



Soil and Water Conservation

Merit Badge Workbook

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

The work space provided for each requirement should be used by the Scout to make notes for discussing the item with his counselor, not for providing the full and complete answers. Each Scout must do each requirement.

No one may add or subtract from the official requirements found in **Boy Scout Requirements** (Pub. 33216 – SKU 34765).

The requirements were last issued or revised in 2005 • This workbook was updated in June 2012.

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

1. Do the following:

a. Tell what soil is. _____

Tell how it is formed. _____

b. Describe three kinds of soil. Tell how they are different.

1. _____

2. _____

3. _____

c. Describe the three main plant nutrients in fertile soil.

1. _____

2. _____

3. _____

Tell how they can be put back when used up. _____

2. Do the following:

a. Define soil erosion. _____

b. Tell why it is important. _____

Tell how it affects you. _____

c. Name three kinds of soil erosion. Describe each.

1. _____

2. _____

3. _____

d. Take pictures or draw two kinds of soil erosion.

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3. Do the following:

a. Tell what is meant by conservation practices. _____

b. Describe the effect of three kinds of erosion-control practices.

1. _____

2. _____

3. _____

c. Take pictures or draw three kinds of erosion-control practices.

4. Do the following:

a. Explain what a watershed is. _____

b. Outline the smallest watershed that you can find on a contour map.

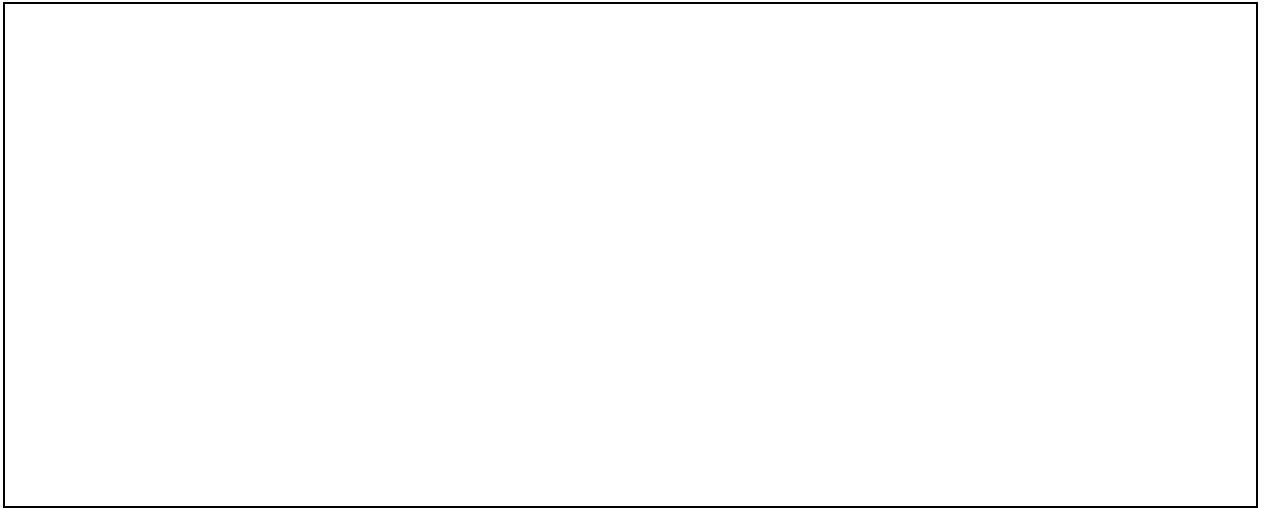
c. Then outline on your map, as far as possible, the next larger watershed which also has the smallest in it.

d. Explain what a river basin is. _____

Tell why all people living in it should be concerned about land and water use in it. _____

5. Do the following:

a. Make a drawing to show the hydrologic cycle.



b. Show by demonstration at least two of the following actions of water in relation to soil: percolation, capillary action, precipitation, evaporation, and transpiration.

c. Explain how removal of vegetation will affect the way water runs off a watershed. _____

d. Tell how uses of forest, range, and farm land affect usable water supply. _____

e. Explain how industrial use affects water supply. _____

6. Do the following:

a. Tell what is meant by water pollution. _____

b. Describe common sources of water pollution and explain the effects.

Water Pollution Source

Effects:

_____	_____
_____	_____
_____	_____
_____	_____

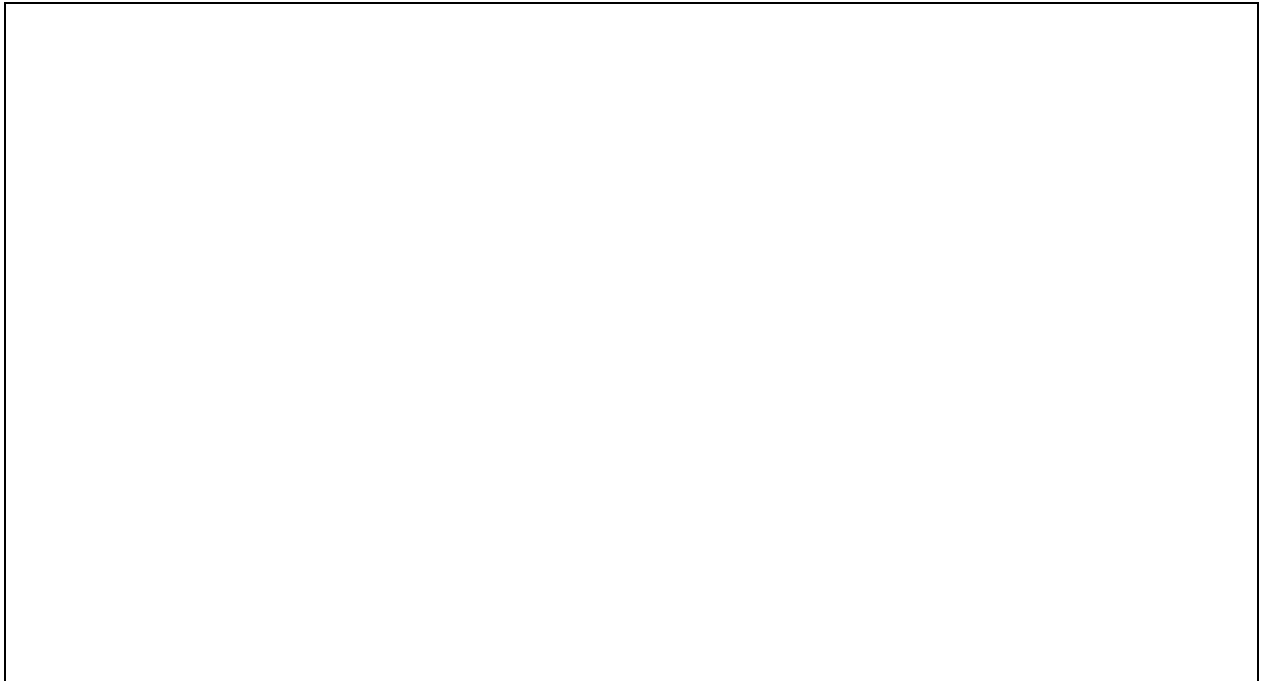
c. Tell what is meant by "primary water treatment," "secondary waste treatment," and "biochemical oxygen demand."

"primary water treatment" _____

"secondary waste treatment" _____

"biochemical oxygen demand" _____

d. Make a drawing showing the principles of complete waste treatment.



7. Do TWO of the following:

- a. Make a trip to two of the following places. Write a report of more than 500 words about the soil and water and energy conservation practices you saw.
 - 1. An agricultural experiment.
 - 2. A managed forest or woodlot, range, or pasture.
 - 3. A wildlife refuge or a fish or game management area.
 - 4. A conservation-managed farm or ranch.
 - 5. A managed watershed.
 - 6. A waste-treatment plant.
 - 7. A public drinking water treatment plant.
 - 8. Industry water use installation.

- 9. Desalinization plant
- b. Plant 100 trees, bushes and/or vines for a good purpose.
- c. Seed an area of at least 1/5 acre for some worthwhile conservation purpose, using suitable grasses or legumes alone or in a mixture.
- d. Study a soil survey report. Describe the things in it. On tracing paper over any of the soil maps, outline an area with three or more different kinds of soil. List each kind of soil by full name and map symbol.

- e. Make a list of places in your neighborhood, camps, school ground, or park that have erosion, sedimentation, or pollution problems. Describe how these could be corrected through individual or group action.

- f. Carry out any other soil and water conservation project approved by your merit badge counselor.

Requirement resources can be found here:
[http://www.meritbadge.org/wiki/index.php/Soil and Water Conservation#Requirement resources](http://www.meritbadge.org/wiki/index.php/Soil_and_Water_Consevation#Requirement_resources)

Important excerpts from the [‘Guide To Advancement’](#), No. 33088:

Effective January 1, 2012, the ‘Guide to Advancement’ (which replaced the publication ‘Advancement Committee Policies and Procedures’) is now the official Boy Scouts of America source on advancement policies and procedures.

- **[Inside front cover, and 5.0.1.4] — 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 disabilities. For details see section 10, “Advancement for Members With Special Needs”.)
- **[Inside front cover, and 7.0.1.1] — 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. [Note: Always reference the online version, which is updated quarterly.]
- **[7.0.3.1] — The Buddy System and Certifying Completion**
Youth members must not meet one-on-one with adults. 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. 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 certification. 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.
- **[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 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. Because of the importance of individual attention in the merit badge plan, group instruction should be limited to those scenarios where the benefits are compelling.
- **[7.0.3.3] — Partial Completions**
Scouts need not pass all requirements with one counselor. 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, he or she does not retain the counselor’s 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 Scoutmaster to find another counselor. An example for the use of a signed partial would be to take it to camp as proof of prerequisites. Partials have no expiration except the 18th birthday.