Investigating Saratoga Lake Watershed!

Adapted from The GLOBE Program, 2005

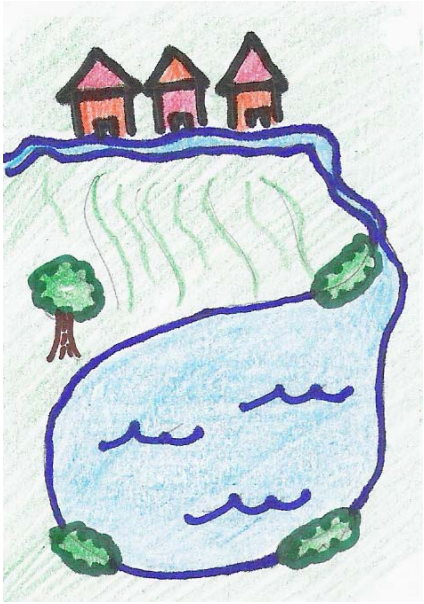
This activity will familiarize students with local hydrology through visual surveys and raise questions about land use and water chemistry issues.

Objectives-

- ✓ Understand local hydrology and local hydrologic issues
- ✓ Relate visual survey information to water related issues in the community
- ✓ Raise questions about aspects that may require further investigation

Estimated Time-

- ✓ 1 hour in the classroom
- ✓ Field trip time



Material

- ✓ Drawing materials for making sketches of the site
- ✓ Compass
- ✓ Measuring tape
- ✓ Other suggested materials: camera or video recorder, plant and animal guides, binoculars

Classroom Preparation-

1) Begin to collect materials pertaining to your hydrology site such as:
    a. Topographic and other maps
    b. Satellite imagery of your site (GoogleEarth provides great imagery)
    c. Newspaper articles, etc., about local water issues
    d. Local plant and animal guides
    e. Invite local experts on water issues to visit your classroom (optional)

Procedure-

1) Ask students about their knowledge of local bodies of water. Begin with questions such as:

    1) Is there a lake, river, pond or stream that you visit?

2) What is your favorite past time at this place?

3) Why is this body of water important to you?

4) Look at maps of the local area to identify water sites

5) Researching water in the community through newspaper articles, periodicals, or books; reports from local, state or federal agencies; or other written sources

6) Interviews with long-time residents of the community about what they remember about your hydrology site

7) Discussions with local experts on water from local agencies or Professors from the Environmental Science Department at Skidmore College.

2) Take a field trip to your Hydrology site:
    1) For beginning levels:

        i. Have the students walk around, observe and ask questions about the water in the site. This includes noticing the direction of flow, the presence of ponds or lakes, residual water from precipitation, springs and soil moisture.

        ii. Encourage students to focus on water in all its forms as they walk around the study site.

        iii. Take a container and collect a sample of the water, ask students to observe the color of the water, whether the water is moving and how fast, what is near the water, whether they can hear the water while they are quiet, whether the water has a smell, whether the water is clear or cloudy.

        iv. Have the students draw pictures and/or take notes about the location and size of the study site. Compare the water location to other features on their study site such as trees, hills, etc. Have your students ask questions about where the water came from.

    2) For intermediate and advanced levels:

        i. Assign teams of students to survey different sections of the hydrology site. In teams composed of a journalist, a sketcher, and a photographer, students should begin to document what they observe about their section.

ii. What is the appearance, smell, and nature of the water in their section? Bordering lands should be noted such as urban, agricultural, residential, wooded, and wetlands.

iii. Students should map the general contours and characteristics of their sections and record the wildlife and plants in and around its water. What is the slope of the land adjacent to their section of water?

iv. Back in the classroom, students should create a composite display of all sketches and maps. Look for similarities and differences and discuss observed patterns. Based on their observations, encourage students to think about how the water got to this location, how it flows through the study site, where it goes from there, how the area surrounding the water influences the properties of the water particularly during periods of rain, snowmelt and flooding.

v. What questions do they have? Record them on a poster on the classroom wall.

Concluding Discussion Questions-

1) Did you see any discharge into your water body?

2) What land-use activities did you observe and list?

3) How do you think these activities would change the water characteristics?

4) Would these activities influence water properties?

5) What type of water appearance was recorded most often and what might this indicate about the water?

6) Was there evidence of human uses of the water?

7) Is there evidence of wildlife and other animals using the water?