display, like fun facts about certain insects or information about their lifecycles, habitat, etc. Be sure any info included is accurate!
- Use tightly fitting containers that exclude moisture or other insects from the collection.
- Collect more insects than you plan to put in your display as some will be damaged during curation.
- Euthanize insects by freezing them or placing them in liquid alcohol and pin while soft.
- **Never pin insects still alive, if any insects are still alive on pins 0 points will be awarded for the collection.**

REFERENCES

4-H Sources for Purchase: Teaming With Insects: Entomology Curriculum Levels 1-3 & Facilitator's Guide

Arkansas Extension Publications: Making an Insect Collection, MP83
<https://www.uaex.uada.edu/publications/PDF/MP-83.pdf>

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(Revised 5/2023)

Note: Work done in the district and state entomology activity should be reported in 4-H record books under *Entomology* activity. If no entomology project is being taken, report entomology activity work under other related projects such as agriculture, beef cattle, field crops, home management, safety, etc., where insect control is a part of carrying out these projects.

