

IOLA-SCANDINAVIA SCHOOL FOREST

EDUCATIONAL PLAN



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The Iola-Scandinavia School Forest Educational Plan was created by Rhonda Fechter, Barney Snyder, Alan Bauer,

Marsha Mueller, and Amy Wiersma.
Consultants: Connie Abert (UWEX) and Gretchen Marshall (LEAF)

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Rationale

Value Statement:

The Iola-Scandinavia School Forests provide a unique opportunity to enhance classroom instruction through experiential outdoor education that meets state education standards, integrates environmental education into the curriculum, and demonstrates sustainable natural resources management. This has been shown to increase student achievement, decrease behavior issues, and increase attendance (Lieberman and Hoody 1998). An education plan that details opportunities and provides connections to the classroom curriculum and state education standards will provide the Iola-Scandinavia staff with the framework upon which future curriculum and lessons can be built. The ultimate goal is to enhance students' environmental knowledge, awareness, ethics, citizen action skills and experiences in environmental literacy.

The Iola-Scandinavia School Forests have the potential to become a valued asset to both the Iola-Scandinavia School District and the Iola-Scandinavia community as a whole. They can become inexpensive, practical teaching and learning tools, community event venues, and models of significant small town accomplishments. They will ultimately have a positive impact on area economics by increasing tourism and recreational opportunities in the area.

Target Message:

1. I-S School Forests will be used for research, management, collaboration, and outdoor activities creating awareness and healthy physical lifestyles in students and community members.
2. The I-S School Forests will provide meaningful outdoor education and environmental opportunities.
3. The I-S School Forests will encourage an awareness of local and global environmental issues to develop a connection and sensitivity to the environment and foster responsible behaviors.
4. The I-S School Forests will promote environmental stewardship and conservation which are essential for insuring a high quality of life for future generations on a local, regional, national, and global scale.

5. The I-S School Forests contain natural resources which greatly influence our lives monetarily, recreationally, emotionally and spiritually.

Needs Assessment Results:

In the fall of 2010, the teaching staff in our district was sent an invitation to participate in an online needs assessment survey regarding our school forest program and facilities. Forty staff members (65%) participated in the survey which included at least one response from every subject area and grade level in the district. This section describes some of the results of this survey. Seventeen teachers were not even aware of some of the school forest properties available to them. Only three staff members took students to one of these school forest properties and each one of those only used the property once per year. However, 91% of the staff indicated an interest in utilizing the school forest areas. These results alone indicate the need to promote the use of our school forest properties.

Thirty staff members indicated they encountered some type of problem which hindered their use of the school forest properties. Over half of these teachers indicated that transportation to the properties was a major issue. Other issues included not being aware of what the property offered as well as a feeling that the forest areas did not fit into their curricular area. These results indicate a need to work out the transportation issues with the administration of our district as well as a strong need to educate our staff on what they can do in their curricular areas at the properties we have within the district.

Results from questions related to the staff's confidence level in teaching a group of students in a school forest setting suggests that Iola-Scandinavia teachers feel inadequately prepared in content knowledge (56%) to facilitate trips to the school forest but would be likely to do so with assistance (82%). This indicates a need to in-service our teachers on how they can use the school forest areas as well as a need to develop resources and make assistance available to those teachers who request it.

Finally, questions asked what additional facilities or improvements to the school forest areas would help staff members enhance their use. The responses (listed in order from most to least) were as follows: create walking trails, develop an educational shelter, provide benches and seating areas, create maps of the areas, eradicate infectious plants such as Poison Ivy or Poison Oak, provide restroom facilities, provide a parking area where needed, add plant diversity to the areas, and develop activity areas such a ropes course, navigation course, or a ski trail. Since the

majority of our school forest property is undeveloped, there is a strong need to add facilities to these areas so they can be properly used by members of our district.

Site Descriptions and Opportunities

Site Descriptions and Locations

The Iola-Scandinavia School Forest consists of three parcels of land totaling 90.37 acres; Gjertson Memorial Forest 8.00 acres, Iola-Scandinavia School 3.76 acres (2.76 wooded & 1 acre prairie) and Jorgens Park Preserve 79.61 acres. All parcels of land are located in Waupaca County and no more than 8 miles from our school.

Gjertson Memorial Forest Property: Legal Description- NWNW Section 11 Town of Scandinavia Waupaca County

The Iola-Scandinavia school district registered an eight acre school forest in 1958. Approximately 6 acres of the school forest consists of red and white pine and two acres of mixed hardwood. It is located approximately 2 miles south of the elementary school on highway 49 to the West. Gjertson Memorial School forest consists of a red pine plantation that was thinned in 1988 and again in 1999. Currently trees present include: red pine, white pine, jack pine, box elder, red oak, and sugar maple. Shrubs include: dogwood, highbush cranberry, honeysuckle and buckthorn. The perimeter of this site is surrounded by invasive species such as, buckthorn and honeysuckle, which will need to be removed for quality growth of native species.

Iola-Scandinavia School Property: Legal Description- SEC2 T23N R11E FRL NENE EX OLS 1 6&34 IN NW/COR EX COM 4FT N & 44 3FT E OF NE/COR LT1 BLK F OL18 S 693FT-S/L ST R/W & POB E ALG ST R/W 109FT S132FT W PAR WITH N/L 109FT N-POB EX V303P301 V312P151

ADDRESS- 450 DIVISION STREET IOLA, WISCONSIN 54945

The I-S School Forest Task Force Committee had gone through the process of registering this property in the school forest program. Final registration of the property occurred in the spring of 2011. This property is part of the school grounds and is located directly south of the elementary school. The property consists of a 1 acre prairie and a 2.76 acre wooded parcel. The prairie was

planned and planted in 2000 by the staff and students of Iola-Scandinavia. It consists of a mixture of forbs and tall grasses including; purple and yellow cone flower, compass plant, stiff goldenrod, ox eye, pale beardtounge, wild quinine, coreopsis, wheat grass, side oats grama grass, big bluestem, and little bluestem. The prairie is south of the elementary school and east of the middle/high school on a high sloping manmade hill. The wooded area contains jack pine, white pine, blue spruce, white oak, red oak, box elder and sugar maple. Shrubs include dogwood, honeysuckle, and buckthorn. There is an existing trail through one section of the wooded area that was part of a fitness trail in 1985-1990.

Jorgens Park Preserve: Legal Description- Northeast ¼ of the Northeast ¼ of Section 11, Township 23 North, Range 11 East, Town of Scandinavia, Waupaca County, Wisconsin.

SEC 14 T23N R11E E1/2 NESW

SEC14 T23N R11 W1/2 NESW

SEC14 T23N R11E NWSW

ADDRESS- N5463 STATE ROAD 49 SCANDINAVIA, WISCONSIN 54977

The I-S School Forest Task Force Committee had gone through the process of registering this property in the school forest program. Final registration of the property occurred in the fall of 2012. This property is located just north of the Village of Scandinavia off Highway 49 to the east. It consists of 79.61 acres of property comprising a variety of habitats including; wetland, prairie, forests containing mature mixture of hard and softwoods, and a five acre lake. Friends of Jorgens Park Preserve have spent many hours designing and developing an educational nature preserve for the communities of Iola and Scandinavia. As of July 2012 members have removed some of the invasive buckthorn and honeysuckle, installed a boardwalk across the wetland area, planned for harvesting of white pines, created a walking/nature trail through the field and hardwood forest, removed the Jorgens house (structure unsafe), scheduled planting of the 10 acre short grass prairie for November 2012, organized a logo design project and have begun planning for trail markers. The Jorgens Park Preserve board consists of community members, Jorgens family representatives and an Iola-Scandinavia school forest committee member.

Trees on the Jorgens Park Preserve property consists of: White pine, red pine, balsam poplar, bur oak, sugar maple, river birch, white cedar, white oak, European buckthorn and staghorn sumac. Shrubs present are barberry, elderberry, dogwood buckthorn and honeysuckle. Forbs and grasses present include joe pye weed, milkweed, meadow rue, daisy fleabane, St. John's wart, big bluestem, June grass, switch grass and Indian grass. A variety of wildlife and aquatic species as well as birds and insects thrive throughout the area because of the habitat diversity.

The geological landforms of Iola and Scandinavia are strongly linked to past glacial activity. Glacial erosion, glacial deposition and other processes have influenced the landforms. Much of

Waupaca county lies in the Central Plain geographical region a small section in the north western corner is included in the Northern Highland region.

The educational opportunities provided by the sites include:

- Air quality monitoring
- Art – photography, drawing, painting
- Data collection
- Descriptive writing
- Diversity calculations and comparisons
- Ecological disturbance
- Ecological restoration – prairie, forest, wetland
- Ecological succession
- Education material development
- Exotic species impact and control
- Food web analysis
- Forest management methods
- Forest measurements
- Forest products
- Forest regeneration
- Forest surveys
- Glacial geology
- Habitat surveys and classification
- Land use history
- Life-cycle investigations
- Management plan development
- Mapping
- Navigation skills/GPS
- Nutrient cycles
- Observation with a variety of senses
- Phenology
- Plant identification and classification
- Service learning
- Soil analysis
- Team building
- Trail hiking
- Water cycle
- Water quality analysis
- Watershed analysis
- Weather and climate measurements

- Wetland delineation and survey
- Wildlife identification and classification

The I-S school forest committee has developed this education plan with the goal that it will help to increase usage and enhance environmental and outdoor learning opportunities for all pre K-12 students.

Site History

The original school forest property (Gjertson Memorial Forest Property) for the Iola-Scandinavia School District was donated by Selmer Gjertson and designated a school forest in 1958. This property, originally a farm field, was converted to a pine plantation and has been choice cut on two occasions by the district. Although this area has been designated a school forest for over 50 years, to a large extent it has not been used by the district.

The I-S School Property was approved by the school district to be designated as a school forest in the spring of 2011. In 2000 a major improvement to the property was made by a group of dedicated students led by teacher Rhonda Fechter. A one acre school prairie was developed which included a fence, several benches, and a walking path. This area of the school grounds property is currently the most widely used area in our school forest program.

The Jorgens Park Preserve Property was also approved by the school district to be designated as a school forest in the spring of 2011. The property was purchased and farmed by Anton and Oline Jorgens in 1916. Their son Carsten and his wife Dora continued to farm until the late 1940s at which time they raised silver foxes. The property continued to be tilled by the Morks right up to Carsten's death in 2007. Upon their death, Carsten and Dora Jorgens generously donated their entire property to four local organizations. With the goal of trying to preserve the property to make it into a natural recreational park, the Scandinavia Booster Club organized a fundraising effort in order to purchase the property from the different organizations it was donated to. During the spring of 2011, the Scandinavia Booster Club and the Iola-Scandinavia School District worked out a lease agreement on the property. By leasing this property, it is able to be identified as a school forest property for our district. A board of community members including a representative from the I-S School Forest Task Force Committee was set up to make this property a separate entity from the Scandinavia Booster Club. The property is now owned by the non-profit organization, Friends of Jorgens Park Inc., and is officially identified as the Jorgen's Park Preserve. Although the property is currently undeveloped, both the Friends of Jorgens Park Inc. and the school district are excited about developing this property into an environmental education and recreation area for Iola-Scandinavia students and community

members. The property serves as a living memorial honoring the Jorgens and their generous donation to the community.

Site Management

In 2011 a Wisconsin Environmental Education Board (WEEB) grant was received by the Iola-Scandinavia schools for funding in support of establishing a School Forest Education Plan. Because the I-S School Forest Task Force Committee is in its beginning stages of developing the school forest for educational purposes we feel the natural resource management plan is vital to success overall. We hope to include natural resource professionals, volunteers, students, teachers, and administration in management plans. Students and teachers will play an important role in current and future management; therefore connecting educational activities to forest management will help create an understanding of how human actions and management decisions are related.

In order to meet our educational goals we have established the following resource management key goals:

- Provide a diverse and accessible site for educational and recreational use for the school and the community.
- Manage the land to maintain diverse ecosystems.
- Manage the land to maximize learning opportunities.
- Promote best management practices.

Objectives for site management that will ensure educational opportunities are successful include:

1. A subcommittee to visit all school forest sites. This committee will consist of teachers, school forest coordinator, community members and resource specialists. Establish the existing natural resources on the I-S forest properties and create a plan that will match those resources with educational opportunities/activities.
2. School forest property features will be recorded by teachers, students, committee members and volunteers; this will be done individually and/or as a class project/activity. The goal is to make numerous site visits and record information over a period of time to show changes that might affect teaching areas or resources. Recorded information will include; animal and plant species, land/topographical and geological features, water features, habitat features, and human features such as structures, paths, fences, garbage or vandalism.

3. An important and yet difficult management goal for our committee is to identify and remove invasive species. To accomplish the task of invasive species removal we will need to consult with other school forest coordinators and forestry specialists to develop the best plan for successful management practices in this area. Two resource specialists that we have available in our area are Dave Stoiber, DRS Forester LLC, Consulting Forester drsforestry@yahoo.com and Benjamin Baumgart, DNR Forester, benjamin.baumgart@wisconsin.gov

When considering our educational and facility goals, the natural resource management of our school forest is a key factor in overall decision making. The school forest committee is committed to getting teachers and students outside using the facilities we have available. In order for the school forest to provide an educational opportunity for the students, resource management goals will need to be sustained on a regular basis. Once the school forest properties have been reviewed and a management plan is in place, it will be updated and revised yearly by the school forest coordinator, students, staff and the county DNR Forester.

These objectives are created to help develop a sense of ownership and accomplishment in students, staff, and community members by being a part of the school forest management and future realization.

Educational Connections

Key Concepts/Educational Goals

1. Sustainable natural resource management aims to provide essential natural resources for humans, enhance local communities, and protect the health of the land.
2. Wisconsin ecosystems are ever changing due to historical events, climate, succession, and other factors.
3. Human values, lifestyles, and actions impact environmental health.
4. An understanding and appreciation for nature promotes responsibility and stewardship within a community.
5. The natural world can promote physical, emotional, and social well-being.
6. The natural world has aesthetic value, providing inspiration and creativity.
7. Tools, technology, and skills are used to interact with and study the environment.

Site Connections, Classroom Curriculum Connections, Alignment with State Standards

The Iola-Scandinavia school forest education plan is closely coordinated to classroom curriculum and core standards to ensure every child at I-S graduates with environmental skills and knowledge

needed to contribute to a sustainable future. Perhaps, more importantly, the plan will document the value of the school forest as an educational resource and provide teachers with the basis for determining what and how they should teach at the school forests. We hope to enhance students' environmental literacy and address the environmental education needs of the

I-S district from pre-K through 12th grade.

The table inserted below shows our site connections, classroom curriculum connections, and our alignment with the state standards. This is just the beginning of our curriculum alignment. School forest committee members will develop more plans/activities and concepts which will be placed into this document. It should also be noted that this document will be a continual work in progress over the years and will be modified as other plans to use the school forest areas are developed.

Classroom Curriculum Connections			Site Connections		Key Concepts and Resources			Common Core & State Standards
Grade Level	Subject(s)	General Topic	Objectives (Students will be able to...)	Activity (what will they do)	Key Concepts	Location	Resources Needed	
K-1	Science	Living & non living	Using the senses to investigate the forest,	Field Enhancement Sensing the Forest -Leaf guide pg. 92	3,4	Any	Crayons, blindfold, paper and pencil (for teacher) objects to display smooth, pointy, rough, soft, sticky	
K-2	PE	Hiking/ heart rates	Make a connection between physical activity and their hearts	Hiking trails scavenger hunt	3,5,7	Prairie	Various items to find, heart rate monitors, pedometers	1, 5, 6
K-3	Art	Texture	Students will recognize different textures within the forest: cutting and pasting, rubbings	Student can collect objects with different textures gluing them to paper and identifying. Students can collect and ID objects, place paper over and rub with crayon.	2, 6	Any	20 bottles of glue, paper, crayons	

K-12	PE	Team Building	Share the importance of working together, listening and sharing strategies. Trying a variety of ideas to come to an agreement.	Low ropes course	3, 4, 5, 7	Any	Team building activity books, trust activities, balance blocks, harnesses, ropes	2,3,4,5,6
1-2	Music	Environmental Sounds	Students will understand the concept of 'Timbre' through environmental sounds.	Move around to listen to different environmental sounds Take home and find different sounds at home. What do the sounds of nature tell us? How are they different? Can we put the sounds in a variety of groups, similar to instrumental families?	6,7	Any		
2	Social Studies	Lumber industry	Identify reasons forests are important. List forest products that are used every day.	Forests are important to Me! Leaf Guide pg. 56	4,6,7	classroom	Sticky notes, map of Wisconsin, drawing paper, magazines to cut apart, glue, scissors, dry erase board, tape,	
3	Science	Seed Dispersal	Explain how seeds are carried by animals and evaluate the importance of wildlife as contributors to ecological systems	Project Wild Activity: Seed Need Pg. 98	4	School property - prairie	One large sock per student, 3 or four paper grocery bags, roll of masking tape	
3-6	Music	Instruments	Students will build their own musical instruments to make a 'natural band' using pieces of school forest. (Dried leaves, twigs, grass, larger logs, stones, nuts, etc.)	Students will look for materials that they could use to make/build their own musical instruments from various pieces they find in the school forest. Do they sound rhythmic? Can we give some of the sounds a rhythm? Do some sounds reoccur consistently? Some sounds appear to be simply random.	4,6,7	Any	String, rubber bands	

				Name some of these sounds.				
3-6	PE	Lifetime sports (snow shoeing)	Give examples of activities that include snowshoes; snowshoe specifics, why is it a lifetime sport!	Snowshoe	3, 4, 5, 7	Any	Snowshoes, trails, heart rate monitors	2,5,6
3-12	Music	Nature sounds	<p>Students will record the sounds of the School Forest and save the recordings on an MP3 to be used in the classroom.</p> <p><i>**Students learn about world music and discuss the various influences that inspire their unique styles of music. Our School Forest creates a variety of sounds that are unique to our location on the Earth. How do those sounds influence the songs we compose? Through this exploration, the students will come to appreciate other cultures of music and better understand why they have the music that they do.**</i></p>	<p>Students will go into the forest and listen to the sounds of nature. Then the sounds could be used in class for various activities that include improvisation and composition and comparing the two techniques. Are there different soloists in each sounds group? Do we hear different moods in the music we hear? When were the recordings made? Did this have an effect on the type of music? What was the weather during the recordings? Can we recreate some of the sounds that we hear? (bird calls, rain, rustling of leaves, crunching of branches, sticks falling, animals moving, etc.)</p>	2,6,7	Any	MP3 player	

3-12	Music	Nature Sounds	Students will discuss the two concepts; improvisation and composition.	As a class, draw analogies and examples from the sounds of the School Forest to different musical techniques. The forest makes a variety of sounds, and depending on the day, weather and mood, the sounds seem completely improvised. Let's improvise our own nature sounds. Using the Forest sounds that we have recorded, let's write a song or piece that uses only the sounds we discussed.	2, 6, 7	Any	Song Paper	
3-12	PE	Compass navigation	Navigate using a compass	Hiking Navigation	4, 5	Any	Compasses, heart rate monitors, pedometers	2, 5, 6
4	Science	Limiting factors in eco-systems	Define a limiting factor and describe how limiting factors affect animal populations	Project Wild Activity: How Many Bears Can Live in This Forest? Pg23	1, 4	Any	Activity directions, 5 colors of construction paper cut into cards, one black marker, one envelope per student, pencils, one blindfold, two small teddy bears, poster board	
4-6	Art	design elements	Students can recognize design elements in the forest	Look for lines (trees), shape (leaves), form (cones), spaces (positive and negative), value (lights and darks), texture (rubblings) and colors (color match)	2,5,6	School prairie		
5	Language Arts	Who Is Responsible For Forests?	Describe how choices people make affect the future of forests.	5/6 Leaf Forestry Lesson Guide p.140 "Individual Responsibility"	1, 2, 3, 4	Any		
5	Science, Math	Measuring Board Feet	Determine the number of board feet in a tree and its value.	5/6 Leaf Forestry Lesson Guide p.152 "Field Enhancement 1: Wood's Worth"	3, 7	Gjertson Property	Tape Measure	

6	Careers, Language Arts	Forestry Related Careers	Give examples of forestry-related careers and discuss their interest in a similar career.	5/6 Leaf Forestry Lesson Guide p.148 "Careers Exploration"	1, 2, 4, 7	Any	Leaf Packet	
7	Art	Color match	Have students recognize the multitudes of colors in the forest (green and brown)	Give each student a multitude of green and brown paint chips. Students will use paint chips to match to objects. They can then mix paint to match.	2, 6	Gjertson Property and prairie	A variety of green and brown paint chips	
7-8	Science	Chromo-Chloroplast manipulation	Be able to manipulate the structure of chromo- and chloroplasts in plant species	Chromo-Chloroplast manipulation lab	7	Any		
7-8	Science	Erosion	Identify signs and affects that erosion has on various properties	Erosion identification and affects lab	1, 2	School Property Jorgens Park	Sampling kits	
7-8	Science	Insect	Identify various species of insects found in a natural setting	Insect identification lab	1, 2	Any	Insect identifying resources – (books, articles, charts, pictures)	
7-8	Science	Tree Identification	Identify various species of trees based on its characteristics	Tree identification activity	4, 7	Any	Tree identifying resources – (books, articles, charts, pictures)	
7-8	Science	Woody Plant Components	Be able to identify the various components of woody plants	Woody plant identification activity	4, 7	Any	Plant identifying resources – (books, articles, charts, pictures)	
8	Art	Found object sculpture	Understand the design principles of unity, repetition, and pattern.	Take a walk in the forest and collect object off the forest floor. Using hot glue make a sculpture using these objects. Keep in mind design elements and principles.	4,5,6	Gjertson Property	Hot glue gun plastic bags	
9	Science	Water Quality	Understand what dissolved O2 is and how it affects life within a water body	Test dissolved O2 levels in Silver Lake	1, 2, 3, 7	Jorgens Park	Water testing kits	

9-12	Science Small Business	Forestry	Understand the connection the forester has to the forest, the landowner, and to the logger. Compare and contrast the end goals of a forester compared to the goals of a logger.	Prepare questions of a forester: education needed, what is the function of a forester, how does the forester and the landowner work together, etc. Observe a forester at work and experiment with techniques used.	4,7	Gjertson Property	Video camera?	
9-12	Art - Drawing	Observational drawing/pers ective	Students will go on sight to draw from observation	In a pine plantation the visual perspective of trees is obvious. Draw this perspective and then draw a close up of a texture.	2,6	Gjertson Property	Colored pencils drawing paper clip boards	
9-12	Art - painting	Color match and perspective	Students will go on sight to draw from observation	In a pine plantation the visual perspective of trees is obvious. Draw this perspective and then draw a close up of a texture. Paint matching colors	2, 6	Gjertson Property	Tables or drawing boards, paint, pencils	
9-12	Business	Business of Forestry	Understand the business of the forest	Lesson 4 Leaf guide 9-12. Page 126	1,7	Gjertson Property	Leaf Guide	
9-12	Business Economics	Supply and demand	The Forest Market Place. Students identify factors that influence the supply and demand of forest products using basic economic principles.	Using veneer as an example, students use a graph to describe markets in different geographic regions and examine the relationship between WI forest and the rest of the world. See Leaf Guide 9-12 unit guide.	1, 2, 6	Any	Various graphs and maps	
9-12	Careers	Job opportunities in natural resource fields.	Student will learn about job opportunities in natural resources.	Create a resume from education and experiences of college students in WI. See Leaf Guide 9-12 unit guide.	1, 4, 7	Any		
9-12	Careers	Logging business	Understand and identify the career of a logger	Observe and discuss with a logger his knowledge and process of working in the woods.	1, 4, 7	Gjertson Property	Logger w/ equipment. Note taking	

9-12	Comp. I	Descriptive writing	Use their senses in an outdoor setting to create verisimilude	Descriptive Writing - using sense imagery to create verisimilude? (writing like you are there)	6	Any	Blind folds, clothes pins, ear plugs, gloves (to limit a specific sense)	
9-12	Creative Writing	Creative Writing	Use the natural setting of a forest area to inspire creative writing	Writing Marathon - give students with class time to sit in a natural setting to provide them with inspiration towards a creative writing project/assignment	5, 6	School Property, Jorgens Park	Clip Boards	
9-12	English	Poetry	Create a poem based on observations made in an outdoor setting.	Outdoor poetry writing activity.	5, 6	Any		
9-12	English	Research and science based writing	Students learn about the forest ecosystem functions and processes by reading an Aldo Leopold essay, doing research, and creating an original science based essay as a class.	See Leaf guide 9-12 Lesson 1 the Forest Odyssey	1,2,7	Any	Leaf guide Copies of Aldo Leopold Essay	
9-12	English	Aldo Leopold Essay	Students learn about the forest ecosystem functions and processes by reading an Aldo Leopold essay, doing research, and creating an original science-based essay as a class.		2, 7	Any	Copies of Aldo Leopold Essay	
9-12	History	How WI forests have changed due to human and natural influences.	Students explore how WI forest has changed due to human and natural influence through reading and video. Current changes in WI forest are discussed using a WI Land Cover map.	See Leaf guide, Unit guide 9-12 Lesson 2- a History of Succession.	2,5,7	Any	WI forest books, articles WI forest videos WI land/plot maps	

9-12	Math, Science	Sampling, environmental Resources	Calculate the amount of O2 given off by a tree and use sampling to estimate the value for a forest	Calculate the amount of O2 given off by a forest based on the types of tree species and the number of each species.	1	Any	Sampling test items	
9-12	PE	Lifetime sports (cross country skiing)	Describe how XC skiing is a lifetime sport and its benefit for those who do it!	XC Skiing	3, 5, 7	Any	XC skis, trails, heart rate monitors	2,5,6
9-12	Science	Healthy Biodiversity	Students study how WI climate and natural history influence forest biodiversity. They use case studies to develop insights into the question, "What is a healthy level of forest biodiversity?"	Group work on poster and presentation. See Leaf Guide 9-12 unit , lesson 3	2,3,4	Any	WI case studies	
9-12	Science	Environmental impacts	Students will analyze the environmental impacts associated with wood, concrete and steel by creating a life cycle analyses.	Students will study the roles that forest management, technology, and consumption play in sustaining forests and develop proposals to reduce environmental impact of wood use. See Leaf Guide 9-12 unit guide. Lesson 5	1,3,4, 7	Any		
9-12	Writing	Inspired Writing	Appreciate the use of the environment towards inspiring literature.	Discuss the writings of Thoreau, Whitman. Nature Literature - romantics. Write inspired works.	5, 6	Any		
9-12	Writing	Detailed and Descriptive Writing	From observations made in the environment, create a descriptive writing.	Make observations of some object or situation observed in an environmental setting. Create a detailed descriptive writing about your observations.	6, 7	Any		
10	Math	Fractal Geometry	Apply their knowledge of fractal geometry to predict a	Use repetition of patterns in plant growth to predict the growth pattern of an entire forest.	1, 7	Any	Graphing Paper	

			growth pattern in a forest					
10-12	PE	Survival in the wilderness	Give examples of specific survival techniques they could use when in the wilderness and faced with nature!	Survival of the Fittest	3, 5, 7	Any	Tracking with sun/stars; navigation tools, maps, compasses, GPS, weather props, national disaster props, help signals	3, 4, 5, 6
12	CSI	Entomology	Identify the various stages of decomposition as indicated by the insect population	Using cages, place samples of raw meat in the woods and observe the insect populations and their stages of development over time to estimate how long the meat has been exposed to the environment.	7	Any	Cages, various pieces of raw meat	

As mentioned in the paragraph before this table, it is important to understand that this table will continue to be a work in progress. Although the school forest task force committee has included numerous activities in this table, it is our ultimate goal that each year, every student in the I-S school district participates in at least one activity on a school forest property. To do this, we plan to organize activities with an overall district plan in mind. At the elementary and perhaps middle school levels, each grade would have a main activity they would do in a school forest area along with other smaller activities done by individual teachers. In the high school, each subject area would have a school forest related activity and this would be coordinated so that students would be exposed to a school forest area at least once per year. We felt it was important to first expose teachers to the types of activities available in the school forest areas which are reflected by the table above. Once teachers understand the opportunities that lie in these areas, collaboration can begin to reach the goals mentioned above.

Staff Development

The Iola-Scandinavia teaching staff completed a survey in fall of 2010 which assessed current usage of our school forests. It indicated a strong need for staff development related to our school forests. Since our school forest educational program is nearly nonexistent at this point in time, our plans for staff development will need to be somewhat fluid based on feedback we obtain from our staff as our school forest plan is developed.

August 2012, Barney Snyder and Rhonda Fechter, school forest task force team members gave an overview presentation at the fall in-service and updated staff members on the school forest plan. On October 26, 2012 Barney and Rhonda guided 13 staff members on a four hour

in-service touring the school forest sites. During these visits and demonstrations, the staff discussed what they experienced and shared ideas for improving the school forests for increased student learning and environmental literacy. Teachers will have another opportunity to visit the school forest sites in the spring, share curriculum, review lessons and discuss ideas for increased usage and implementation of activities. Staff development sessions will be held at least every other year as we begin to implement the education plan. Staff members will be contacted by the school forest coordinator with professional development opportunities regarding the school forests. Topics, locations, and presenters of these development sessions will be determined based on the feedback of staff members and educational need. Project Wild, Project Learning Tree and LEAF courses will be offered for staff development training if available. Staff development opportunities will be held at the high school, elementary school or school forest sites.

AVAILABLE AND NEEDED RESOURCES

AVAILABLE

People:

School Forest Committee members
 LEAF Program staff
 UW-Stevens Point
 Waupaca County Extension Office
 (Connie Abert)
 WI K-12 Forestry Ed. Program (Gretchen
 Marshall)

Waupaca County Register of Deeds (GIS
 Maps)

Materials:

General

Scissors
 Paper
 String
 Glue
 Pencils/Pens

 Hand lenses
 construction paper
 writing paper
 masking tape

Safety

Safety goggles
 Ear Protectors/Headphones

Technology

Digital Cameras
 Flip Cameras
 CBL's & Probes
 Portable Weather Station

Basic Exploring

Microscopes
 Insect nets
 Stop watches

Compasses
Colored Ribbon

Forest Measurement

Rulers
Tape Measures (300ft)
Measuring Wheel
Protractors
Levels

Timber Management

Birch Bark Samples

Plant Studies

Leaf/Flower Presses
Plotting Stakes/Supplies

Wildlife Management

Skull samples
Track samples
Jaw samples
Small Cages

Geology/Soils Studies

Soil sieves
Soil Quality Test Kits
Topsoil Tour Kit
Soil and Rock reference specimens
Rope and stakes for gridding
Soil Sampler

Aquatic Studies

Pond nets
Petri dishes
Forceps
Beakers
Test tubes
Graduated Cylinders
Water quality test kits

Pond Water Tour Kit
Thermometers
pH paper and test kits
Groundwater models

Recreation

[No materials available]

Weather Studies

[No materials available]

Curriculum Guides

LEAF Lesson Guide
Project Wild K-12 Curr. & Activity Guide
Project Learning Tree E.E. Activity Guide
LEAF Urban Forests Lesson Guide

Books

Birds of North America
Mammals
Plants
Insects
Wildflowers
Amphibians
Trees
Animal Tracks
Rocks & Minerals
Mushrooms
Weeds
Spiders

Multimedia Resources

[No materials available]

Available from CESA

GPS Receivers

Facilities:

Benches at School Property - prairie

NEEDED

People:

Local conservations clubs
Local gardening clubs
Pheasants Forever
White Tails Unlimited
Ducks Unlimited

Wings Over Wisconsin
Turkey Federation
Iola Historical Society

Materials:

General

Map of school forests
Clipboards or drawing boards (30)
School Forest users guide
Plastic storage containers
Post-it Notes
Dry Erase Board/Markers
Rubber Bands
Glue Bottles

Safety

First Aid Kit (prepared in office for each trip)

Technology

Laptop computer, printer
MP3 Player

Basic Exploring

Examination trays
Magnifying glasses
Bug boxes
Ice cube trays for sorting specimens
Boots of various sizes
Rain coats
Work gloves
Socks (for Seed Need activity)
Grocery bags for “How Many Bears...”
Crayons
Envelopes for “How Many Bears...”

Two small teddy bears for “How Many Bears...” activity
Water color and acrylic paint (various colors) for art activities
Hot glue gun and glue sticks for object sculpture activity

Forest Measurement

Tree keys
Biltmore Sticks
Tree Cookies
Diameter tapes
Increment borer
Ingle gauges
Clinometers
Wood Samples
Board foot samples
Prisms

Timber Management

Pole saws
Bow saws
Hand Pruners
Lopper

Plant Studies

Invasive plant guide

Wildlife Management

Animal tracks and molds

Skulls
Dissection kits
Binoculars
Echolocator
Study skins
Mounted specimens
Plaster of Paris
Small mammal box traps

Geology/Soils Studies

Soil samples
Soil and Rock reference specimens
Hammer/sledgehammer

Aquatic Studies

Biotic index charts
Waders
Minnow traps
Dishpans for sample observations
Watershed model

Recreation

Archery equipment
Snowshoes
Compasses/Orienteering Kit
Generic and specific topographic maps
Wisconsin Maps
Low Ropes Course Materials
Pedometers

Weather Studies

Weather station

Heat index charts
Sling psychrometers
Rain gauge
Cloud charts
Wind chill charts
Barometers
Anemometers
Light meters
Air quality kits (CO₂, SO₂, NO_x, ozone, radon)

Curriculum Guides

Project WET Activity Guide
Project WILD Activity Guide

Books

Prairie Flower identification guides
Weed identification guides

Multimedia Resources

Videos on related topics

Miscellaneous

Chain saw
Mowers
Refrigerator
Hoses
Chemicals for invasives and poison ivy control

Facilities:

Restrooms (composting toilet)
Education shelter
Trails
Trail signs
Trail kiosk
Picnic tables
Tables and chairs

Trail benches
Storage shed
Marking signs for plants, etc.
Amphitheatre
Parking area
Display areas
Fire pit

Materials on this list include those needed to obtain our educational opportunities as well as current curriculum.

Assessment:

The school forest education plan will be the foundation for the use of our school forests. Implementing the plan will lead to increased utilization, and thus enhanced learning opportunities. The school forest committee will assess the effectiveness of the school forest plan by tracking utilization and surveying teachers, students, and community members regarding their perceptions of the school forests and the activities provided there. A page on the school forest web site has been set up for the purpose of obtaining this feedback. A blog is present to allow people who have used the school forest to post comments on what they did while on the property. A survey is also available for community members to fill out to let us know about their experience while on a school forest property. Finally, a survey is available for I-S staff to use which will provide us with information on how the school forest is being used for educational purposes. Both of the surveys' feedback information will be transferred to a spreadsheet to be used by the school forest committee for evaluation and planning purposes. The committee will update the education plan at 3-5 year intervals based on the tracking and feedback received or whenever major changes are required (e.g., changes in district curriculum, changes to state standards, management activities on the school forest sites). The curriculum coordinator's job description has been altered to include responsibility for plan updates and assessment duties.

Sustaining the School Forest Program

School Forest Committee Members

Listed below are the titles and descriptions of the three committees we have established as part of our school forest program. Listed beneath the titles are the names of committee members and their affiliation. As our school forest program develops, we expect changes to these committees as well as the members who work participate within them to occur. These changes will be updated each time the school forest plan is reviewed.

***Iola-Scandinavia School Forest Task Force Committee* – This group will serve as the primary leaders of the school forest program. They will be the main resource for information related to our school forest program. This committee will be responsible for developing and reviewing the school forest plan, tracking and evaluating the activities related to the school forest, and the finances and planning of major projects.**

- Alan Bauer– Iola-Scandinavia Elementary School (5th Grade Teacher)
- Rhonda Fechter – Iola-Scandinavia Elementary School (Kindergarten Teacher) and is also our school forest project coordinator.
- Marsha Mueller – Iola-Scandinavia High/Middle School (Art Teacher)
- Barney Snyder – Iola-Scandinavia High School (Science Teacher)
- Amy Wiersma – Iola-Scandinavia Elementary School (2nd Grade Teacher)

***Iola-Scandinavia School Forest Education Committee* – This committee is comprised of the Task Force Committee members as well as the other teachers listed below. This group will be directly involved with the implementation of our district’s curriculum into the school forest properties. They will serve as additional resources to the Task Force Committee and as outreach to other teachers in our district who are interested in using our school forest properties in part of their curricula.**

- Sam Bertch – Iola-Scandinavia Elementary School (6th Grade Teacher)
- Darin Beschta – Iola-Scandinavia Middle School (Science Teacher)
- Robin Tomski – Iola-Scandinavia High/Middle School (Guidance Counselor)
- Brian Tucker – Iola-Scandinavia High School (Social Studies Teacher)

***Iola-Scandinavia School Forest Advisory Committee* – This group of committee members have agreed to serve as advisors to our school forest program. Each member has his or her own area(s) of interests and/or expertise related to the school forest program.**

- Sara Anderson – Iola-Scandinavia High/Middle School (Principal)
- Tess Lecy-Wojcik- Iola-Scandinavia Elementary School (Principal and District Curriculum Director)
- Duane Braun – Iola-Scandinavia School District (School Administrator)
- Laura Scott – Iola-Scandinavia High/Middle School (Business Education Teacher)
- Bill Myers – Iola-Scandinavia Elementary School (2nd Grade Teacher)
- Charlie Wasrud – Iola-Scandinavia School District (School Board member, maintenance background)
- Larry Fechter – Maintenance Consultant
- Connie Abert – UWEX Youth Development
- Gretchen Marshall – Wisconsin School Forest Specialist
- Tom & Ila Sanders – Master Gardeners
- Dave Stoiber –Independent Forest Resource Manager
- Bud Peterson – Log Structure Construction

Communication Plan

As I-S student usage of the School Forest increases through outdoor education that meet educational standards, the School Forest Committees' goal and mission is to keep the I-S community informed and to provide accurate information about the usage of the School forest.

- Newspaper articles and informational releases: throughout the process of writing our school forest plan, obtained through the WEEB grant, we need to inform the public of our goals and mission. The first article was published in May 2011 to inform the community of what we are working on and to open up the lines of communication with the community. A second article was published October 2011 as the school forest plan moved forward to inform the community about the plan and update our progress on the school forest program as a whole. A third article was published in the fall of 2012 to update community members about the status of our school forest developments and to inform them about the work that was being done to improve the school forest areas and our educational goals related to them.
- School forest web site: ongoing updates to our school forest web site will continue to occur as our committees meet while developing our school forest plan. We will continually update what is going on with the school forest as well as any supporting documents for the use and management of the land. The website for our school forest is http://www.iola.k12.wi.us/school_forest.cfm
- Expansion of the School Forest Advisory Committee: the School Forest Task Force Committee and the School Forest Education Committee will expand adding interested community members to make this a well-rounded, community minded committee.

Jorgen's Park Preserve Property: Over the history of including the Jorgens Park Preserve property into our school forest program, numerous means of communication have been conducted. Our School Forest Task Force Committee and the Friends of Jorgens Park board met in August 2011 to discuss common goals of this property and its usage as a school forest. We have informed the Iola-Scandinavia Communities of developments related to this property through newspaper articles. In these articles, we provide a link to our recently modified school forest web page where readers are able to find more information as well as contact information. Our first article was published on May 18, 2011, another shortly after the start of the 2011-2012 school year on October 26, 2011, and the latest in the fall of 2012. To continue informing the public, as we update, expand, and complete our forest plan, more local newspaper articles will be submitted. Our goal is to publish these articles in the "Orange and Black" issue as everyone in the I-S school district gets a free paper with this school insert.

School Property and the Gjerston Memorial Forest Property: The two properties that the school already owns have been included in the Web site and the newspaper articles as to their usage, goals and mission.

A school forest web page was initiated by a group of seniors in the spring of 2011 as part of a school project. Their goal was to inform the community about our school forest properties. This web page was modified by a member of the Task Force Committee during the summer of 2011 to reflect our current goals and information related to the property. A photos section was also added to the web page at this time. This web site will be updated continually throughout the development stages of our school forest program.

To engage the community in the school forest we plan to expand the school forest committees. The School Forest Task Force Committee and the School Forest Education Committee will expand into a School Forest Advisory Committee by adding interested community members to make this a well-rounded, community minded committee. It would benefit the school forest to have the expertise of community members such as foresters, landscapers, electric Co-op members, construction/builders, etc. on this committee to offer suggestions and knowledge.

Long-Range Goals

To begin this process all teachers in the IS school district were given a short survey asking how they used the school forest, what prevented them from using it or what they need to make it more user friendly. Short and long term goals were determined from this survey.

Currently, there are very few facilities on any of our properties. Our goals for our properties at our three sites could be broken down into short term goals and long term goals.

Short term goals:

- The goal of the School Forest committee is to create a place where the staff and students feel free to explore and investigate and are able to better utilize all properties.
- Develop and create a curriculum in partnership with enthusiastic teachers to use in the school forest and create as science-based class instructing upper class students as instructors in order to move teachers and students outside using the facilities we have available.
- All areas need bathroom facilities, a shelter area, parking for a school bus (except the school property), and a trail system.
- Make all properties user friendly.

Long-range goals:

I-S School Property: This includes the 1 acre area is on our school property situated between the elementary school and the high school creating quick and easy walking access for all students. There is also a wooded area of 2.8 acres. A fence has been placed around the prairie area, three small benches have been built at its entrance area, and a basic trail has been made through the center of the prairie.

Immediate needs:

- The trail through the prairie needs maintenance and the wooded area needs poison ivy control.

- Benches or picnic tables for discussion/work areas.

Long-range wants:

- Shelter area. This could be a portable tent with sides to a posted roof structure with dirt or cement floor to a four-sided classroom. Tables and benches could be contained here for instruction.
- White board/ writing area for teacher instruction.
- Identification markers: to ID prairie flowers and surrounding trees made with small planting stakes to framed drawing of species on posts to 4x8' plywood illustrations/maps of flowering species

Gjerston Memorial Forest This includes the 8 acre pine plantation bordering Highway 49. At the time of donation in 1958 this was a farm field. Pine trees were planted and have been managed, through thinning by the DNR in 1986 and 1999.

Immediate needs:

- Eradication of evasive species within the forest such as Honeysuckle and Buckthorn.
- Parking entrance to allow a bus to pull off the highway to drop off students safely.
- Bathroom facilities
- Trails are needed to direct students into the property and away from Highway 49.
- Benches or picnic tables for discussion/work areas.

Long-range wants:

- Shelter area. This could be a portable tent with sides to a posted roof structure with dirt or cement floor to a four sided classroom. Tables and benches could be contained here for instruction.
- Low ropes course. This property would be the most practical to build a low ropes course due to the pine plantation environment. This could be used in several classes for both physical fitness and leadership development.
- Orienteering course and materials.
- Timber Stand Improvement (TSI) materials, forestry instruction and tools.

Jorgen's Park Preserve. This property is located between Silver Lake and Highway 49 in Scandinavia and has the original barn on the site. It also has an osprey nest which has a breeding pair in attendance. The I-S school system has secured a lease of this property for usage.

Immediate needs:

- Parking entrance to allow a bus to pull off the highway to drop off students safely.
- Bathroom facilities
- Trails are needed to direct students into the property and away from Highway 49.
- Benches or picnic tables for discussion/work areas.
- Amphitheatre: This area could include bench seating for larger number of students.
- 15 pair of Binoculars for bird watching. (Osprey nest)

Long-range wants:

- Outdoor shelter/classroom/Nature center. This will allow an area allows for classroom type discussions, work space and provides shelter from inclement weather when needed.
- Waterfront area.
 - Dock or pier to enhance water studies
 - Canoes/kayaks/boats w PFD's and paddles

- Waders
- Water study equipment
- Gardens
 - Vegetables. Vegetable gardens could be used to supply the school lunch program.
 - Rain. A rain garden is a planted depression that allows rainwater runoff from impervious urban areas like roofs, driveways, walkways, parking lots.
- Orienteering course. There have been several teachers interested in such a course being developed. Both properties could lend themselves to this type of course and could be used both for physical fitness as well as math/tech ed applications.
- Solar usage and exploration
- Bird house
- ID signage of plants, trees, geological formations.

Implementation Plan

Since the school forest program at our district is in its initial developmental stage, implementation will depend largely on the feedback provided by staff members as our school forest plan is developed. We plan to complete our school forest plan by the winter of 2012.

- Poison Ivy needs to be controlled.
- There are several facility needs, such as parking, bathrooms and trails that we will have to address before many of the properties can be used effectively.
- Build curriculum so teachers will know how to use the school forest areas to the best of their abilities. Our fall 2012 in-service will help initiate this process.
- Forming an advisory committee that will include not only the existing teachers but also community members, forestry specialist and students.
- Apply for grants which could assist us in some major development needs. This will also be a priority once our plan has been completed.
- The following Implementation Plan Table will serve as a guideline for implementing our goals regarding our school forest plan.

Event/ Activity	2011/12	2012/13	2013/14	2014/15	2015/16
Form staff SF committee	X				
Create needs assessment survey	X				
Expand curriculum from needs assessment input and visit other sites	X				
SF committee review 1st draft/initiate data collection	X	X			
Develop and expand k-12 curriculum	X	X	X	X	X
Begin second drafting sessions	X	X			
Final editing writing and review of SF ed. plan		X			
Plan district in-service and SF ed. Plan feedback		X			
Involve students in site visits for usage feedback		X	X	X	X
Complete ed. Plan utilizing input from staff and large committee/ prepare presentation for school board		X			
Remove invasives, including poison ivy on all sites		X	X		
Work on designs and volunteer involvement for benches and bathroom facilities at Gjertson and Jorgens SF sites		X	X	X	
Update and keep current information regarding SF ed plan on School web site including promotion of community involvement	X	X	X	X	X
Present SF ed. Plan/WEEB grant to school board		X			
Work with staff and SF committee members to develop a materials room, checkout procedure and useage feedback for SF usage		X	X		
Build amphitheater at selected site			X	X	X
Develop and build ropes course at Gjertson site			X	X	X
Build an education shelter at the school site (possible HS Tech ed. Project)			X	X	X

District Commitment

The Iola-Scandinavia School Forest Task Force Committee and its work on the education plan was recognized at the August 8, 2011 Annual Meeting. Recognition of the school forest proposed sites and committee members Barney Snyder and Rhonda Fechter was made by board member Charlie Wasrud. The I-S administration and school board supports activities and development at the school forests, and will provide professional development opportunities and site visits for staff during in-services. Copies of this plan were given to school board members and administrators to review. A final adoption of this plan by the Iola-Scandinavia School Board was formally made at their monthly meeting on December 10th, 2012.