

Insect Study

Merit Badge Workbook

Merit badges are earned by doing: reading the pamphlet, practicing the skills, and showing your counselor what you have learned.
This workbook gives you a place to organize your notes and track your progress along the way.
Merit badge counselors may not require the use of this or any similar workbook.
You still must satisfy your counselor that you can demonstrate each skill and have learned the information.
Use the space under each requirement to note what you have done and what you want to talk about, not to write out full answers.
When a requirement says discuss, show, tell, explain, or demonstrate, that is what you must do.
No one may add to or subtract from the official requirements found on scouting.org (Guide to Advancement 7.0.4.8).
Scouting America last updated this badge's requirements page on September 19, 2025.
Requirements change from time to time. Double-check scouting.org before you start.

Scout's name: _____ Unit: _____ Date started: _____

Counselor's name: _____ Phone no.: _____ Email: _____

Links marked "Scouting America resources" are the ones Scouting America shares on its official badge page.
This workbook is unofficial and not endorsed by Scouting America.

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1. Safety. Do the following:

(a) Explain to your counselor the most likely hazards associated with exposure to ants and bees and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.

Scouting America resources: Insects, Bites, and Stings (video) · Fire Ant Bites (website)
Are There Risks Associated With Keeping Honey Bees? (website)

Hazards from ants and bees

What I explain	Ants	Bees
Most likely hazards		
How I anticipate them		
How I help prevent them		
How I mitigate them		
How I respond		

(b) Discuss the prevention of and treatment for health concerns that could occur while working with ants and bees, including insect bites and anaphylactic shock.

Scouting America resources: Anaphylactic Shock: Symptoms, Triggers, and Life-Saving First Aid Tips (video)
First Aid for a Bee Sting (video)

Health concerns when working with ants and bees

Health concern	Prevention	Treatment
Insect bites		
Anaphylactic shock		

Other health concerns we discussed

Requirement 1 completed on _____ counselor initials _____

2. Anatomy. Do the following:

(a) Tell how insects are different from other animals.

Scouting America resources: Insect Anatomy (video) · Insect Pictures and Facts (website)

How insects are different from other animals

(b) Show how insects are different from millipedes and spiders.

Scouting America resources: Insects vs Arachnids (video)

Insects, millipedes and spiders compared

What I compared	Insects	Millipedes	Spiders

(c) Point out and name the main parts of an insect.

Scouting America resources: Basic Insect Anatomy: Head, Thorax, and Abdomen (video)

My insect with its main parts labeled (draw here or attach)

(d) Describe the characteristics that distinguish the major orders of insects.

Scouting America resources: Top 5 Insect Orders and How to Identify Them (video)

Major orders of insects

Order	Example insects	Characteristics that set it apart

Requirement 2 completed on _____ counselor initials _____

3. Life Cycles. Do the following:

(a) Compare the life histories of a butterfly and a grasshopper. Tell how they are different.

Scouting America resources: The Life Cycle of Butterflies and Moths (video) · The Life Cycle of a Grasshopper! (video)

Life history of a butterfly

Life history of a grasshopper

How they are different

(b) Raise an insect through complete metamorphosis from its larval stage to its adult stage (e.g., raise a butterfly or moth from a caterpillar). (Some insects are endangered species and are protected by federal or state law. Every species is found only in its own special type of habitat. Be sure to check natural resources authorities in advance to be sure that you will not be collecting any species that is known to be protected or endangered, or in any habitat where collecting is prohibited. In most cases, all specimens should be returned at the location of capture after the requirement has been met. Check with your counselor for those instances where the return of these specimens would not be appropriate.)

Insect I raised _____ Where I found it _____

- ☐ Checked that it is not a protected or endangered species
- ☐ Returned it where I found it, or checked with my counselor

My rearing log

Date	Stage	What I fed it and what I observed

Requirement 3 completed on _____ counselor initials _____

4. Observation and Analysis. Do the following:

(a) Discuss the importance of the Leave No Trace Seven Principles and the Outdoor Code as they relate to insect study. Explain how you have followed the Leave No Trace Seven Principles and the Outdoor Code during field observation, specimen collection, and identification.

Scouting America resources: Leave No Trace Basics (video) · Leave No Trace Outdoor Ethics (video)

Why Leave No Trace and the Outdoor Code matter in insect study

How I followed them

Activity	What I did to follow Leave No Trace and the Outdoor Code
Field observation	
Specimen collection	
Identification	

(b) Observe 20 different live species of insects in their habitat. In your observations, include at least four orders of insects.

Scouting America resources: Insect Orders (video) · Crash Course in Entomology: The "Big Four" Insect Orders (video) An Introduction to Insect Orders (video)

20 live species I observed in their habitat (1 to 10)

#	Insect	Order	Date	Where (habitat)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

20 live species I observed in their habitat (11 to 20)

#	Insect	Order	Date	Where (habitat)
11				
12				
13				
14				

20 live species I observed in their habitat (11 to 20) (continued)

#	Insect	Order	Date	Where (habitat)
15				
16				
17				
18				
19				
20				

(c) Make a scrapbook of the 20 insects you observe in 4(b). Include photographs, sketches, illustrations, and articles. Label each insect with its common and scientific names, where possible. Share your scrapbook with your counselor.

Scouting America resources: How To Start a Bug Collection (video) · How To Make an Insect Collection: Spreading (video) Collecting Insects: Tools and Supplies (video) · Insect Collecting—Tools & Tips (video)

- ☐ Photographs
- ☐ Sketches
- ☐ Illustrations
- ☐ Articles
- ☐ Common and scientific names, where possible

Shared with my counselor on _____

(d) From your scrapbook collection, select eight species of insects and identify what role they play in the ecosystem.

Scouting America resources: Why Insects Are So Crucial to Life on Earth (video) · Why Are Insects Important? (website)

Eight species from my scrapbook

Insect	The role it plays in the ecosystem

Requirement 4 completed on _____ counselor initials _____

5. Social Insects. Do the following:

(a) Tell things that make social insects different from solitary insects.

Scouting America resources: Social Insects (website) · What Are Social Insects? (website)

What makes social insects different from solitary insects

(b) Do ONE of the following:

☐ **(1)** Observe an ant colony in a formicarium (ant farm). Find the queen and worker ants. Explain to your counselor the different chambers found within an ant colony.

Scouting America resources: Inside the Ant Colony (video)

Date _____ Where _____ With whom _____

☐ Found the queen

☐ Found the worker ants

The different chambers in an ant colony

☐ **(2)** Study a hive of bees. Remove the combs and find the queen. Estimate the amount of brood and count the number of queen cells. Explain how to determine the amount of honey in the hive. (If you are allergic to bee stings, pick option (1) above.)

Scouting America resources: Beekeeping 101 (video)

Date _____ Where _____ With whom _____

☐ Removed the combs

☐ Found the queen

My estimate of the amount of brood _____ Queen cells I counted _____

How to determine the amount of honey in the hive

Requirement 5 completed on _____ counselor initials _____

6. Ecology. Do the following:

(a) Tell how insects fit in the food web of other insects, fish, birds, and mammals.

Scouting America resources: Ants and Their Role in Food Webs (video)

Insects in the food web

Animal group	How insects fit in its food web
Other insects	
Fish	
Birds	
Mammals	

(b) Explain the role insects serve as pollinators for plants.

Scouting America resources: The Power of Pollinators (video)

The role insects serve as pollinators for plants

Requirement 6 completed on _____ counselor initials _____

7. Insects and People. Do the following:

(a) Explain the symbiotic relationship between bees and humankind. Explain what colony collapse disorder (CCD) is and some of the possible causes. Discuss how CCD affects our food supply.

Scouting America resources: Hundreds of Millions of Bees Mysteriously Dying (video) · Why Are the Bees Dying? (video) Colony Collapse Disorder (website)

The symbiotic relationship between bees and humankind

What colony collapse disorder (CCD) is, and some possible causes

How CCD affects our food supply

(b) Describe three alternatives to insecticides as a way of preventing crop injury and subsequent yield loss. Explain the advantages and disadvantages of these alternatives.

Scouting America resources: Ultimate Pest Control Guide for Farmers (video) · 4 Ways Nuclear Techniques Help Feed the World (video)

Three alternatives to insecticides

Alternative	Advantages	Disadvantages

Requirement 7 completed on _____ counselor initials _____

8. Conservation. Do the following:

(a) Tell the migration route of an insect (e.g., monarch butterfly). Discuss the challenges they face and how Scouts can contribute to their success.

Scouting America resources: Monarch Migration (website)

Insect _____

Its migration route (describe it, or sketch a map here or attach one)

Challenges it faces

How Scouts can contribute to its success

(b) Find out about an insect that is a threatened or endangered species. Discuss the challenges they face and how Scouts can contribute to their success.

Scouting America resources: Endangered Species Conservation (website)

Threatened or endangered insect

Challenges it faces

How Scouts can contribute to its success

Requirement 8 completed on counselor initials

9. Careers and Hobbies. Do ONE of the following:

☐ **(a)** Identify three career opportunities that would use skills and knowledge in Insect Study. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.

Scouting America resources: Meet an Entomologist (video) · Entomologist (video)

Three careers that use Insect Study

Career	Skills and knowledge from Insect Study it uses

The career I picked

What I researched

Topic	What I found
Training	
Education	
Certification requirements	
Experience	
Expenses	
Prospects for employment	
Starting salary	
Advancement opportunities	
Career goals	

Whether I might be interested in this career, and why

☐ **(b)** Identify three career opportunities that would use skills and knowledge in Insect Study. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.

Scouting America resources: Beekeeping 101—Quick Guide for Beginners (video)

Three careers that use Insect Study

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What I researched

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Training	
Education	
Certification requirements	
Experience	
Expenses	
Prospects for employment	
Starting salary	
Advancement opportunities	
Career goals	

Whether I might be interested in this career, and why

Requirement 9 completed on counselor initials

Counselor sign-off

Your counselor signs your blue card or approves the badge in Scoutbook, and your unit records it. This line is for your own records.

Counselor's signature Date completed

Official Scouting America resources

Scouting America resources: Insect Study merit badge page (requirements and resources) · Insect Study merit badge pamphlet (free PDF)
All merit badges

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