

Facilitator Tools

Welcome to the 4-H Entomology project! As a project facilitator you will work with 4-H members interested in learning about insects. This Facilitator's Guide provides helpful information on exploring insect study, the contribution of insects to biodiversity, how to manage pests, invasive species, and forensic entomology.

Your main role is provide a safe, supportive environment for youth to practice important life skills as they explore the world of entomology through many exciting, insect-related activities. You can help youth get the most out of this project by being enthusiastic about their efforts and asking thoughtful questions. Team up with youth to help them select goals, identify resources, gain confidence, and evaluate their own progress. The activities are designed so youth have an opportunity to “learn by doing” with your help and guidance.

Key Concepts

Safety First! Keep safety in mind at all times. Some of the activities will be done outdoors where wasps, bees, and other potentially harmful organisms might be in the area. Keep a watchful eye on the surroundings, especially including weather changes.

Gather Materials. Youth should collect the materials listed in the Tool Box before doing the activity. All the supplies used in these activities can be found around the home or purchased at minimal cost.

Read and Understand the Activity. Each activity is self-contained and often leads seamlessly into another activity. For example, in Level 2, youth will make simple insect collection tools that they can use in many other activities.

Support Youth. Most youth who take 4-H Entomology are interested in working with insects. Some may have reservations about picking up insects. Work with the 4-H members and explain that the insect they are working with is harmless. The youth must be willing to do the activity, so if you sense any continued reluctance, move on to the next activity.

Show Relevance of Each Activity. Explore the relevance and interconnectedness of each activity to the real world.

Relying on Others. Expand the learning activity and get additional supporting information from your state Extension Service. The Internet can provide a wealth of information to enrich learning. Take care to use sites

that are supported by educational organizations (*.edu), professional societies, national organizations, and not-for-profit groups associated with entomology. The best way to confirm the reliability of the site is to check with entomologists at your state Entomology Extension office.

Learning Goals

4-H Entomology • Level 1

- Begin to learn about insect form and function.
- Begin to learn about integrated pest management and forensic entomology.
- Develop an understanding of and an appreciation for entomology (the study of insects).

4-H Entomology • Level 2

- Learn how to make insect collection tools.
- Learn more about insects and insect diversity.
- Develop a deeper understanding of and an appreciation for entomology.

4-H Entomology • Level 3

- Conduct research and use resources beyond the manual for in-depth study of entomology.
- Use the scientific method and keep accurate records.
- Expand understanding of and appreciation for entomology.
- Educate others about entomology.

Insect identification is not covered in the 4-H Entomology manuals. The following references are recommended for youth who want to learn more about collecting and identifying insects:

- *Arthropod Collection and Identification, Laboratory and Field Techniques*, Timothy J. Gibb and Christian Y. Oseto, Academic Press, books.elsevier.com, ISBN 12:978-0-12-369545-1 and 10:0-12-369545-7.
- *How to Make an Awesome Insect Collection, A Beginners Guide to Finding, Collecting, Mounting, Identifying and Displaying Insects*, Timothy J. Gibb and Christian Y. Oseto, Purdue University, available in print (from www.extension.purdue.edu/new) and online at www.4-H.org/curriculum/entomology.