

DIVISION G - NATURAL RESOURCES

G-1 Entomology

Entomology Workbook Required

Entomology is the study of insects. Insects have three body regions, three pairs of legs and one pair of antennae, wings in adult stage, typically two pair.

Spiders are Arachnida which have four pair of legs, two body regions and no antennae.

Recommended Level is associated with the existing Unit numbers, which have also been adjusted in the workbook.

Exhibits in entomology are limited to insect specimens only.

1. New this year, Level 1 has a display board option as well as an insect collection option, since the Level 1 manual does not cover how to make an insect collection.

2. Each year 4-H members build on their collection by adding new insects as required by that particular unit. Refer to the exhibit requirements for the number of insects to collect for that unit.

3. Project will be evaluated on the quality of information completed in the manual and e-Record (25 percent) and quality of exhibit (75 percent).

4. Regular insect pins required in all units.

5. Acceptable sizes of handmade entomology display boxes taken from the manual & kit:

12"W x 16"L x 3" Deep

12"W x 18"L x 3 1/2" Deep

18"W x 24"L x 3 1/2" Deep

Glass tops on entomology cases should slide to the top or side of the case to prevent them from slipping out and breaking when placed on display.

Commercially available display cases are acceptable.

On Unit 2 through Unit 5 classes, the insect display must include date and location where insects were collected. Place this information on labels attached to insect pins.

Class

1. Unit 1: Level 1 - Display Board Exhibit - Teaming With Insects - Learning About Insects - Junior

2. Unit 1: Level 1 - Display Board Exhibit - Teaming With Insects - Learning About Insects - Intermediate

3. Unit 1: Level 1 - Display Board Exhibit - Teaming With Insects - Learning About Insects - Senior

Exhibit will consist of the following:

A. Completed e-Record and Entomology workbook presented in a sturdy binder/notebook. Do a minimum of 12 activities of any combination from the manual.

B. A display board representing some phase of your project work. This could include a chart or special equipment used or developed for the activities in the workbook. The standardized display board size of 4'X3' is to be used with 4-H projects. No additional items may be included in front of the display board.

4. Unit 2: Level 1 - Teaming With Insects - Beginner Collection - Junior

5. Unit 2: Level 1 - Teaming With Insects - Beginner Collection - Intermediate

6. Unit 2: Level 1 - Teaming With Insects - Beginner Collection - Senior

Exhibit will consist of the following:

A. Completed e-Record and Entomology workbook presented in a sturdy binder/notebook. Do a minimum of 12 activities of any combination from the manual.

B. Insect collection - display no fewer than 25 nor more than 75 adult insects in at least 6 different orders. Standard-sized display boxes with removable glass covers are required.

7. Unit 3: Level 2 - Teaming With Insects - Be An Entomologist - Junior

8. Unit 3: Level 2 - Teaming With Insects - Be An Entomologist - Intermediate

9. Unit 3: Level 2 - Teaming With Insects - Be An Entomologist - Senior

Exhibit will consist of the following:

A. Completed e-Record and Entomology workbook presented in a sturdy binder/notebook. Do a minimum of 12 activities of any combination from the manual.

B. Insect collection - display no fewer than 75 nor more than 150 insects including a representative from at least 9 different orders (one order developed in water) and include one incomplete metamorphosis (egg-nymph-adult), correctly labeled. Standard-sized display boxes with removable glass covers are required.

10. Unit 4: Level 3 - Teaming With Insects - Insect Investigations - Junior

11. Unit 4: Level 3 - Teaming With Insects - Insect Investigations - Intermediate

12. Unit 4: Level 3 - Teaming With Insects - Insect Investigations - Senior

Exhibit will consist of the following:

A. Completed e-Record and Entomology workbook presented in a sturdy binder/notebook. Do a minimum of 12 activities of any combination from the manual.

B. Report on at least three special activities and include them in the e-Record before the story.

C. Insect collection - display no fewer than 100 nor more than 250 insects in 10 different, correctly labeled orders. Standard-sized display boxes with removable glass covers are required.

13. Unit 5: Level 3 - Teaming With Insects - Immature Insects & Life Stages - Junior

14. Unit 5: Level 3 – Teaming With Insects - Immature Insects & Life Stages - Intermediate

15. Unit 5: Level 3 – Teaming With Insects - Immature Insects & Life Stages - Senior

Exhibit will consist of the following:

A. Completed e-Record and Entomology workbook presented in a sturdy binder/notebook. Do a minimum of 12 activities of any combination from the manual.

B. Display your regular insect collection.

C. Display a collection of at least 10 larvae or immature insects in vials of rubbing alcohol or similar preservative.

16. Unit 6: Any Level – Teaming With Insects - Exploring With Insects Advanced - Junior

17. Unit 6: Any Level – Teaming With Insects - Exploring With Insects Advanced - Intermediate

18. Unit 6: Any Level – Teaming With Insects - Exploring With Insects Advanced - Senior

Exhibit will consist of the following:

A. Completed e-Record with emphasis on your accomplishments in your story, presented in a sturdy binder/notebook.

B. A display board representing some phase of your special project work. This could include a chart or special equipment used or developed. The standardized display board size is 4 ft x 3 ft is to be used with 4-H projects. No additional items may be included in front of the display board.

G-2 Sportfishing

Exhibit of record kept during the year and display illustrating a chosen aspect of skill area is required.

Exhibits may include stand-alone items such as hand-wrapped rods or hand-made lures.

Members may have entries in both the display board classes and the stand-alone classes.

For those members who are exhibiting both a display board and a stand-alone, they may copy their e-Record. Each exhibit must have an e-Record. Be sure to highlight what you are exhibiting in your e-Record.

Stand-alone items must not exceed 3 feet in width and depth and 7 feet in height. The item must be stable when standing in order to be displayed. If an exhibit is larger than these dimensions you may use a notebook as the exhibit and explain how and what was made.

Project will be evaluated on the quality of information completed in the manual and e-Record (25 percent) and quality of exhibit (75 percent).

Class

1. Unit 1 - Take the Bait – Junior

2. Unit 1 - Take the Bait – Intermediate

3. Unit 1 - Take the Bait – Senior

4. Unit 2 - Reel in the Fun – Junior

5. Unit 2 - Reel in the Fun – Intermediate

6. Unit 2 - Reel in the Fun – Senior

7. Unit 3 - Cast into the Future – Junior

8. Unit 3 - Cast into the Future – Intermediate

9. Unit 3 - Cast into the Future – Senior

Members may have entries in both the display board classes and the stand-alone classes.

The classes below are for stand-alone items only. No display boards are allowed in these classes.

10. Sportsfishing – Take the Bait - Stand Alone – Junior

11. Sportsfishing – Take the Bait - Stand Alone – Intermediate

12. Sportsfishing – Take the Bait - Stand Alone – Senior

13. Sportsfishing – Reel in the Fun - Stand Alone – Junior

14. Sportsfishing – Reel in the Fun - Stand Alone – Intermediate

15. Sportsfishing – Reel in the Fun - Stand Alone – Senior

16. Sportsfishing – Cast into the Future - Stand Alone – Junior

17. Sportsfishing – Cast into the Future - Stand Alone – Intermediate

18. Sportsfishing – Cast into the Future - Stand Alone – Senior

Exhibit for all units will consist of the following:

A. Completed Sportfishing e-Record presented in a sturdy binder/notebook.

B. Include the following information on the project information page:

1. Record each fishing experience:

a. date

b. location

c. type (pond, lake reservoir, stream, river or other)

d. name of body of water

e. if you catch fish (if no, what do you think the reason was for not catching fish)

f. if yes, include the following weather information about the day: time of day, air temperature, water temperature, cloud cover and other information about the weather.

2. Complete a Catch and Release Fish for your 5 best fish, caught and released OR your 5 best fish kept, depending on legal limits.

a. species, length (nose to tail)

- b. girth (around the middle)
 - c. approximate weight.
3. Complete a Fishing Journal for each trip (whether you caught fish or not):
- a. rod and reel used
 - b. types of rig/bait/lure used
 - c. technique used
 - d. types of structure fished
 - e. other things you want to remember about this trip.

C. Exhibits may include a display board or a stand-alone item such as hand-wrapped rods or hand-made lures. A display board is to be a specific skill level area related to the exhibit. When using a display board, it is strongly recommended to use photos, drawings or other illustrations rather than actual items (i.e., rods, reels, other tackle or accessories). Educational materials shall not extend beyond the edges of display boards. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board. Hooks must be removed from lures and jigs when these items are used in an exhibit. The exceptions are artificial flies, which may be exhibited with functional hooks, but the hook points must be imbedded in material (i.e. rubber, dense cork, etc.) that will secure the flies and offer safety to the judges and other show officials. Be sure to remove barbs and any other sharp points.

D. No knives to be displayed.

G-3 Wildlife

For those members who are exhibiting both a display board and a stand-alone, they may copy their e-Record. Be sure to highlight what you are exhibiting in.

Project will be evaluated on the quality of information completed in the manual and e-Record (25 percent) and quality of exhibit (75 percent).

Class

1. Unit 1 - The Worth of Wild Root - Junior
2. Unit 1 - The Worth of Wild Root - Intermediate
3. Unit 1 - The Worth of Wild Root - Senior
4. Unit 2 - Living Wild in an Ecosystem - Junior
5. Unit 2 - Living Wild in an Ecosystem - Intermediate
6. Unit 2 - Living Wild in an Ecosystem - Senior
7. Unit 3 - Managing in a World With You & Me - Junior
8. Unit 3 - Managing in a World With You & Me - Intermediate
9. Unit 3 - Managing in a World With You & Me - Senior
10. All Units - Stand-Alone Item - Junior
11. All Units - Stand-Alone Item - Intermediate
12. All Units - Stand-Alone Item - Senior

Exhibits will consist of the following:

- A. Completed Wildlife e-Record presented in a sturdy binder/notebook.
- B. Include the following on the Wildlife Page. Show what you did and learned. Show evidence of your personal field experiences, study or observations.
- C. A display board showing educational information about a topic of interest related to wildlife. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board. Possible topics could include but not restricted to: species found in Colorado, wildlife habitats, role of predators, types of bird feed, or urban wildlife challenges.
- D. OR, instead of a display board, exhibit may be a stand-alone item, such as a wildlife diorama, scrapbook with wildlife information, pictures and news, a bird feeder or bath, or wildlife track molds. Display items should illustrate something learned in the project this year.

G-4 Outdoor Adventures

Project will be evaluated on the quality of information completed in the manual and e-Record (25 percent) and quality of exhibit (75 percent).

NOTE: List the day, month, and year for the date of completed activities on page 4 of the manual.

Class

1. Unit 1 - Hiking Trails – Junior
2. Unit 1 - Hiking Trails – Intermediate
3. Unit 1 - Hiking Trails – Senior
4. Unit 2 - Camping Adventures – Junior
5. Unit 2 - Camping Adventures – Intermediate
6. Unit 2 - Camping Adventures – Senior
7. Unit 3 - Backpacking Expeditions – Junior
8. Unit 3 - Backpacking Expeditions – Intermediate

9. Unit 3 - Backpacking Expeditions – Senior

Exhibits will consist of the following:

- A. A completed manual (at least 6 chapter activities and at least 6 Reach the Pike activities completed each year) and e-Record presented in a sturdy binder/notebook including these items: appropriate sections in manual completed, e-Record and other items or attachments related to the activities in the manual.
- B. A display board illustrating a topic investigated during the project year. You may use diagrams, drawings, charts and photographs. Label and use captions to make your display as educational as possible. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.

G-5 Beekeeping

DISPLAY BOARDS

Project will be evaluated on the quality of information completed in the manual and e-Record (25 percent) and quality of exhibit (75 percent).

Class

1. Beekeeping Unit 1 – Junior
2. Beekeeping Unit 1 – Intermediate
3. Beekeeping Unit 1 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Unit 1 e-Record.
- B. Exhibit one of the following topics on a display board:
 1. Flowers used to make honey (display pressed flowers from 10 different Colorado plants that bees use for making flowers)
 2. Uses of honey and beeswax, past and present
 3. Setting up a Beehive
 4. Safe handling of bees
 5. History of Beekeeping

The standardized display board size of 4 ft. x 3 ft. Is to be used with 4-H projects. No additional items may be included in front of display board.

4. Beekeeping Unit 2 – Junior
5. Beekeeping Unit 2 – Intermediate
6. Beekeeping Unit 2 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Unit 2 e-Record.
- B. Exhibit one of the following:
Working with Honeybees. Present a topic from your manual to teach about working with honeybees (example: Regional Differences of Beekeeping). Use your knowledge and creativity to display this information on a display board.

The standardized display board size of 4 ft. x 3 ft. is to be used with 4-H projects. No additional items may be included in front of display board.

STAND-ALONE EXHIBITS

Extracted Honey

Class

7. Beekeeping – Unit 2 – Junior
8. Beekeeping – Unit 2 – Intermediate
9. Beekeeping – Unit 2 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Extracted honey (2 one-pound jars, shown in glass or clear plastic with screw tops). Jars must be labeled with name, county, class, where honey was extracted and date.

Chunk Honey

10. Beekeeping Unit 2 – Junior
11. Beekeeping Unit 2 – Intermediate
12. Beekeeping Unit 2 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Chunk Honey (comb in jar shown in 2 one-pound jars wide mouth glass or clear plastic). Jars must be labeled with name, county, class, where honey was taken and date.

Cut Comb Honey

13. Beekeeping Unit 2 – Junior
14. Beekeeping Unit 2 – Intermediate
15. Beekeeping Unit 2 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Cut Comb Honey (2 one-pound boxes, usually 4 ½” X 4 ½” in size). Boxes must be labeled with name, county, class, where honey was taken and date.

Wooden Ware Stand-Alone

16. Beekeeping Unit 2 – Junior
17. Beekeeping Unit 2 – Intermediate
18. Beekeeping Unit 2 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Wooden ware – examples: tool box, hive components, etc. Item must be labeled with name, county, class, where honey was taken and date.

Beekeeping Unit 3

19. Beekeeping Unit 3 – Junior
20. Beekeeping Unit 3 – Intermediate
21. Beekeeping Unit 3 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record
- B. Exhibit: Prepare an education display board or notebook about honeybees or beekeeping (example topics: diseases, seasonal colony management, etc.) Use your knowledge and creativity to display this information on a display board. The standardized display board size of 4 ft. x 3 ft. is to be used with 4-H projects. No additional items may be included in front of display board.

STAND-ALONE EXHIBITS

Extracted Honey

Class

22. Beekeeping – Unit 3 – Junior
23. Beekeeping – Unit 3 – Intermediate
24. Beekeeping – Unit 3 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Extracted honey (2 one-pound jars, shown in glass or clear plastic with screw tops). Jars must be labeled with name, county, class, where honey was extracted and date.

Chunk Honey

25. Beekeeping Unit 3 – Junior
26. Beekeeping Unit 3 – Intermediate
27. Beekeeping Unit 3 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Chunk Honey (comb in jar shown in 2 one-pound jars wide mouth glass or clear plastic). Jars must be labeled with name, county, class, where honey was taken and date.

Cut Comb Honey

28. Beekeeping Unit 3 – Junior
29. Beekeeping Unit 3 – Intermediate
30. Beekeeping Unit 3 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Cut Comb Honey (2 one-pound boxes, usually 4 ½” X 4 ½” in size). Boxes must be labeled with name, county, class, where honey was taken and date.

Comb Honey

31. Beekeeping Unit 3 – Junior
32. Beekeeping Unit 3 – Intermediate

33. Beekeeping unit 3 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record.
- B. Exhibit – Comb Honey – 2 sections (honey built by bees in frames of wood commonly called “sections”. Boxes are usually 4 ½” X 4 ½” in size. Sections must be labeled with name, county, class, where taken and date.

Wooden-Ware

34. Beekeeping Unit 3 - Junior

35. Beekeeping Unit 3 – Intermediate

36. Beekeeping Unit 4 – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record
- B. Exhibit – wooden ware – examples: tool box, hive components, etc. Item must be labeled with name, county, class, description of item.

Advanced Beekeeping

37. Advanced Beekeeping – Intermediate

38. Advanced Beekeeping – Senior

Exhibits will consist of the following:

- A. One sturdy binder/notebook that contains the completed Beekeeping Units 2-4 e-Record
- B. A detailed notebook describing your project including your goals, plans, accomplishments and your evaluation of results. You may use pictures or any records you have kept that provides evidence of your accomplishments. This notebook is your main project exhibit and will count for 75 percent of the scoring. If an item was made as part of your project, a sample may be displayed as further evidence of the quality of your project. Display must not require over a 1'x1' area or consist of more than three items.

DIVISION G-6 Gardening

NOTE: The gardening project focuses on activities related to vegetable gardening: planning, planting, experimenting, understanding soils, seeds, insects, plant care, harvesting, processing, exploring careers, etc.

Project will be evaluated on the quality of information completed in the manual and e-Record (25 percent) and quality of exhibit (75 percent).

Class

1. Unit 1 - See Them Sprout - Junior
2. Unit 1 - See Them Sprout - Intermediate
3. Unit 1 - See Them Sprout - Senior
4. Unit 2 - Let's Get Growing - Junior
5. Unit 2 - Let's Get Growing - Intermediate
6. Unit 2 - Let's Get Growing - Senior
7. Unit 3 - Take Your Pick - Junior
8. Unit 3 - Take Your Pick - Intermediate
9. Unit 3 - Take Your Pick - Senior
10. Unit 4 - Growing Profits - Senior Advanced

Exhibits will consist of the following:

- A. A gardening project manual and e-Record presented in a sturdy binder/notebook, including these pages of the manual: pages 43, 44 & 45 in See Them Sprout; pages 45, 46 & 47 in Let's Get Growing; pages 45, 46 & 47 in Take Your Pick; and pages 45, 46 & 47 in Growing a Profit in the e-Record.
- B. A display board illustrating a topic investigated during the project year. The standardized display board size of 4' X 3' is to be used with 4-H projects. No additional items may be included in front of display board.
- C. Label each item with name and county.

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