Title: Environmental Stewardship

Abstract/Vignette: The environment is precious to all of us. The environment is to be explored, appreciated and preserved.

Grade level(s): Please check all that apply.
- [ ] K-2
- [ ] 3-5
- [x] 6-8
- [ ] 9-12
- [ ] College and Lifelong Learning

Discipline: Please check all that apply.
- [x] Art and Music
- [x] Health and PE
- [ ] Foreign Language
- [x] Literature and Language Arts
- [x] Mathematics
- [x] Science
- [x] Social Studies and Geography
- [x] History
- [ ] Technology

Year Developed: 2007

Period (month, week, year): Ongoing

Teaching environment:
- [x] In the Classroom (indoors)
- [x] On the Trail
- [ ] In the Community
- [ ] Online/Virtual
CO-SEED—Following a Trail to Place-Based Learning

Big Idea
What is the main idea you want your students to come away from the unit knowing?
The environment is precious to all of us. The environment is to be explored, appreciated and preserved.

State Standards/Outcomes
Which elements of the state framework of standards does this unit address? What are the skills and outcomes you are working towards?
See attachment Sixth Grade Standards of Learning for the state of Virginia.

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

What does the environment do for us? What can we do for our environment?

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.

Students will learn the benefits of environmental stewardship.
Students will learn to evaluate environmental impact.
Students will make responsible decisions regarding environmental issues.

Vocabulary
What vocabulary do you expect children to learn through the unit?
Examples of vocabulary are: stewardship, conservation, preservation, environment, choice, quality, mega-transect.
Each discipline will have its own unique vocabulary words.

Proposed Unit Project(s)
What project(s) could your class undertake that would actively engage your students in learning about this theme?

Study local geography.
Perform water quality testing. Participate in World Water Monitoring Day.
Participate in the Appalachian Trail Mega-transect study.
Participation in the Growing Native Seed Collection.
Develop an appreciation for outdoor activities as lifetime sports such as hiking, backpacking, camping.
Integrate core academic skills into environmental education.

Community-Based Learning Opportunity
What opportunities exist in the school or community that could serve as an experiential and integrating focus for your students’ learning? Also include any opportunities for interdisciplinary learning.

Students have the opportunity to visit and study the school’s outdoor natural wildlife habitat.
Students participate in school clubs with a focus on environmental conservation, and preservation.
The clubs include: Growing Native Tree Club, Save Our Snakes, Bird Watching, Recycling, Ecology Club, Landscaping.

Virginia Game and Inland Fisheries provided an in-service for our science teachers detailing lessons for the outdoor classroom.
Field trips to: Appalachian Trail, Carver Senior Center, Water Treatment Plant.
**Project Name:** Environmental Stewardship  
**Teacher/s:** Marlene Jefferson, Inez Lemmert  
**Grade Level:** Middle School  
**Time Frame:** Ongoing  
**This is a pre / post plan (circle one)**

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**Related Texts**
- Which books or local source readings will you use to support this unit?
- Last Child in the Woods by Richard Louv
- Place Based Education
- Halfway to the Sky by Kimberly Bradley
- Step by Step Appalachian Trail Conservancy
- AT Trail Guides

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**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?

Students will respond to prompts in their Appalachian Trail Journal. Photographs of outdoor experiences will be displayed in our school. Students will write thank you letters to people who helped them explore the outdoors.

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**Activities**

What steps and individual elements or activities will your unit include?  
*See Attached guide.*

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**Analysis & Interpretation of Literature**

What will you ask your students to write as a response to the literature?

- Journal Writing
- Descriptive Writing
- Poetry

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**Product**

What will be the final class product(s) for this unit? How will you share it with the community?

- Participation in the on-going opportunities for environmental learning.
- Create display boards.
- Display a map of the AT in the main hallway of the school.

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**Assessment**

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

Student’s learning will be assessed by participation in the various environmental education projects.

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**Final Celebration**

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

- Newspaper coverage, Named a Virginia Naturally School, Recognition ceremony for Schools to Watch Distinction.
- Posted Certified Wildlife Habitat sign on the Outdoor Classroom.

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**Evaluation of Unit**

How will you evaluate the unit and make note of what worked well and what could be improved?

Formally and informally survey students, parents, and teachers about each activity focusing on accomplishments of goals and areas where enhancement is needed.
A Trail to Every Classroom- Place Based Education

Environmental Stewardship  Marlene Jefferson and Inez Lemmert
As a result of the “A Trail to Every Classroom” program, the staff at Blue Ridge Middle School in Loudoun County, Virginia implemented a school-wide environmental theme beginning in the fall of 2007. Teachers and students became actively involved in studying, appreciating, conserving and preserving the natural, local environment.

Environmental Activities at Blue Ridge Middle School

Teacher In-service on Placed-based Education
Every school year the faculty of Blue Ridge Middle School has a rejuvenating back-to-school retreat. This year the Placed-base Education team led a discussion on the significance of our environment in education. Each faculty member drew a map of their community when they were 11 or 12 years old, the same age as the students in our classrooms today. Teachers shared their map stories in small groups and in one large group. Then teachers compared their own communities with the communities of their students. The overwhelming conclusion was that our students experience a life much different for the lives the teachers had. The value of outdoor experiences was discussed and teachers agreed that place-based education is extremely important in our students’ development. After the discussion, teachers shared ways they already use place-based education in their curriculum. Teachers then discussed ways to expand place-based education experiences.

Some suggestions include:

- Use the Rust Library for genealogy research.
- Use the existing Outdoor Classroom for observation poems.
- Tour the water treatment plant in Purcellville.
- Visit the local bookstore in Purcellville with local authors.
- Take a walking tour of Purcellville and note the changes in ecology due to the development.
- Use the newly created Carver Center (Senior Citizen Center in Purcellville) for oral history. Students read to the senior citizens and vice versa. Students perform musical selections for the center during activity periods. This center is in walking distance of the school.
- Use the W&OD bike path in physical education classes.
- Study local Civil War history: Lincoln cemetery in walking distance of the school.
- Create displays featuring history of Blue Ridge Middle School use historical photos.
- Visit Bears Den on the Appalachian Trail for an outdoor experience
- Create scavenger hunt using a compass.
- Create a nature walk on the school campus using the five senses.
- Convert steps walked from miles into metric units.
- Have students create their own map of their neighborhood as the teachers did and compare.
**Cross Curricular Activities:**
TTEC participants chose a sixth grade team of 131 students and 7 teachers to implement their place-based lesson plans using the Appalachian Trail. A section of the Appalachian Trail is located less than 10 miles from Blue Ridge Middle School. This section has an area called Bears’ Den where there are a number of outdoor resources, such as a hostel, rock outcropping with a view of the Shenandoah River and Valley, nature trail, maintenance trail, and streams. Since few people in our school community are aware of this resource a cross-curricular learning activity was developed and implemented to raise the awareness and use of the Appalachian Trail. Lessons on geography, art, mapping, journaling, reading, environmental awareness, life-long fitness skills, and math were integrated to connect learning to the Appalachian Trail. In October the entire team went to Bears Den to experience the AT first hand. The following are the activities the students completed.

**Journaling:** In Language Arts, students use journaling to write about their experiences. The student’s experience on the AT was journaled through writings and drawings. Prior instruction was given on how to journal. Examples were shared with the students. Each student wrote or drew pictures about each activity on the AT.

**Physical Exercise (Hiking):** All students hiked a variety of trails around Bears’ Den and a section of the Appalachian Trail to the south of Bears’ Den. Trails ranged from easy to challenging. Many participants experienced the Appalachian Trail for the first time. This physical fitness activity made students and parents aware of the lifelong sport of hiking.

**Geography:** Students connected their study of the Regions of the U.S. to hiking one of the regions, the Appalachian Mountains.

**History:** Students toured the hostel at Bears’ Den and learned the history of the AT and the hostel.

**Thru Hiker:** Students met a thru-hiker and interviewed him.

**Creative Writing:** Upon returning to school students wrote a descriptive writing about their experience on the AT including a description of a thru-hiker.

**Water Testing:** Students participated in the World Water Monitoring Day, completing water testing on Spouts Run and its tributaries.

**Science:** Environmental SOLs were experienced hands-on by the students when they hiked the trail maintenance trail and completed the water testing.
**Growing Native Program:** Students collected seeds from the trees along the nature trail to be used in a Virginia Department of Environmental Quality Program. Seeds were sent to the state nursery to be cultivated into trees for reforestation along local water sources.

**Math:** Students used charts and other resources to compute distances, highest points, state with the longest part of the AT, etc. Students created and shared their own questions.

**Art:** Students learned and practiced the skill of sketching. The art teacher presented a lesson on sketching landscapes and buildings. Students sketched scenery at Bears’ Den.

**Outdoor Fitness and Recreation - Backpacking/Camping:** Students were instructed on essentials for hiking/backpacking and camping on the AT by the Mountain Club of Maryland and the Potomac Appalachian Trail Club.

**Safety on the Trail:** Students learned about the “Hug-A-Tree and Survive” program. Precautions to take when encountering dangerous plants, animals, and situations were also identified and discussed.

**Environmental Stewardship:** “Leave No Trace” practices were identified discussed practiced and evaluated.
Sixth Grade Virginia Standards of Learning Addressed With Unit

**History:**
USI.1b Students will develop skills for historical and geographical analysis, including the ability to make connections between the past and present.
USI.1f Students will analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events.

USI.2b The student will use maps, globes, photographs, pictures, and tables to locate and describe the location of the geographic regions of North America: Coastal Plain, Appalachian Mountains, Canadian Shield, Interior Lowlands, Great Plains, Rocky Mountains, Basin and Range, and Coastal Range.

**Oral Language**
6.1a The student will analyze oral participation in small-group activities, communicate as leader and contributor, summarize and evaluate group activities.

**Reading**
6.4f The student will read and demonstrate comprehension of a variety of narrative nonfiction and use information stated explicitly in the text to draw conclusions and make inferences.

**Writing**
6.6a The student will write narrative, descriptions, and explanations using a variety of planning strategies to generate and organize ideas and revise writing for clarity.
6.7e The student will choose adverbs to describe verbs and adjectives to describe nouns.

**Science**
6.5 The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment. Key concepts including the action of water in physical and chemical weathering; the importance of protecting and maintaining water resources.
6.7 The student will investigate and understand the natural processes and human interactions that affect watershed systems including the health of ecosystem, the location and structure of Virginia’s regional watershed systems; divides, tributaries, river systems, and river stream processes; water monitoring and analysis using field equipment including hand-held technology.
6.9 The student will investigate and understand public policy decisions relating to the environment such as management of renewable resources, cost/benefit tradeoffs in conservation policies.
Math
6.7 The student will use estimation strategies to solve multistep practical problems involving whole numbers.
6.8 The student will solve multistep consumer-application problems involving fractions and decimals and present data and conclusions in paragraphs, tables, or graphs.
6.19 The student will describe the mean, median, and mode as measures of central tendency, describe the range, and determine their meaning for a set of data.

Health and Physical Education
6.5 The student will identify and seek opportunities in the school, at home, and in the community for regular participation in physical activity.

Physically Active Lifestyle
7.5 The student will select and participate in physical activity to produce health-related benefits by analyzing the relationship between physical activity and stress management, and investigate ways to use physical activity to lessen the impact of stress.

Art
6.3 The student will use one-point perspective to create the illusion of depth in a two-dimensional drawing.
6.4 The student will depict the proportional relationships among the parts of the human body or among other objects.
6.6 The student will use appropriate art media and techniques to create both visual and tactile textures in works of art.