



SOIL AND WATER CONSERVATION MERIT BADGE WORKBOOK

This Scoutmaster Bucky Merit Badge Workbook is based off the 2021 *Scouts BSA Requirements*.

Consider also using the Soil and Water Conservation merit badge class preparation page for clarification and expectations when participating in a Scoutmaster Bucky merit badge opportunity (online or in-person).

<https://scoutmasterbucky.com/merit-badges/soil-and-water-conservation/>

Scout's Name:

REQUIREMENT 1: Do the following:

REQUIREMENT 1A: Tell what soil is. Tell how it is formed.

REQUIREMENT 1B: Describe three kinds of soil. Tell how they are different.



REQUIREMENT 1C: Name the three main plant nutrients in fertile soil. Tell how they can be put back when used up.

REQUIREMENT 2: Do the following:

REQUIREMENT 2A: Define soil erosion.

REQUIREMENT 2B: Tell why it is important. Tell how it affects you.



REQUIREMENT 2C: Name three kinds of soil erosion. Describe each.

REQUIREMENT 2D: Take pictures or draw two kinds of soil erosion.

REQUIREMENT 3: Do the following:

REQUIREMENT 3A: Tell what is meant by conservation practices.



REQUIREMENT 3B: Describe the effect of three kinds of erosion-control practices.

REQUIREMENT 3C: Take pictures or draw three kinds of erosion-control practices.

REQUIREMENT 4: Do the following:

REQUIREMENT 4A: Explain what a watershed is.



REQUIREMENT 4B: Outline the smallest watershed that you can find on a contour map.

REQUIREMENT 4C: Then outline on your map, as far as possible, the next larger watershed which also has the smallest in it.

REQUIREMENT 4D: Explain what a river basin is. Tell why all people living in a river basin should be concerned about land and water use in it.

REQUIREMENT 4E: Explain what an aquifer is and why it can be important to communities.



REQUIREMENT 5: Do the following:

REQUIREMENT 5A: Make a drawing to show the hydrologic cycle.

REQUIREMENT 5B: Show by demonstration at least two of the following actions of water in relation to soil: percolation, capillary action, precipitation, evaporation, transpiration.

REQUIREMENT 5C: Explain how removal of vegetation will affect the way water runs off a watershed.



REQUIREMENT 5D: Tell how uses of forest, range, and farmland affect usable water supply.

REQUIREMENT 5E: Explain how industrial use affects water supply.

REQUIREMENT 6: Do the following:

REQUIREMENT 6A: Tell what is meant by "water pollution."



REQUIREMENT 6B: Describe common sources of water pollution and explain the effects of each.

REQUIREMENT 6C: Tell what is meant by "primary water treatment," "secondary waste treatment," and "biochemical oxygen demand."

REQUIREMENT 6D: Make a drawing showing the principles of complete waste treatment.

REQUIREMENT 7: Do TWO of the following:



REQUIREMENT 7A: 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.

REQUIREMENT 7A1: An agricultural experiment

REQUIREMENT 7A2: A managed forest or a woodlot, range, or pasture

REQUIREMENT 7A3: A wildlife refuge or a fish or game management area



REQUIREMENT 7A4: A conservation-managed farm or ranch

REQUIREMENT 7A5: A managed watershed

REQUIREMENT 7A6: A waste-treatment plant

REQUIREMENT 7A7: A public drinking water treatment plant



REQUIREMENT 7A8: An industry water use installation

Blank area for notes or drawings related to Requirement 7A8.

REQUIREMENT 7A9: A desalinization plant

Blank area for notes or drawings related to Requirement 7A9.

REQUIREMENT 7B: Plant 100 trees, bushes and/or vines for a good purpose.

Blank area for notes or drawings related to Requirement 7B.

REQUIREMENT 7C: Seed an area of at least one-fifth acre for some worthwhile conservation purposes, using suitable grasses or legumes alone or in a mixture.

Blank area for notes or drawings related to Requirement 7C.



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REQUIREMENT 7D: 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.

REQUIREMENT 7E: 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.

REQUIREMENT 7F: Carry out any other soil and water conservation project approved by your merit badge counselor.