Indiana Entomology CDE

Purpose
The primary purpose of this event is to increase youth understanding of insects, control measures, and integrated pest management.

The Area Entomology Career Development Event

The Area Entomology Career Development Event is composed of insect identification and quiz questions. Juniors and Seniors will have different quizzes. Questions will be taken from the Resources listed below.

Scoring: 40 specimens – 3 points for each common name (ma. 120) and 1 point for each order (max. 40) for a total of 160 (120+40) points for the insect identification. Quiz: 20 questions, 2 point each for a total of 40 points. Maximum total points 200.

	Points
Insect Identification (40 specimens)	
Common name – 3 points each	120
Order – 1 point each	40
Quiz – 20 questions at 2 points each	40
Total	200

All preliminary contests should be conducted in such a manner as to prepare contestants for the State contest. We recommend participants are allowed 20 seconds per identification, assuming that this will be adjusted as needed.

Area quizzes will be sent to Area Coordinators in October. If possible, use Scantron for at least part of the CDE to familiarize youth with them before they reach the State CDE.

The State Entomology Career Development Event
The State Entomology Career Development Event is composed of insect identification and quiz questions. Participants will complete both parts at the same time as they sit at a table and pass Riker mounts. Some Riker boxes will contain insects for identification and some will contain questions.

1. Fifty (50) insect or insect related specimens mounted in individual Riker mounts will be identified both to order and common name. Contestants from both the junior and senior divisions will be required to choose the correct names (multiple choice) and indicate the correct answer on a Scantron answer sheet.
2. Specimens for the state contest will be taken from the list of insects given in this Handbook. Specimens will be adult form.
3. Juniors and Seniors will have different quizzes. Multiple choice and/or true & false questions will be taken from the Resources listed below.
4. Time per specimen/question: 20 seconds, although this will be altered if needed. Additional time is generally allotted at the start of the contest, to allow participants to become comfortable with our procedure of passing specimens to the next contestant while remaining seated.

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5. Scoring: 3 points for each common name and one point for each order for a total of 150 points for the insect identification. Quiz: 25 questions, 2 points each for a total of 50 points. Maximum total points 300:

Insect Identification (50 specimens)	Points
Common name – 3 points each	150
Order – 1 point each	50
Quiz – 20 questions at 2 points each	50
Total	250

In the event of a tie high score, the tie will be broken by favoring the individual or team having the highest score on the quiz questions. If a tie still exists, the tie will be broken by favoring the individual or team answering a question (or questions) given by the contest coordinator.

Resources

Questions for the Entomology CDE will be taken from the following resources:

Juniors

- How to Make an Awesome Insect Collection! (ID-401) – available at:
  - online
  - purchase from The Education Store
  - App
- Awesome Insect Fact n' Photo Cards (ID-415) – available at: http://extension.entm.purdue.edu/4hyouth/

Seniors

- Junior resources (see above)
- Who Let the Bugs Out? (ID-402) – available:
  - online
  - purchase from The Education Store (coming soon)
  - APP

Common names & order

Note: There are 150 insects that youth may be asked to identify. They are listed below by order. Specimen boxes will contain either the adult stage or both the adult and growing stages, except where noted.

Common Name – Order Name

1. Alfalfa weevil - Coleoptera
2. American cockroach - Dictyoptera
3. Angoumois grain moth - Lepidoptera
4. Annual cicada - Homoptera
5. Antlion - Neuroptera
6. Aphid - Homoptera
7. Apple maggot fly - Diptera
8. Armyworm - Lepidoptera
9. Asparagus beetle - Coleoptera
10. Assassin bug – Hemiptera
11. Bagworm - Lepidoptera

Common Name – Order Name

1. Carpenter bee - Hymenoptera
31. Carrion beetle - Coleoptera
32. Cecropia moth – Lepidoptera
33. Chinch bug - Hemiptera
34. Cicada killer wasp - Hymenoptera
35. Click beetle - Coleoptera
36. Clover leaf weevil - Coleoptera
37. Cluster fly – Diptera
38. Codling moth - Lepidoptera
39. Colorado potato beetle - Coleoptera
40. Common stalk borer - Lepidoptera

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Common Name – Order Name

12. Baldfaced hornet - Hymenoptera
13. Bean leaf beetle – Coleoptera
14. Bed bug - Hemiptera
15. Bird louse - Mallophaga
16. Black cutworm - Lepidoptera
17. Blister beetle - Coleoptera
18. Blow fly – Diptera
19. Booklouse – Psocoptera
20. Boxelder bug - Hemiptera
21. Brownbanded cockroach - Dictyoptera
22. Brown lacewing - Neuroptera
23. Bumble Bee - Hymenoptera
24. Cabbage butterfly - Lepidoptera
25. Cabbage looper - Lepidoptera
26. Caddisfly - Trichoptera
27. Camel cricket - Orthoptera
28. Carolina grasshopper – Orthoptera
29. Carpenter ant - Hymenoptera
59. Flea - Siphonaptera
60. Fungus Gnat – Diptera
61. German cockroach - Dictyoptera
62. Giant water bug - Hemiptera
63. Green June beetle - Coleoptera
64. Green lacewing - Neuroptera
65. Ground beetle - Coleoptera
66. Gypsy moth – Lepidoptera
67. Hackberry psyllid - Homoptera
68. Head louse - Anoplura
69. Hessian fly - Diptera
70. Honey bee - Hymenoptera
71. Horntail - Hymenoptera
72. Horse fly - Diptera
73. House fly - Diptera
74. Ichneumon wasp - Hymenoptera
75. Indian meal moth – Lepidoptera
76. Japanese beetle - Coleoptera
77. June beetle - Coleoptera
78. Katydid - Orthoptera
79. Lace bug - Hemiptera
80. Lady beetle - Coleoptera
81. Locust leafminer - Coleoptera
82. Longhorned beetle - Coleoptera
83. Luna moth – Lepidoptera
84. Mayfly - Ephemeroptera
85. Mexican bean beetle - Coleoptera

Common Name – Order Name

41. Corn earworm - Lepidoptera
42. Corn flea beetle - Coleoptera
43. Cottony maple scale - Homoptera
44. Crane fly – Diptera
45. Damsel bug - Hemiptera
46. Damselfly - Odonata
47. Deer fly - Diptera
48. Dermestid beetle - Coleoptera
49. Differential grasshopper - Orthoptera
50. Diving beetle – coleoptera
51. Dobsonfly - Megaloptera
52. Dragonfly - Odonata
53. Earwig – Dermaptera
54. Elm leaf beetle - Coleoptera
55. Emerald ash borer – coleoptera
56. European corn borer - Lepidoptera
57. Field cricket - Orthoptera
58. Firefly – Coleoptera
105. Rice weevil - Coleoptera
106. Robber fly - Diptera
107. Rose chafer - Coleoptera
108. Rove beetle – Coleoptera
109. Satyr – Lepidoptera
110. Sawfly - Hymenoptera
111. Sawtoothed grain beetle - Coleoptera
112. Scorpionfly - Mecoptera
113. Seedcorn beetle - Coleoptera
114. Silverfish - Thysanura
115. Sod webworm - Lepidoptera
116. Soldier beetle – Coleoptera
117. Spittlebug - Homoptera
118. Spotted cucumber beetle - Coleoptera
119. Springtail - Collembola
120. Squash bug – Hemiptera
121. Squash vine borer - Lepidoptera
122. Stable fly - Diptera
123. Stag beetle - Coleoptera
124. Stink bug - Hemiptera
125. Stonefly - Plecoptera
126. Strawberry root weevil - Coleoptera
127. Striped cucumber beetle - Coleoptera
128. Swallowtail butterfly - Lepidoptera
129. Sweat bee – Hymenoptera
130. Syrphid fly - Diptera
131. Tarnished plant bug - Hemiptera

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Common Name – Order Name

86. Midge (chironomid) – Diptera
87. Mimosa webworm - Lepidoptera
88. Mole cricket – Orthoptera
89. Monarch butterfly - Lepidoptera
90. Mosquito - Diptera
91. Mud dauber wasp - Hymenoptera
92. Northern corn rootworm - Coleoptera
93. Oriental cockroach - Dictyoptera
94. Oystershell scale - Homoptera
95. Pavement ant – Hymenoptera
96. Peachtree borer - Lepidoptera
97. Periodical cicada - Homoptera
98. Picnic beetle - Coleoptera
99. Pine needle scale - Homoptera
100. Plum curculio - Coleoptera
101. Polistes paper wasp - Hymenoptera
102. Potato leafhopper - Homoptera
103. Praying mantis - Dictyoptera
104. Redlegged grasshopper - Orthoptera

Common Name – Order Name

132. Termite - Isoptera
133. Thrips – Thysanoptera
134. Tiger beetle - Coleoptera
135. Tiger moth - Lepidoptera
136. Tobacco hornworm - Lepidoptera
137. Tomato hornworm – Lepidoptera
138. Tortoise beetle - Coleoptera
139. Treehopper - Homoptera
140. Tulip tree scale - Homoptera
141. Tussock moth - Lepidoptera
142. Velvet ant - Hymenoptera
143. Viceroy butterfly - Lepidoptera
144. Vinegar fly – Diptera
145. Walkingstick - Dictyoptera
146. Water strider – Hemiptera
147. Western corn rootworm - Coleoptera
148. Whitefly - Homoptera
149. Wood cockroach – Dictyoptera
150. Yellowjacket – Hymenoptera

Other -- Non-Insects

The following are all non-insects that are described in the Entomology CDE references. They may show up on a question (because they are part of the book), but they will NOT be included in the Insect ID portion of the CDE.

Class	Subclass name
Centipede	Chilopoda
Sowbug	Crustacea
Spider	Arachnida
Tick	Acari (SC)
Mite	Acari (SC)
Millipede	Diplopoda

Resources

- Purdue's Department of Entomology and 4-H website – information on how to identify insects, how to create insect collections, special training activities, and other links of interest to youth and their leaders. Also provides sample quizzes for the Career Development Event (CDE).
- 4-H, www.four-h.purdue.edu/natural_resources/career.html
- Entomology Extension, http://extension.entm.purdue.edu/publications.php

Note

All adults working with and training youth enrolled in 4-H must be an official, approved 4-H volunteer in the county in which that adult is working with the youth, in the county of membership for those youth. To become an official 4-H volunteer the adult must complete the

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Indiana 4-H volunteer application, successfully complete the approved screening process, and annually file a signed Adult Behavioral Expectations form with the county Extension Office. If a 4-H unit/school spans across multiple counties, then the adult volunteer/coach must be approved as a 4-H adult volunteer in one of those counties.

Updated 9/2014