



SOIL & WATER CONSERVATION

Merit Badge Requirements

- 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 soil conservation is important. Tell how it affects you.
 - C) Name three kinds of soil erosion. Describe each.
 - D) Take pictures of 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.
 - 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) Outline, as far as the map will allow, the next larger watershed which also has the smaller one in it.
 - D) Explain what a river basin is. Tell why all people living in a river basin should be concerned about land and water use in the basin.
- 5) Do the following:
 - A) Make a drawing to show the hydrologic cycle.
 - B) Demonstrate at least two of the following actions of water in relation to soil: percolation, capillary action, precipitation, evaporation, transpiration.
 - C) Explain how removal of vegetation will affect the way water runs off a watershed.
 - D) Tell how uses of forest, range, and farmland 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 of each.
 - 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.
 - 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 one-fifth acre for some worthwhile conservation purposes, using suitable grasses or legumes alone or in a mixture.
 - D) Study a soil survey report. Describe the thing in it. Using tracing paper and pen, trace over any of the soil maps; and 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 having 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.

Scout Name: _____ Unit #: _____ Date: _____

Requirement 1

What is soil? _____

How is soil formed? _____

Describe three kinds of soil. In your description include how they are different from each other.

Soil #1: _____ Description: _____

Soil #2: _____ Description: _____

Soil #3: _____ Description: _____

Describe three main plant nutrients in fertile and how they can be put back when used up.

Nutrient #1: _____ Description: _____

Returned to soil by: _____

Nutrient #2: _____ Description: _____

Returned to soil by: _____

Nutrient #3: _____ Description: _____

Returned to soil by: _____

Requirement 2

Define soil erosion: _____

Why is soil conservation important? _____

How does soil conservation affect you? _____

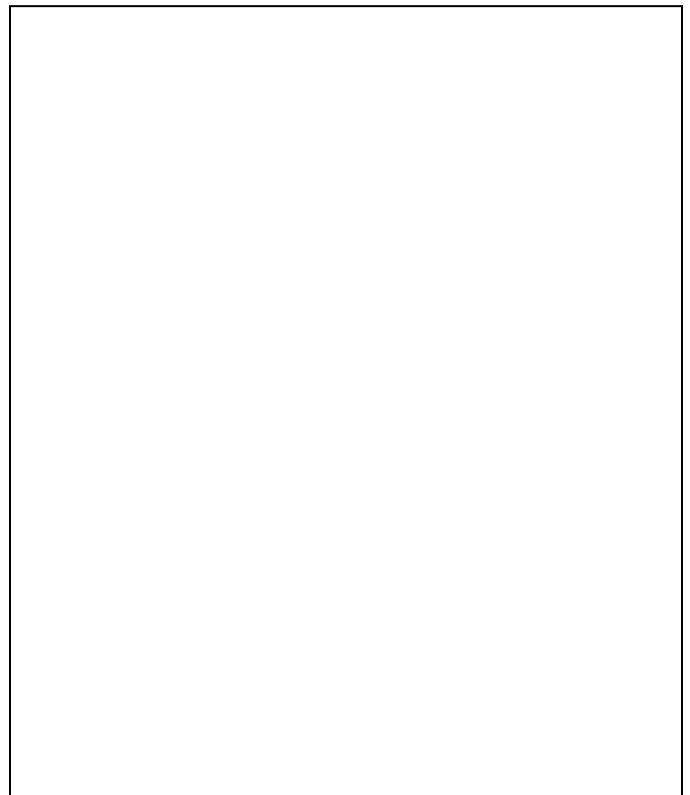
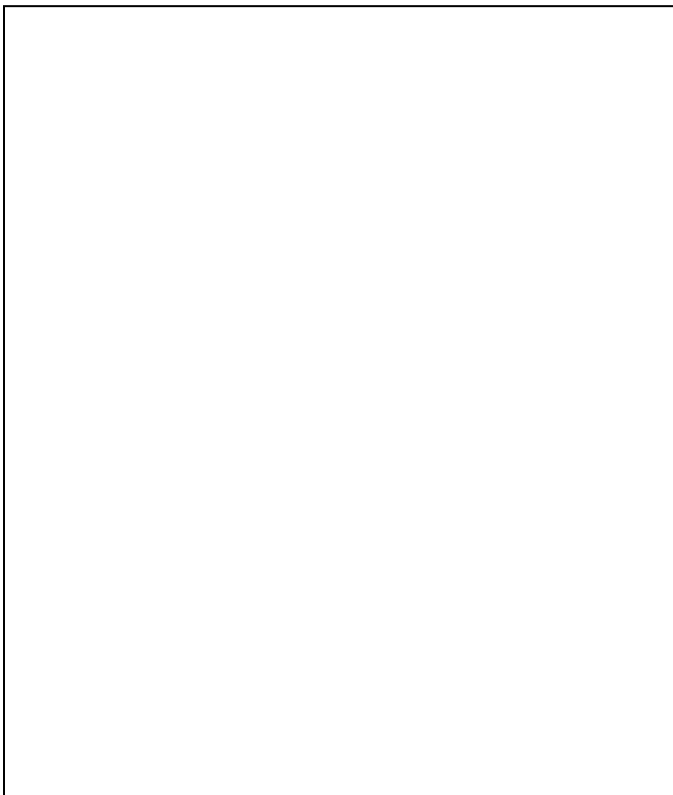
Name and describe three kinds of soil erosion.

Soil Erosion #1: _____ Description: _____

Soil Erosion #2: _____ Description: _____

Soil Erosion #3: _____ Description: _____

Take pictures of or draw two kinds of soil erosion. Use the area below to either attach your photos or to make your drawings:



Requirement 3

What is meant by conservation practices? _____

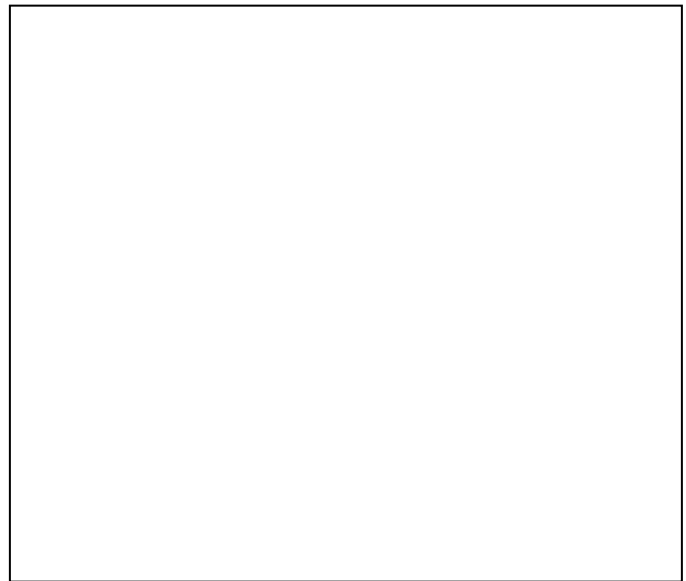
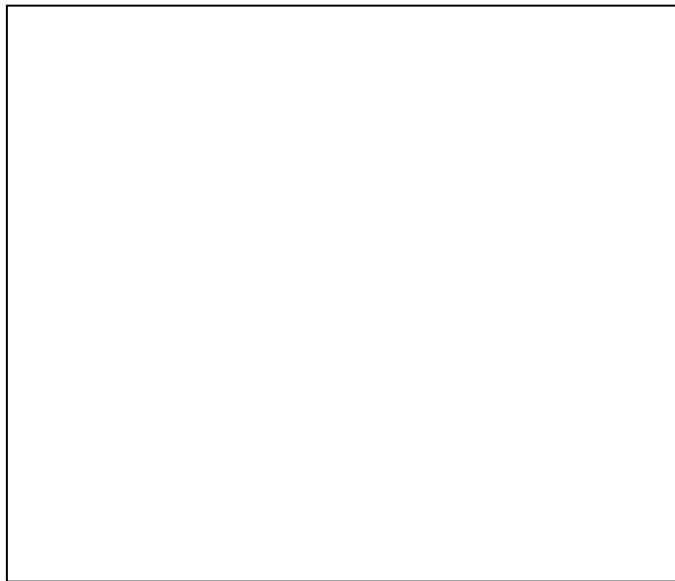
Describe the effect of three kinds of erosion-control practices:

Erosion-control practice #1: _____ Effect: _____

Erosion-control practice #2: _____ Effect: _____

Erosion-control practice #3: _____ Effect: _____

Take pictures or draw three kinds of erosion-control practices. Use the area below to attach your photos or make your drawings.



Requirement 4

What is a watershed? _____

_____ On a contour map outline the smallest watershed that you can find. Attach your map to this worksheet and show it to your counselor.

_____ On your contour map, outline, as far as the map will allow, the next larger watershed which also has the smaller on in it. Show it to your counselor.

What is a river basin? _____

Why should people living in a river basin be concerned about land and water use in the basin? _____

Requirement 5

Use the area below to make a drawing that shows the hydrologic cycle:



Scout Name: _____ Unit #: _____ Date: _____

Demonstrate at least two of the following actions of water in relation to soil. Place a check mark next to the two you demonstrated to you counselor.

Percolation Capillary Action Precipitation Evaporation Transpiration

How does the removal of vegetation affect the way water runs off a watershed? _____

How do the uses of forest, range, and farmland affect usable water supply? _____

How does industrial use affect water supply? _____

Requirement 6

What is meant by water pollution? _____

What are some common sources of water pollution? _____

What are some of the effects of water pollution? _____

What is meant by "primary water treatment"? _____

What is meant by "secondary waste treatment"? _____

What is meant by "biochemical oxygen demand"? _____

_____ Make a drawing showing the principles of complete waste treatment. Use the back of this sheet for your drawing or make your drawing on a separate piece of paper and attach it to this worksheet. Show your drawing to your counselor.

Scout Name: _____ Unit #: _____ Date: _____

If you selected **Option E**:

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

Place #1: _____ How it can be corrected: _____

Place #2: _____ How it can be corrected: _____

Place #3: _____ How it can be corrected: _____

If you selected **Option F**:

Carry out any other soil and water conservation project approved by your merit badge counselor. Use the following area to either plan your project or give a description of what you did to satisfy the requirement: _____
