

Soil and Water Conservation Merit Badge Prework
Huntley Meadows Park

Please bring to class:

- **Pre-Work – listed in BOLD and red**
- Blue card
- Pen
- Snack/lunch and a drink
- Appropriate clothing to go outside to observe the weather

Important information about how to prepare for a merit badge program at Huntley Meadows Park.

Parents, please review the content of a merit badge prior to registering your scout: some badges may be challenging for younger scouts. Also, the class discussions are more interesting if scouts review *all* the requirements for the badge before the program. The chances of your scout completing all the work for the badge increases dramatically when he is properly motivated and the badge content is age-appropriate.

Merit badges are not designed to be completed in a day and require independent work on the part of the scout outside of the workshop. We call this PREWORK. We suggest this is done prior to the badge program date, but we realize this is not always practical or possible, in these cases we will sign partial cards and accept the assignments after the program.

Merit badge programs can be from 3 to 5 hours long, so be sure to pack a snack and water for your scout and that he is dressed appropriately for being outdoors for some or all of the program.

Though not required, Scout workbooks are very useful and we prefer that scouts use the workbook during the program. Workbooks can be found at:
http://meritbadge.org/wiki/index.php/Merit_Badge_Worksheets .

About blue cards: WE DO NOT HAVE BLUE CARDS. Please bring an *authorized* blue card with you to the program. Your troop scout master should be consulted prior to attending any merit badge program and he or she will sign the front of the card.

What to bring:

- Blue card
- pen and pencil.

- Appropriate clothing for going outside including closed toe shoes.
- Snack and water.

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) Name 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.
- (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 a river basin should be concerned about land and water use in it.
- (e) Explain what an aquifer is and why it can be important to communities.

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, 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:

1. (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.
 - a. (1) An agricultural experiment
 - b. (2) A managed forest or a woodlot, range, or pasture
 - c. (3) A wildlife refuge or a fish or game management area
 - d. (4) A conservation-managed farm or ranch
 - e. (5) A managed watershed
 - f. (6) A waste-treatment plant
 - g. (7) A public drinking water treatment plant
 - h. (8) An industry water use installation
 - i. (9) A desalinization plant
2. (b) Plant 100 trees, bushes and/or vines for a good purpose.
3. (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.
4. (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.
5. (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.
6. (f) Carry out any other soil and water conservation project approved by your merit badge counselor.

Huntley Meadows Park

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