New Mexico FFA

Entomology

Career Development Event

ENTOMOLOGY

Updated 7/27/23

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 Certificiation: Core Manual.*** Each question will be worth two points for a maximum of 100 points for the pesticide application part.

Exam Chapter Rotation

2024	Chapters 1-4
2025	Chapters 5-8
2026	Chapters 9-12

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 Series)

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)

Samples

Pesticide Application Test

Instructions: Read all questions carefully and select the most correct answer. Record your answer on the scantron sheet provided with the quiz by darkening the appropriate blank. **Only One** answer per question. Answer will be counted incorrect of more than one blank is darkened. **Erase Very Carefully and Thoroughly .**

1 What do you call plants that live for two years?

A. Annuals
C. Biennials
B. Perennials
D. Winter Annuals

2 A spray that kills insects when they touch it is called:

A. A contact insecticide
C. A fumigant
B. A stomach poison
D. A desiccant

3 You find something crawling on you dog that looks like a small flat brown bug; it has eight (8) legs. It is:

A. An insect
C. A flea
B. A tick
D. A brown bug

Instructions For Filling Out Identification Answer Sheet

A **Common Name -** Darken the space on the Scantron sheet (also used for the pesticide application test) that corresponds to the correct name listed on card with the specimen. **You will not need the Insect Identification List.**

B **Class And Order-** Fill in the space on the sheet that corresponds with the correct class for Sowbugs (Crustacea), Millipede (Diplopoda) and Centipede (Chilopoda) or correct order for the class Arachnida and Insecta. **You will not be required to use the class names for the last two classes.**

C **Metamorphosis -** Fill in the space for either none, Simple of Complete. See list on next page for codes.

D **Mouthparts -** Fill in the space for either Chewing, Sucking, neither, or both. See list on next page for codes.

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 Sphecid 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