Soil & Water Conservation

Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet (book). No one can add or subtract from the Boy Scout Requirements #33215. Merit Badge Workbooks and much more are below: Online Resources.
Send comments to: craig@craiglincoln.com. Requirements revised: 2005, Workbook updated: February 2008.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Ph #: _____

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.

_____ _____

_____ _____

_____ _____

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

_____ _____

_____ _____

_____ _____

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.

_____ _____

_____ _____

_____ _____

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

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. *(Attach photos, separate page or use the back of a page.)*

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." _____

_____

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. *(Attach a page or use the back of a page.)*

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.

_____

Online Resources *(Use any Internet resource with caution and only with your parent's or guardian's permission.)*

Merit Badge Workbooks: usscouts.org **-or-** meritbadge.org ►**Merit Badge Books:** www.scoutstuff.org

Boy Scouts of America: http://www.scouting.org/ ►Requirements ►Intro to Merit Badges ►Guide to Safe Scouting ►Youth Protection ►Leave No Trace ►Outdoor Code ►Wilderness Use ►Safe Swim Defense ►Safety Afloat

American Fisheries Society: http://www.fisheries.org
American Meteorological Society: http://www.ametsoc.org/AMS
American Museum of Natural History: http://www.amnh.org
American Zoo and Aquarium Association: http://www.aza.org
Chesapeake Bay Program: http://www.chesapeakebay.net
Conservation and Resource Center: http://www.si.edu/crc
Discover Magazine: http://www.discover.com
The Discovery Channel: http://dsc.discovery.com/
Environmental Protection Agency: http://www.epa.gov
EnviroLink Network: http://www.envirolink.org
Int. Assn. of Fish and Wildlife Agencies: http://www.iafwa.org
Leave No Trace Center: http://www.LNT.org
Nat. Climatic Data Center: http://lwf.ncdc.noaa.gov/oa/ncdc.html
Nat. Fish and Wildlife Foundation: http://www.nfwf.org
Nat. Geographic Society: http://www.nationalgeographic.com
Nat. Oceanic and Atmospheric Admin: http://www.noaa.gov
Nat. Park Service: http://www.nps.gov
Nat. Wildlife Federation: http://www.nwf.org
Natural Resources Cons. Service: http://www.nrcs.usda.gov
Soil and Water Conservation Society: http://www.swcs.org
U.S. Fish and Wildlife Service: http://www.fws.gov
Wildlife Conservation Society: http://wcs.org