



Sustainability

Merit Badge Workbook



This workbook can help you but you still need to read the merit badge pamphlet.

This Workbook can help you organize your thoughts as you prepare to meet with your merit badge counselor.

You still must satisfy your counselor that you can demonstrate each skill and have learned the information.

You should use the work space provided for each requirement to keep track of which requirements have been completed, and to make notes for discussing the item with your counselor, not for providing full and complete answers.

If a requirement says that you must take an action using words such as "discuss", "show", "tell", "explain", "demonstrate", "identify", etc, that is what you must do.

Merit Badge Counselors may not require the use of this or any similar workbooks.

No one may add or subtract from the official requirements found in Boy Scout Requirements (Pub. 33216 – SKU 621535).

The requirements were last issued or revised in 2015 • This workbook was updated in September 2016.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Phone No.: _____

<http://www.USScouts.Org> • <http://www.MeritBadge.Org>

Please submit errors, omissions, comments or suggestions about this **workbook** to: Workbooks@USScouts.Org
Comments or suggestions for changes to the **requirements** for the **merit badge** should be sent to: Merit.Badge@Scouting.Org

- Before starting work on any other requirements for this merit badge, write in your own words the meaning of *sustainability*.

Explain how you think conservation and stewardship of our natural resources relate to sustainability.

Have a family meeting, and ask family members to write down what they think sustainability means. Be sure to take notes. You will need this information again for requirement 5.

Workbook © Copyright 2016 - U.S. Scouting Service Project, Inc. - All Rights Reserved
Requirements © Copyright, Boy Scouts of America (Used with permission.)

This workbook may be reproduced and used locally by Scouts and Scouters for purposes consistent with the programs of the Boy Scouts of America (BSA), the World Organization of the Scout Movement (WOSM) or other Scouting and Guiding Organizations. However it may NOT be used or reproduced for electronic redistribution or for commercial or other non-Scouting purposes without the express permission of the U. S. Scouting Service Project, Inc. (USSSP).

2. Do the following:

Water. - Do A AND either B OR C.

A. Develop and implement a plan that attempts to reduce your family's water usage

As a family, discuss water usage. To aid in your discussion, if past water bills are available, you may choose to examine a few.

As a family, choose three ways to help reduce consumption.

1.	
2.	
3.	

Implement those ideas for one month.

Share what you learn with your counselor, and tell how your plan affected your family's water usage.

- B. Using a diagram you have created, explain to your counselor how your household gets its clean water from a natural source and what happens with the water after you use it. Include water that goes down the kitchen, bathroom, and laundry drains, and any runoff from watering the yard or washing the car.

Tell two ways to preserve your family's access to clean water in the future.

1.	
2.	

- C. Discuss with your counselor two areas in the world that have been affected by drought over the last three years. For each area, identify a water conservation practice (successful or unsuccessful) that has been used. Tell whether the practice was effective and why. Discuss what water conservation practice you would have tried and why.

Area:

Conservation Practice used:

Was it effective?

Why?

What would you try?

Why?

Area:		
Conservation Practice used:		
Was it effective?		
Why?		
What would you try?		
Why?		

Food. - Do A AND either B OR C.

- A. Develop and implement a plan that attempts to reduce your household food waste.

Establish a baseline and then track and record your results for two weeks.

Report your results to your family and counselor.

- B. Discuss with your counselor the ways individuals, families, and communities can create their own food sources (potted plants, family garden, rooftop garden, neighborhood or community garden).

Tell how this plan might contribute to a more sustainable way of life if practiced globally.

- C. Discuss with your counselor factors that limit the availability of food and food production in different regions of the world.

Tell three ways these factors influence the sustainability of worldwide food supplies.

1.	
2.	
3.	

Community. - Do A AND either B OR C.

- A. Draw a rough sketch depicting how you would design a sustainable community.

--

Share your sketch with your counselor, and explain how the housing, work locations, shops, schools, and transportation systems affect energy, pollution, natural resources, and the economy of the community.

- B. With your parent's permission and your counselor's approval, interview a local architect, engineer, contractor, or building materials supplier.

Person Interviewed:

Find out the factors that are considered when using sustainable materials in renovating or building a home. Share what you learn with your counselor.

- C. Review a current housing needs assessment for your town, city, county, or state.

Discuss with your counselor how birth and death rates affect sufficient housing, and how a lack of housing—or too much housing— can influence the sustainability of a local or global area.

Energy. - Do A AND either B OR C.

- A. Learn about the sustainability of different energy sources, including fossil fuels, solar, wind, nuclear, hydropower, and geothermal.

Fossil Fuels	
Solar	
Wind	
Nuclear	
Hydropower	
Geothermal	

Find out how the production and consumption of each of these energy sources affects the environment and what the term "carbon footprint" means.

How does production and consumption affect the environment?

Fossil Fuels	
Solar	
Wind	
Nuclear	
Hydropower	
Geothermal	

What does the term "carbon footprint" mean?

Discuss what you learn with your counselor, and explain how you think your family can reduce its carbon footprint.

- B. Develop and implement a plan that attempts to reduce consumption for one of your family's household utilities.

Examine your family's bills for that utility reflecting usage for three months (past or current).

As a family, choose three ways to help reduce consumption and be a better steward of this resource.

1.	
2.	
3.	

- Implement those ideas for one month.

Share what you learn with your counselor, and tell how your plan affected your family's usage.

- C. Evaluate your family's fuel and transportation usage.

Review your family's transportation-related bills (gasoline, diesel, electric, public transportation, etc.) reflecting usage for three months (past or current).

As a family, choose three ways to help reduce consumption and be a better steward of this resource.

1.	
2.	
3.	

- Implement those ideas for one month.
Share what you learn with your counselor, and tell how your plan affected your family's transportation habits.

Stuff. - Do A AND either B OR C.

- A. Keep a log of the “stuff” your family purchases (excluding food items) for two weeks. In your log, categorize each purchase as an essential need (such as soap) or a desirable want (such as a DVD).

(Editor's Note: A blank log form can be found at the end of this workbook.)

Share what you learn with your counselor.

- B. Plan a project that involves the participation of your family to identify the “stuff” your family no longer needs.

- Complete your project by donating, repurposing, or recycling these items.

- C. Discuss with your counselor how having too much “stuff” affects you, your family, and your community.

Include the following: the financial impact, time spent, maintenance, health, storage, and waste.

Financial Impact	
Time Spent	
Maintenance	
Health	
Storage	
Waste	

Include in your discussion the practices that can be used to avoid accumulating too much "stuff."

3. Do the following:

- a. Explain to your counselor how the planetary life-support systems (soil, climate, freshwater, atmospheric, nutrient, oceanic, ecosystems, and species) support life on Earth and interact with one another.

Soil	
Climate	
Freshwater	
Atmospheric	
Nutrient	
Oceanic	
Ecosystems	
Species	

- b. Tell how the harvesting or production of raw materials (by extraction or recycling), along with distribution of the resulting products, consumption, and disposal/repurposing, influences current and future sustainability thinking and planning.

- 4. Explore TWO of the following categories. Have a discussion with your family about the two you select. In your discussion, include your observations, and best and worst practices. Share what you learn with your counselor.

- a. **Plastic waste.** Discuss the impact plastic waste has on the environment (land, water, air).

Learn about the number system for plastic recyclables, and determine which plastics are more commonly recycled.

Find out what the trash vortex is and how it was formed.

- b. **Electronic waste.** Choose three electronic devices in your household. Find out the average lifespan of each, what happens to these devices once they pass their useful life, and whether they can be recycled in whole or part.

	Device	Lifespan	What happens?	Can it be Recycled?
1.				
2.				
3.				

Discuss the impact of electronic waste on the environment.

- c. **Food waste.** Learn about the value of composting and how to start a compost pile.

- Start a compost pile appropriate for your living situation.
Tell what can be done with the compost when it is ready for use.

- d. **Species decline.** Explain the term species (plant or animal) decline.

Discuss the human activities that contribute to species decline, what can be done to help reverse the decline, and its impact on a sustainable environment.

- e. **World population.** Learn how the world's population affects the sustainability of Earth.

Discuss three human activities that may contribute to putting Earth at risk, now and in the future.

	Activity	Discussion
1.		
2.		
3.		

- f. **Climate change.** Find a world map that shows the pattern of temperature change for a period of at least 100 years. Share this map with your counselor, and discuss three factors that scientists believe affect the global weather and temperature.

5. Do the following:

- a. After completing requirements 1 through 4, have a family meeting.

Discuss what your family has learned about what it means to be a sustainable citizen.

Talk about the behavioral changes and life choices your family can make to live more sustainably.

Share what you learn with your counselor.

- b. Discuss with your counselor how living by the Scout Oath and Scout Law in your daily life helps promote sustainability and good stewardship.

6. Learn about career opportunities in the sustainability field

Pick one and find out the education, training, and experience required.

Career	
Education	
Training	
Experience	

. Discuss what you have learned with your counselor and explain why this career might be of interest to you.

Requirement resources can be found here:
http://www.meritbadge.org/wiki/index.php/Sustainability#Requirement_resources

Log of Purchases of “Stuff” for requirement 2.

Date	Purchase	Essential	Desirable	Date	Purchase	Essential	Desirable
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>

Important excerpts from the Guide To Advancement - 2015, No. 33088 (SKU-620573)

[1.0.0.0] — Introduction

The current edition of the *Guide to Advancement* is the official source for administering advancement in all Boy Scouts of America programs: Cub Scouting, Boy Scouting, Varsity Scouting, Venturing, and Sea Scouts. It replaces any previous BSA advancement manuals and previous editions of the *Guide to Advancement*.

[Page 2, and 5.0.1.4] — Policy on Unauthorized Changes to Advancement Program

No council, committee, district, unit, or individual has the authority to add to, or subtract from, advancement requirements. There are limited exceptions relating only to youth members with special needs. For details see section 10, "Advancement for Members With Special Needs".

[Page 2] — The "Guide to Safe Scouting" Applies

Policies and procedures outlined in the *Guide to Safe Scouting*, No. 34416, apply to all BSA activities, including those related to advancement and Eagle Scout service projects.

[7.0.3.1] — The Buddy System and Certifying Completion

A youth member must not meet one-on-one with an adult. Sessions with counselors must take place where others can view the interaction, or the Scout must have a buddy: a friend, parent, guardian, brother, sister, or other relative—or better yet, another Scout working on the same badge—along with him attending the session. If merit badge counseling or instruction includes any Web-based interaction, it must be conducted in accordance with the BSA Social Media Guidelines (<http://www.scouting.org/Marketing/Resources/SocialMedia>). For example, always copy one or more authorized adults on email messages between counselors and Scouts.

When the Scout meets with the counselor, he should bring any required projects. If these cannot be transported, he should present evidence, such as photographs or adult verification. His unit leader, for example, might state that a satisfactory bridge or tower has been built for the Pioneering merit badge, or that meals were prepared for Cooking. If there are questions that requirements were met, a counselor may confirm with adults involved. Once satisfied, the counselor signs the blue card using the date upon which the Scout completed the requirements, or in the case of partials, initials the individual requirements passed.

Note that from time to time, it may be appropriate for a requirement that has been met for one badge to also count for another. See "Fulfilling More Than One Requirement With a Single Activity," 4.2.3.6.

[7.0.3.2] — Group Instruction

It is acceptable—and sometimes desirable—for merit badges to be taught in group settings. This often occurs at camp and merit badge midways, fairs, clinics, or similar events. Interactive group discussions can support learning. The method can also be attractive to "guest experts" assisting registered and approved counselors. Slide shows, skits, demonstrations, panels, and various other techniques can also be employed, but as any teacher can attest, not everyone will learn all the material.

There must be attention to each individual's projects and his fulfillment of *all* requirements. We must know that every Scout—actually and *personally*—completed them. If, for example, a requirement uses words like "show," "demonstrate," or "discuss," then every Scout must do that. It is unacceptable to award badges on the basis of sitting in classrooms *watching* demonstrations, or remaining silent during discussions.

It is sometimes reported that Scouts who have received merit badges through group instructional settings have not fulfilled all the requirements. To offer a quality merit badge program, council and district advancement committees should ensure the following are in place for all group instructional events.

- A culture is established for merit badge group instructional events that partial completions are acceptable expected results.
- A guide or information sheet is distributed in advance of events that promotes the acceptability of partials, explains how merit badges can be finished after events, lists merit badge prerequisites, and provides other helpful information that will establish realistic expectations for the number of merit badges that can be earned at an event.
- Merit badge counselors are known to be registered and approved.
- Any guest experts or guest speakers, or others assisting who are not registered and approved as merit badge counselors, do not accept the responsibilities of, or behave as, merit badge counselors, either at a group instructional event or at any other time. Their service is temporary, not ongoing.
- Counselors agree to sign off only requirements that Scouts have actually and personally completed.
- Counselors agree not to assume prerequisites have been completed without some level of evidence that the work has been done. Pictures and letters from other merit badge counselors or unit leaders are the best form of prerequisite documentation when the actual work done cannot be brought to the camp or site of the merit badge event.
- There is a mechanism for unit leaders or others to report concerns to a council advancement committee on summer camp merit badge programs, group instructional events, and any other merit badge counseling issues—especially in instances where it is believed BSA procedures are not followed. See "Reporting Merit Badge Counseling Concerns," 11.1.0.0.
- There must be attention to each individual's projects and his fulfillment of all requirements. We must know that every Scout—actually and personally—completed them.

It is permissible for guest speakers, guest experts, or others who are not merit badge counselors to assist in the counseling process. Those providing such assistance must be under the direction of a registered and approved counselor who is readily available onsite, and provides personal supervision to assure all applicable BSA policies and procedures—including those related to BSA Youth Protection—are in place and followed.

[7.0.3.3] — Partial Completions

A Scout need not pass all the requirements of one merit badge with the same counselor. It may be that due to timing or location issues, etc., he must meet with a different counselor to finish the badge. The Application for Merit Badge has a place to record what has been finished—a "partial." In the center section on the reverse of the blue card, the counselor initials for each requirement passed. In the case of a partial completion, the counselor does not retain his or her portion of the card. A subsequent counselor may choose not to accept partial work, but this should be rare. A Scout, if he believes he is being treated unfairly, may work with his unit leader to find another counselor. An example for the use of a signed partial would be to take it to camp as proof of prerequisites. Partial completions have no expiration except the Scout's 18th birthday. Units, districts, or councils shall not establish other expiration dates for partial merit badges.

[7.0.4.8] — Unofficial Worksheets and Learning Aids

Worksheets and other materials that may be of assistance in earning merit badges are available from a variety of places including unofficial sources on the Internet and even troop libraries. Use of these aids is permissible as long as the materials can be correlated with the current requirements that Scouts must fulfill. Completing "worksheets" may suffice where a requirement calls for something in writing, but this would not work for a requirement where the Scout must discuss, tell, show, or demonstrate, etc. Note that Scouts shall not be required to use these learning aids in order to complete a merit badge.