What is a Watershed?

Adapted from Wood, 2007

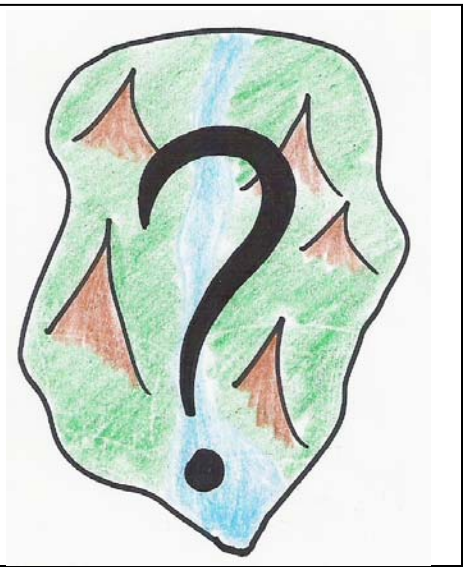
This activity will allow students to easily observe the movement of water through a watershed and help define what a watershed is.

Objectives-

- ✓ Understand the distribution of water in a watershed.
- ✓ Understand the importance of water in daily life, and where water comes from.
- ✓ Recognize different land-usage in the Watershed and their basic effects on water quality.

Estimated Time-

- ✓ 1 ½ hours



Materials-

- ✓ Brown paper bag
- ✓ Spray bottle
- ✓ Newspapers
- ✓ Food Coloring
- ✓ Paper towels
- ✓ Peanut butter (beware of allergies!)
- ✓ Saltine crackers
- ✓ Napkins
- ✓ 100 Pennies
- ✓ Clear jar
- ✓ Aerial map of local watershed
- ✓ Paper
- ✓ Crayons

Vocabulary Words-

- ✓ Watershed – a region or area bounded peripherally by a divide and draining ultimately to a particular
- ✓ Herbicide – chemicals used to kill and control plant growth
- ✓ Pesticide – chemicals used to kill and control pests and insects harming crops or other plant matter
- ✓ Point Source Pollution - pollution that can be traced back to a single origin or source such as a sewage treatment plant discharge.
- ✓ Non-point Source Pollution - pollution that occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, and coastal waters or introduces them into ground water

Procedure-

1) Discuss the limitations on available fresh water, and how it gets recycled to end up as fresh water we drink and use daily: take a jar with 100 pennies and explain that over 97% of the earth's water is found in the oceans as salt water, about 2% is stored in glaciers and ice caps and only 1% of water is available for us to use.

2) Hold up the jar with 100 pennies and remove three, explaining that those represent all the fresh water on earth. Put two back because they are frozen and hold up one to represent the amount of fresh water we can use.

3) Ask students to give ideas to create a list on the board of daily activities that require water. Once they have given the direct usage (showering/bathing, brushing teeth, and washing hands) suggest some indirect uses (growing/preparing food, washing clothes, manufacturing).

4) Then ask the children to pick one of the activities on the board, and draw themselves engaging in that activity.

5) While they are drawing, spread peanut butter on (or simply hand out) a saltine cracker for each student, and wait until they ask for a drink of water. Once they have drank some, remind them of the penny jar, and how small an amount of freshwater we have available, and how important it is to keep that water clean.

6) Look at the aerial map of the watershed, and point out recognizable features and talk about the activities, industry, agriculture and recreational locations in the watershed.

7) Crumple the paper bag (to show topographical differences) and use the food coloring to represent different land-uses and the pollution associated with them. Sprinkle water all over simulating rain, and watch the food coloring run together as run-off, and eventually to an outlet (off the end of the paper bag).

8) Finally, discuss the differences between point and non-point sources of pollution and how that affects the water bodies, and the places of discharge within the watershed.

Concluding Discussion Questions-

1) What happens when people pollute?

2) Where does all the water in the watershed drain?

3) Come up with a list of possible pollutants we see in Saratoga Springs.

4) Discuss differences in their created watershed and our local watershed.

5) Ask students if they would want to swim or fish or go boating on a water body affected by the amount of pollutants that have drained out of their system.