



Royal Rangers

Merit Requirements: Silver-Bordered Merit

SOIL AND WATER MERIT

Requirement #1 - Explain the statement, "Soil is the most important mineral in the world."

Requirement #2 -Complete the following:

- a. Define soil and explain how it may be formed.
- b. Describe three kinds of soil and how they are different.
- c. Name the three major nutrients in the soil and how they can be replaced when depleted from the soil.

Requirement #3 -Complete the following:

- a. Explain in writing, what soil erosion means.
- b. Explain in writing, the importance of preventing soil erosion.
- c. Make a drawing or show in pictures, two kinds of soil erosion.

Requirement #4 -Complete the following:

- a. Define three soil conservation practices.
- b. Make drawings or take pictures that show 3 soil conservation practices. What effect is each practice engineered to achieve.

Requirement #5 -Complete the following:

- a. What is a watershed?
- b. On a contour map, identify a watershed by outlining it.

Requirement #6 -Complete the following:

- a. Show the water cycle in a drawing.
- b. Demonstrate two of the following interactions between water and the soil: percolation, evaporation, transpiration, run-off, condensation. Use a terrarium with a cover for condensation and a container of dry soil (large jar or aquarium) for the other interactions.
- c. Explain how the removal of vegetation will affect a watershed.
- d. Explain how a forest, prairie, or cultivated land will affect usable water.

Requirement #7 -Complete the following:

- a. Explain the term, "water pollution."
- b. What are some common causes of water pollution?
- c. Describe some common effects of water pollution on living things.
- d. In a drawing show the principles of complete waste water treatment including, primary treatment; secondary treatment.

Requirement #8 - Choose TWO of the following:

a. Make a trip to ONE of the following places. Write a report of three hundred words or more about the soil and water conservation practices you observed.

- A managed forest/wood lot or prairie/pasture.
- A wildlife refuge or a fish/game management area.
- A farm or ranch where conservation practices are in place.
- A waste treatment plant.
- At a water treatment plant.

b. Plant 50 erosion control plants, where erosion is a problem. This requirement may be completed as a working member in a patrol project.

c. Seed an area of at least 2500 square feet (50 X 50 ft.) which is designed to meet an identified soil conservation need, using native grasses and flowering plants. This requirement may be completed as a working member in a patrol project.

d. On a soil survey map, outline an area that has three or more soil types. Identify each soil type by name and map symbol.

e. Make a map of your neighborhood, identifying areas of erosion, sedimentation or pollution, and outline a plan for correcting each.

f. Complete any other soil and water conservation project which is clearly outlined and has been approved by your Commander.