



New Mexico FFA

Entomology

Career Development Event

ENTOMOLOGY

Updated 8/27/24

Purpose:

To increase the educational value of the curriculum through visual aids during Entomology course work and to produce more hands on experiences.

Objectives:

- To develop an understanding of insect life cycles
- To increase ability to identify insect pest
- To increase awareness of the dangers of pesticides
- To increase knowledge of pesticide application
- Increase critical thinking application for student to further their interest in future career goals in entomology
- To develop awareness of beneficial insect and economical pest management
- To develop understanding of animal taxonomy

Common Core References:

7th Grade

MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

8th Grade

CCSS.ELA-Literacy.RST.6-8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

9-12th Grade

HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.*

Event Format:

1. **Insect Identification.** There will be thirty (30) specimens chosen from the six insect relatives and one hundred and ten (110) insect groups on the Insect Identification List. The participant will give the name of the specimens; the order (insect) and class (insect relatives); the type of mouthparts; and the type of metamorphosis. The event will be scored as follows for each specimen:

Correct Name	2 points
Correct Class	2 points
Correct Order	2 points
Correct Type of Metamorphosis	2 points
Correct Type of Mouthparts	2 points

A maximum of 300 points for the identification part is possible.

2. **Pesticide Application.** The pesticide Application quiz will consist of fifty (50) multiple choice questions taken directly from the study manual, *National Pesticide Applicator Certification: Core Manual*. Each question will be worth two points for a maximum of 100 points for the pesticide application part.

Exam Chapter Rotation

2025 Chapters 5-8

2026 Chapters 9-12

2027 Chapters 1-4

3. **Beneficial vs Pest Practicum.**

* Students will identify five insects and determine if they are beneficial or a pest.

* If identified as a pest students will then determine which type of control is best for that pest. (mechanical, biological, chemical)

* If identified as beneficial insect, students will mark beneficial on the scantron.

3. **Team Members.** There will be four members to a team with the three highest individual total scores making the team total.

4. **Breaking Tie Scores.** (See General Rules)

5. **References:**

A Field Guide To The Insects Of America North Of Mexico by D.J.. Borror and R.E. White, 1970. Houghton Mifflin Company, Boston. (A Peterson Field Guide

National Pesticide Applicator Certification: Core Manual Published by the National Association of State Departments of Agriculture Research Foundation
Download the pdf version at nasda.org or follow the link on the New Mexico FFA website nmffa.org

One Hundred Common Insects of New Mexico by Richman, David B., Sutherland, Carol A., and Oseto Y. New Mexico Cooperative Extension Service, November 1993.

Insect Specimens Available From:

T.W. Taylor

Div. Of Combined Scientific Supplies

P.O. Box 1446

Ft. Davis, Texas 797344-1446

Phone: AC 915/426-3851

(catalog is also available for \$5.00 from the same place)

Arthropod Identification List for Reference, FFA

COMMON NAMES

- 1 Ambush bug
- 2 American cockroach
- 3 Ant
- 4 Antlion
- 5 Aphid
- 6 Assassin bug
- 7 Backswimmer
- 8 Bark beetle
- 9 Bed bug
- 10 Bee fly
- 11 Big-eyed bug
- 12 Black fly
- 13 Blister beetle
- 14 Blow fly
- 15 Braconid wasp
- 16 Brush-footed butterfly
- 17 Camel cricket
- 18 Carrion beetle
- 19 Centipede
- 20 Chalcidid wasp
- 21 Checkered beetle
- 22 Chewing louse
- 23 Cicada
- 24 Click beetle
- 25 Cricket
- 26 Damsel bug
- 27 Damselfly
- 28 Darkling beetle
- 29 Dermestid beetle
- 30 Diving beetle
- 31 Dragonfly
- 32 Earwig
- 33 Flea
- 34 Flesh fly
- 35 Fruit fly
- 36 Geometer moth
- 37 German cockroach
- 38 Giant silkworm moth
- 39 Gossamer-winged butterfly
- 40 Green lacewing
- 41 Ground beetle
- 42 Halictid bee
- 43 Hard tick
- 44 Hister beetle
- 45 Honey bee
- 46 Horse fly
- 47 Ichneumon wasp
- 48 Jerusalem cricket
- 49 Jumping spider
- 50 Ladybird beetle
- 51 Leaf beetle
- 52 Leafcutting Bee
- 53 Leaf-footed plant bug
- 54 Leafhopper
- 55 Long-horned beetle
- 56 Long-horned grasshopper
- 57 Louse fly
- 58 Mantid
- 59 Mealybug
- 60 Metallic wood-boring beetle
- 61 Millipede
- 62 Mosquito
- 63 Muscid fly
- 64 Noctuid moth
- 65 Oriental cockroach
- 66 Plant bug or leaf bug
- 67 Planthopper
- 68 Pyralid moth
- 69 Robber fly
- 70 Rove beetle
- 71 Sap beetle
- 72 Scale insect
- 73 Scarab beetle
- 74 Scoliid wasp
- 75 Scorpion
- 76 Seed bug
- 77 Short-horned grasshopper
- 78 Silverfish
- 79 Skipper
- 80 Snout beetle
- 81 Soft tick
- 82 Soft-winged flower beetle
- 83 Soldier beetle
- 84 Sowbug
- 85 Sphecicid wasp
- 86 Sphinx moth
- 87 Spider wasp
- 88 Stink bug
- 89 Sucking louse
- 90 Sulfur butterfly
- 91 Swallowtail butterfly
- 92 Syrphid fly
- 93 Tachinid fly
- 94 Termite
- 95 Thrips
- 96 Tiger beetle
- 97 Tiger moth
- 98 Tiphiid wasp
- 99 Treehopper
- 100 Twig borer
- 101 Velvet ant
- 102 Vespid wasp

- 103 Violin spider
- 104 Walkingstick
- 105 Water boatman
- 106 Water scavenger beetle
- 107 Water strider
- 108 Whipscorpion
- 109 Whitefly
- 110 Widow spider

CLASSES

- 1 Arachnida
- 2 Chilopoda
- 3 Crustacea
- 4 Diplopoda
- 5 Insecta

ORDERS

- 1 Acari (=Acarina)
- 2 Araneae (=Araneida)
- 3 Blattodea (=Blattaria)
- 4 Coleoptera
- 5 Dermaptera
- 6 Diptera
- 7 Hemiptera
- 8 Hymenoptera
- 9 Isopoda
- 10 Isoptera
- 11 Lepidoptera
- 12 Mantodea
- 13 Neuroptera
- 14 Odonata
- 15 Orthoptera
- 16 Phasmatodea (=Phasmida)
- 17 Phthiraptera
(=Anoplura + Mallophaga)
- 18 Scorpiones (=Scorpionida)
- 19 Siphonaptera
- 20 Thysanura
- 21 Thysanoptera
- 22 Uropygi
- 23 *No Order Listed*

METAMORPHOSIS

- 1 None
- 2 Simple
- 3 Complete

MOUTHPARTS

- 1 Chewing
- 2 Sucking
- 1 and 2 Chewing & Sucking
- BLANK No functional mouthparts