

# Tennessee 4-H Entomology & Beekeeping Project

Advanced





### COLLECTIONS AND RECORD KEEPING

Outcome: Demonstrate ability to keep detailed records of observations and experiments



#### EXPLORE: Step Out Activity

Keep records of your insect collection by location, time, and other information you think is important to keep. Feel free to create your own chart, or use the example below.

Sample Number	Date	Location	Habitat	Weather Conditions	Collective Device	Collector

Source: <https://www.canr.msu.edu/uploads/236/67534/4H1393EntomologyRecordandReport.pdf>



#### EXPAND & APPLY

What skills did you learn? How does this relate to every day life? How can you use this knowledge in the future?

Entomology Studies - Use this section to record the tangible items from your entomological studies (such as illustrations, articles, photographs, displays and oral presentations or demonstrations).

Date	Description of Item

**Entomology Experiments**-Use this section to describe in your own words one of your experiments related to living insects. Use a copy of this form to record the results of other experiments you have conducted, including insects you have collected.

**Purpose of experiment**

(What do you hope to accomplish?)

**Background study**

(What information did you gather about this problem?  
What references did you use?)

**Hypothesis**

(What do you predict will happen?)

**Experimental Methods**

(Describe how you set up and conducted your experiment. Include the results and discuss whether you satisfied your hypothesis).

**Revision of Hypothesis**

(If you need to, state your revised hypothesis and suggest additional experiments you may want or need to do.)



# INTEGRATED PEST MANAGEMENT

*Outcome: Describe advantages of integrated pest management approaches.*



### EXPLORE: Step Out Activity

Set up a time to talk with your county Extension Agriculture and Natural Resource Agent to gain information about integrated pest management approaches.

Sample Interview Questions	Responses
What is integrated pest management?	
How do you education your clients about pest management?	
What are different integrated pest management practices ?	
Are there are any laws related to integrated pest management?	
Where do you see integrated pest management moving/changing in the future?	
Other questions you have?	



### EXPAND & APPLY

How does this relate to everyday life? How can you use this knowledge in the future?



## ***DIVERSITY IN PLANTS, INSECTS, AND HUMANS***

*Outcome: Investigate and describe insects intentionally eaten throughout the world.*



### **EXPLORE: Step Out Activity**

Use a worldwide map to conduct your own research, writing on the map which country eats what insects.

## ***World Map***



### **EXPAND & APPLY**

How can you use this knowledge in the future? Write your thoughts about our population rising and food sources becoming limited . How can insects aid in these efforts?



## INSECT DIVERSITY AND EVOLUTION

*Outcome: Describe the natural history of social bees, ants, and termites.*



### EXPLORE: Step Out Activity

Read a children's book about bees, ants, or termites and lead a demonstration about how the social order operates (Ag Literacy Week).

#### Sample books to utilize:

*Ants for Kids: A Junior Scientist's Guide to Queens, Drones, and the Hidden World of Ants* by Beverly Gerdeman

*The Natural Genius of Ants* by Betty Culley

*The World of Bees-Look inside* by Emily Bone

*The Bees of Notre Dame* By Meghan P. Browne

*National Geographic Readers: Bees* by Laura Marsh

*The Thing about Bees: A Love Letter* by Shabazz Larkin

Where did you complete your demonstration? How many youth did your reach? How did your demonstration go? What would you change to make the demonstration better? Provide a summary of your experience.

What is the next step? How can you expand upon this experience?



### EXPAND & APPLY

What skills did you learn? How does this relate to every day life? How can you use this knowledge in the future?