

A Trail to Place-based Service Learning Curriculum

Start Here!

Big Idea
 What is the main idea you want your students to come away from the unit knowing? *Our schoolyards, local trails, and the Appalachian Trail MEGA-transect provide an excellent opportunity to study ecosystems. By engaging in place-based, service learning activities with exotic-invasive and native plants, students will develop an understanding of a real-world problem, possible solutions, and be empowered to make a difference.*

Youth Voice
 How will you guide your students to express ideas, be involved in project decisions, and evaluate outcomes?

- Guide students in a discussion in which they generate rules & expectations for an outdoor classroom.
- Think, pair, share strategy throughout
- Writing for real audience (principal, school board, newspapers, web)
- Survey & communicate with local horticultural experts.

Partnerships & Benefit(s)
 Who are potential community partners that could assist you in this project? *ATC- Julie Judkins, CMC, John Murphy – Bullington, School Community, Hot Springs Elementary School, Jen Pharr-Davis, Carl Sandburg National Historical Site, local nurseries*

What are the potential benefits for your class and your partners of working together?
Management and eradication of invasive-exotic plants in our communities. Reintroduction of native plants; restoration and expansion of school gardens. Healthier wildlife habitats. Student, family community ownership and awareness.

Project Name: Plant Patrol
Teacher(s):Becky Ledbetter-Gardner, Jan Onan, Kate Fisher
Grade Level: 3rd grade
Time Frame: School Year 2008-2009



State Standards/Outcomes
 Which elements of the state framework of standards does this unit address?
This unit will utilize standards from different subject areas to form an integrative approach to a place-based service learning curriculum for 3rd graders.

What are the skills and outcomes you are working towards?

- 📖 Science: 1.02, 1.03, 1.04, 1.06
- 📖 Social Studies: 1.01, 1.05, 3.01, 4.04
- 📖 Informational Skills: 1.08, 1.09, 1.10, 4.01, 4.05, 5.01-5.05
- 📖 Language Arts: 2.02, 3.01, 3.06, 4.04
- 📖 Math: 2.02, 4.01, 4.02, 4.03
- 📖 Computer Skills: 2.09, 2.11, 3.04

*Descriptions of standards are found on the attached page

Project
 What project(s) could your class undertake that would actively engage your students in learning about this theme? What could the final product be?
Students will participate in an experiential study of exotic-invasive species and native species with John Murphy of the Bullington Horticultural Center. After which, students will research a dozen local invasive-exotic and native plants. This information will then be used by the students to develop an educational brochure to be distributed through our schools, the Bullington Horticulture Center, Henderson County Visitor's Center, The Carl Sandburg National Historic Site, as well as local businesses and recreation areas. In May, ~ 50 students will travel to the AT in Hot Springs to participate in a plant control service project.

Resources
 Describe resources (books, articles, materials, supplies) you will use to support this unit? *Clear Creek and Upward received a 2008 TTEC grant in the amount of \$1,000.*

See attached Pathfinder and booklists Also: Bullington Horticultural Center, Equinox Environmental, Appalachian Trail Conservancy, Southern Appalachian Man and the Biosphere Hands On the Land National Wildlife Federation Carolina Mountain Club volunteers Henderson County Master Gardener volunteers Assorted Free Periodicals from USDA, NCWildlife, etc.

Your Evaluation of the Unit
 How will you evaluate the unit and make note of what worked well and what could be improved? How will you analyze and interpret project outcomes?

- Student pre-and post-tests
- Team and partner meetings and reflections
- Student journal entries, and products (PhotoStory & brochure)
- Student post-unit survey

Essential Questions (Content)
 What are the essential questions that will help guide students toward understanding the Big Idea?

- 📖 What makes a plant native?
- 📖 Why do some plants grow in some areas and not others?
- 📖 What are invasive- exotic plants?
- 📖 What invasive plants are found in Henderson County? Along the WNC part of the AT?
- 📖 Why are invasive plants a problem?
- 📖 What are possible solutions to the problem of exotic- invasive plants along the AT and WNC corridor?
- 📖 How can studying invasive- exotic plants along the AT help us with our own gardens and land in and around our community?
- 📖 What is citizen-science?
- 📖 What can we do to help with this problem locally?

Community Opportunities
 What opportunities or needs exist in your school or community that could be addressed by a student project related to your big idea for learning?

- opportunity for more parent involvement. Students and parents will learn together and apply what they learn in their own backyards.
- opportunity to strengthen community and school partnerships
- need to control invasive-exotics throughout our community to preserve natural heritage areas, biodiversity and protect agricultural areas.
- opportunity to connect with other communities along the AT.

Skills and Habits of Mind
 What are the academic or life skills students will gain from this unit? What habits of mind do you expect them to demonstrate? Think all disciplines.

- thinking like a scientist and steward of the environment
- working cooperatively
- understanding cause & effect
- making a difference
- communicate the importance of applying citizen science practices

Models
 How will students understand where they're supposed to get? What exemplars of student work will they see? What opportunities will there be for them to critique each other's work?

Student made brochure made in Harper's Ferry, WV SC-EPPC Invasive Plant Pest Species brochure Equinox Environmental and Bullington PowerPoint presentation on invasive-exotics. Participating 3rd grade classes at CC & UPW will apply and discuss shared rubric via e-communication tools.

Reflection
 How will reflection be built in to your curriculum and activities?

- journals – head, heart, hands model
- group sharing - bean bag, dart board, & graffiti board
- reflect from different perspectives
- take a stand

Final Celebration
 How will you celebrate the success of your unit and share its results with the school and community?

- Culminating field trip to Appalachian Trail in hot Springs, NC May 2008.
- Presentation of brochure and PhotoStory to Henderson County Public School Board.
- Student recognition in media.

Student Assessment
 How will you assess student learning? How will you know if they have met the goals for the established outcomes?

- Pre-and Post-Anticipation Guide (T-F)
- Completed student handouts
- Recognize invasive-exotics and apply proper control.
- Rubrics for creation and evaluation of brochure and PhotoStory multimedia presentations.
- Completion, publishing & distribution of brochure.

MSE-820-80, Trail to Every Classroom
Lebanon Valley College
Plant Patrol Curriculum Outline
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Program Theme: Plant Patrol: Invasive-exotics are threatening local ecosystems

Grade Level: 3rd grade teachers at two elementary schools collaborating with the library media specialists, and community partners

Goals of this project: Our schoolyards, local trails, and the Appalachian Trail MEGA-transect provide an excellent opportunity to study ecosystems. By engaging in place-based, service learning activities with exotic-invasive and native plants, students will develop an understanding of a real-world problem, possible solutions, and be empowered to make a difference. Students will integrate information skills practice with science, math, social studies, language arts and computer/technology goals to research the problem of nonnative invasive plants in our area in multiple sessions throughout the year. In the spring, they will participate in invasive-exotic control on a section of the Appalachian Trail near Hot Springs, NC and share what they have learned throughout the year-long project by creating a brochure to be distributed in our community and a PhotoStory to be shared with the school board, school community and other interested parties. The cost of the field trip to Hot Springs and the publication of the student-produced brochure will be covered by a \$1000 grant from TTEC. See Appendix A.

*For an overview of the project, please refer to **A Trail to Place-based Service Learning Curriculum Map** attached.*

Curriculum Description: This is the culminating project for participation in a *Trail to Every Classroom*, a 68 hour professional development workshop series that took place in three separate, but related workshops between April and September, 2008. This curriculum project was developed by a North Carolina Henderson County Public School team and is currently being implemented at Clear Creek and Upward Elementary school by team members:

Becky Ledbetter-Gardner, 3rd grade classroom teacher at Clear Creek Elementary
Jan Onan, HCPS sign-language interpreter and Carolina Mountain Club hike leader
Kate Fisher, library media specialist at Upward Elementary
with assistance from community partners, listed under resources.

Methods/Activities: Hands-on observation, discovery, and reflection strategies (journals, active group sharing using bean bag targeted discussion, graffiti boards and take a stand) nature journaling, e-mail or Edublog online discussions, research, planning, creation of brochure using Microsoft Publisher and multimedia presentation using Microsoft PhotoStory3 for documenting learning and educating the community, and field trips for experiential service learning.

Library Media Specialist Responsibilities will be to teach students about copyright, research, evaluating sources, and also for creating a display of information about both native and nonnative invasive plants in our area and along the Appalachian Trail. The media specialist will also team with the third grade teachers to help students synthesize information in a PhotoStory3 slideshow and Microsoft Publisher brochure.

Third Grade Teacher's Responsibilities will be to take classes outdoors for investigations both at the Bullington Center and in the schoolyard. Classroom teachers will conduct pre-activity sessions and sessions 1-5. Leaders will meet and use e-mail to discuss progress, share resources, and adjust lessons, as needed.

Carolina Mountain Club members and other community partners will contribute expertise and leadership as available and needed.

North Carolina Standard Course of Study Objectives

Answers: *What are the skills and outcomes you are working towards?*

- 📖 NCSCOS 3rd grade Science: 1.02, 1.03, 1.04, 1.06
- 📖 NCSCOS 3rd grade Social Studies: 1.01, 1.05, 3.01, 4.04
- 📖 NCSCOS 3rd grade Informational Skills: 1.08, 1.09, 1.10 , 4.01, 4.05, 5.01-5.05
- 📖 NCSCOS 3rd grade Language Arts: 2.02, 3.01, 3.06, 4.04
- 📖 NCSCOS 3rd grade Math: 2.02, 4.01
- 📖 NCSCOS 3rd grade Computer/Technology Skills 2.09, 2.11. 3.04

Science:

Objective 1.02

Observe and describe how environmental conditions determine how well plants survive and grow in a particular environment.

Objective 1.03

Investigate and describe how plants pass through distinct stages in their life cycle including: Growth, Survival, and Reproduction.

Objective 1.04

Explain why the number of seeds a plant produces depends on variables such as light, water, nutrients, and pollination.

Objective 1.06

Observe, describe and record properties of germinating seeds.

Social studies:

Objective 1.01

Identify and demonstrate characteristics of responsible citizenship and explain how citizen participation can impact changes within a community.

Objective 1.05

Suggest responsible courses of action in given situations and assess the consequences of irresponsible behavior.

Objective 3.01

Analyze changes, which have occurred in communities past and present.

Objective 4.04

Compare how people in different communities adapt to or modify the physical environment to meet their needs.

Information Skills:

Objective 1.08

Select and use independently, both within and outside the school, a variety of resources (print, non-print, electronic) and formats (print, graphical, audio, video, multimedia).

Objective 1.09

Recognize that ideas are produced in a variety of formats (print, graphical, audio, video, multimedia, web-based).

Objective 1.10

Identify characteristics and advantages of various media formats (print, graphical, audio, video, multimedia, web-based) for a specific task.

Objective 4.01

Identify information needs and formulate questions about those needs.

Objective 4.05

Gather information.

Objective 5.01

Respond to reading, listening, viewing experiences orally, artistically, dramatically, through various formats (e.g., print, multimedia).

Objective 5.02

Produce media in various formats (print, graphical, audio, video, multimedia) appropriate to audience and purpose.

Objective 5.03

Collaborate with others, both in person and through technologies, to identify information problems and to design, develop and evaluate information products and solutions.

Objective 5.04

Credit sources in all print, non-print, and electronic.

Objective 5.05

Apply fair use copyright guidelines (Copyright Law, P. L. 94-553) in all projects.

Language Arts:

Objective 2.02

Interact with the text before, during, and after reading, listening, or viewing by:

- setting a purpose.
- previewing the text.
- making predictions.
- asking questions.
- locating information for specific purposes.
- making connections.
- using story structure and text organization to comprehend.

Objective 3.01

Respond to fiction, nonfiction, poetry, and drama using interpretive, critical, and evaluative processes by:

- participating in creative interpretations.
- making inferences and drawing conclusions.
- reflecting on learning, gaining new insights, and identifying areas for further study.

Objective 3.06

Conduct research for assigned and self-selected projects (with assistance) from a variety of sources (e.g., print and non-print texts, artifacts, people, libraries, databases, computer networks).

Objective 4.04

Use planning strategies (with assistance) to generate topics and to organize ideas (e.g., drawing, mapping, discussing, listing).

Mathematics:

Objective 2.02

Estimate and measure using appropriate units.

- Capacity (cups, pints, quarts, gallons, liters).
- Length (miles, kilometers).
- Mass (ounces, pounds, grams, kilograms).
- Temperature (Fahrenheit, Celsius).

Objective 4.01

Collect, organize, analyze, and display data (including circle graphs and tables) to solve problems.

Computer/Technology Skills

Objective 2.09

Identify, discuss, and use multimedia tools (e.g., capture, create, edit, publish).

Objective 2.11

Investigate teacher-selected Internet resources about communities; discuss and compare findings for usefulness as a class.

Objective 3.04

Identify, discuss, and use multimedia to present ideas/concepts/information in a variety of ways as a class.

Social Studies Pre-Activity 1: Citizenship Discussion (may coincide with Constitution Day, September 17)

Students will use group brainstorming to discuss the Lesson Essential Questions: *What makes a good citizen? How can we actively and effectively participate in our democracy?*

Three large poster sheets are hung around the room. Students work together to answer the questions for each area: School, Self (attitudes and beliefs), Community (Social Studies Objective 1.01)

Social Studies Pre-Activity 2: Outdoor Classroom Rules and Expectations

Students will use group brainstorming to discuss and answer the Lesson Essential Questions: *What is an outdoor classroom? What rules would be helpful for participating in an outdoor classroom activity?*

A clear list of rules and expectations will be developed and followed during the introductory session to take place on the school campus or at Bullington Horticultural Center. (Language Arts Objective 4.04, Social Studies Objective 1.01, 1.05)

Assembly Pre-Activity 3: Learning about the Appalachian Trail and Setting Goals

Activating Strategy: Jen Pharr-Davis, Appalachian Trail record holder for women's assisted thru hike will visit each school and share her experience on the Appalachian Trail (her personal outdoor classroom) as well as guiding students through a process of setting personal goals. A large map of the Appalachian Trail will be put on display in the main hallway or Media Center, along with photographs and text highlighting plant and community facts along the trail.

Session 1: Identifying nonnative invasive plants in our schoolyard and area

Essential Questions: *What are invasive-exotic plants? Why are they a problem in our area?*

Anticipation Guide and pre-assessment: 10 question T/F quiz

This 1.5 hour session will be conducted by John Murphy, director at The Bullington Horticultural Center and Henderson County Master Gardeners. It needs to be done while leaves are on the plants, during September or October. It can also be done in late April for any classes unable to schedule in the fall. Sessions may be held at the Bullington Center or on the school campus. Photographs in a Powerpoint presentation and actual plant samples will be used. Photos of plants from the school campus may also be uploaded to Picasa, or another web-based photo site for sharing and analysis. Example:

<http://picasaweb.google.com/firepink17/UPWcampusPLANTS?authkey=IQAMbC6ZhXY#>

Each student will have access to a copy of the book, *Nonnative invasive plants of southern forests: a field guide for identification and control* by James Miller (2003).

Session Outline

1. Pre-assessment and introduction with new terms
2. Characteristics of native plants
3. Characteristics of invasive plants
4. Examine 5 invasive plants with check list (determining if woody, vine, broadleaf, approx. height, etc)
5. Examine 5 native plants (with check list)
6. Review identification of 10 plants
7. Do survey of small area (in small groups) determining presence of each plant
8. Review results & conclude (Science Objectives 1.02, 1.03, 1.04)

Session 2: Follow-up and vocabulary review. “What the heck is an invasive plant?”

Lesson Essential Questions: *When is a guest a pest? What makes a plant native? Why do some plants grow in some areas and not others? What are invasive- exotic plants? How do nonnative invasive plants impact natural ecosystems?*

Students will address language arts goals as they read the *Weeds Gone Wild* fact sheet: “What the heck is an invasive plant?” by Jil M. Searingen, National Park Service. (2007). Available at <http://www.nps.gov/plants/alien/pubs/index.htm>

The classroom teacher will aid in the interpretation of the material, helping students to translate it into even more “kid-friendly” language, (especially the section *How Bad Are Invasive Species?*). Students will use Thinking Maps or another graphic organizer to document further understanding about the following vocabulary terms: *native species, exotic species, invasive, biological diversity, biodiversity, natural ecosystems*

Creative Synthesis: Selected verses of the “The Weed Busters Theme Song” may be used to inspire students to write their own weed busting lyrics to a familiar tune. <http://www.nps.gov/plants/alien/weedsong.htm>
(Language Arts Objectives 2.02, 3.01, Information Skills 1.09)

Session 3: Create a checklist survey. Send to horticultural experts in the community

Essential Questions: *What invasive plants are found in Henderson County? Along the WNC part of the AT? Why are invasive plants a problem?*

Students will work with their teacher to create a cover letter and checklist survey to include the 25 invasive-exotics listed in the book, *Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control*, and any others identified on the school campus. In the cover letter, they will ask horticulturists to rate the top 5 nonnative invasives in our area. Students may also develop additional questions for the experts, e.g. *Are all *micanthus* varieties equally invasive? Why are some Nonnative invasive plants still being sold at locally nurseries? Can you suggest a native plant that could be reintroduced for each invasive-exotic that is taken out of an environment?*

See numbers 1-8 on the Resource List for experts to contact.

Upward classes will contact numbers 1-4. Clear Creek classes will contact numbers 5-8. When all results are in, they will be shared via e-mail and/or Edublog or a Henderson County Public Schools wiki. Students will graph results and share their graphs electronically. (Language Arts Objectives 2.02, 3.01, 3.06, 4.04, Information Skills Objectives 1.08, 4.01, 4.05, 5.03, Math Objective 4.01)

Session 4: Studying ecosystems and the impact of nonnative invasive plants within the AT MEGA-Transect.

Essential Questions: *What is citizen-science? What is a MEGA-Transect? What can we do to help monitor environmental conditions locally and along the Appalachian Trail?*

Students will read and discuss parts of The Appalachian Trail MEGA-Transect booklet (2008), including the Background, Citizen Science, Forest Health, Seasonal Life Cycle, Invasive Plant, and Rare, Threatened & Endangered Species sections. (Science objectives 1.02, 1.03, 1.04, Language Arts objectives 2.02, 3.06, Social Studies Objectives 3.01, 4.04)

Session 5: Using online tools to document or observe documentation of invasions and progress toward monitoring

Continue with the Essential Questions: *What is citizen-science? What is a MEGA-Transect? What can we do to help monitor environmental conditions locally and along the Appalachian Trail?*

Students will explore EDDMapS <http://www.eddmaps.org/> and Hands on the Land <http://www.handsontheland.org/> websites with their teachers. This can be done in the classroom using a data projector and computer connected to the internet.

(Science objectives 1.02, 1.03, 1.04, Language Arts objectives 2.02, 3.06, Social Studies Objectives 3.01, 4.04)

Session 6: Begin ongoing e-mail correspondence with other 3rd grade classrooms along the Appalachian Trail, including classrooms in Hot Springs, NC and Whitefield, NH

Students will exchange findings and compare and contrast ecosystems and plant communities in the different areas. *See resource list for partners.*

(Science objectives 1.02, 1.03, 1.04, Social Studies objectives 4.04, Language Arts objective 4.04, Information Skills objectives 1.09, 1.10, 4.01, 4.05, 5.02, 5.03, Computer/Technology objective 2.11)

Session 7: Ongoing Research on 5 Invasive-Exotic Plants and 5 Native Plants
(in classrooms, computer lab and library media classes)

Essential Questions: *Which invasive-exotic plants are growing in our school yard or nearby? Which invasive plants were considered the biggest problem by local horticultural experts? What is the impact on our local ecosystems?*

Students will work individually and in groups using print and online resources to answer the above essential questions. A pathfinder will direct them to appropriate resources online. See Appendix B.

Student handout: Resource Matrix

Link to the standards: In this lesson I will show that I can search for information in a variety of sources to answer my research questions. I will credit the source of my information.

TOPIC: Nonnative Invasive Plants

Research questions: What are the characteristics of the nonnative invasive plant I am researching? What are the impacts of this plant on local ecosystems?

My own related question(s): _____

Circle the keywords above that you will use in your search.

Use three different print or electronic resources and record your results here.

Source of Information (Title)	Type of Information (Format)	Rank the resources from 1-3 according to the usefulness in answering your questions. (1 is best)
A)		
B)		
C)		

Record answers to your questions on an attached sheet. Indicate where you found your information by placing an A, B, or C at the end of each note.

Session 8: Hands-On Math & Science Project: Growing Native Plants for the schoolyard from seed or seedlings

Students will work with John Murphy at Bullington to identify and obtain native plant seed or seedlings for the schoolyard gardens. They will use measurement and data tables to monitor growth as well as plan for spacing and planting them in the spring. (Science objectives 1.04, 1.06, Math objectives 2.02, 4.04)

Session 9: Synthesis Project: Creating an educational brochure for the community

What are possible solutions to the problem of exotic- invasive plants along the AT and WNC corridor? *How can studying invasive- exotic plants along the AT help us with our own gardens and land in and around our community?*

Students will collaborate to produce drawings, photos, captions and text for a two-sided color brochure using Microsoft Publisher. Several brochures may be created and evaluated using a student/teacher rubric. The best work will be combined into a final brochure which will be printed and distributed in key points throughout the community. (Information Skills objectives 1.08, 1.09, 1.10, 4.01, 4.05 5.01, 5.02, 5.03, 5.04, 5.05, Language Arts objectives 3.06, 4.04, Computer Technology Skills 2.09, 3.04)

Session 10: Service Learning Field Trip: Travel to the AT in Hot Springs, NC to participate in invasive-exotic control with CMC community partners as chaperones and leaders.

Students will walk a small portion of the AT and pull out Japanese Stiltgrass, cut Japanese Knotweed or other nonnative invasives as directed by The Appalachian Trail Conservancy Asheville office. (Social Studies objective 1.01, 1.05, 4.04)

Session 11: Synthesis Project: Creating a PhotoStory using photos from the whole project.

Third grade teachers and or media specialist will use student input to create a multimedia slideshow documenting the entire project. Student writing can be used as assesement and captions. (Computer Technology objective 3.04)

Session 12: Celebration: Sharing with the school board, parents, school community and media.

RESOURCES FILE for Plant Patrol: Invasive-exotic Plant Study

1) Resource Name: Bullington Horticultural Center

Contact Person: John Murphy

Address: 32 Red Oak Trail

Hendersonville, NC 28792

Phone Number: (828) 698-6104

e-mail: jmurphy@ncsu.edu

URL: <http://www.bullingtoncenter.org/center.htm>

2) Resource Name: NC Soil & Water Henderson County Office

Contact Person: Shaun Moore

Address: 999 High Country Lane

Hendersonville NC 28792-9313

Phone Number: 828-697-4949

Fax: 828-693-5832

e-mail: shaun.moore@nc.nacdnet.net

URL: <http://www.henderson.lib.nc.us/county/soil/>

3) Resource Name: North Carolina Extension, Henderson County Office

Contact Person: Cliff Ruth

Address: Henderson County Center

740 Glover St.

Hendersonville, NC 28792

Phone Number: (828) 697-4891

Fax: (828) 697-4581

e-mail: cliff_ruth@ncsu.edu

URL: <http://henderson.ces.ncsu.edu/>

4) Resource Name: Appalachian Trail Conservancy, Southern Regional Office

Contact Person: Julie Judkins

Address: 160A Zillicoa Street

Asheville, NC 28801

Phone Number: 828-254-3708

Fax: 828-254-3754

e-mail: jjudkins@appalachiantrail.org

URL: www.appalachiantrail.org

5) Resource Name: Mountain Horticultural Crops & Extension Center

Contact Person: Dr. Jeanine Davis and Dr. Thomas Raney

Address: 455 Research Drive

Mills River, NC 28759

Phone Number: 828-684-3562

Fax: 828-684-8715

e-mail: <http://www.ces.ncsu.edu/fletcher/>

URL: <http://www.ces.ncsu.edu/fletcher/>

6) Resource Name: Equinox Environmental Consultation and Design, Inc.

Contact Person: Lindsey Majer

Address: 37 Haywood Street
Suite 100, Asheville, NC 28801

Phone Number: 828-253-6856

e-mail: lindsay@equinoxenvironmental.com

URL: <http://www.equinoxenvironmental.com/>

7) Resource Name: Invasive Plants of the Eastern U.S.

Contact Person: James H. Miller, Research Ecologist, USDA Forest Service

Address: Southern Research Station, Auburn University, AL 36849

URL: <http://www.invasive.org/eastern/srs/>

8) Resource Name: Carl Sandburg National Historic Site

Contact Person: Connie Backlund

Address: 81 Carl Sandburg Lane
Flat Rock, NC 28731

Phone Number: 828-693-4178

Fax: 828-693-4179

e-mail: connie_backlund@nps.gov

URL: <http://www.nps.gov/carl/>

9) Resource Name: The Whitefield School

Contact Person: Janet Steinert, Assistant Principal

Address: SAU #36, 14 King Square
Whitefield, NH 03598

Phone Number: 603-837-9363

Fax: 603-837-2326

e-mail: jsteinert@sau36.org

URL: <http://www.sau36.org/whitefield.cfm>

10) Resource Name: Hot Springs Elementary School

Contact Person: Jannette Kendall and Debra Baker

Address: P.O. Box 246 Hot Springs, NC 28743

Phone Number: 828-622-3292

Fax: 828-622-3685

e-mail: jkendall@madison.k12.nc.us

URL: <http://geocities.com/nck12hses/HotSpringsElementaryWebPage.html>

11) Resource Name: Junior Master Gardener Program

Contact Name: Liz Driscoll

4-H Youth Extension Specialist,
Horticulture, Crops and Soil Science
North Carolina State University

218 Kilgore Hall, Box 7609

Raleigh, NC 27695-7609

phone: 919.513.7346
fax: 919.515.2505
liz_driscoll@ncsu.edu

Grade Level: K-12

Description of Service/Program: The Junior Master Gardener program promotes learning, success and service through gardening projects.

Additional Information: The "Growing Good Kids Excellence in Children's Literature" Book Awards Program selects three books each year that effectively promote an understanding of and appreciation for gardening and the environment.

URL: <http://www.jmgkids.us/index.k2?did=11866§ionID=10398>

12) Resource Name: Kids Consortium: Learning Through Community Involvement

Contact: Barbara Fiore, Educational Consultant

Address: KIDS Consortium

223 Main Street

Auburn, ME 04210

Phone: 207-784-0956

Fax: 207-784-6733

URL: www.kidsconsortium.org

Description of Service/Program: **KIDS** is an acronym for Kids Involved Doing Service-learning. It was founded in 1992 by Marvin Rosenblum as a non-profit organization dedicated to connecting classrooms and communities in ways that develop active citizens who take on real-life challenges in the places where they live. The website links to free resources in the areas of health, environment, voting & elections and school subject area. Educational consultants primarily serve the New England area, however they also publish excellent book resources.

Citations:

Miller, James H. (2003). *Nonnative invasive plants of southern forests: a field guide for identification and control*. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station.

Dufour, C. and E. Crisfield, ed. *The Appalachian Trail MEGA-Transect*. (2008) Washington, DC: U.S. Geological Survey.

Taylor, J. (2006). *Information Literacy and the School Library Media Center*. Westport, CT: Libraries Unlimited.

Appendix A:

2008 Trail to Every Classroom Grant Application

Contact: Becky Ledbetter-Gardner, 3rd grade teacher at Clear Creek and TTEC '08-09
Kate Fisher, Media Specialist at Upward and TTEC '08-09
Jan Onan, Carolina Mountain Club Hike Leader and Ed. Council, TTEC '08-09
Kristie Pace, 3rd grade teacher at Upward, collaborating with TTEC
John Murphy, Director, Bullington Horticultural Center collaborating with TTEC

Phone: Becky Ledbetter-Gardner 828-684-5302 (h) and 828-779-1542 (c)

E-mail: mountaingirl 5674@aol.com

Phone: Kate Fisher 828-692-0161 (h) and 828-606-9315 (c)

E-mail: fish-wein@ioa.com



Clear Creek Elementary, 737 N. Clear Creek Road, Hendersonville, NC 28792



Upward Elementary, 45 Education Drive, Flat Rock, NC 28731

Henderson County Public Schools



Project Title: PLANT PATROL

Grade Level: Grade 3 at Clear Creek and Upward Elementary

Subject Areas: Science, Information Skills, Computer Technology Skills, English Language Arts, Social Studies, Math

Project Description:	Third grade students from Upward and Clear Creek Elementary will research invasive and native plants as well as participate in plant identification class with John Murphy at the Bullington Horticultural Center. They will learn the characteristics and growing conditions of invasive/exotic and native species in order to answer the essential questions: <i>How do environmental conditions determine which plants survive and grow in a particular environment? (schoolyard, public lands and AT)</i> <i>What is the impact of invasive/exotic plants competing with native plants in a particular environment? (NSCOS Science Goal 1)</i>
Purpose:	To increase student and community awareness about this issue while meeting state curriculum standards. To guide students toward a place-based community service project that will develop a sense of stewardship and help solve a problem.
Goals and Objectives:	NCSCOS Science Goal 1, Obj. 1.01, 1.02, 1.03 NCSCOS Math Goal 4, Obj. 4.01 NCSCOS Information Skills Goal 4 & 5 all objectives NCSCOS Computer Technology Skills Goal 1, Obj. 1.11, 1.12, 1.13; Goal 2, Obj. 2.09, 2.10; Goal 3; Obj. 3.02, 3.04 NCSCOS Social Studies Goal 1, Obj. 1.01 NCSCOS English Language Arts Goal 3, Obj. 3.06, Goals 4 -5
Implementation & Timeline	OCT 2008 - Students will be introduced to the project topic by participating in a hands-on plant exploration class taught by John Murphy at the Bullington Horticultural Center in October. This is an approved field trip in our school system. Bullington is maintained by Henderson County Public Schools and Henderson County Education Foundation. These are some of our partners in the TTEC program. NOV 2008 through APRIL 2009 - Ongoing research and application of learning to produce a color brochure and a PhotoStory multimedia presentation. MAY 2009 – Field trip to the AT at Hot Springs, NC with CMC volunteers for trail maintenance to identify and help eradicate invasive/exotic plants along a section of the trail.
Community Served	Upward and Clear Creek communities, Bullington Horticultural Center, Henderson County, Carolina Mountain Club, Appalachian Trail Conservancy in the Hot Springs area.
Measure of Success	Production and distribution of brochure within communities listed. Production and sharing of multimedia presentation to school board, county commissioners and partners listed.

ATTACHMENTS: Letters of Support from Mr. Michael Pressley, principal of Clear Creek Elementary and Mrs. Rebecca Poplin, principal of Upward Elementary; Budget details

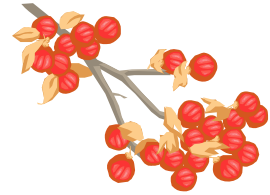
BUDGET for TTEC Grant 2008, Clear Creek and Upward Elementary

	DESCRIPTION	ESTIMATE
Personnel	Bus driver for field trip to AT access in Hot Springs, May 2009	\$160.00 (\$20/hour x 8 hours)
Materials/Supplies	We will use the library, internet and free materials from NC Fish and Wildlife and the NC Arboretum.	0
Transportation	Activity bus for one 3 rd grade class each from Clear Creek and Upward Elementary	\$375.00 (\$2.50 per mile x 150 miles)
Other: Printing of brochures for schools and community	Copy-Works in Hendersonville gave us a quote for 2500 glossy, color, duplexed brochures. These will be created by 3 rd grade students at school using Microsoft Publisher.	\$500.69 (\$35.69 overage to be supplemented by school PTO budgets or U-TOTES school account.
Totals		\$1000.00

Appendix B follows.

Invasive-Exotic Plants in Western North Carolina **A Pathfinder for locating more information on the internet**

October 2008



What is an invasive plant?
What is an exotic plant?
What is an invasive-exotic?

<http://www.se-eppc.org/>

<http://www.ncwildflower.org/invasives/list.htm>

<http://www.naturalinquirer.org/Invasive-Species-Edition-i-10.html>

What is a native plant? Nonnative?

<http://ncwildflower.org/natives/natives.htm>

<http://www.ncsu.edu/goingnative/>

<http://www.wildflower.org/teachers/>

Lady Bird Johnson Wildflower Center. Check out the Wildflower fun facts, Gardening and Landscaping with Native Plants, Wildflower Field Guide Plans, Hike Observation Sheets and Native Plant Growth chart.

What is a citizen scientist?
What do citizen scientists do?

http://www.equinoxenvironmental.com/ecology_project.cfm?proj=srs3&cat=#cat

What is a natural heritage area?

<http://www.blueridgeheritage.com/naturalheritage/index.html>

http://www.equinoxenvironmental.com/ecology_project.cfm?proj=srs3&cat=#cat

What kinds of problems do invasive-exotic plants cause in our region?
What are some possible solutions?

<http://www.nps.gov/plants/alien/>

<http://www.invasive.org/eastern/>

<http://tncweeds.ucdavis.edu/esadocs.html>

<http://www.se-eppc.org/southcarolina/scinvasives.pdf>

<http://www.se-eppc.org/northcarolina/>

<http://plants.usda.gov/java/noxious?rptType=State&statefips=37>