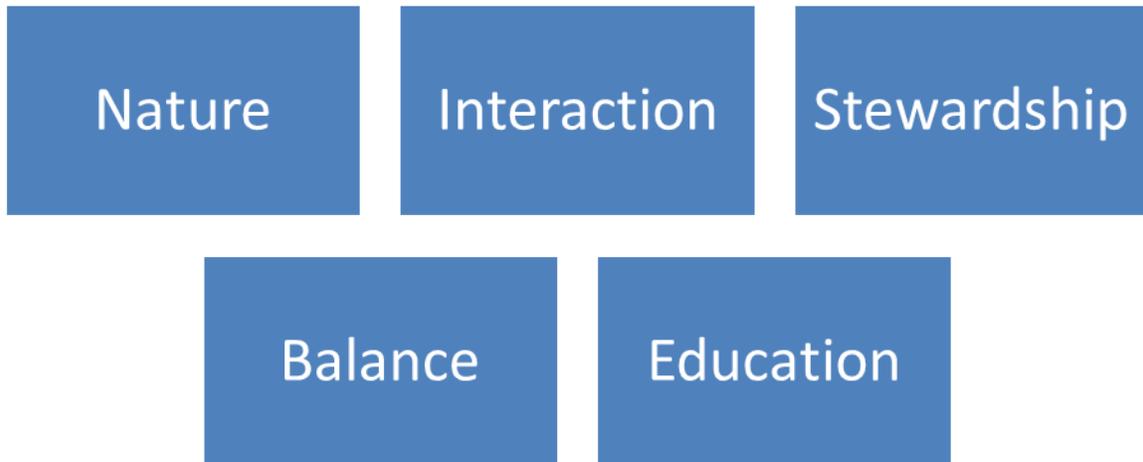


Tomorrow River Forest Education Plan



Developed by the Forest Education Committee

2010

**Produced under a 2009-2010 grant from the Wisconsin Environmental
Education Board**

MISSION STATEMENT

The Tomorrow River School Forests serve as a multiple-use, natural school and community resource, providing opportunities for people to develop awareness of and appreciation for the natural world, and to become informed responsible decision-makers regarding the environment.

RATIONALE

Value Statement

The Tomorrow River School Forests offer a unique natural resource learning opportunity that facilitates the development of ecological and social sense of place. Integrating environmental education (EE) into the curriculum is an effective method to increase student achievement, decrease behavior issues, and increase attendance (Lieberman and Hoody 1998). The Tomorrow River School Forests have the potential to become valued assets to both the Tomorrow River school system and the Amherst community as a whole. It can be an inexpensive, practical teaching and learning tool, a community event venue, and a direct connection to nature for all who visit there. To reach these goals the Tomorrow River School system must take the responsibility with the faculty to ensure proper training for the use of the forests.

***IN THE END WE WILL CONSERVE
ONLY WHAT WE LOVE
WE WILL LOVE ONLY WHAT WE UNDERSTAND
AND WE WILL UNDERSTAND ONLY WHAT WE ARE TAUGHT
-BABA DIOUM (SENEGAL)***

Target Messages

1. Humans directly impact the natural world.
2. Environmental education should be infused into all subject areas.
3. Increasing student awareness, knowledge, attitude, value, and participation for the environment is our goal.
4. Learning should be provided through direct hands-on experiences.
5. Both planned experiences and teachable moments should remain as part of an environmental education program.
6. Problem solving and other critical thinking skills are developed in environmental education experiences.
7. Environmental education should be a continuous, lifelong process, beginning at the pre-school level and continuing through all stages of a person's life.

School Forest Needs Assessment Results

Late in 2009, a survey was delivered to each of the teacher's in the Tomorrow River School District regarding the use of the school forests. The needs assessment was broken down into the following categories:

- School Forest Use
- School Forest Facilities
- School Forest Logistics
- School Forest Equipment and Materials
- Professional Development
- School Forest Administration

School Forest Use

It was found that only three of 75 teachers have taken students to the school forest on an intermittent basis and only 39% of the staff was even aware that we had three school forests.

Out of the 44 surveys collected, 26 teachers were interested in using the school forest and 18 were not.

The following areas were identified as ways that the use of the school forest could enhance classroom instruction or other school-related activities:

4K Forest Unit- Field trip to include tree I.D. and other studies	Poetry / journal writing
Outdoor leadership activities	“Soundtrack project” for music
Plants	Appreciation for nature
Health Science- Fitness	Hands-on Environmental Education
Hands-on learning	Ecology
Correlation with trip to CWES	Mammalogy
A great reference for life drawing	Birds
WI Curriculum/Science Connections- lumbering, food chains and webs	Insects
Build background knowledge for reading	Phenology
Animal Diversity	Biodiversity
Ecosystems	Soils
Arbor Day Celebrations	Ecological succession
Tree growth- tree renewal	Timber cruising
Math connections-measurement, surveying, costs, area, and acreage	Economics
	Stewardship projects

These topics and others will be addressed in the Educational Connections section of this document.

School Forest Facilities and Logistics

Based on the survey, the staff overwhelmingly felt that the following improvements would enhance the usage of the school forest.

Prepare a Map of the School Forests that includes directions to get there

Build restrooms

Build an education shelter

Improve existing trails and develop new trails

Build pond access

Develop a ski trail

It was felt by the staff that they would benefit from the establishment of a school forest coordinator, an established integrated EE curriculum and access to knowledgeable professionals such as a historian, and forester.

The following sections will be covered in subsequent sections of this document.

- School Forest Equipment and Materials
- Professional Development
- School Forest Administration

SITE DESCRIPTION AND OPPORTUNITIES

The Tomorrow School Forests consist of four forest plots. One is located by Lake Emily and called the Lake Emily Site, one is located on Lake Myers Road and is called the Lake Myers Site, one is located off of Pavelski Road and is called the Lutz Property and the fourth adjoins the west side of the school property and is called the Tomorrow River Environmental Education Station (T.R.E.E.S). The forests are comprised of mixed forest, pine plantations, and field and prairie areas.

Legal Description Lake Emily Site: 40 Acres

S ¼ NE ¼, Section 24: Township 23N: Range 9E

Legal Description Lake Meyers Site: 20 Acres:

E1/2 SE ¼ SE 1/4, Section 9: Township 23N, Range 10E

Legal Description Lutz Property: 21.5 Acres

The West 21.5 acres of the NW ¼ NW ¼, Section 7: Township 23N: Range 10

Legal Description of the School Property Site:

PRT S1/2 NE+N1/2 SE as described in 546/390 subject to easement 546/390 S21
Township 23, Range 10-3.3

Site History

In 1954 the Tomorrow River School District set in motion a process to purchase the first of three school forests. At the December board meeting, the board gave approval to purchase 80 acres of Charles Cashin's property, now known as the Lake Emily School Forest. In February, 1955 the School Board sold the two north 20's of the school forest property to Ray Kenowski. At the March 6, 1956 school board meeting the board approved the purchase of 20 acres of land from E. N. Wold for \$300.00. This is known as the Lake Meyers School Forest. During the next few years FFA members planted the forest with primarily Red Pine, a little White Pine, and some White Spruce. The first harvesting of these forests took place in 1987, with the second harvest in 1997. The forests were again harvested in 2007, and a controlled harvest was completed in 2010.

The third school forest property was donated to the Agriculture Department at Amherst High School in 1991 by Carl Lutz. The land was donated in memory of his son, Jesse Lutz, who had been an active member of the Amherst FFA while attending Amherst High School. The land was first used as an FFA Crop Plot, with corn and soybeans being raised. The land is very sandy and was not as productive as desired so it was decided in 2005 to change the land to an official school forest site, now known as the Lutz School Forest. It was planted with Red Pine starting in 2005 and continued through 2010. Future plans for this site include constructing a building for educational use, having various trails mowed and maintained for nature walks and providing a site for annual educational opportunities. In the future this sight will be maintained for forest production as well as wildlife diversity. The school has applied for a fourth school forest site which is located on school grounds to be used by classes with no travel required. A small prairie area has been planted with various indigenous flowers and grasses. This area will be expanded in the future. A small section of the storage building on the sight has been converted into an outdoor classroom area that can be utilized by all teachers grades K-12.

The money raised from timber sales helped build the school greenhouse and additions to the greenhouse. Some money has also been set aside for the construction of the school forest building and future FFA activities. Some of the money has been used to manage the forest and planting of the Lutz property.

Site Management

Objectives:

The Tomorrow River School Forest's primary objective is to provide ecological education via an outdoor classroom. In order to fulfill the above objective, additional objectives include:

- Active, sustainable forest management to provide timber, wildlife and recreation opportunities
- Grassland management
- Maintenance of the diversity of vegetation types
- Promotion of best management practices for healthy water quality
- Manage land and buildings to maximize learning opportunities

The objectives for site management in relation to the educational plan are:

- Encourage students to do environmental research at the school forest sites
- Encourage staff to plan and implement lessons at the school forest sites
- Encourage community programs on environmental education to be held at the school forest sites
- Enable all students K-12 with opportunities to utilize the school forest

EDUCATION CONNECTIONS

KEY CONCEPTS

1. Human values, lifestyles, and actions impact environmental health.
2. The global environment needs responsible stewards.
3. Ecosystems are complex, ever-changing, valuable resources that need proper care.
4. Wisconsin ecosystems are unique due to climate, natural events, and historical events.
5. The natural world can affect physical, emotional, and social health.
6. The natural world has aesthetic value, providing inspiration and creativity.
7. Sustainable natural resource management aims to provide essential resources for humans, enhance local communities, and protect the health of the land.
8. Natural resources are limited.
9. Tools, technology, and skills are used to study and participate in the environment (on earth and in space).

Classroom Curriculum Connections

Activities at the Tomorrow River School Forests are closely tied to classroom curriculum. See pages 9-16 for details.

Alignment with Wisconsin's Model Academic Standards

The school forest curriculum aligns with the state EE standards and many standards in academic areas across the board.

Staff Development

In the fall of 2010 all of the teachers in the Tomorrow River School District toured the Lutz Property and the Lake Emily Property. The teachers were introduced to the school forest and provided with a brief history of each of these properties. Later in the fall all of the K-7 students participated in a ½ day field trip experience for each grade level. Four lessons were taught by community members, the forest education committee members, various teacher volunteers from within the school, and high school students from our T.R.E.E.S (Tomorrow River Environmental Education Society) group. Each grade level participated in four lessons at the school forest. The experience was designed to get teachers comfortable in the forest while introducing them to the sound outdoor connections that can be tied to regular classroom instruction. It also provided them an opportunity to experience the lessons that were developed for the school forest education plan. A survey was conducted after the experience and it was found that most of the teachers involved found this to be a valuable experience and that the school forest curriculum greatly enhanced classroom instruction. There was an expressed interest in developing a winter field trip program and many of the teachers have volunteered to help plan and organize this event. It is hoped that a LEAF class will be offered late this winter or early in the spring. In the future, it is hoped that a KEEP course and Project Wild course may also be offered.

Resources

People

School Forest Advisory Committee

School Forest Coordinator

LEAF Program staff

Wisconsin Center for Environmental Education

UW- Stevens Point

DNR Forester- Lyle Eiden

DNR Warden and Wildlife Biologist- Stevens Point Office

Audubon Society- Stevens Point Chapter

MREA- Midwest Renewable Energy Association

Tomorrow River Conservation Club

Sally Ellingsboe-Retired School Forest Coordinator and LEAF instructor

Materials Available

Aerial Nets

Aquatic Dip Nets

Animal Props (furs,
skulls)

*Amphibian and Reptile
field guide*

Aquatic Collection tubs
and trays

Art Supplies- crayons,
paper, pencils, colored
pencils, tape glue

scissors, yarn

Backpacks

Berry field guide

Biltmore sticks

Binoculars (24)

Bird Field Guides (15)

Buckets

Bug Boxes

Candles and matches

CD player

Children's storybooks

Clinometers

Clipboards

Compasses

Cross country ski
equipment

First Aid Kits

Fern guide

Flagging tape in 4 colors

Dissection kits

*Forest Trees of WI
books (24)*

Ice cube trays

Increment borer

Insect field guides

Loppers

Lumbering tools

Magnifying lenses

Maps of school forest

Microscopes

Mushroom field guide

Plastic bags

Pond Life books

Posters

Rulers and meter sticks

Stuffed Animals

White Boards and

Safety goggles

Tarps

Markers

Shovels

Thermometers

Wood Samples

Spider Guides

Tree cookies

Stopwatches

Wildflower guides

Materials Needed:

Recreation equipment, rain gear, snowshoes, winter weather gear, soil sifters, sample boxes, digital cameras, GPS units, mounted specimens, animal pelts, bones, interpretative signage, trail markers, tracking equipment, track molds, plaster of Paris, weather stations and equipment.

Assessment

The primary goal of the School Forest program is raise the level of awareness and appreciation of the natural world by increasing utilization of the School Forest. Within this goal lies the ultimate belief that students who are better aware of the world that they live in, combined with knowledge of the responsibilities associated with caring for our world, will educate students so they are capable of being productive stewards of the environment.

The on-going success of the School Forest Program will be assessed in a variety of ways including:

- Tracking annual attendance at the school forest
- A teacher survey that will be completed biannually to assess the perceived value and direction of the school forest program
- Student surveys conducted biannually

The School Forest Education Committee will deliver these surveys and use this data to analyze and make recommendations for the future growth of the program.

4 yr. old Kindergarten					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science: Trees and Leaves	Trees are living things and are homes for living things	Learn the parts of a tree Learn what each part of a tree does Learn that trees change with the seasons Learn that trees are homes to animals and insects Learn that trees are used to make a variety of products and provide us with oxygen Explore the forest looking for a variety of leaf shapes, colors and sizes	1. Leaf Hunt/Hike and Leaf Collection Looking for similarities and differences Location: Lutz or school properties 2. Stuffed Forest Animal Hunt: scavenger hunt for hidden animals Location: Lutz or school properties 3. Leaf Mobiles Creating a leaf and twig mobile identifying different shapes and sizes of leaves	3, 4	Cognition A.EL.1, C.EL.1, C.EL.2
Science: Plants	Plants are living things.	Explore the forest looking for a variety of plant species, Learn that plants have similarities and differences, Review the needs of plants to grow and survive, Plant and observe their flower's growth.	1. Planting Violas: students will plant a viola and observe growth and changes in the plant. Location: Classroom 2. Forest Plant Investigation: looking for similarities and differences in leaves, color, Height, etc. Location: School property	3, 4	Cognition A.EL.1, C.EL.1, C.EL.2, C.EL.3

5 yr. old Kindergarten					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science: Trees and Soils	Plants and soils are interconnected	Participate in a group project collecting plant matter, combining it and learning how it will compose Learn the differences in wood (hard vs. soft) Adopt a tree, study it and collect data in several forms	1. Making Soil: collecting of materials (pine needles, leaves, etc), simulate erosion and decomposition and the resulting soil. Location Jordan Park and or School Forest 2. Tree Study: Find a tree and take data (width, bark rubbing, leaf specimen), record data in a book. Location: Jordan park and or School Forest	3, 4, 9	Cognition A.EL.1, C.EL.1, C.EL.2

Science: Winter Animals	Animal tracks help us to learn about animals	Learn to ID a variety of animal tracks in the snow Walk in the forest looking for identifiable animal tracks Watch and listen to birds and create a bird habitat illustration Learn that different animals make different tracks Learn the names of a variety of common winter birds	1. Animal Tracks: tracking animals in the snow Location: Jordan Park and/or School Forest 2. Escaped Animals: A scavenger hunt to find hidden stuffed animals Location: School Forest 3. Learn a variety of songs that pertain to birds 4. Music in the Trees	3, 4	Cognition A.EL.1, C.EL.1
Music	Trees have movements and our valuable resources in our lives	Learn and sing several songs that pertain to our forests. Utilize movement that mimics the movements of the trees			

1st grade

Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science: Habitats	Forest are homes to a variety of animals	Explore the forest looking for signs of animals Learn to ID the necessary components of a variety of forest animals homes Create replicas of forest animal habitats	Arbor Day Tree Planting Ceremony w/ guests and town officials Animals Need Forests, Too- LEAF activity All About My Tree- LEAF Field Enhancement Wolfy-Wolf WI Extension Service	3, 4, 6	Science 1.2.2, 1.2.3, 1.3.1, 1.5.2
Science: Birds and Bees	Insects and birds have specific habitats that are designed to meet their survival needs	Search the forest floor, air and trees for a variety of insects, Collect data on what insects they find in the forest. Learn that insects have similarities and differences based on their habitat, diet, and function Children will observe common birds found in WI forests	1. Insect Hunt: scavenger hunt for a variety of insects 2. Bird Watching: use binoculars to ID common Wisconsin birds 3. Learn a variety of songs that pertain to birds	3, 4, 9	Science 1.2.2, 1.2.3, 1.3.1, 1.5.1
Music	Birds have homes in the forest and communicate through song	Recognize that birds have songs and rhythms	3. Learn a variety of songs that pertain to birds	5,6	Music A.4.7

2 nd Grade					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science Art Butterflies	Living things have life cycles	Explore the forest looking for native butterflies Learn to ID several species of WI butterflies Create paintings/ sketches/ etc. of butterflies they find in the forest Learn the butterfly's stages of life Demonstrate their understanding of butterflies	1. Butterfly Observations/ Data Collections/ Portraits Location: School forest and outdoor classroom 2. Butterfly life cycle mobiles Location: Outdoor classroom	3, 4, 6	Science 2.3.1, 2.4.1, 2.4.3
Music	Insects that have movements often imitated in dance	Learn several songs that incorporate the movement of butterflies	3. Butterflies all around us- song and movement reflecting the life of a butterfly	5,6	Music A 4.7
Science : Soils	Soil Composition affects plant growth	Learn the horizons of soil and what they are composed of Collect soil specimens for further study Plant beans in several soil compositions to determine which is best for plant growth	1. Soil Specimen Collection and Sediment Experiment Location: School Forest 2. Soils/ Plant Growth Experiment Location: Classroom 3. All About Trees- Leaf Field Enhancement 2 4. Tree Hardware- LEAF 5. Fox and Rabbits the Race to Survive	3, 4, 9	Science 2.5.1, 2.5.2, 2.101a, 2.10.b
Trees Forest Food Chains and animal relations	Tree have structure, form and life cycles Forests provide the habitat for many woodland animals	Review the parts of a tree and learn about its life cycle Learn about food chains and predator/prey relationships	3. All About Trees- Leaf Field Enhancement 2 4. Tree Hardware- LEAF 5. Fox and Rabbits the Race to Survive	3,4,6	

THIRD GRADE					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science	Rocks are found everywhere on the earth's surface and they are used in many different ways	Learn rocks are comprised of more than one mineral, minerals are different from each other, crystals are evidence for calcite	Use the scientific thinking process to explore properties of rocks, investigate hardness of minerals, compare rocks identified in classroom to those arranged in "arena" area outdoors	4, 9	Science A4.1, A4.2, D4.4, E4.1
Science, Math	Plants are varied and valuable resources	Examine and discuss the functions of plant structures: List plant needs for survival	Review the structures of plants, study plant parts; draw, measure, and identify structures in plant journal: Seed "scavenger hunt"	3, 9	Science B4.1, C4.1, C4.2, C4.4 F4.2, F4.2 Math D4.1, D4.3, E4.3
Science	Energy flows through producers, composers and decomposers Forest Sample plots can provide many types of information Many professionals use this information	Identify that trees are producers Classify producers, consumers and decomposers Identify the types of information that can be obtained through forest sampling Identify professionals who use this information in their careers	Forest Energy Scavenger Hunt- LEAF Field Enhancement 3 I Can Be A Forester- LEAF Field Enhancement 1	3 7,8,9	Language Arts C4.2 C4.3 Environmental Ed A4.1 A4.2 Art E4.4 H4.1 Language Arts C4.3 Environmental Ed B4.1 Art H4.5
Math, Social Studies, Science	A compass works because of earth's magnetic field	Identify cardinal directions on a compass, learn how to correctly use a compass	Use a compass to navigate to different locations on a map of the school forest area	9	Math A4.1, A4.3 Social Studies A4.1, A4.2 Science E4.1
Music	Insects provide a host of sounds and movements that are included in music	Identify and interpret the movement of insects in song and dance	Learn several songs and movement associated with insects	5,6	A 4.7

FOURTH GRADE					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Social Studies	Logging in Wisconsin is a historically significant part of state history	Learn about tools and applications significant to lumbering history in Wisconsin	Invite guest lumberjack to explain techniques and display lumbering tools (from Portage County Historical Society). Examine and use the lumbering tools on display.	1, 2, 4, 6, 9	Social Studies B4.3, B4.4, B4.7

Music	Logging songs often told a story about the logging era in Wisconsin	Learn about the logging camps through music	Learn and perform several songs from the logging days	5,6	A 4.8
Science	Alternative forms of energy can be generated and stored	Explore alternative forms of energy	Generate electricity with a bicycle, discuss how this energy is stored and can be reused: Explore how to bake/cook in a solar oven, Discuss how and if this energy can be stored	7, 9	Science B4.4, E4.4, E4.7, B4.13
Science	Rocks and fossils provide clues about living things and processes of change	Describe how rocks change over time and what can be learned from these changes	Review how the “Rock Cycle” works and identify what can be learned by examining rocks, rock formations, fossils in rocks,	3, 4	Science D4.1, D4.2
Science	Understanding forest history provides a framework for understanding the importance of forests today Forests provide us many economic and recreational opportunities	Hypothesize about a forest’s history by examining clues Describe how human influence may have affected the forest List recreational uses of forests as well as ways that they affect our current economy	Unlocking a Forest’s Past- LEAF- Field Enhancement 1 Are Forests Important Today? LEAF- Field Enhancement 2	1,3,4,7,8 1,5,7,8,9	Environmental Ed A4.1 A4.2 A4.3 A4.4 Science C4.5 Social Studies A4.4 Art E4.4 Environmental Ed A4.1 A4.3 B4.10 B4.11 Art E4.4
	Decaying Trees are an important part of the forest	Describe the interactions between rotting logs and nearby plant and animal populations	The Fallen Log- Project Learning Tree	3,4	Science F4.4 F8.9
FIFTH GRADE					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science, Social Studies	Living things survive if the environment meets their needs	List the survival needs of trees; discuss stewardship	Arbor Day Tree Planting Ceremony w/ guests and town officials	2, 7, 9	Science F8.8 S.Studies B8.4
Science	All things are part of an ever-changing web of life	Observe and identify producers, consumers, scavengers, and decomposers	Do “Web of Life” activity to accompany observations of “Ecocolumns” unit	3	Science F8.8, B8.3, C8.2, C8.3

Science	An observation journal is a tool we can use to learn more about a subject. The five senses provide a unique opportunity to gather information.	Identify abiotic and biotic components of ecosystems	Note observations in "Ecocolumn" journals	3, 4	Science F8.8 Lang. Arts C8.2, 8.3
Science	A healthy ecosystem is dependent upon new growth	Identify a variety of seeds and the way that they are dispersed	Seed Dispersal- Project Learning Tree	3,4	Science F8.2 F8.8
Music	Natures rhythms have long been used in native American Music	Experience Native American Rhythms and song	Learn and perform a variety of Native American Songs utilizing the drum and flute	5, 6	Music B 8.10 B 8.4

ALL

Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science, Social Studies	Plants and animals are vital components in the "Web of Life"	Discuss stewardship, participate in building, using, an maintaining compost pile	Work w/ high school students to build, use, and maintain a school compost area	2, 7, 9	Science A4.5, B1.4.3, A8.8, F8.6 Social Studies B8.3, 8.4

SIXTH GRADE

Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science	Trees play an important role in our lives	Identify ways that trees affect our lives	Wisconsin Forestry: Leaf Activity	5,7	Agriculture F 8.2 Language Arts A 8.2A 8. A 8.4 Environmental Ed B8.10 B8.15 Science E 8.6
Science	Knowledge of our surroundings influences our desire to protect our environment Awareness of the environment helps us to protect it Sufficient energy is required for survival	Learn the vocabulary necessary to use a dichotomous key to identify trees Identify local invasive species Identify the basic needs of foraging bears in the wild	Tree Identification LEAF-Field Enhancement 1 World Travelers- Project Wild How May Bears- Project Wild	2,9 3,4 3,4	Environmental Ed A8.4 Science C8.2 Science F8.2 F8.8 F8.9 F8.10 Science F8.8 F8.8.9
Science	Understanding the role of forestry conservation enhances our ability to predict the health of	Forestry conservation allows for a sustainable system that will	Future Forests Leaf Activity	1,2,7	Agriculture B8.3 Environmental Ed A8.4 B8.23 D 8.7

	future forests	enhance our living spaces			Science G 8.3
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SEVENTH GRADE					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science	All organisms are interdependent on each other for survival	Learn that all living creatures meet their survival needs in a variety of ways	Create a food web based on observations and discussions in the forest field trip	3, 4	Science A4.1, A4.2, D4.4, E4.1
Science	Organisms adapt to their surroundings in order to survive	Birds have adaptations that allow for them to survive in their habitats	Birding trip to the school forest to ID birds and note specific beak, coloration and size features Adaptive Artistry: Students will create their own unique bird that has adaptations that allow it to survive in it's habitat	3, 4, 6	Environmental Ed B8.14 Science F8.2
Science	Patterns in nature are indicators of the health of an ecosystem	Learn the importance of observations and the necessity of data recording	Journaling: The student will complete 5 weeks of observations in one spot in nature. They will record data in a notebook. They will be looking for changes in nature.	3, 5, 6, 9	Science B4.1, C4.1, C4.2, C4.4 F4.2, F4.2 Math D4.1, D4.3, E4.3
Science	Insects play an important role in the sustainability of a forest ecosystem	Identify common insects found in the forest ecosystem Recognize that invasive species can do damage to the forest	Field trip for insect collection and identification Guest forester to do walk through school forest and talk about the impact of invasive species	7, 8, 9	Math A4.1, A4.3 Social Studies A4.1, A4.2 Science E4.1

EIGHTH GRADE					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science	Rocks are found everywhere on the earth's surface and they are used in many different ways	Learn rocks are comprised of more than one mineral, minerals are different from each other, crystals are evidence for calcite	Use the scientific thinking process to explore properties of rocks, investigate hardness of minerals, compare rocks identified in classroom to those arranged in "arena" area outdoors	4, 9	Science A4.1, A4.2, D4.4, E4.1
Science, Math	Plants are varied and valuable resources	Examine and discuss the functions of plant structures: List plant needs for survival	Review the structures of plants, study plant parts; draw, measure, and identify structures in plant journal: Seed "scavenger hunt"	3, 9	Science B4.1, C4.1, C4.2, C4.4 F4.2, F4.2 Math D4.1, D4.3, E4.3

Math, Social Studies, Science	A compass works because of earth's magnetic field	Identify cardinal directions on a compass, learn how to correctly use a compass	Use a compass to navigate to different locations on a map of the school forest area	9	Math A4.1, A4.3 Social Studies A4.1, A4.2 Science E4.1
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NINTH-TWELFTH GRADE					
Subject(s)	Enduring Understanding	Objective	Activity	Key Concept(s)	State Standards
Science	Abiotic characteristics will determine the kind of community the environment can support.	Students collect data to calculate percentage of soil moisture in the environment	Assessing Abiotic Factors in the Environment	1,2	Science B.12.6
Science	Organic waste can support a vast community of organisms that will contribute to the cycling of organic and inorganic materials.	Students will compost a variety of materials to learn how different microorganisms work together to break down organic matter	Ditch's Brew	2,3,8	Science B.8.20, B.12.4, B.12.7, F.12.7
Science	Human activities can impact the environment by producing harmful pollutants	Students measure ground level ozone to learn how it contributes to air pollution	There's Something in the Air	1,2,4	Science B.8.17, B.8.18, B.12.18,
Science	Microhabitats affect community composition.	Students collect and identify arthropods living in a pine cone	Life in a Pine Cone	2,3,7	Science B.12.4,
Science	Observations are used to predict current and future communities.	Survey an area of land and determine the land's physical features and the type of organisms that live there	What's in an Ecosystem	3,7	Science B.8.14, B.12.3, F.12.8,
Science	Field observations are used to test models.	Perform field observations to identify the name of the biome the students live in	Identify Your Local Biome	3,4	Science B.12.3
Science	Biodiversity is affected by human use.	Observe, evaluate, analyze and graph the difference in species diversity between two locations	Differences in Diversity	1,2,4	Science B.8.15, B.12.3, B.12.4, B.12.6, B.12.7, F.12.8,

SUSTAINING THE SCHOOL FOREST PROGRAM

SCHOOL FOREST COMMITTEE

The School Forest Committee provides leadership for the School Forest Program. Currently the committee is made up of two elementary, one middle school, and two high school teachers as well as the district administrator. It is recommended that the committee be expanded to include two elementary teachers, two middle school teachers, two high school teachers, administrators including district and building principals, community members, a school board member, a LEAF program representative, a DNR forester, and others as interest grows and is expressed.

It is recommended that a school forest coordinator position be established to accomplish many of the expanded duties of the committee.

Responsibilities of the Advisory Committee:

Education and Outreach

- Continued school field trip events
- Community events
- Oversight for new educational programs
- Updating/and Reviewing the Forest Educational Plan
- Provide content to the Community Spirit
- Report to the School Board
- Continue as Liaisons within the school- contacts with other teachers and provide feedback to the committee

Facilities and Grounds

- Forest Management (reviewing the management plan)
- Maintaing and expanding use of the forest
- Monitoring and reviewing updates on facilities
- Technology advances
- Opportunities for the School Forest program
- Security and trail procedures- policies/ restrictions/signage
- PR relating to school forest policy changes
- Ensure School Forest compliance with Health Department standards
- Ensure School Forest compliance with Tomorrow River School District standards and policies
- Trail Maintenance
- Recycling program

Financial

- Fundraising for special projects
- Budgetary and finance monitoring
- Write and review grants
- Financial aspects of restoration and expansion
- Financial support for coordinator
- Harvest Fund Management
- Develop a plan for a school forest facility

Communication

- Presentations about the school forest will be made at least annually to the school board
- Information will be shared with the media for all major events at the School forest. This might include teacher training, community involvement, and projects.
- The School Forest Coordinator will offer or provide an opportunity for in-service training for teachers to become more familiar with curriculum that could be used in the school forest.
- The School Forest Coordinator will develop a bi-monthly contact with staff through the use of a newsletter.
- The School Forest Coordinator will maintain an updated inventory of equipment.

Long Range Plan

To fulfill our vision for the use of the School Forest, we have identified the following goals for the School Forest Committee:

Leadership:

1. Expand the committee to allow for more ownership of the project
2. Establish a “Friends of the Tomorrow River School Forest” group.
3. Establish a program to train “student” teachers to teach in the school forest
4. Establish a School Forest Coordinator position

Education:

1. Expand the school forest curriculum for students to maximize learning opportunities at the school forest.
2. Continue with the field trips and make them an annual event for grades K-7
3. Increase school forest attendance by 5% per year.
4. Allow opportunities for every elementary student to experience an outdoor education opportunity twice a year.
5. Provide an opportunity for every 6-8 student to visit the school forests at least once a year.
6. Provide an opportunity for each 9-12 student to visit the School forest annually.

Forest Management:

1. Develop a trail system in all of the school forests.
2. Continue to manage the school forest to optimize the diversity and health of the site for flora and fauna.
3. Design and construct an educational facility at the Lutz Property.

Implementation Plan

Event / Activity	2009/10	2010/11	2011/12	2012/13	2013/14
Follow forest management timeline	X	X	X	X	X
Offer in-service training		X		X	
Increase school forest use	X	X	X	X	X
Increase the school forest committee membership		X			
Establish a school forest coordinator		X			
Establish a “friends of the forest” group			X		
Design a building for the Lutz property		X			
Finish the TREES building		X			
Equipment storage center			X		
Obtain needed equipment	X	X	X	X	X