

A Trail To Every Classroom (TTEC) Curriculum Development Tool

UNIT DESIGN COVER SHEET

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School name, state and town: **Fort Chiswell Middle School,
Max Meadows, VA**



Title: **Reconnect to Nature**

Abstract/Vignette: *Students will learn about the importance of natural resources, explore and enjoy nature and be responsible for its continuance for other generations to experience.*

Grade level(s): Please check all that apply.

- K-2 3-5 6-8 9-12 College and Lifelong Learning

Discipline: Please check all that apply.

- Art and Music Health and PE Foreign Language
 Literature and Language Arts Mathematics Science
 Social Studies and Geography History Technology

Year Developed: **2009**

Period (month, week, year): **October - April**

Teaching environment:

- In the Classroom (indoors) On the Trail
 In the Community Online/Virtual

A Trail to Place-Based Service-Learning Curriculum

Connecting Youth & Communities **ATC**
Along the Appalachian Trail

Start Here! →

1. Big Idea

What is the main idea you want your students to come away from the unit knowing? **Students need to reconnect back to the natural world and learn about the importance of natural resources...**

7. Student Role (Youth Voice)

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

Hands-on-experiences, creation of poster, pictures, essays, informational material, power-point presentation, motivated group discussion, and student produced rubric.

2. State Standards

(Objectives/Anchors/ Outcomes)

Which elements of the state framework of standards does this unit address? What are the skills and outcomes you are working towards?

Life Science: 5,6,7,8,11,12,13,14

English: 7th grade- 1,4,6,7,9

P.E.: 7.1c

Health: 7.2

Music: MS2

Also Computer Technology, Math, Civics and Economics and Art...

6. Service 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? **Appalachian Trail Nature Club hiking on the AT and The Pioneer Trail (PT) and the Pond Project. Final products are: Nature Journal Book, AT and PT Photo Album, PT Brochure with map-Field Guide, PT creation and modification, Planting native plants, Chestnut Tree Project, Vernal pools.**

3. Essential Questions (Unit Objectives)

What are the essential questions that will help guide students toward understanding the Big Idea? **What is the Appalachian Trail and the Appalachian Trail Conservancy? Why are natural resources so important? How can we help to ensure nature to continue prospering? What is the pond project and The Pioneer Trail?...**

4. Community Connections

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? **Pioneer Trail and Pond Project, Recycling, Appalachian Trail in Smyth County, Leave No Trace, Go Green, Backyard Habitats, Appalachian Trail Nature Club, Outdoor Classrooms.....**

5. 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. **Openness of mind- willing to engage, problem-solving, intelligences at all levels, cooperation and appropriate behavior, community outreach, shared learning, safety and an active lifestyle.**

8. Partnerships & Benefit(s)

Who are the potential community partners that could assist you in this project? What are the potential benefits for your class and your partners of working together? **ATC, Forestry Service, VA chapter of Chestnut Foundation, Parent vol. and PTO, VA Cooperation Extension-4-H, Outdoor Club at VA Tech, AT Regional Office in Blacksburg, Wythe Co. Foundation for Excellence.....**

Benefits: on attached page...

9. Resources

Describe resources (books, articles, materials, supplies) you will use to support this unit?

On attached page.

10. Models & Examples

How will students understand the expectations for their project? What exemplars of student work will they see? What opportunities will there be for them to critique each other's work? **Rubrics, Example of Field Guide, Journals, Ideals through discussion, Exemplars: Plant signs, Nature Journals, Nature posters, pictures, Power Pt.....**

Opportunities: group critiques of field guides, journals and knowledge exhibited in these works, student discussion of their work.

11. Reflection

How will reflection be built in to your curriculum and activity(ies)? **Reflection about AT will take place at the end of the day before students leave the trail, Very open discussion- exposing of feelings, ideals, knowledge... students will record whatever comes to mind in their journals.**

Pond Project: Ongoing reflections of aspects of the pond study and daily reflection in nature journal.

RECONNECT TO NATURE

Patti Akers and Sue Porter

Seventh grade

Ongoing- tentative dates: October '09 to Apr.'10.

14. 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? **Ongoing note-taking, running account checklist-check off as completed, evaluation of journals, portfolio of students' work, analyzing and interpreting project outcomes, observation of students and student feedback .**

13. Final Celebration

How will you celebrate the success of your unit and share its results with the school and community? **Power-point presentation at PTO meeting, newspaper announcements, School and Community Picnic at the Pond with scheduled guided student tours, Nature Halls- decorating halls (school and community posters, pictures, art prints, chestnut trees at various breeding stages, essays)....celebrating nature.**

12. Student Assessment

How will you assess student learning? How will you know if they have met the goals for the established outcomes? **Teacher observation, Journals, Student Rubric, Discussions, Field Guides and the ongoing modification and maintenance of the PT and the Pond area.**

A Trail to Every Classroom

MSE 820-90

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Reconnect to Nature

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101 Pioneer Trail

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Seventh grade

Overview:

Students will learn about the importance of natural resources, explore and enjoy nature and be responsible for its continuance for other generations to experience.

They will benefit from their hiking experiences and activities on The Appalachian Trail. The seventh grade will gain knowledge about the AT and the Appalachian Trail Conservancy.

Skills learned will be openness of mind with a willingness to engage, problem-solving, intelligences at all levels, cooperation and appropriate behavior, community outreach, shared learning, safety and an active lifestyle. Students will participate in a service project which includes hands on experiences as they plant wildflowers and Chestnut trees, maintain the Pioneer Trail, and use their intellect to improve the condition of the school pond. Native and invasive plants will be identified.

This project trails across the curriculum and will produce products such as Nature Journal Book, AT and PT (Pioneer Trail) Photo Album, PT Brochure with map-Field Guide, creation of posters, essays, a student produced rubric, and a power-point presentation. Future plans include utilization of the “outdoor classroom” by teachers and community connections such as recycling, going green and backyard habitats.

Our overall goal is for our students to see and feel nature through new eyes.

A Trail to Place-Based Service Learning Curriculum Map: pages 1 & 2

Order of the numbers on the map will correspond with the following topics and numbers on pages 3 through 12.

Budget: page 13

Ongoing and future plans: page 14.

1. Big Idea continued....

Students should explore and enjoy nature and be responsible for its continuance for other generations to experience.

2. State Standards (Objectives, Anchors, Outcomes).....

Science

SOL6.5- The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human made environment. A key concept includes the importance of protecting and maintaining water resources.

SOL6.9- Investigate and understand public policy decisions relating to the environment, such as the management of renewable resources (water, air, soil, plant life, and animal life).

Life Science.1- The student will plan and conduct investigations enhancing process skills of observing, recording, measuring, and analyzing data.

LS.4- Investigate and understand that the basic needs of organisms must be met in order to carry out life processes; such as, plant and animal needs and factors that influence life processes.

LS.5- Classification of living things. Key concepts include the distinguishing characteristics of kingdoms of organisms, major animal and plant phyla and the characteristics of the species.

LS.6- The importance of the basic physical and chemical processes of photosynthesis to plant and animal life. Key concepts include energy transfer between sunlight and chlorophyll, transformation of water and carbon dioxide into sugar and oxygen, and photosynthesis as the foundation of virtually all food webs.

LS.7, 8, 11- Complex interactions occur within ecosystems.

LS.12- Investigate and understand the relationships between ecosystem dynamics and human activity. Key concepts include: food production and harvest; change in habitat size, quality, or structure; change in species competition; population disturbances and factors that threaten or enhance species survival; and environmental issues (water supply, air quality, energy production, and waste management).

LS. 13- Investigate and understand that organisms reproduce and transmit genetic information to new generations. Key concepts include the role of DNA; the function of genes and chromosomes; factors affecting the expression of traits; characteristics that can and cannot be inherited; and genetic engineering and its applications.

LS. 14- Investigate and understand that organisms change over time.

English

7.1- The student will give and seek information in conversation, in group discussions, and in oral presentations.

7.4- Read to determine the meanings and pronunciations of unfamiliar words and phrases.

7.6- Read and demonstrate comprehension of a variety of informational texts.

7.7- Apply knowledge of appropriate reference materials.

7.9- Edit writing for correct grammar, capitalization, punctuation, spelling, sentence structure, and paragraphing.

Physical Education

SOL 7.1- Demonstrate basic abilities and safety precautions in recreational pursuits such as hiking.

Health

SOL 7.2- Describe and exhibit the behaviors associated with a physically active and healthy lifestyles such as the importance of participating in recreational and leisure activities.

Music

MS .2- Students will sing and play music (Appalachian based songs).

Computer/Technology

C/T 6-8.5- Demonstrate knowledge of technologies that support collaboration, personal pursuits, and productivity. Work collaboratively and/or independently when using technology; practice preventative maintenance of equipment, resources, and facilities; explore the potential of the Internet as a means of personal learning and the respectful exchange of ideas and products.

C/T 6-8.6- Use technology to locate, evaluate, and collect information from a variety of sources.

C/T 6-8.7- Evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

C/T 6-8.8- Use technology resources for solving problems and making informed decisions.

C/T 6-8.9- Use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Mathematics

Data collection and analysis.

Statistics.

Dual measurement.

**Create a map of school grounds (PT and pond area) to scale
Grade 7th- identify real life applications of math principles and apply these to science and other disciplines.**

7.4- solve single step and multistep practical problems, using proportional reasoning; estimation.

Civics and Economics

CE.1- The student will develop the social studies skills citizenship requires, including the ability to create and explain maps, diagrams, tables, charts, and graphs and identify a problem and recommend solutions.

CE. 4- Demonstrate knowledge of personal character traits that facilitate thoughtful and effective participation in civic life by practicing responsibility, accountability, and self-reliance; and practicing respect for the law.

Art

Identification signs for plants.

Appreciation of nature prints.

AI.1- maintain a sketchbook/journal of ideas and writings to use as a resource and a planning tool.

AI.7- Use a variety of subject matter to express ideals in works of art.

AI.10- Demonstrate skill in preparing and displaying works of art.

AI. 14- Will identify influential artists.

2. (cont.)Skills and Outcomes

Enjoy Appalachian Music

Use a journal as a means of recording, understanding, researching, and self reflection.

Know the importance of recreational and leisure activities in the great outdoors.

Use safety precautions in hiking.

Appreciate and enjoy nature.

Identify plants and animals.

Understand the characteristics of a pond and pond life.

Have a basic knowledge of plant life.

Create maps.

Solve problems.

Practice responsibility- Leave No Trace

Understand and use basic math principles.

Use technology to enhance learning and as a presentation tool.

Develop a Field Guide for The Pioneer Trail

Learn about The Chestnut Foundation

Create The Appalachian Trail Nature Club (ATNC)

Learn about vernal pools

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3. Essential Questions (Unit Objectives) cont.

What does Leave No Trace mean?

What are some ways to explore nature on the AT, in class, and on the school grounds?

What organizations can help students reconnect back to the natural world?

What can we do at home in our own background to help?

What is a vernal pool?

How can we involve the community?

4. Community Connection (cont.)

Walking trail for the community.

Our school would like to build a closer, positive, working relationship with our community through Nature and be proud of what we accomplish together.

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5. Skills and Habits of Mind (on curriculum map)

6. Service Projects (on curriculum map) **Background & Explanation of projects:**

The Appalachian Trail

The Appalachian National Scenic Trail makes its path across fourteen different states as it travels through more than 60 federal, state and local parks and forests. Volunteers built the AT and still presently maintain the 2,170 miles from Maine to Georgia. First begun by Benton MacKaye in the 1920's and completed in 1930's; it is America's best known long distance footpath (www.appalachiantrail.org).

People lived in Southwestern Virginia as far back as 9500 BCE. In the early 1700's, the Europeans settled in SW VA. Abraham Wood of Petersburg, VA was most likely the first European visitor to the New River in 1654. William Byrd established Fort Chiswell fort near the end of the century to protect early settlers. Burkes Garden is one of the first lasting settlements. Located now in Bland County, it began early in the 18th century and is part of the VA section 37 of the AT.

Appalachian Trail Guide, Southwest VA, ATC, Harpers Ferry, West VA.

The Appalcahian Trail Conservancy

The Appalachian Trail Conservancy consists of volunteers who teach people about the trail, work with the land owners, and coordinate work of the maintenance groups.

Leave No Trace is a nonprofit organization who teach the seven principles so we and future generations can enjoy the AT without destroying it.

Appalachian Trail Guide, Southwest VA, ATC, Harpers Ferry, West VA.

The Appalachian Trail Nature Club

Our school group, The Appalachian Trail Nature Club, has 25 seventh grade students from Fort Chiswell Middle School. We meet once a month for about an hour and a half. The AT area our club will be visiting is in Atkins, VA and will be a school day trip. Rules, consequences, and safety precautions will be followed. Details about which point of the trail to enter are ongoing and we are corresponding with the AT regional office in Blacksburg.

By utilizing The Single Concept Field Trip, Teaching Green: The Elementary Years, 2005 Green Teacher Magazine, Clarke Birchard and Alan Crook, and nature journaling, students will reconnect to the natural world. They will freely explore, take pictures, and be prompted toward note taking, drawing and questioning. Students will be equipped with a camera, journal, poncho, packed lunches, backpack and “pocket” filled with writing and drawing materials. To provide guidance, they will be asked to concentrate on single concepts such as relationships, changes, signs of the seasons, nature sounds, movements, or adaptations...Nothing on the trail will be disturbed or collected. There will also be a free explore time to enjoy nature followed by quiet reflection.

The Pioneer and Trail project will be a good opportunity for hands on experiences, creating wildlife habitat and a wonderful place to enjoy and learn about nature. Fortunately, there is a pond located on the back section of Fort Chiswell High School and Fort Chiswell Middle School. A path is already in existence leading from the schools to the pond area.

In 1996, the water level of the pond was raised to increase the habitat and then vandalized. The FCHS Junior Achievement Economics class created the Operation Pond Project of 2000. The path and around the pond was mowed and maintained on a regular basis by the science classes. Sturdy benches were made and placed around the pond. Mulching was also added to the area. (April 2000, Jody Gibson-architect of benches, Teachers Judy Crouse and Tad Phipps supervised the project.

In 2005, the pines surrounding this area were harvested due to the beetle blight. Then 2,000 pines and 2,000 hardwoods were replanted but half were killed by drought. The VA Dept. of Forestry supervised a controlled burn and 40 different types of hardwood were planted. The Agriculture Dept. now wants to raise the water level of the pond so bluegills can be added. We will be working along with The Ag. Dept. on this venture.

The Appalachian Trail Nature Club will assist in maintaining the Pioneer Trail and adding the following wildflowers: Mayapple, Spring Beauty, Bloodroot, Trout Lily, Wild columbine, and Red Trillium. The VA Forestry Department will assist us in identifying the trees and plants which will be followed up by making signs. The pond water and soil will also be tested. The Forestry Department can guide us with problems such as the pond containing a lot of algae at times and professional identification of a vernal pool.

Students will construct a brochure with a map of the area drawn to scale and the recording of 4 plants, animals, and birds (Student Field Guide). There will be before and after pictures taken by the students and with the assistance of The Chestnut Foundation and Empire Chestnut Company, Chestnut trees will be planted. Decisions about beginning other projects and visiting Meadowview (main breeding work on chestnut trees) will be considered if time allows.

7. Student Role (on curriculum map)

8. Partnerships & Benefits (cont.)

Partnerships:

Empire Chestnut Company, Agriculture Dept. at Fort Chiswell Middle and High School, Dept. of Game and Inland Fisheries, Piedmont Appalachian Trail Hikers, NYLC, Division of Natural Heritage, Project Learning Tree, Audubon Society, Nurseries, Wal-Mart, National Park Service, Arbor Day Foundation, Charlie Chestnut Environmental Education Program, Lowes Charitable and Educational Foundation, Learn and Serve America and National Corporation of Community Service (grants), Virginia Native Plant Society (www.vnps.org), Virginia Naturally, American Folk-life Center, ttaonline.org.,-students with special needs, Appalachian Music Archives, Forest Gardening (www.ForestConnect.info).

Personnel Assistance:

Tad Phipps and Mr. Grimes- Agriculture teachers, Michelle Patton-ITRT, Rebecca McGhee-Art teacher, Frank Pugh-band teacher who composed Appalachian Sunrise, Mr. Edmondson- music teacher, Greg Miler-www.empirechestnut.com, Dr. Fred Hebard-fred@acf.org (Chestnut Foundation), Kathy Marmett (Chestnut Foundation), Betty Gatewood-www.gatewoodgraphics.com, Rita Hennessy-rita_hennessy@nps.gov and Laura Belleville-lbelleville@appalachiantrail.org., Jessica Liptak and Pat Woods.

Benefits:

New ideals, better methods of accomplishing goals, how to obtain a grant , a better understanding of how each group operates individually and cooperatively and how they can best help us, individual assistance to meet our needs, and support.

9. Resources

Belle Prater's Boy-Ruth White, classroom sets

Biography of Audubon

Rachel Carson books such as Silent Spring

Appalachian Culture books

Sketching in Nature

The Boy who drew Buds

Henry Climbs a Mountain

Lewis and Clark

Nature Journaling: Learning to observe and connect with the world around you- Clare Walker Leslie, www.clarewalkerleslie.com.

Book list of Nature Journalists

Science Explorer, Prentice Hall, Life Science

Articles: In the Footsteps of Audubon, Virginia's Disappearing Ponds, Variety of Going Green articles.

www.barebooks.com

Charlie Chestnut-www.charliechestnut.org., education about the American chestnut tree.

Charlie Chestnut vs. Buster Blight-CD

10. through 14 on Curriculum Map.

Budget :

Sue Porter & Patti Akers

	Description:	Cost Estimate:
Personnel	Tad Phipps, Jonathan Grimes, Rebecca McGee, Frank Pugh, Mr. Edmondson, Greg Miller, Dr. Hebard, Kathy Marmett, Betty Gatewood....	
Equipment	<i>Shovels</i> (6) <i>Hand Trowels</i> (8) <i>Rakes</i> (4) Out Building	20.00 each (120.00) 8.00 each (64.00) 15.00 each (60.00) 428.00
Facilities (rental)	None foreseen	
Materials/Supplies	<i>Water testing supplies</i> <i>Pond needs</i> <i>Soil Modification</i> - 5 bags <i>Wildflowers</i> <i>Chestnut trees</i> -12 <i>Nature Books</i> Informational material Poster boards Art supplies (markers...) Photo Albums -2 <i>Nature Journal books</i> - 125 Paper -various colors, sizes - 10 <i>Soil</i> - 10 bags Folders - 1 box <i>Plant Signs</i> - 15 Big Board <i>Mulch</i> 10 bags <i>Edging</i> <i>25 ponchos</i> <i>Field Guides</i> - 25 <i>Pockets with ruler, hand lens, pencils, compass, erasers, tape, colored pencils & sharpener</i> -25 Garden Cart Art prints <i>Flash Guides</i>	20.00 To be determined 15.00 1 bag (75.00) 40.00 4.00 ea. (48.00) 100.00 100.00 11.00 10.00 20.00 2.00 (250.00) 2.00 each (20.00) 5.00 1 bag (50.00) 7.00 25.00 25.00 4.00 1 bag (40.00) 20.00 5.00 each (125.00) 7.00 each (175.00) 100.00 total 70.00 100.00 6.00 (60.00)
Transportation	Driver's Pay	60.00
Other		
Total		2,220.00

Ongoing Plans:

The Appalachian Trail Nature Club was established and held its first meeting on October 22 with 20 seventh grade students. The following took place:

- overview of year 09-10**
- introduction of the Appalachian Trail, facts, maps,**
- introduction of the ATC and its many tasks and contributions,**
- field trip on school grounds- students learned how to observe nature,**
- paid particular interest to pond area, identifying plants, and the vernal pool.**

At the Nov. 25 meeting:

- field trip on PT trail and surrounding area, use of single concept,**
- students used nature journaling as a means to explore nature using their senses, emphasized how organisms change over time,**
- seasonal changes noted and discussed,**
- discussion followed inside, students used technology to enhance learning by researching topics they chose,**
- students drew the AT on a blank map labeling the states.**

Future plans for this year include:

Leave No Trace lesson, employ Forestry Service to assist us in identifying plants and pond study, make site map- field guides for visitors, study and plant chestnuts and flowers, water quality test on pond, photo albums, nature halls, work with high school to develop a plan of future action, and trip to the AT in Atkins.

Second year: develop walking trail for community use with signs and a kiosk for information, research projects and formulate plans to include more students and the community in nature activities, maintain PT and pond and revisit the AT, continue to utilize our partners, and former club members can assist other students and the community to learn about, enjoy and appreciate nature.