

Upper Valley Linkages for Environmental Literacy (UVLEL) Project

Teachers' names: Cindy Siegler & Jill Kurash

Grade level: 4

Unit title: A Forest Tells a Story

Essential questions addressed:

What can we learn about the history of Woodstock from our forests?

What evidence is there on Mt. Tom that shows that people have changed the environment?

How is the forest preserved on Mt. Tom?

How can a healthy forest be sustained?

GEs Assessed:

Science GEs

S3-4:6;4:7 Students demonstrate their ability to Analyze Data by interpreting patterns ...and provide an accurate explanation. (Succession forest activity)

S3-4:31 Students demonstrate their understanding of reproduction by investigating and describing a variety of plant and animal life cycles (Succession forests and stewardship)

S3-4:38 Students demonstrate their understanding of Classification of Organisms by describing and sorting plants... (Naturescope activities; brochure creation)

History GEs

H&SS3-4:8 Students connect the past to the present by explaining differences between historic and present day objects in Vermont and identifying how the use of the object itself changed over time and describes ways that life in the community and Vermont has both changed and stayed the same

H&SS3-4:11 Students interpret geography and solve geographic problems by observing, comparing and analyzing patterns of local and state land use

H&SS3-4:12 Students show understanding of human interaction with the environment over time by describing how people have changed the environment in VT for specific purposes...and identify...ways they can contribute to preserving environmental resources (History of Mt. Tom trips, picture comparison of olden days, History Fair presentations, brochure creation.)

Activities to Support Learning:

First two weeks:

Students will keep a science folder of keying and identification activities, parts of a tree, rings indicating age and lists of tree uses in class. (*Project Learning Tree, Naturescope*)

Third Week:

On a walk through the Mt. Tom forest, students look for evidence that people have been there. They identify stone walls, other types of fencing, presence of apple and other non-native trees, trees with scars, trees that have been cut down with chain saws, foundations and any other signs of past history. (Led Conservation Education Coordinator, Vt. Dept. of

Forests, Parks and Recreation, Rebecca Phelps & Marsh-Billings-Rockefeller Historic National Park Education Coordinator, Joan Haley)

Fourth Week:

Students are taught how to measure trees with a Biltmore stick and played a tree survival game(*Project Learning Tree*)

Fifth Week:

Approaching Mt. Tom from the King Farm, students identify various stages of forest succession by taking inventory of plants, trees, insects, mammals, amphibians, birds and other living things in designated plots in the forest. (*Project Learning Tree*)

Sixth Week:

Students compare data recorded about the two plots in the forest noting how the forest has changed over time.

Students write a "Recipe for a Forest" to show an understanding of how the forest evolves.

On-going:

Classroom discussions are held about current events pertaining to forests and the use of trees in Woodstock area. Students will draw leaves and cones in their journals using various techniques of sketching.

Seventh Week:

Students planted ten spruce saplings in a temporary garden until spring.

While showing the sustainability venn diagram on the floor, students discuss where to place activities in the over lapping rings of social, economic and environmental needs.

Students visit Marsh-Billings_Rockefeller National Park to learn the history of the founders and to work on maintenance of a new trail built by the YCC from Falkner Park.

Students respond to *The Lorax* and discuss stewardship. Students write a letter to a tourist persuading him/her of the value of trees to Woodstock.

Springtime:

Saplings are replanted on a hillside near the school to stop erosion.(Arbor Day pamphlet)

History Fair mentors work with groups on a "landuse" theme: surveying, maple sugaring, and forest history

Revisit MBRNHP to listen to 7th Graders' research on the history of the McKenzie farm.

Create a brochure for other schools to use citing common trees, animals, evidence of human involvement on Mt. Tom over the years, etc.

Join a celebration at the Park to share all of the achievements of district schools, who partnered with MBRNHP.

Assessments of learning

1. Given a data recording sheet completed in two succession forests, students will compare and contrast plots and comment on signs of use, both present and historically. (recording sheet attached)

2. After a hike with a forester observing the management of trees, students will be able to use a historic photograph of Mt. Tom to discuss the change in the landscape since 1890.

3. Students write a narrative identifying a problem a forest could have and then write about a logical solution to that problem.

4. To show an understanding of forest succession, students write a "Recipe for a Forest". Before beginning, brainstorm different cooking terms and forest ingredients. Students then create a recipe for the forest.
5. After reading Dr. Suess' The Lorax, students write a response to text. Students write about how the Oncler changes from the beginning to the end of the story and his awareness of environmental issues and sustainability.
6. Students will meet with a 7th Grade Class, who is studying the history of the McKenzie Farm on Mt. Tom and share what they have learned in their study of forests.

Length of Unit

Sept.-November 2010; March –May 2011
 (4-6hrs./week in the fall for 8 weeks)
 Spring 2011 (hard to determine)

Supporting resources:

Human Rources: Joan Haley, Place-based Education Coordinator, MBRNHP;
 Rebecca Phelps, Conservation Education Coorindator, Vt. Dept, of Forests, Parks and Recreation;
 Susan Sawyer, Naturalist / Artist/Educator,
 Lisa Kaija, Art Teacher: Ranger Marie Hanson, Marsh-Billings-Rockefeller Park Ranger,
 Rob Anderegg, Educator, Naturalist, 4 Winds Institute

Children's Books:

- Amsel, Sheri. *VERMONT Nature Guide*. New York: Pinto Press. 1998.
- Arnosky, Jim. *In the Forest*. New York: Lothrop, Lee & Shepard Books. 1989.
- Brandt, Keith. *Discovering Trees*. New York: Troll Associates. 2001
- Cherry, Lynne. *A River Ran Wild*. San Diego: Harcourt Brace & Co. 1992.
- Cherry, Lynne. *The Dragon and the Unicorn*. San Diego: Harcourt Brace & Co. 1995.
- Dahl, Roald. *The Minpins*. New York: Viking Penguin. 1991.
- Dr. Seuss. *The Lorax*. New York: Random House. 1971.
- Giono, Jean. *The Man Who Planted Trees*. Vermont: Chelsea Green Publishing Co. 2005.
- Locker, Thomas. *Sky Tree*. China: Harper Collins Publishers, 1995.
- Podendorf, Illa. *TREES*. Chicago: Childrens Press. 1982.
- Ray, Mary Lyn. *Christmas Farm*. Florida: Houghton Mifflin Harcourt Publishing Co. 2008.
- Sohi, Morteza E. *Look What I Did With a Leaf*. New York: Walker and Co. 1993.

Usborne Conservation Guides. PROTECTING Trees & Forests. Oklahoma: EDC Publishing Co. 1991.

Waldman, Neil. The Never-Ending Greenness. New York: Morrow Junior Books. 1997.

Teacher's Resources:

AIMS Foundation, The Budding Botanist, Fresno, CA. 1993

Holland, Mary. Naturally Curious. Pomfret, VT: Trafalgar Square Books. 2010.

Orr, David W. Earth in Mind. Washington, D.C.: Island Press. 1994

President's Council on Sustainable Development. Education for Sustainability. Washington, D.C.: U.S. Government Printing Office. 1994.

Project Learning Tree. Exploring Environmental Issues: Focus on Forests. Washington, D.C.: American Forest Foundation. 1995.

Project Learning Tree. Environmental Education Activity Guide. Washington, D.C.: U.S. Government Printing Office. 2006.

Project Learning Tree: Forest Ecology. Washington, D.C.: American Forest Foundation. 1996.

Project Learning Tree. Forests of the World. Washington, D.C.: American Forest Foundation. 2008.

Ranger Rick. Nature Scope. Trees Are Terrific. Washington, D.C.: National Wildlife Federation. 1985.

Sobel, David. Beyond Ecophobia. Great Barrington, MA: The Orion Society. 1996.

Watts, May T. Tree Finder. Nature Study Guild. 1963.