

Taughannack Falls State Park Activities Day 8th Grade Physical and Earth Science Students

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Photo Credit: Laurie Van Vleet**

Overview : This is a half day to all day program for an entire grade at Taughannock Falls State Park . Thirteen different sessions, such as geology walk, digital photography, fishing, macroinvertebrates, and boat races, are happening concurrently so that each session has 12-20 students participating. Each session has two adults, usually a teacher and a parent or other community volunteers. Each child will participate in at least three different sessions depending upon how much time you have. When we piloted the program on October 3rd , 2008, there were 168 students and 40 adults including all of the 8th grade teachers, guidance counselors, special ed aides, parents, and community volunteers. Each child participated in three different sessions, followed by lunch and a recreation session. There were also pre-and post-field trip activities conducted in different classrooms on such topics as the geologic history of the area, GPS use, and history of the formation of the local parks.

Community Partners:

Christine Smith, Naturalist: Finger Lakes State Parks
Sheila Myers: Education Outreach Coordinator, Finger L akes Institute, Hobart William Smith
Karen Edelstein: GIT Ahead Program Manager, Hobart and William Smith Colleges
Ken Rosenberg Cornell University Ornithology Lab
Bob McGuire Cayuga Bird Club
Richard Kissel and Trisha Smrecak: PRI
EMS (kayaks)

Objectives: This kind of program has many different objectives. We introduce the students to a number of different concepts, such as erosion, sedimentary rocks, fossils, digital photography technology, and stream velocity, which will be covered during the year's course work in science, technology, and math. We can then refer back to this common experience when we reintroduce the material in class. It is an opportunity for students to have hands-on experiences in the local environment, thus exposing them to activities that they could consider on their own. Current research indicates that fewer and fewer children have regular outdoor experiences. One major understanding of environmental action is that until one is intimately familiar with one's

surroundings, only then can one take the steps to protect those surroundings. This program is an attempt to offer a step towards that familiarity. In addition, this program was offered early in the school year as a way to encourage bonding among students of this grade. Since sessions changed every hour and they were configured without attention to prior friendships, students had the opportunity to work with many of their different fellow classmates.

Schedule:

9:05 am and earlier: Arrive at school

9:05-9:15 am: Load buses alphabetically (Students were told ahead of time which bus to be on. Attendance was taken on each bus and turned into the office before leaving.)

9:40 am: Arrive at the park and sort into first session (explained below)

10:00 – 10:45 am: First session

10:45 – 11:00 am: Hot chocolate and resorting

11:00 – 11:45 am: Second session

11:45 – 12:00 noon: Hot chocolate and resorting

12:00 – 12:45 pm: Third session

12:45 – 1:15 pm: Lunch and recreation time (includes rock skipping contest, soccer, frisbee, relaxing). Note: Since the weather was chilly, we had fires going in two pavilions, but in the end, it warmed up enough and we did not need to use them.

1:20 pm: Load buses and return to school. Note: Our district requires that we are done with field trips by 2:00 pm because buses need the afternoon elementary bus runs. This is a major limitation and caused us to rush the morning. Our evaluation of the day after the event concluded with our hope of changing this in the future possibly using other forms of transportation to get the kids back later in the afternoon closer to their own school dismissal time.

Sessions:

A. Beach Stones - Building Challenge Limit: 20 students

Teams of students will compete to create the tallest rock tower in a certain amount of time. Winners will get a prize. Prizes awarded for: 1. Tallest – skinniest, 2. Tallest – widest at top; 3. Most beautiful/creative; 4. Most architecturally interesting. Each team will be given some basic architectural design information and a bag of marshmallows to use as a construction material (mortar). Students can also use any materials found on the beach. Winning structures must meet certain criteria.

B. Birding Quest Limit: 10 students

Join several local ornithologists in a quest to discover the birds of Taughannock State Park . Be prepared to use your visual and auditory powers of observation to help us locate and identify as many different species of birds as possible. Using binoculars and possibly spotting scopes, we will be searching the lake, the sky, and the trees for birds of all kinds.

C. Bugs in the Water: Macroinvertebrates Limit: 20 students

Using nets, students will collect bugs, like mayfly nymphs and caddis fly larva that live in the creek under rocks and along the bottom. Identify and count the different organisms and use this information to gain an understanding of the health of the creek.

D. Boat Racing Limit: 20 students

Do you like building and design? Do you like to play in the water? Then come build a model boat and race it down Taughannock Creek. Use a variety of different building materials to create your boat on site at the creek. Prizes will be awarded in several categories!

E. Digital Photography Limit: 15 students

Join us to take pictures of our field trip at Taughannock Park . We will be using digital cameras and will be conducting student interviews. Our goal is to document the many different activities the students will be participating in during the day. Bring along your own digital camera if you have one.

F. Fishing for Beginners: Limit: 15 students Come learn the basic skills of fishing including casting, baiting, reeling in, and landing a fish. We will be fishing for pan fish off the piers at Taughannock.

G. Fossil Hunt Limit: 20 students

Come learn about fossils, what they are, how they were formed, how to identify them, and how they are different in various places in a rock wall. Search through buckets of rock to find, identify, draw, and count.

H. Geology Walk (Note: Don't chose this one as everyone will do this as one of their sessions) Since this will be offered at the same time in three different groups, it wall be listed as Geology Walk A, B, or C **Limit: 20 students**

All students will participate in this activity. You will hike along the gorge trail next to Taughannock Creek. Part of the hike will take you out onto the creek bed where we will stop at different locations to discuss interesting geological features. One of the stops will be at the base of the falls. All students will need to bring good walking/hiking shoes for this activity. Students will record their observations and conclusions in their field notebooks.

I. GPS/Geocaching Limit: 20 students

Discover the world of navigation with GPS, the global positioning system, a free resource that uses communication between hand-held units and 20+ satellites circling the globe. In this geocaching activity, students will learn the power of hand-held GPS units to direct them from one hidden cache (treasure) to the next, and see how, in many cases, GPS can be a better tool for orienteering than a simple compass can be. GPS is not just a gadget to help guide your car trips. It can be used for navigation on water, and out in the field...and in recreational geocaching hunts almost anywhere in the world.

J. Kayaking Limit: 12 students

Enjoy the serenity of Cayuga Lake this fall season by learning how to Kayak. The first part of the session we will cover the basics of Kayaking: Turning, entering and exiting the boat, safety, etc. The second half of the session will be a kayaking trip. Please note that this class will be taught at an introductory level.

K. Nature Haikus Limit: 20 students

Students will be writing haikus. A haiku is an unrhymed Japanese poem in which each line has a certain number of syllables (5-7-5). Haikus are usually based on some aspect of nature, so students will use their observations of Taughannock Park to write haikus in their field journal. They will also be encouraged to include a sketch to accompany their haiku.

L. WILL IT Sink or WILL IT FLOAT ? Limit: 20 students

Students will explore the concept of buoyancy by participating in the following activity.

Ten items will be selected for students to observe and fill out a chart identifying properties of the items and then predicting whether it will float or sink. They will make predictions for all ten items. An adult placing the item in the water will test the first five items. Students will record the outcome and then have an opportunity to change any of their predictions for the remaining items. At the end of the activity students will try to collectively or in pairs write a conclusion for why some of the items floated and some sank.

Organization and set-up prior to the event : Teachers met in late summer to brainstorm the overall set-up and ideas for sessions. A date was selected and buses arranged. Extra volunteers were recruited to help. (It should be noted that from idea to date of program was 5 weeks). Students were given permission slips two weeks prior to the date of the program. We included requests for parent assistants on this permission slip. Ten days prior to the program, students were given lists of the possible sessions and asked to rank their first four choices. Note: Each child took Geology Walk as one of their three sessions. Thus to accommodate all of the students, three different Geology Walks up Taughannock Falls gorge were conducted each session. Students filled out these sheets in their science classes. Here is a copy of that sheet. Note how the

name appeared five times, one for the Geology Walk and one for each of their four choices. We then cut these into five different cards that could be sorted. When sorting we tried to accommodate their first two choices, but this was not always possible because kayaking filled up fast. All students were able to get two of their four choices. When sorting, priority was getting kids into activities they wanted to do, not making all the sessions even numbered. Thus **Digital Photography**, which was limited to 15 students because of equipment availability, had 15 students each session and **Sink or Float** which was less popular had 7 students each session.

Name _____

Session: Geology Walk

-----cut

Name _____

First Choice _____

-----cut

Name _____

Second choice _____

-----cut

Name _____

Third Choice _____

-----cut

Name _____

Fourth Choice _____

-----cut

To complete this sorting by choices, it took two teachers two hours. We used one classroom and laid out the choices for each session. Thus one set of tables had 13 pieces of paper, each one titled with a session heading and labeled with the student limit for each one. There were three sets of tables, one for each time period. As we placed a student sort card on a sheet, we slashed

off how many students were in that sessions. Attention had to be paid to making sure that each student had a class for each time period, first, second, and third. At the end, we counted each group of students in each session per each time period and made sure that it all cross referenced....that each time period had the same number of students.

Once this all was even, we stapled the sorting card to the session and then entered all of the information into an excel data base. The names of the 8 th grade students were emailed to us ahead of time. We completed the database by session. Thus all the students in Geology Walk A were found and Geology Walk A was added to their name.

Here is a sample:

Student Name	Session #1	Session #2	Session #3
Amouse, Jane	Geology Walk	Fishing	Fossil Hunt
Around, Bill	Kayaking	Geology Walk	Bugs in Water

By putting this in a database, we could sort by session to get class lists for each session to give to the instructors and we could sort by students and select a sort mode so that we could print each kid's schedule. Entering all of this into a database and printing lists and records, took the most single amount of time, from start to finish about five hours. This step also allowed us to catch any errors, such as having a student scheduled for two second period classes and no third period class.

The final step of the pre-planning, was taking each kids schedule and stapling it to a two pocket folder and organizing these by their first period sessions. In the folder was the following: a map, an evaluation form, and questions/directions for each of the sessions that they were in. These session questions had been created, collected and printed by the teachers prior to this final sorting activity. Students only had the questions for the sessions that they were enrolled in. Students also were given a copy of their schedule in science classes the day before attached to a note about reminders of what to bring....lunches, warm clothing, change of clothing for kayakers, cameras, etc. These questions are listed at the end of this lesson.

Event Day Organization:

Ten teachers, the parents, and the community volunteers went directly to the park to get set-up. The remainder of the teachers escorted the students on the buses. When the buses arrived, the students disembarked and went directly to hub central. This is the organizational hub for the day. Here the students found 13 tall poles each labeled with the sessions. The poles were in a large circle approximately 50 feet in diameter. The students went to the flag pole of their first session where they found their instructors and parent assistant. Attendance was taken and folders handed out. Attendance as turned into the hub central table. This table was covered by four parents.

Their tasks included checking attendance off of a master list, making hot chocolate (we provided the equipment for this), handing out sweatshirts to cold kids, escorting kids to the bathroom, and then to late classes.

Once attendance was turned in, the groups would be lead away by the instructors to the location of their session. In the case of many such as *Digital Photography*, *Geology Walk*, and *Birding Quest* , this involved a variety if locations. Students were asked to complete the questions for their sessions while they were involved in the activity. At the end of the session, instructors returned their group to hub central and the sorting process began again. At the end of the day, everyone returned to this point, where they had left their backpacks and lunches under a tarp (we had forecasts of rain). We served hot chocolate at the end of sessions one and two.

Safety:

Each session had at least two adults so that the ratio of adult to student was at least 1:10. If a student needed to leave a session for purposes or bathroom or first aide needs, he or she was escorted by the second adult in that session. No students were allowed to cross route 89 unattended. We had a life guard for kayaking session and three other adults for supervision. To prevent hypothermia, kids in sessions that involved getting their feet wet were told to bring extra footwear. Kids in kayaking were told to bring a change of clothing. We also had fires going in two pavilions (a community volunteer kept the fires going) in case it got so chilly or rainy that we needed to get kids out of the weather.

Evaluation:

Students were asked to complete a through evaluation of the day. The large majority of the students ranked their overall evaluation of the day a 4 or 5 out of a 5. Likewise they ranked each of their sessions mostly in the 4 and 5 range. Kids wrote very positive comments in general, the biggest complaints being cold weather and wishing they had more time for their session. All the adults involved in the event were extremely positive and agreed to repeat the event next year.



Pre-and post activities:

A virtual field trip about the geologic history of Taughannock Falls gorge was conducted in science classes prior to the event. This virtual field trip can be found online on the Finger Lakes Geology blackboard site, in the Taughannock Falls State Park section under virtual field trips.

http://icsbb.ocmboces.org/webapps/portal/frameset.jsp?tab=courses&url=%2fbin%2fcommon%2fcourse.pl%3fcourse_id%3d_4408_1

GPS instructions and practice were also conducted in Earth Science classes prior to the event at Taughannock. Students learned about taking waypoints, compass directions, identifying latitude and longitude, and measuring elevation. Some of these students in turn took the session on GPS/Geocaching at Taughannock and were thus able to help their fellow students.

Social studies students learned about Robert H. Treman, local conservationist responsible for the creation of many of our local state parks. Here is a summary from the Social Studies teacher:

Our social studies preparation will be in class before the trip. We will work with primary sources and focus on two periods in history relating to Taughannock.

One time period we will look at is the 1920s, and the role of Robert Henry Treman in Ithaca and in the creation of the beautiful parks in the Ithaca area. Robert Henry Treman was associated with many important local institutions, including Cornell University and the Tompkins County Trust Company. He was a gifted athlete and visionary community leader. He and his wife bought up and donated land along several beautiful gorges, in order to preserve their beauty for public access. It was at a time period when inexpensive automobiles were increasing the opportunity of the general public to reach such locations. Learning about R.H.Treman will enable us to emphasize the difference one individual can make, philanthropy, the role of natural beauty in the quality of life, and the power of transportation technology to change patterns of everyday behavior.

The second time period focus will be the 1930s and the Civilian Conservation Corps, which (if we can determine whether and which structures were built by them) we will teach in the context of providing work programs for young men during the Great Depression. It will also make it possible for us to emphasize the value of skilled youth as the future of the nation. It will also demonstrate the connection between R.H.Treman's vision, and the follow-through needed to make it a reality of experience for the public.

The Social Studies standards that are embedded in this pair of lessons are:

Standard 1 -- History of United States and New York

Students will use a variety of intellectual skills to demonstrate their understanding of major ideas, eras, themes, developments, and turning points in the history of the United States and New York .

Key Idea 3: Study about the major social, political, economic, cultural, and religious developments in New York State and United States history involves learning about the important roles and contributions of individuals and groups.

Standard 3 -- Geography

Students will use a variety of intellectual skills to demonstrate their understanding of the geography of the interdependent world in which we live—local, national, and global—including the distribution of people, places, and environments over the Earth's surface.

Key Idea 1: Geography can be divided into six essential elements which can be used to analyze important historic, geographic, economic, and environmental questions and issues. These six elements include: the world in spatial terms, places and regions, physical settings (including natural resources), human systems, environment and society, and the use of geography.

Standard 5 -- Economics

Students will use a variety of intellectual skills to demonstrate their understanding of how the United States and other societies develop economic systems and associated institutions to allocate scarce resources, how major decision-making units function in the U.S. and other national economies, and how an economy solves the scarcity problem through market and nonmarket mechanisms.

Key Idea 1: The study of economics requires an understanding of major economic concepts and systems, the principles of economic decision making, and the interdependence of economies and economic systems throughout the world.

A final aspect to this event, involved creating a slide presentation from all of the images taken by the digital photography class and showing this to the 8th grade students as a community building activity. Students will be engaged in a follow-up discussion about how the day built on the *Circle of Courage..... Belonging, Independence , Mastery, and Generosity.*

[Student Handouts with Questions for Each Session](#)

[Evaluation Form for Students](#)