



**WHITNALL**  
school forest

**Education Plan**  
*Learning and Growing, Together*

# Whitnall School Forest Education Plan

## Rationale

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### ***Value Statement***

The Whitnall School Forest is a unique educational site that provides opportunities to enhance and expand student and teacher learning in a natural environment, increase family involvement in student learning, and provide a community connection to and engagement in our schools. Integrating environmental education into school curricula across content areas has been correlated to increased student achievement, improved school attendance, and decreased negative behaviors (Lieberman & Hoody, 1998). Through hands-on and active experiences in an authentic natural setting, students acquire the relevant knowledge, skills, and dispositions to promote responsible global citizenship.

### ***Target Messages***

- Public natural areas become and remain safe, accessible, and vibrant through regular use and continuous protection.
- Responsible citizens are obligated to preserve and enhance these natural areas and their surrounding waters.
- Offering resources that support learning, volunteerism, stewardship, recreation and camaraderie promote community.
- Responsible citizens practice and model environmentally responsible behaviors.
- Learning is best provided through direct hands-on experiences in an authentic environment.
- Problem solving and other critical thinking skills are developed and meaningfully applied through environmental education experiences.
- Environmental education is a continuous, lifelong process, beginning at the pre-school level and continuing through all stages of a person's life.

### ***Needs Assessment and Current Usage***

The school forest should be used to enhance classroom instruction through experiential outdoor education that meets state education standards, addresses Next Generation Science Standards, integrates environmental education into the curriculum, and demonstrates sustainable natural resources management. The Whitnall School Forest is an incredible educational resource that is not being utilized to its full potential. A major reason for this is lack of familiarity with the school forest and the opportunities that it presents to enhance classroom instruction as well as a number of issues preventing safe and/or useful accessibility.

According to a District-wide survey of 176 staff, only 34% of teachers indicated that they had taken students to the school forest, and they each use it only primarily one day per year. Two teachers within this 34% use the school forest more than one day a year, but less than 5 days per year. Results from the School Forest Needs Assessment conducted by the district in January/February 2014 suggest Whitnall teachers feel inadequately prepared (both in content knowledge (68%) and in outdoor teaching strategies (76%) to facilitate trips to the school forest. At the same time, however, 99% of Whitnall teacher respondents indicated strong interest in future or continued use of the school forest pending lesson development, improvements to the forest (clearer trails, removal of invasive species, for example), and an awareness of possible uses for classroom instruction as well as support in initial usage.

The extensive School Forest Needs Assessment generated many anecdotal responses suggesting strong interest among teachers to generate community and District-wide awareness around the school forest. The Whitnall School District has launched an in-depth and extensive technology plan, including

1:1 initiatives at both the high school and middle school. Whitnall teachers express high interest in using the technology in “real world” applications, including in the school forest. One responder commented,

The opportunity to take learning outside is always powerful! With our iPads and 1:1 initiative, the possibilities for doing so are significantly broadened. I can see data collection & statistics, geometry, and human environment interaction as being main themes or units of study that the school forest could help to facilitate. But given the motivation and inspiration to delve further, I'm certain I could come up with many learning opportunities... It just wasn't always something in the forefront of my mind, so I'm glad this survey and initiative has come to my attention!

The Whitnall School Forest Needs Assessment will be used in planning staff development as well as in developing the Whitnall School Forest Management plan. Logistically, Hales Corners Elementary school will need transportation to the site. A shelter with seating for classes would provide a better environment for gathering and elementary teachers reported that they could not visit without better access to bathroom facilities.

The school forest was previously used to teach a unit called Milkweed Monitoring in which 3rd grade students paired up with high school biology students to monitor ozone damage to milkweed plants. The data was reported to the DNR and posted on its EEK site. More recently, 9th grade biology students use the forest to study ecosystem populations by monitoring earthworms using protocol established by the University of Minnesota. The 6th grade teachers have developed a geocache unit. The school forest is also used by the PE department (snowshoeing and cross country skiing), but on a fairly limited basis. An Environment Club was formed at the high school (2013), and they are planning to raise funds to improve school forest sustainability.

## **Site History and Description**

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### ***History***

The Whitnall School forest is a flat, glaciated area that is poorly drained. The bedrock is limestone that was once quarried in the area and burned for lime production. Originally the area had an abundance of trees, including maple, pine, and oak.

According to the Hales Corners Historical Society, the earliest known people to visit the area were the Potawatomi and Menomonee Indians. A few artifacts were found in the Hales Corners area and many stories were told by earlier settlers of visits by passing Native Americans. As late as 1882 there were still a few Native Americans to be seen on Janesville Road who would stop and ask for food.

Early European settlers were from the New York, Germany, and Ireland. The natural deep and fertile clay loam soil of the area was attractive for farming once the land was cleared. Settlers typically worked medium size farms (80 acres or less) growing wheat until the soil was depleted (1840's - 1860's). With the soil unproductive for wheat, many of them turned to dairy as cheese brought better prices. In 1865, Jacob Conrad bought a house and acreage around 10224 W. Forest Home Avenue and settled his family in Hales Corners. Mr. Conrad had come to America from Germany in the 1840's. Jacob Conrad was a farmer, as was his older son, Jacob Jr. The son settled on the farm where Whitnall High School now stands. He and his sons extended their holding in that area. Whitnall High School opened to students in September of 1959 to 215 students.

The northern boundary of the school forest, Highway 43, was completed in 1969. The 894 bypass had been finished earlier, and the opening of the “Rock Freeway” completed existing expressway plans for the southwest corner of the county.

The western portion of the "Whitnall School Forest" was purchased by the Whitnall School District from William R. Heffernan on January 4, 1991 for \$295,000.00. At that time, the property was prepared to accommodate a proposed subdivision known as Heffernan's Meadow Wood that included both sewer and water. In total, the property had the capability to support 17 single family lots and 14 two family lots. According to the city of Greenfield records, the property was then known as Parcels 1, 2, and 3, of Certified Survey Map #5402, being a part of the Northwest 1/4 of Section 30, Township 6 North, Range 21 East. Photographs and text from the Appraisal Report show/state that the area was 11.384 acres, partially wooded, mostly with softwood growth. The land was irregular in topography with the high point of the property lying near the southwest corner of the site. The land gradually falls to the east with the low point being the bed of an intermittent stream, which is approximately 24 feet below the high point. The intermittent stream enters the property near the middle of the south property line and meanders northeasterly, exiting the property through a culvert. The road grade begins to rise at this point to meet the grade of the overpass over Highway 43. Because of this, the northeast corner of the site is approximately 23 feet below the grade of 116th street.

At some point the western portion of the school forest became known as the Nature Pod. In a document dated March 1, 1999, Whitnall Superintendent Peter Alvino, sent a letter to Mr. and Mrs. Bob Hokanson thanking them for a \$10,000 gift. The Greenfield Rotary Club supplemented the gift with a \$3000 donation. In a letter dated April 28, 1999, Brian McCormack, Principal of Whitnall Middle School, thanks the Hokansons' and explains that the monies will be used to design a learning center within the Nature Pod. In 2001, science teachers from the middle school and high school worked together and with their students to develop a plan for the learning center. Much discussion took place as to how to deal with the "thicket"- should it be bulldozed or pulled. By May of 2001, building and grounds custodian, Jim Frami had determined that only 6 larger trees, some smaller black locust, and shrubs would need to be removed during the development of the trail system. Records from October of 2001 indicate that a sign for the "Nature Pod" was in place.

In 1999, the Whitnall School District applied for a Wisconsin Environmental Education Board (WEEB) grant titled "The Whitnall Nature Pod". The purpose of the grant was to provide funds to remove invasive species (buckthorn, honeysuckle, poison ivy, and black locust), improve trails and signage, and provide staff development in the area of environmental education. Sited as project directors were Deanna Biermann-Schroeder (Edgerton Elementary teacher), Bill Twitchell (Whitnall High School biology teacher), Patricia Goodspeed, and Sally Habanek (Associate Superintendent of Curriculum and Instruction). At that time, the grant was awarded to the Whitnall School District.

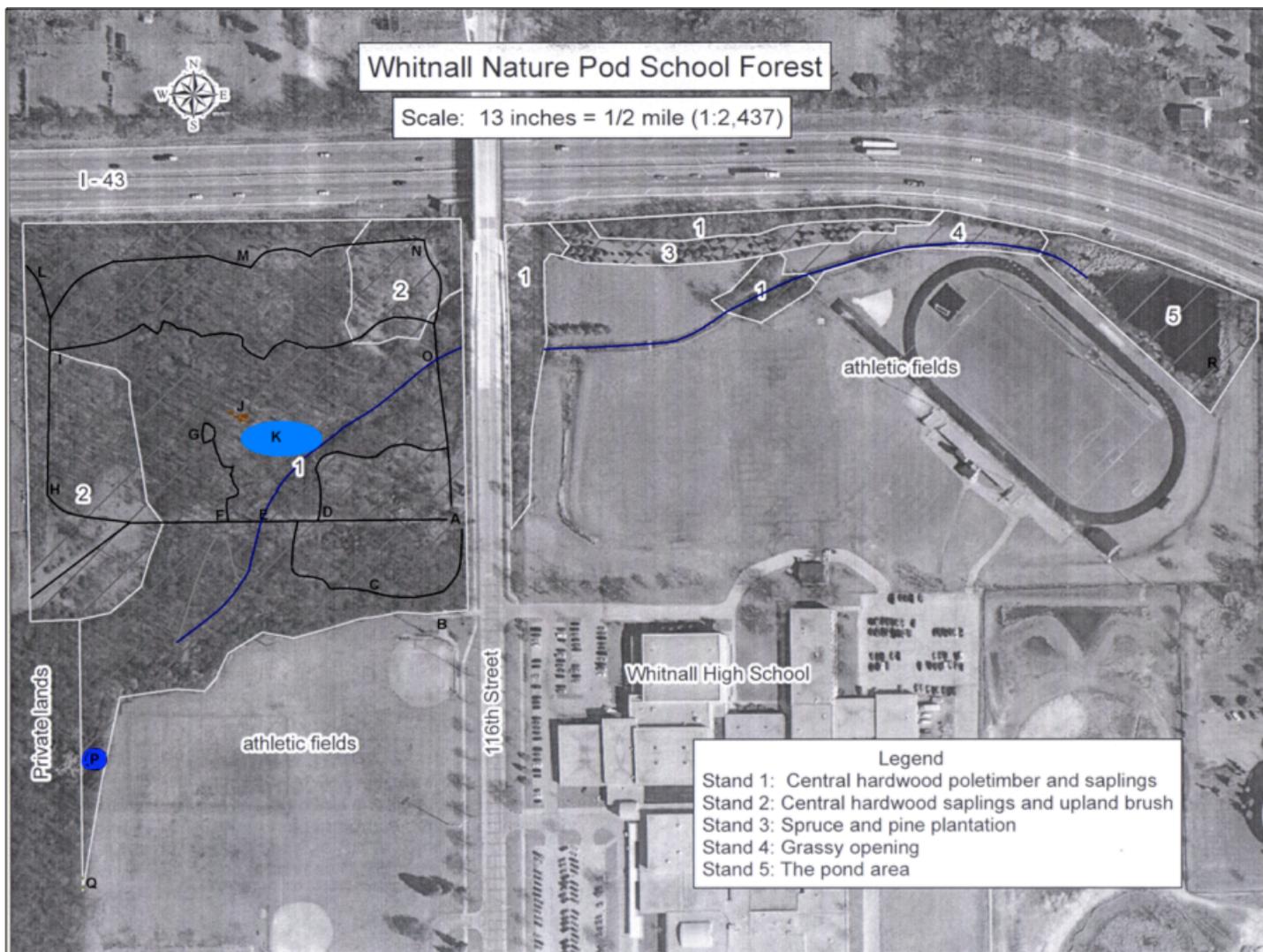
### ***Description***

The Whitnall School District is located in Southwestern Milwaukee County. This area is primarily suburban being dominated by homes and with businesses along the main highways. The Whitnall School Forest is located on the north side of the Whitnall Middle School and Whitnall High School properties- 5000 S. 116th Street in Greenfield, Wisconsin, less than a mile from the Village of Hales Corners. The northern boundary of the property is Interstate Highway 43 (I-43). The site is bordered on the west by a housing subdivision and on the south by school athletic fields. The School Forest covers 16.8 acres of wooded area along with 3 small ponds and grassy areas.

### ***Legal Site Description***

NE1/4 of the NW1/4 of Section 30 in T6N R21E, the City of Greenfield in Milwaukee County.

## Map and Key Attributes



### Key Attributes

- A Entrance- located on 116th street, just south of I-43, parking is available along the street or at the HS
- B Restroom- single Port-o-Potty (bathrooms are available at the high school and middle school)
- C Songbird Trail- many spring wildflowers
- D Cattail Creek Trail- access to south side of the wetland
- E Creek access point- a culvert passes under the main trail, steep muddy banks lead to creek
- F Poplar Cove Trail- access to the west side of the wetland
- G Teaching Station- an open area originally supplied with desks and chairs until vandalized
- H North Trail- runs along the subdivision built in 2012
- I \*This trail has no name – not on original map- access to the north end of wetlands and rock outcropping
- J Rock Outcropping- several large rocks, evidence of glaciation
- K Wetland- a shallow wetland that can be accessed with waders
- L Subdivision path (new- not created by school)
- M Deer Trail- location of native tree plantings from 2001, parallels highway
- N Possible site for prairie (area 2)- a once open area, now invaded by non-native plants
- O Creek access point- muddy banks but easy access
- P Pond- small pond surrounded by grapevines, berry bushes makes for difficult access
- Q Fence posts- evidence of a farm fence line
- R Pond 1 - Dug during the time of the first football stadium (Pond 2 is SE of pond 1- dug in 2012)

## Structural Features

### *Roads and trails*

A city sewer easement runs west to east through the property. This is the widest and most heavily used trail. Manhole covers are visible along this path. From the map, you can see that several trails loop through the property west of 116th street. The two ponds on the east side of 116th street are accessible via the football stadium parking lot.

### *Parking lots*

Street parking is available along 116th street for buses transporting students from Hales Corners Elementary. The high school also offers several parking lots but most are at capacity on a school day. All other schools are within walking distance.

### *Buildings*

A portable restroom (B) is located in the SE corner of the property not far from the entrance. Bathrooms are also available at the high school and middle school which are adjacent to the property.

### *Utilities and services*

There is access to electricity on the NE side of the property at the site of the softball diamond. Cell phone service is available. There are garbage containers at the softball field and they are serviced by the school district.

### *Outdoor facilities*

Currently there are no outdoor facilities.

### *Fences*

Fences run along the I-43 highway and are maintained by the Department of Transportation. Old fence posts (Q) may have been part of the original farm. The School Forest is always open. There are no gates.

Main trail (A-H on map)



Portable restroom (B on map)



Poplar Cove trail and teaching station, which once had desks. (G on map)



Workers repair fencing along WI I-43. Pond 1 is in the foreground. (R on map)

## Cultural Features



This area could be returned to a prairie. (N on map)



Original sign was vandalized. This replacement missing lower portion and is in disrepair. (A on map)

Older fence posts remain on the property. (Q on map)



A discarded residential soccer goal disposed of in the school forest near the main entrance. (A on map)

### *Paths, campfire rings, or other signs of human use*

During the winter it is evident that the land is used for cross-country skiing. People walk their dogs year round and students use the paths as a route to school.

### *Places of beauty*

The streams and wetlands should be made accessible because of their beauty and potential as a learning tool. In the spring, the forest has an abundance of wildflowers. Area 2 on the map was once a home to many native prairie plants that would bloom in the fall but is now overrun with thistle and Queen Anne's Lace. This area should be enhanced with native prairie plants.

### *Archeological sites*

There are no indications that Native Americans used the area.

### *Old foundations*

None

### *Fencerows*

There are 2 fence posts located near the south point of the triangular piece of land behind the WMS athletic fields (Q).

### *Garden plants*

None

### *Dumpsite*

None (Though no official dumpsites were ever present on this site, people do sometimes use it to drop off unwanted items.)

### *Vandalism*

The metal signs that once marked the trails were damaged so badly they had to be removed. The entrance sign which had a map has also been destroyed and the new sign seen in the picture needs repair.

## Topographical Features

### *General topography*

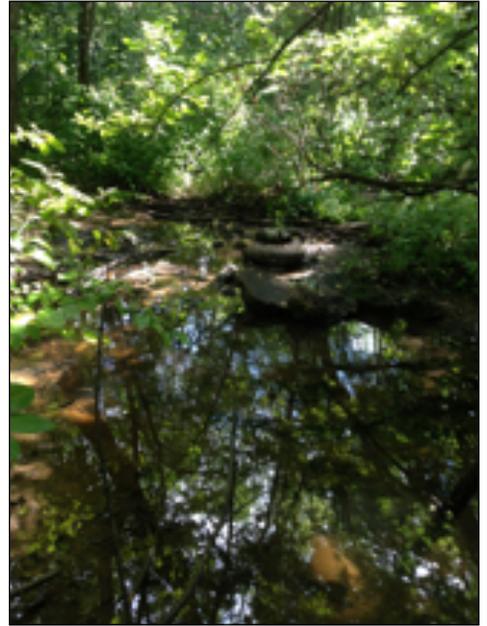
The land is generally flat. A steep slope is located along 116th street where the bridge crosses I-43. More gentle slopes lead to the creek and ponds.

### *Drainage*

The creek flows from the SW corner of the property and then borders the N boundary. The creek has been routed underground until it flows into pond 1. The creek leaves the property on the NE portion of the property and flows to the Root River.

### *Safety concerns*

The slope of the land does not warrant any safety concerns. Students should be cautious along banks of all water bodies and the steeper slope along 116th street.



## Geological Features

### *Bedrock, Limestone deposits, Rock diversity*

No

### *Glacial evidence*

Yes, there are rock outcroppings on the NW side of the wetland. These rocks were probably tilled from the soil and placed here by the farmer. As invasive species are removed, we are finding more rock outcroppings.

### *Soil thickness*

To be completed by students. Use a soil auger to determine the presence and thickness of the topsoil, subsoil, and parent material in several locations.

### *Soil type*

The site has four soil types present, including in order of abundance: Ozaukee silt loam, Mequon silt loam, Ashkum silty clay loam, and a type referred to as Loamy land. The Ashkum soil is only present along the stream areas, the Mequon soil on the west side of the woods, the Ozaukee soil is found in the north and southeast portions of the site, and the loamy land type is found in the pond area and directly around it. The first three of these soils have good fertility and can grow trees well, although the Mequon and Ashkum are not as well drained as the Ozaukee soil and can often be wetter sites. The loamy land soil is generally not a good soil for growing trees.



### *Soil Chemistry*

To be completed by students.

## Water Features



Stream (**O** on map)

### *Watershed*

The School Forest is part of the Root River watershed and the water eventually flows into Lake Michigan.

### *Surface waters*

See map

### *Year round sources*

Pond 1 and Pond 2 on the E side of 116th street contain water year round as does the small pond (P) on the SW part of the property. The stream (O) and wetland (K) are rain dependent.

### *Water quality*

To be completed by students.

### *Accessibility*

There is a need for providing boardwalks along the stream because the banks are very muddy. A path needs to be cleared to the wetlands and boardwalks would also need to be added. All of the ponds need access points.



Small pond (**P** on map)

### *Groundwater*

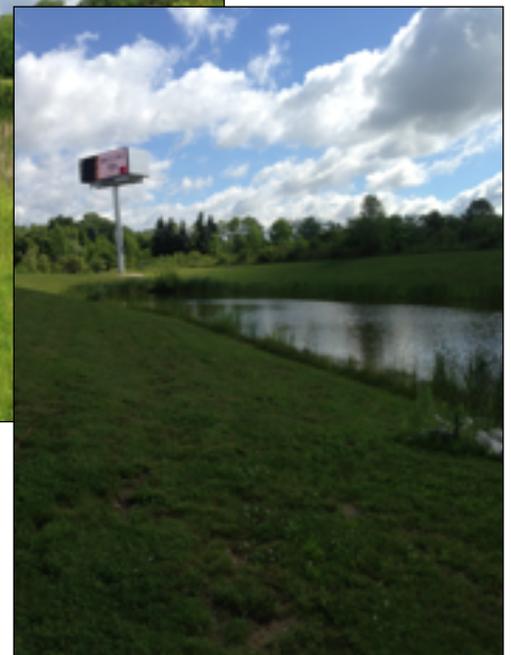
To be completed by students. Determine the depth and direction of flow using groundwater maps of the region. Are there any groundwater monitoring wells present on the site? Are there private or commercial wells that draw on the groundwater?



Wetland (**K** on map)



ABOVE: Pond 1 was excavated during original site build over 50 years ago. (**R** on map)



RIGHT: Pond 2 excavated in 2012 during water management and outdoor facilities renovation. (southeast of **R** on map)

## Habitat Features

### *Plant communities*

There are 5 stands (areas of relatively consistent vegetation) of vegetation that make up the Whitnall School Forest. See map. For more information on each stand, see the Forest Management Plan.

### *Successional stages*

Yes. But to do so we will first need to get rid of the invasive species. We also need to determine why certain trees (white pine) atypical to this area were planted in 2001.

### *Wildlife habitat features*

Possible Student Project

## Plant Species

*Native trees, shrubs, vines, wildflowers, grasses, aquatic plants, mosses, and ferns*

Black walnut, green ash, elm, black locust, hickory, cottonwood, box elder and red oak. A few planted conifers including Norway and blue spruce, white cedar and red cedar. The brush layer is dominated by common buckthorn, honeysuckle, hawthorn and some multiflora rose. Dogwood and cattails are around the ponds. Planted white spruce, white pine and red pine are in stand 3.

### *Endangered species*

One species, Hooker's orchid was listed as a special concern in 1899 when it was last observed. Whether it is still present is unknown. It would be worth learning what the plant looks like and keeping an eye out for it.

### *Invasive plants*

The area is highly invaded by common buckthorn, garlic mustard, and honeysuckle.

### *Hazardous plants*

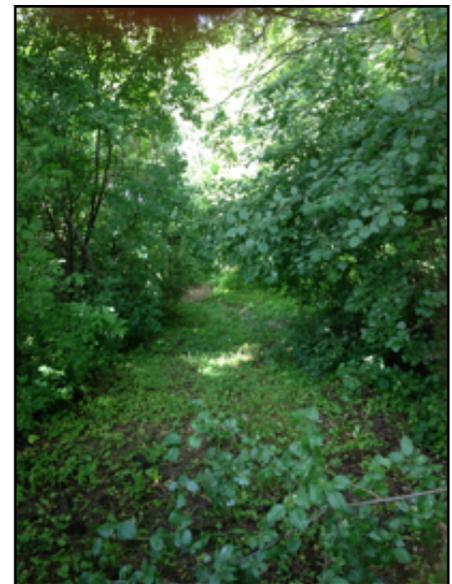
Poison ivy

## Animal Species

Possible Student Project: Compile species lists for all animals present on the site. Indicate if listings are confirmed sightings or signs left by animals. To get a complete listing, you will need to inventory the site many times throughout the year.



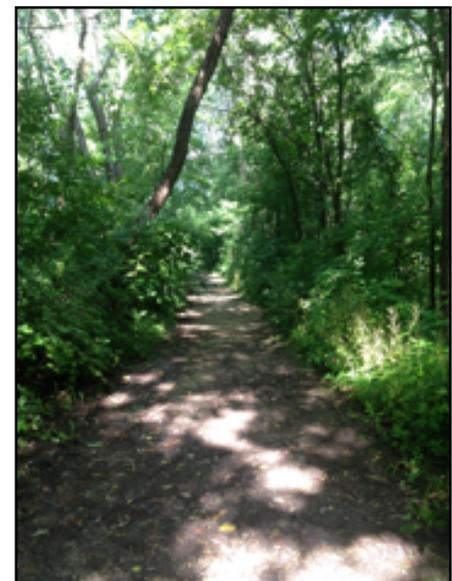
Raspberries are abundant in July



Buckthorn on Songbird Trail



Students collect data on earthworm populations



Main trail lined with honeysuckle

## Site Management

### Objectives:

The primary objective of the Whitnall School District in maintaining a School Forest, is to provide hands-on outdoor environmental education opportunities for students. In order to fulfill the above objective the following management tasks must be met:

- Invasive species removal
- Prairie restoration
- Tree planting
- Access to streams, ponds, and wetlands
- Trail maintenance
- Improved restroom facilities
- Erection of a shelter with tables

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

- Support staff in planning and implementing lessons at the school forest site
- Enable all students K4-12 with opportunities to utilize the school forest
- Encourage community programs on environmental education to held on school forest facilities

## Educational Connections

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### ***Whitnall School District Forest Mission***

By providing the highest quality personalized educational experience, the Whitnall School District engages learners who embrace challenges and are responsible contributing members of a dynamic global society. In each classroom, learning is driven by enduring understandings and tied to the national standards. The educational connections put forth in this document draw upon best practices already in use by the district, which will be enhanced through use and/or management of the school forest.

### **Key Concepts**

1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.
3. Successfully managing natural resources depends on careful collection and analysis of data.
4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.
5. Human health and environmental health are interrelated.
6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
7. Interacting with the natural environment inspires creativity.
8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.

### **Classroom Curriculum and Site Connections**

Activities at the school forest are tied closely to existing curricula across K-12 content areas. Ultimately, the intent is to provide students with "real world" experience (in the forest) where theories and ideas come to life through observation, creation, and engagement with the natural world. These experiences are designed in alignment to the Key Concepts (listed above). **Appendix A** contains lessons collaboratively developed by teachers in the Whitnall School District which span all content areas and grades. Each lesson is also aligned to a key concept, state standard, and WSD learning target. The document also contains supply and equipment needs.

**Appendix B** contains the site map, talking points for guided or points of interest for self-guided tours, and a school forest orientation “scavenger hunt” activity. All will be made available via the website and the main entrance of the forest.

**Alignment with State Standards**

Activities and learning taking place in the school forest are aligned to Wisconsin’s Model Academic Standards for content areas and/or National Standards. As WSD teachers have developed working learning targets from these standards across all content areas, school forest activities also address specific learning targets. **Appendix A** contains such lessons and their alignment to standards and targets.

**Staff Development**

Several professional development opportunities will be provided for WSD staff:

<b>Topic</b>	<b>Format</b>	<b>Location</b>	<b>Timeline</b>	<b>Presenter that will address staff needs</b>
<b>School Forest Tours</b>	Presentation, Small group interactive stations	School Forest	August 2014 (Repeated each year for new staff during orientation)	School forest task force, Administrators
<b>Field Trip Development</b> (content area lesson planning)	Presentation, K-12 content area breakout sessions, Hands-on experiences	High School	March 2015	School forest task force, Academic achievement team,
<b>Field Trip Development</b> (standardized school forest protocol)	Presentation, Work session	Community boardroom School forest	Summer 2015	Administrators, School forest task force
<b>School Forest Safety Training</b>	Small group breakout sessions, Hands-on experiences	School Forest High School	August 2015	Fire department, Police department, Administrators
<b>Field Trip Development 2</b> (content area lesson planning)	Presentation, K-12 content area breakout sessions, Hands-on experiences	High School	March 2016	School forest task force, Academic achievement team,
<b>Student Leader Training</b>	Presentation, Workshop	High School School Forest	May 2016	Lead teacher of school forest task force, AP teachers
<b>Horizontal curriculum development</b>	Presentation, Small group breakout sessions	High School School Forest	August 2016	Academic achievement team

## Assessment

An essential component to the sustainability of effective school forest use and management is the assessment of efforts related to educational or management experiences within or about the school forest. The Whitnall School District has developed baseline data regarding use, interest, and awareness of the forest as well as management recommendations. In order to monitor, develop, and promote school forest use and progress, the WSD will:

- Conduct surveys (school and community) to collect data regarding perceptions, familiarity, interest, logistical concerns, usefulness and updates to the Education plan, effect of motivation in teaching and learning, site maintenance and possible updates and proposals;
- Analyze the results of lessons, assessments, and learning experiences;
- Analyze the results of standardized tests that are aligned to school forest activities, key concepts, and learning targets;
- Analyze and collect data regarding usage (frequency and purpose);
- Track the number of business, municipal, and government agencies who become involved in the school forest program as well as the number of community members who attend school forest events; and,
- Collect and centrally store via the Whitnall Curriculum Database (for access by all staff) school forest lessons, including detailed information about alignment to learning targets, key concepts, supplies, equipment, and activities.

## Sustaining the School Forest

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### Task Force Members

In order to develop rigorous and relevant instructional, curricular, and professional development opportunities, the Whitnall School Forest Task Force is comprised of members spanning all grade levels, various content areas, and a diversity of roles and responsibilities within the District and related to the school forest. This dedicated leadership team is committed to enhancing existing school forest opportunities, facilitating education and professional development, and serving as an advocate of the Whitnall School Forest.

Name	Position	School Forest Responsibilities	E-mail
Tony Brazouski	District Administrator- Chief Academic Officer	-Finances (grants) -Curriculum -Staff development	<a href="mailto:abrazouski@whitnall.com">abrazouski@whitnall.com</a>
Laura Cerletty	High School Science Teacher K-12 Science Coordinator Community Member School Forest Neighbor	-School Forest Coordinator -Curriculum -Staff development -Communication	<a href="mailto:lcerletty@whitnall.com">lcerletty@whitnall.com</a>
Jessie Hoida	High School Science Teacher Science Curriculum Writing Team	-Curriculum -Natural resource specialist	<a href="mailto:jhoida@whitnall.com">jhoida@whitnall.com</a>
Scott Jaeckel	Middle School Tech Ed Teacher	Facilities	<a href="mailto:sjaeckel@whitnall.com">sjaeckel@whitnall.com</a>
Sue Rosenberg	Elementary Teacher- Edgerton Science Curriculum Writing Team	Curriculum	<a href="mailto:srosenberg@whitnall.com">srosenberg@whitnall.com</a>
Sue Sabre	Pre-K5 Teacher- Hales Corners Elementary Community Member	Curriculum	<a href="mailto:ssabre@whitnall.com">ssabre@whitnall.com</a>

## School Forest Advisory Committee Members

In order to represent the diverse perspectives of the stakeholders served by the Whitnall School District, the School Forest Advisory Committee is comprised of members of the school district, the community, and various municipal and governmental agencies. The advisory committee provides input, direction, and support for efforts around increasing school forest educational opportunities as well as effectively managing the school forest so as to ensure continued and future use by school and community.

Name	Position	School Forest Responsibilities	E-mail
Tony Brazouski	District Administrator- Chief Academic Officer	-Finances (grants) -Curriculum -Staff development	<a href="mailto:abrazouski@whitnall.com">abrazouski@whitnall.com</a>
Laura Cerletty	High School Science Teacher K-12 Science Coordinator Community Member and Forest Neighbor	-School Forest Coordinator -Curriculum -Staff development -Communication	<a href="mailto:lcerletty@whitnall.com">lcerletty@whitnall.com</a>
Mike Seiger	DNR Forester	Natural resource specialist	<a href="mailto:michael.sieger@wisconsin.gov">michael.sieger@wisconsin.gov</a>
Jim Gilboy	Community member Active in the Lion's Club and Historical Society	Facilities	<a href="mailto:datafacts@sbcglobal.net">datafacts@sbcglobal.net</a>
Robert Stockinger	Community member Connections to Whitnall Park, Boerner Botanical Gardens	Natural resource specialist	<a href="mailto:robertstockinger@mac.com">robertstockinger@mac.com</a>
Amelia Hernandez	High School Art Teacher	Curriculum Facilities	<a href="mailto:ahernandez@whitnall.com">ahernandez@whitnall.com</a>
Shanna Bradley	High School Science Teacher	Curriculum	<a href="mailto:sbradley@whitnall.com">sbradley@whitnall.com</a>
Kat Kaiser	IT support	Curriculum	<a href="mailto:kkaiser@whitnall.com">kkaiser@whitnall.com</a>
Matt Karshna	Building and Grounds	Facilities	<a href="mailto:mkarshna@whitnall.com">mkarshna@whitnall.com</a>
Jonathan Cagle	School Board Member	Finance	<a href="mailto:jcagle@whitnall.com">jcagle@whitnall.com</a>
John Cohn	Fire Chief	Safety	<a href="mailto:jonc@greenfieldwi.us">jonc@greenfieldwi.us</a>

## Communication

- A school forest page of the Whitnall School District website will be built and maintained. Here, the Advisory Committee, teachers, students, and community may post School Forest updates, activities, and photos. The site will also contain School Forest descriptions, safety information and protocols, a detailed map, mission statement, rationale, history, management, curricular connections, and the Whitnall School Forest education plan and goals.
- Presentations about the School Forest and/or related activities will be made at least annually to the Whitnall School Board.
- Information regarding school forest activities, significant events, and community involvement will be shared with the media via the Whitnall School District communications coordinator.
- The School Forest Task Force members, K-12 curriculum coordinators, and instructional effectiveness coaches will provide in-service and support staff in School Forest activities, curricula, and instruction.
- Regular communication to staff will be maintained via emails, Curriculum Corner Newsletter, K-12 Science newsletter, and Lesson Ideas Menus.
- The WHS school newspaper will run a series of articles on the school forest in 2014-15 issues. The focus will include school forest activities as well as what it means to students. It will also tie it into the environmental club as a way to encourage membership, advocacy, and action.
- The on-site Whitnall School Forest sign will be built to include an informational section for posting forest events as well as a holder for pamphlets, brochures, and trail maps

## Long-Range Plans

- 2014-2015** Increase communication and student participation (vandalism reduction)  
Survey the property  
Begin the honeysuckle, buckthorn reduction process in the fall  
Complete the "School Forest Use" survey  
Business classes design a logo and a slogan  
Use district site survey to design trails- outdoor pursuits classes  
Design and calculate the cost of a low ropes course- outdoor pursuits class  
Have staff fill out the School Forest Google Spreadsheet to identify equipment needs  
Sponsor a Spring community buckthorn removal day- Sign up at District Block Party  
Finish Education Plan and Write another Grant Proposal  
Propose an "Environmental Science" intern position for the high school.  
Survey the Staff/Community- Compare data to previous year  
Repair the main entrance sign- Tech Ed Classes  
Possible spring staff development
- 2015-2016** Continue to communicate via The Lab Report, Viewpoint and contact list.  
Fall staff development based on needs listed in survey  
Increase curricular applications- soil testing, water testing, habitat survey, bio blitz, etc.  
Conduct fall buckthorn/honeysuckle removal days  
Begin to tackle poison ivy problem  
Put the intern to work  
Build a shelter or water access points depending on staff survey results  
Trail signs- Design and build  
QRS codes- Design  
Use the site as a community Geocache Event/Snowshoe intro  
Write another grant proposal  
Write a proposal for an Environmental Science Class  
Survey the Staff/Community- Compare data to previous year
- 2016-2017** Continue to communicate, in-service, survey, write grants, improve site  
Offer a HS level Environmental Science Class

**APPENDIX A: K-12 Whitnall School Forest Lessons and Activities**

GRADE	CONTENT AREA	STANDARD	LEARNING TARGET	ACTIVITY	LOCATION(S)	SUPPLIES NEEDED	SUPPLIES IN HAND	WSF KEY CONCEPT(S)
K4	Math, Science	Collects, Describes, and Recognizes Information using all Senses	To use each of the 5 senses to describe an item in the forest such as a tree.	The students choose a tree and smell it (tell about it), feel it (describe using descriptive words such as smooth/rough, Look at it (tell about color, size, etc) listen (hear sounds that could be made with it or if the wind is blowing through the leaves, birds in the tree making noise, etc) and then take a paper and crayon and draw it and make a texture rubbing of the bark. They wouldn't taste it, but a discussion of things that we do eat that come from trees could follow.	both	Paper, crayons	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
K4	Math, science	collects, describes, and records Information Using All Senses	I can use my senses to describe the outdoor environment.	The K4 student will go on a nature hike and observe the changes in the environment at each during the fall season. We will take digital pictures of nature items such as trees, leaves, birds, and other animals we may see to make a class book of the Fall Season. The students will also take do a 'crayon rubbing' of a tree or leaf.	As we move through the forest	Variety of Fall Seasonal books. Digital camera crayons paper	nothing at this time	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
K5	ELA-Writing	CCSS.ELA-LITERACY.W.K.2	I can select a topic for an informative or explanatory writing.	Students will take a walk through the School Forrest and take a clip board/pencil and paper with them. They will list objects they have observed (trees, plants, grass, animals, flowers, insects, rivers, ponds, etc.by drawing pictures or attempting to write the words for the objects. When we come back to school, in their Science Journals, they can choose one of the objects to draw and write about. They can practice labeling different parts of the object in nature they chose. The can write about the object- giving as many details as possible. We could also use the iPads to take pictures of the objects so students can look back and remember details about what they saw. The could also read more about the object they chose and add more details to their writing and drawings.	Classroom first, then forest, then back to the classroom.	Pencil, paper, clipboards, IPADS.	More nature books for children to learn more about the nature objects they observed in the School Forrest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 7. Interacting with the natural environment inspires creativity.
K5	Science	F.4.1 Discover* how each organism meets its basic needs for water, nutrients, protection, and energy* in order to survive	I can list what plants and animals need to survive.	Kindergarten students need time to explore. A nature walk through the forest will provide opportunities to identify and list living things previously talked about. In addition, they will be able to add to a list started in the classroom. Teacher can list list student responses of what plants and animals need to survive.	School Forest	Checklist of living things students could see on their nature walk. Clipboard to list living things they observe and what these living things need to survive.	Transportation	9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
K5	Math	K.G.A1	I can name shapes in the environment, and tell where they are using words such as above, below, beside, in front of, behind, next to.	Each group of children will bring a baggie of shapes (circle, square, rectangle, hexagon, rhombus) with them to the forest. They will find things in nature that match the shapes. The group will have a discussion about where these shapes are. Ex. The circle berries are next to Timmy. The rectangle log is below the bridge. Extension for the spring: finding 3-D shapes.	Moving throughout the forest	Plastic shapes, baggies	None	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.

K5	Writing	CCSS.ELA-Literacy.W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.	I can use drawing and writing to give information about a topic	After a walk through the forest, the children will draw and label 1 item they saw that was a living thing, and 1 that was non living.	Begin in the classroom with brainstorming things you might find in a forest. Then sort them by LIVING THINGS and NONLIVING THINGS. Then head to the forest to look for these items. When you return to the classroom, add to the list. Then ask each child to draw a picture of 1 living and 1 non living thing. Label it with words, letters or a sentence.	White board, science notebooks	None	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.
K5	Math	.CC.K.MD.2 Describe and compare measurable attributes. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	I can compare two objects.	The students will take a bag of unifix cubes, activity paper, pencil and clipboard to the forest. They will have a list of several items in the forest that they will measure with cubes. They will find each item and connect the cubes and record the length of each. Then we can compare what items are shorter, longer or equal lengths.	The students will practice this concept before in class then go out in the nature forest to complete the same type of activity.	Clipboard, pencil, recording paper, bags, cubes	none	Finding items in nature and comparing sizes
K5	ELA	CCSS.ELA-LITERACY.W.K.2	I can select a topic for an informative or explanatory writing.	After reading some informational texts on local forests and the area children would be able to identify things they see in the school forest and write a book about it, mimicking the informational texts that were exposed too. They would add illustrations and other nonfiction features (labels and captions).	In the Classroom then on a walking tour	Books and paper	Nonfiction books about the local area and school forest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
K5	ELA	CCSS.ELA-LITERACY.RF.K.1.C	I can point to words from left to right on a page.	Students will work on developing voice - print match during this lesson. They will use iPads to take pictures of things they see in the School Forest. When they return to school, teachers will print the pictures and students will complete the frame: I can see _____. If the lesson is used in the spring, the frame could be: I can see _____ in the school forest. Pictures will be printed and pasted into the frame. Students will label the picture below. Individual books or a class big book for the classroom library will be created. When reading the book, students will practice pointing to the words as they read to a partner.	In the classroom before heading to the forest and then as the class moves through the forest	Paper Pencils Glue Scissors Printer	None	7. Interacting with the natural environment inspires creativity.
K5	Science	Interdependent Relationships in Ecosystems K-LS1-1 Plants and Animals Performance Expectation - Use observations to describe patterns of what plants and animals (including humans) need to survive.	Learning Target: Compare two plants or two animals and what they need to survive. (CCC patterns)	This would be in addition to a lesson we just developed for our plant and animal unit. After the student has learned about a plant (or animal) in their particular habitat, they have an opportunity to learn about one in their environment. By going to the forest, children can see for themselves what plants (or animals) exist in their environment.	Classroom and forest	Books about plants, animals, forests Science Journals Magnifying glasses	None at this time!	9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.

K5	Music	Standard H	Cross Curricular activities that relate to other subject matter.	As the class moves through the forest each student will tell me what sound they hear or animal they see or think would live in the forest. I will write down what they choose. We will discuss the sound they hear or the sound the animal would make. We will make the sounds together with our voices, one at a time. When we get back to class we will pick instruments from the classroom that will imitate the sounds we heard in the forest.	As the class moves through the forest.	Rhythm instruments, wood blocks, maracas, hand drum, bells, triangle, etc.	N/A	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
K5	Science	LS2	K-LSI-1	Students will learn about the relationship between animals and plants. They will relate the animals need for food in order to live and grow. They will learn about how plants need water and light to grow using different conditions.	classroom-forest	cups, dirt, seeds, plant light, writing tools, clipboards with paper	Seeds, dirt	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
K,1,2,3,4,5	PE	Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.	Interacts/helps others with physical challenges.	Students will be doing an Orienteering Activity. They will be trying to find various things/objects related to the outdoors. This activity will involved various physical movements (walking, climbing, balancing, and cooperation). Students will be involved in cross-curricular activities related to literacy, math, science, and social studies.	Both. An introduction to the various things/objects they will be looking for or observing will be discussed in class through cross curricular activities. Then it could take place in the forest bringing in more of the physical aspect of the lesson.	I have some resources/books for guiding and planning the lesson. Basic office supplies: paper, pencils, clip boards, markers.	I would need time to collaborate with the Core Teachers to plan and help facilitate this activity, especially when we would go to the forest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 5. Human health and environmental health are interrelated. . 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., Team Building
K,1,2,3,4,5	PE	PK-12 Standard 6: Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.	Chooses to participate in group activities.	The students will be involved in a orienteering activity. They will find various things/objects related to the outdoors. The students will be doing various actives while participating. Some activities are, walking, running, balancing, climbing, reaching, team-building and cooperation. The students will also be involved in cross-curricular activities related to literacy, math, science, and social studies. I may also work with a colleague and team teach orienteering combining PE with cross-curricular subject(s).	An introduction would take place in the gym and practiced before we would go to the Whitnall Forest.	P.E. equipment, office supplies, and nature.	Resources and school related time to work with my colleagues.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 3. Successfully managing natural resources depends on careful collection and analysis of data., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 5. Human health and environmental health are interrelated. . 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other., Team building.
K,1,2,3,4,5	Social Behavior	Speaking and listening	Student will engage in conversational speech using appropriate social rules and pragmatics following presentation of material.	During the spring students will be matched with peer buddies. With teacher supervision the students would take a nature walk and match picture cards to objects they find in nature. Students would engage in activities and take direction / instruction from peer buddies. The goal would be to initiate social interaction as well as enhance physical and social health.	as the students move through the forest.	picture cards forest maps social stories / conversations	peer buddies adult supervision	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 5. Human health and environmental health are interrelated. . 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
K,1,2,3,4,5,6,7,8,9,10,11,12	Speech	CCSS ELA literacy SL 3.4	produce clear speech	Walking around the school forest and looking for items containing an articulation sound related to the students' IEP goals. The student must search and find at least 5 items to practice and help generalize their articulation skills.	throughout the forest	none	transportation to the forest	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.

ELL Level 2	Science	Identify plants and insects and how they interact.	Elementary level 2 ell students will be able to identify some of the plants and insects the forest after learning about them in class how they interact.	During ell class, I will introduce the plants and insects found in the school forest and how they interact to my ell students. After they have learn about the plants and insects and their relationship, I will take them to the school forest to identify the real plants and insects.	This lesson will take place in the ell room before going to the forest.	More information about the plants and insects found in the the school forest.	More information about the plants and insects found in the school forest.	9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
ELL Level 2	Spanish	Interpersonal Communication (Novice-Mid)	The target of this lesson is to engage in basic conversation around the topic of nature	Students will engage in interpersonal conversation with another student regarding the plants and animals that they recognized in the forest. Students will have to use the high frequency phrases "I know...", "I saw...", and "I found..." and successfully employ basic Spanish vocabulary on the topic of nature.	After visiting the forest	iPads	materials to pre-teach nature vocabulary (I will make these)	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
1	Science	Core Idea LS2 Ecosystems: Interactions, Energy, and Dynamics How and why do organisms interact with their environment and what are the effects of these interactions?	Compare the layers in the rain forest to the layers in the Whitnall School Forest	Rationale: We study the rainforest as an ecosystem when learning to read informational books. We study the layers, the concept that it is a vertical living space, the biodiversity of the region and that each habitat is full of predators, prey and other organisms. A key concept it no one creature can survive on its own. After visiting the rainforest at the Milwaukee Public Museum the class will go to the Whitnall Forest.  Students will compare the two vertical living spaces, and look for evidence of organisms at each level.	Lesson begins in the classroom, moves to the Milwaukee Museum and finishes in the forest.	Paper, crayons, pencils	Transportation to the forest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 3. Successfully managing natural resources depends on careful collection and analysis of data., 5. Human health and environmental health are interrelated. , 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
1	Math	CCSS.MATH.CONTENT.1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	Students can compare the length of objects using sticks and plants in their environment.	In math, students practice measuring objects. Using the forest will students can compare the length of solid objects from the classroom to sticks, leaves, and plants in their natural environment. They will also be able to compare themselves to the height of naturally growing plants/trees.	The lesson would take place in the classroom and transfer to the forest where the same practices would be applied to the natural environment.	Clipboard, rulers, pencils, journal	I have everything I need!	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 7. Interacting with the natural environment inspires creativity.
1	Science	1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	I can hear sounds that are carried by the wind that vibrate in the environment.	Students will be engaged in taking a nature walk and listen to sounds that surround them in the school forest.	The lesson begins in the classroom building background knowledge of sound/vibration	Clip board, pencils, learning log.	NA	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 3. Successfully managing natural resources depends on careful collection and analysis of data., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.

1	Science	1-ESS-1 Use observations of the sun, moon, and stars to describe patterns that can be predicted.	I can observe that the moon phases are predictable.	Observation of the moon.	Begins in the classroom and would be an evening extension that involves parents to observe the night time sky in the forest.	Since this is an evening event students will be observing the night sky. It would be hard to record data when the forest would be very dark. However students who attend would be able to share their data during the lesson. I would provide a sheet for the students to record what they saw during their observation.	I vision a portion of the forest to transform into a night observatory where students and the community come together to observe patterns in the night sky. This would include a part of the forest to have benches, eventually a building equipped with literature of the history of the forest and the community a lecture stand, pictures of the stars/planets etc...This would give presenters an opportunity to share their expertise with students and the community.  As time moves on students could develop scientific instruments to view the stars and	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 3. Successfully managing natural resources depends on careful collection and analysis of data., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 5. Human health and environmental health are interrelated. , 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
1	ELA	RL1.2	Retell stories, including key details, and demonstrate understanding of their central message or lesson.	Students will preform Readers Theater Plays in the nature pod at site 8.  Students will pick plays with a nature based setting (One Smart Chick, Goldlocks and the Three Bears, Jack and the Beanstock, etc.) They will prepare props and practice plays at school. When plays are ready for presentation groups of students will present their plays outdoors.	Preparation in the classroom, preform in the forest at site 8	Teachers have many readers theater plays.	Benches or log stools would be great to create an outdoor theater. I platform stage would be awesome as well. More nature based plays at different reading levels.	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
1	Science	LS3.A INHERITANCE OF TRAITS: Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly like their parents. (1.LS3.1) LS3.B VARIATION OF TRAITS: Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3.1)	DCI: Recognize that young plants and animals are like their parents but have some difference.	Students will bring their Science Journal, clipboard, ruler, hand lens and pencil to the school forest. iPads also will be brought. Working as pairs, students will find adult and young plants: measure & sketch, take notes( similarities/differences) of both adult & young. Before leaving each plant, they will take a photo with the iPad. Student pairs will look for a variety of different plants. Information will be shared when class returns to school- as this is the first activity for this standard/target.	Students will move through various parts of the forest looking for a range of plants & their young.	All	None	3. Successfully managing natural resources depends on careful collection and analysis of data.
2	Language Arts	W2.6 Production and Distribution of Writing: With guidance and support from adults, use a variety of digital tools to produce and publish writing, including collaboration with peers	I can use digital tools for producing and publishing writing	Students will be put into small groups. The students will take a tour of the forest and be asked to use their senses to connect to their surroundings. What do they see, smell, hear, and feel (obviously talk about not touching anything with 3 leaflets!). Using iPads, students will take pictures and even videos of what they are observing. Students will be asked to record their observations in a nature journal of some sort once they return to school. The students will use the pictures and videos that they took on the walk and turn them into a photo essay of some sort (details not worked out at this point). Students will present their essays in a presentation to the class.	Classroom, school forest, and computer lab	All of them (except nature journal that will be used to record observations once back at school- this will be created)	N/A	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.

2	ELA	descriptive word choice and clear oral speaking	Children will use descriptive word choices to describe in written and oral form.	Go to Forest area, spend time walking and sitting and observing with 5 senses as focus. Record with different medium--written word, drawing, photos, video recordings. Then use the observations for descriptive writing in the classroom and oral presentations.	In the forest and in the classroom afterwards	district iPads, student notebooks, pencils	transportation to and from forest; possibly related picture books for introductory lesson and extensions	7. Interacting with the natural environment inspires creativity.
2	ELA	CCSS ELA LiteracyW2.6	The student will experience the school forest through their sense of hearing	The students will experience/tour the school forest listening for the sounds of a forest. Some students will record on iPads at various times to play back at a later time. They will stop at various times to "really listen" and record what they hear and will also close their eyes to listen. Back in the classroom, the students will write the first part of a 5 senses book about the sounds of a forest. Class discussion will also be about what the sounds could have been.	As we move through the forest	iPads	Transportation from HCE to the forest	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
2	Math	MD.2	I can measure an object using two different units and explain how the two measures are the same or different.	The students can first estimate lengths of different objects in the forest. They will record their data. They can then measure the objects using two different units of measure and explain how the two measures are the same or different. Students can compare different objects in the forest.	Class moving through the forest.	Meter Sticks Yard Sticks Rulers Paper Pencils	Flexible/Cloth Retractable Tape Measures	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
2	Science	2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.	PLANNING AND CONDUCT AN INVESTIGATION: I can observe plants and animals in different habitats.	Students will be asked to observe the different habitats in our school forest and to take pictures of different plants and animals that live in the different habitats.	In the classroom before heading to the classroom	iPads	No other materials at this time.	9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
2	Social Studies	Students will identify three types of communities: urban, suburban, and rural	Students can identify characteristics of a suburban community.	Students will have background on what a community is and also have background knowledge on the three different types of communities: urban, rural, and suburban. We will take time to focus on each community by doing projects, having discussions, and using technology for students to demonstrate understanding. Students will learn what kinds of things can be found in each community. We will take a trip to the forest and explore the trails, pond, and wildlife. Students will understand how a forest can be part of a suburban community, not only a rural community.	throughout the forest	paper and pencil to make observations	first-aid kit forest guide	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
2	Science	2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.	I can observe shapes of land and bodies of water.	Students will observe land and the bodies of water around them to identify shapes to create the model.	Trails and pond	iPads	None - field trip permission slip?	Things found in nature can be used as a learning tool.
2	Social Studies	RI.2.3	I can determine the common features of a region.	We study regions in second grade. We learn about how the United States can be broken a part into regions that share common factors such as landforms or plants. I think we could learn about what regions Wisconsin is apart of. Then we would travel to the forest and find evidence to prove this. The student would journal and draw illustrations to show their findings.	Classroom and forest	I have my Social Studies curriculum, arts and craft supplies, and writing journals.	Transportation to the forest and maps of the forest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.

2	ELA	Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.	Students will gain an understanding of fairy tales and fables through reenactment	After reading a fairy tale or fable, students will walk to the school forest and travel with the teacher to stations within the forest. At each station, students will summarize each part of the story and act out character roles. This activity will help students understand how characters may be feeling as well as understand the sequence of the story line.	Classroom, around forest	Props bug spray fairy tale and fable books	none	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
3	Science	3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.	I can identify cause and effect relationships that explain changes seen in the environment. (Cause and Effect)	We would go out several times throughout the year and examine several areas where invasive species are located. Students would be journaling and drawing where certain invasive species are in the forest and what they see in the plants around the invasive species. Going several times per year would give the students an opportunity to see how the invasive species grow and take over surrounding plants over time, which is why they can be problematic in forests. This could also turn into a project where the students help to safely remove some of the invasive species after they understand the importance of getting those species out of the forest.	As we move through the forest, but choosing several specific locations along the way.	We would need to use science journals and pencils, which the students supply.	I think it would be beneficial to photograph the specific areas we choose so that the students can utilize both the journal drawings as well as photographs or even videos to point out changes seen in the area over time due to the invasive species.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 3. Successfully managing natural resources depends on careful collection and analysis of data.
3	Math	3.OA.A.1. Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each.	I can explain the meaning of a product of two whole numbers by writing a number story, drawing a diagram, using manipulative, or modeling equal groups.	Near the beginning of our multiplication we will discuss and logging for things that come in equal size groups. Prior to going to the forest we will start a class chart.(3 wheels on a tricycle, 4, legs on a dog . . .). Groups will look for objects found in the school forest that come in groups and take pictures using the iPad equal size groups. Using the pictures students will write multiplication / division number stories.	The lesson will take place both in the classroom and as the class moves through the forest.	iPad, pencils, paper, crayons / colored pencils.	none	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
3	Math	3.MD.6	I am learning to calculate area by counting square units.	Students will use the inch cubes to learn how to calculate the amount of board feet in the boards.  Each team needs a 1"x 12"x 12" board. Have students measure boards with their inch ruler and share results. Explain that those in the lumber industry call this a board foot and that is their basic unit of measure.  Students place their inch cubes in such a way that if they were to glue them together they would be the same size as the BOARD FOOT. Have the students count how many inch cubes they needed to make a board foot.  Give each team a 2"x 4"x 12" board. Discuss whether the students think it is more or less than a board foot. Ask students to lay out their inch cubes to form the same size board. Have students count their cubes. Was this MORE or LESS than a BOARD FOOT? How much less?  Begin a chart recording the dimension of the wood, and the number of inch cubes.  Follow the same procedure for the 2"x 6"x 18" and 2"x 4"x 24" boards. Discuss better ways of finding out how many cubes rather than just counting.	At a place in the forest	One inch cubes	Different dimensions of board.	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.

3	Science	3-LS1-1	I can label the components of a life cycle for an organism.	Students will visit the school forest in order to find an organism, plant or animal, that can be observed to identify its components. Students will sketch the organism and research the stages of its unique life cycle.	as the class moves through the forest	composition notebook pencils colored pencils ipads reference books	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 3. Successfully managing natural resources depends on careful collection and analysis of data., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
3	Science	3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.	Students will understand that plants and animals are able to handle and adapt to environmental changes.	Students will have a discussion about how they would adapt to changes in their environment pertaining to the weather. Students will journal about different environmental changes that can affect plants and animals. As a class we would utilize the school forest to observe and record how plants and animals adapt to those changes throughout the seasons and school year. Students will use the iPad to take photos of plants and animals during the seasons in their habitat. Students will create a photo album to compare and contrast the changes that take place in the environment.	This lesson will start in the classroom with a discussion about changes in an environment	Notebooks Informational Texts Ipad	Currently there are no materials needed.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 3. Successfully managing natural resources depends on careful collection and analysis of data., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
3	Science	3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	HEREDITY: I can identify and label the components of a life cycle for an organism. (K-DCI)	Students will be learning about the life cycle of a butterfly. In the classroom, we will be journaling about each stage in the life of a butterfly. We would need to purchase the live butterfly pavilion so students could see the whole process take place. We will be talking about the each stage over a period of a couple days. We will identify key vocabulary. In pairs, students will create a diagram of the actual life cycle. Students would be able to look in books to see how the process works if they need any ideas. Here they will hit on the learning target of identifying and labeling the parts in the life cycle. After, we will take a trip to the forest to observe one of the cycles that is taking place. When we come back to the classroom, we will discuss our findings and observations. We can also revisit our diagrams we made to tie the whole lesson together.	The lesson would start in the classroom, and then we will head to the forest to specific location	Journals, Poster board, crayons, markers, pencils, smart board, books pertaining to butterflies.	Transportation to forest. Live Butterfly Pavillon	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 7. Interacting with the natural environment inspires creativity.
3	SPED-ELA	CCSS.ELA-LITERACY.W.3.7	Students will be writing about an animal they see and it's habitat.	First, students would be doing a brain storm of the animals they want to write about. Next, we would have a discussion about where those animals live and what to look for in the forest. Then, students would be spending time in the forest observing and looking for their animal's habitat(s) and signs that the animals were there. Last, the students would put together a report/research project about their experience (and from additional research) including any forest pictures they may have taken.	Classroom before and after going to the forest and in the forest.	-Computer -Clip board -Pencils -Paper -Transportation -Bug spray -Medical kit -Cameras or iPads	-How to transport students from HCE to the forest. -Funding for the transportation. -Bug spray -Medical kit	7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
3	Social Studies	D.4.3 Identify local goods and services that are part of the global economy and explain their use in Wisconsin	I can identify uses for the natural resources found in the school forest.	Students will walk through the school forest and identify plant and water resources, taking photos with their ipads, and notes in their notebook. Upon returning to the classroom they will use their evidence to identify ways those resources can be used for economic gain.	The forest and then the classroom	Ipad, notebooks, and pencils	Transportation from HCE	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 3. Successfully managing natural resources depends on careful collection and analysis of data.
4	Math	CCSS.MATH.CONTENT.4.G.A.3	Identify line-symmetric figures and draw lines of symmetry	Students will walk through the trails and take pictures using an iPad of symmetrical examples found in nature. When students return, they will print pictures, draw lines of symmetry, and sort into categories based upon the number of lines of symmetry. Students will present their posters to peers.	As my class moves through the forest	*iPad *paper *printer	None	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.

4	Science	4LS11	students can identify and explain internal and external structures that function to support growth, survival, reproductions and behavior	We will do a pre-activity lesson surrounding pictures of several living things and brainstorm why they are "designed" the way they are (what supports survival, reproduction, growth, etc.). We will then identify any themes we can in the natural world. Immediately prior to going to the forest we will brainstorm what we might see. Once in the forest students will need to seek out at least 2 living things (plants, animals, fungus, etc), diagram that living thing and identify at least 3 features of its internal or external structure which support that function to support growth, survival, reproductions and behavior. Students who have chosen the same living things will get together to examine similarities and differences between their chosen living things. Students will decide in small groups on one living thing to diagram and present to the group.	Classroom, Forest, Classroom	paper, pencil, colored pencils, clipboards, boots, rain gear, gloves	books on life structures of plants (specifically those in our forest)	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.. 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.. 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
4	Science	4-ESS2-1. DCI ESS2.A: Earth Materials and Systems	Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	At any point in the year or at multiple times of the year, take the children to the areas of the school forest where there are streams, ponds or runoff areas and document through photographs, video clips and written observations erosion and/or weathering that has occurred. If the class has multiple visits to these areas throughout the school year, children can then compare and contrast the data. The data should include how the water shapes the land and affects the types of living things found in this region.	Preparations in class and then in the school forest	Notebook, observation guidelines, iPad or camera	none	3. Successfully managing natural resources depends on careful collection and analysis of data.
4	Science	4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	CAUSE AND EFFECT: Determine the causes of weathering or rate of erosion. (R-CCC)	The students will observe the interaction between land and water in a cause and effect relationship in two different locations in the Whitnall School Forest. At points 6 and 11 on the trail map, students will observe the stream that runs through the land, identifying examples of erosion and weathering. Students will take notes and make sketches about their observations, as well as take a digital picture with their iPads. If there is standing and/or moving water, students will measure the depth of the water at its deepest depth at each locale. In the fall, students will hypothesize how water has changed the land in the past, and predict how the land will change in the future. They should also note how humans attempt to control the flow of water at point 11. In the spring, students will return to the two sites and repeat their observations, note taking, sketches, digital photography, and water measurement. Students will compare and contrast their fall findings to their spring findings, discuss weathering and erosion, and attempt to determine the effectiveness of the human intervention at point 11.	This lesson is part of our Earth Science Unit on Land and Water, and will take place in the Whitnall School Forest at points 6 and 11.	Science notebooks or paper handouts with clipboards and writing tools, iPads, and plastic rulers for measuring water depth.	We have all needed supplies for this lesson.  *Additional supervision in the form of support staff and/or parent volunteers may be helpful, as well as transportation for HCE.	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.. 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
4	science	4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	ENGAGING IN ARGUMENT FROM EVIDENCE: I can observe the body structures of an animal and plant, and explain why these structures help it to survive in its environment. (S-SEP)	Students will observe in teams, plants and animals at a specific place in the nature pod. They will take pictures with the iPad, and take notes about the external structures and how they think the plants/ animals are adapting to the seasons. They will choose one tree and measure the length and width of a leaf to see if there is a difference. The students will notice how their specific place changes over the different seasons.	in the classroom and in the	-correct clothing ipads, pencils, notebooks rulers	GPS	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
4	Math	Exploring Multiples and Factors	I can explain how numbers are decomposed multiplicatively and show factors that are multiplied together to get a product between 1 and 100.	While walking in the Whitnall Forest, stop at a Woodland Sunflower plant. Count the number of blooms on one plant. Estimate how many Woodland Sunflower plants are in the cluster. Using multiplication, make an estimate for how many total sunflowers are blooming in the cluster. Take Number of blooms on one plant and multiply by the number of plants you estimate to be in the cluster to get the total estimate of blooms in the cluster.	At a place in the forest when Woodland Sunflowers are blooming in early September.	Clipboards Paper Pencil	None	3. Successfully managing natural resources depends on careful collection and analysis of data.

4	ELA	W.4.1C	I can write an opinion piece on topics and texts that support a point of view with reasons and information	After introducing how to write opinion pieces and practicing writing a few, visit the school forest. Explain how the forest came to be and its purpose. Walk through the entire forest, as we did on inservice day. Back at the classroom discuss the pros/cons of having a school forest. Each student has to choose a point of view - the school forest is a good use of resources or the school forest area would better be used for... and write an opinion piece of writing.	This takes place before the trip, during the trip and after the trip	We have all the writing supplies.	There are no additional supplies that will be needed.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
4	Art	State Standard C5: look at nature and worlds of art as visual resources	I can create asymmetrical balance in a piece of photography.	The students would be learning some design and compositional aspects of photography focusing on the use of asymmetry.	a lesson would occur before the forest and the photography would happen throughout the forest	ipads - use of camera	nothing	7. Interacting with the natural environment inspires creativity.
4	Music	H. Students in WI will relate music to other arts and disciplines outside the arts.	Do cross curricular activities that relate music to other subject matters-	*Sing songs to bring awareness to nature and the forest: 1. Don't Be a Water Waster 2. When a Tree Falls 3. The Yellow Taxi  *Create sound stories in rondo form which depict sounds found in nature.  *Transfer 'forest' terminology in rhythmic values.	In the classroom, after we head to the forest.	Instruments, clip boards, Smart Boards, Doc camera.	None	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 7. Interacting with the natural environment inspires creativity.
5	Math	Math 5.MD.1	Convert within the metric and customary number systems	Students choose items in nature to measure. Each small group of students is assigned a different related group of items (flora, fauna, etc.). Each group is assigned a number system and unit as a starting point. Conversions of units can be done either on-site, or back in the classroom. Estimation could also be used as a precursor to measurement to incorporate that target as well.	both in the classroom and in the forest	measuring tapes of different varieties	none	3. Successfully managing natural resources depends on careful collection and analysis of data.
5	Science	5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	Developing & Using Models: DEVELOPING AND USING MODELS: Independently create a visual model illustrating the interaction of the four spheres: geosphere, biosphere, hydrosphere, and atmosphere. (S-SEP)	As a part of the 5th grade Earth's Systems unit of study, the students will be using various resources to gather information about each of the Earth's five spheres. After gathering this information, the class will visit the school forest. The class will walk around a few different areas. Then as a group, they will go back to one larger area where they can spread out for their own individual work time. They will observe their natural surroundings and take notes on what they see. Next, each student will create a sketch using the forest, labeling the different spheres. In their visual representation, they will also show (using arrows, etc.) the interactions among the different spheres. As a final step, the students will use their science journals to write descriptions of each of the spheres and the connected relationships.	This lesson begins in the classroom and then continues into the forest on another day.	paper pencil technology sources for gathering background knowledge	class set of clipboards composition books transportation	9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
5	Science	5-ESS-2-1	Independently create a visual model to represent the interactions amongst the five spheres (lithosphere, geosphere, biosphere, atmosphere, and hydrosphere).	The fifth grade Earth's Systems unit is about five different spheres and addresses spherical interactions as well as how human interactions with each sphere. A large part of the unit focuses on how students themselves interact with the sphere and identifying where we can see the spheres once we leave the classroom setting. Students will talk a walking field trip to the school forest. Students will walk through the forest and identify different areas where they see the spheres. Students will create a visual representation of the spheres. This could be done in the form of a drawing or through the use of technology. For example, using the iPad students could take pictures to capture photos of the different spheres and use them to create an EduCreations video.	Classroom then Forest	- iPads - paper - pencils - notebooks	I believe I have all of the necessary supplies however, teaching elementary school I believe there would need to be additional supervision such as parent volunteers who would be willing to come to the school forest to help supervise the students as they engage in this activity.	9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.

5	ELA	ELA RI 5.3	Students do research.	Students will research local environmental issues. They will work in partnerships or small groups. They will create a short presentation project from limited choices given to share their information. It will need to explain the issues, and differing positions. They will need to show why the issue is important and what people can do to improve an environmental condition. In a followup visit to the forest, students will observe and note how the issue affect that environment and it will be discussed with class.	Class before forest	Internet and print sources, art materials if needed for project.	Teacher will need to preview forest for environmental problems.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
5	ELA	ELA RI 5.3	Students do research.	Students will research local environmental issues. They will work in partnerships or small groups. They will create a short presentation project from limited choices given to share their information. It will need to explain the issues, and differing positions. They will need to show why the issue is important and what people can do to improve an environmental condition. In a followup visit to the forest, students will observe and note how the issue affect that environment and it will be discussed with class.	Class before forest	Internet and print sources, art materials if needed for project.	Teacher will need to preview forest for environmental problems.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
5	Science	5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	OBTAINING, EVALUATING AND COMMUNICATING INFORMATION: Obtain and combine information from reliable sources to explain the impact human activities have on water, land, and air. (S-SEP)	Initial instruction would center on the relationship and impacts of humans on the environment. Then the students will identify and research issues that are locally based in our community and state. The next step would be to visit the forest 3 times a year and identify positive and negative impacts between humans and the environment on there school forest. They would be asked to create and promote a plan to address the negative impacts of humans on the school forest and also identify and promote positive relationships between humans and the environment.	Begins in the classroom in the beginning of the year and then moves out to the forest.	Web based technology, pencils/paper,	Mobile web based technology, transportation, and clip boards.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
5	Math	CC.5.G.1b	I can explain how to plot a given point on the plane using ordered pairs (positive whole number coordinates).	Students will practice graphing coordinates on a plane using a map of the forest. The points they graph will be specific areas of liking we visit throughout a trail walk through the forest.	The lesson will begin in the classroom, continue as we move through the forest, and then end by plotting points in an open area in the forest.	Clip boards/binders to write on, pencils	I will need to copy a map of the forest with coordinate lines on it.	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
5	ELA	RL 5.3	To compare and contrast two different settings.	Begin by taking the students through the trail in the fall. They will write down observations, as well as take photos using the iPads.	Different locations through the school forest.	Notebooks, pens, iPads.	The different vegetation that is found in the school forest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
5	ELA	RL5.3 Key Ideas & details compare contrast	Compare & contrast 2 different settings	Using historical fiction unit to read westward expansion literature and discuss how land was changed due to that expansion.	Before heading to forest and continuing in classroom after visit	Historical fiction novels revolving on westward expansion and pioneers. Reading notebooks.	None	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
5	Math	CC.1.MD.1 Measure lengths indirectly and by iterating length units. Order three objects by length; compare the lengths of two objects indirectly by using a third object. CC.1.NBT.1 Extend the counting sequence. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	"I can use an object to compare the length of two other objects. (If a is longer than b...) (DOK 2)" I can write the numeral for the number of objects I counted. (DOK 2)	As an introduction to measurement students are asked to compare themselves to other objects. They need to find objects that are smaller than they are, same as they are and taller than they are. In the classroom it is difficult to find many objects that are taller than they are. In the forest, I would have them tally with a partner how many different objects they find that are taller, same and smaller than they are. They would have to total the tallies. A science connection would be there as well when talking about why a forest would contain so many different plants that are different heights.	anywhere In the forest west of 116th street where there are tall trees	paper and pencil	clip boards bus to get students from HCE to forest	comparing the length of objects in nature
6	Math	CC.6.NS.8	I can solve real-world problems by graphing in all four quadrants.	Students will create a real-life coordinate plane using points within the Whitnall School Forest.	classroom and forest	graph paper rulers pencils iPads	an accurate bird's eye view of the School Forest	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 7. Interacting with the natural environment inspires creativity.

6	Social Studies	Five Themes of Geography	I will learn how to use latitude/longitude to find a location of a place.	Teaching students how to use a GPS unit to find the location of a place through a geocaching activity. Students can input coordinates into the GPS unit to take them to a certain waypoint in the school forest, which will draw attention to a certain feature, whether that would be a tree, plant, or water feature to name some examples.	lesson on use of GPS unit outdoors at school before moving into school forest	GPS units, batteries	more GPS units (ideally one for every 1-2 students)	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
6	ELA	W6.3d	I can select precise words and phrases, relevant descriptive details and sensory language to develop experience and events. R	Descriptive writing activity using sensory details based off experiences in the school forest. Students will use their prior knowledge, such as the reading of The Legend of Sleepy Hollow, to enhance their creative writing skills in order to create a piece using sensory details that is inspired by a short story.	first in the classroom and then the forest and then back into the classroom	-iPad -notebook -short story	We are not sure of what is needed at this time. Supplies should be adequate.	7. Interacting with the natural environment inspires creativity.
6	ELA	W6.3D	I can select precise words and phrases, relevant descriptive details and sensory language to develop experience and events.	Descriptive Writing Activity using sensory details based off experiences in the school forest. Student use their prior knowledge of reading, such as the reading of The Legend of Sleepy Hollow, to enhance their creative writing skills in order to write a piece that uses sensory details that is inspired by a short story.	First in the classroom, then the forest, then back in the classroom.	iPad, notebook, writing materials, short story	We currently do not need anything.	7. Interacting with the natural environment inspires creativity.
6	SPED-ELA	Writing Standards 6–12 Grade 6 students Text Types and Purposes 3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e. Provide a conclusion that follows	Writing Standards 6–12 Grade 6 students Text Types and Purposes 3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e. Provide a conclusion that follows	ELA class during narrative writing/poetry unit will go for a 50min walk to the nature pond. We will investigate what we see, hear, feel, smell, and even maybe taste the edible grapes. The next day in class, with recent experience interacting with the natural environment, we will create a 5 senses narrative essay and/or poem about our visit to the School Forrest.  *Note: some of my ELA student receive EEN services and have history of short term and/or long term retrieval memory issues. The Goal is that having a recent and tactile visit with nature will increase students written response idea formation and persistence to produce a length more typical with peers.	In classroom after	iPads for written response. Peer review/review and share sheets. 5 Senses descriptive language information sheet.	none	7. Interacting with the natural environment inspires creativity., Writing Standards 6–12 Grade 6 students Text Types and Purposes 3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e. Provide a conclusion that follows from the narrated experiences or events.
6	Science	performance expectation	construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems	Debate--Are school forests important; why or why not	both	ipad	unknown	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 3. Successfully managing natural resources depends on careful collection and analysis of data., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 7. Interacting with the natural environment inspires creativity., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.

7	Music	Listen to and describe the elements of music in specific musical events or in examples representing diverse genres and cultures	Students will be able to analyze elements of composition	There are some pieces in the band world that take inspiration from nature. My idea for an activity with band students is, after having worked on a piece for a few weeks, take a visit to the school forest to gather thoughts and ideas of where the composer got his or her ideas from to create music. For example, in Vivaldi's Four Seasons, certain articulations are used to represent the different seasons throughout the year. While Four Seasons is an orchestral work, there are similar pieces in the band world that would apply as well. It would be a great idea for students to imagine the mind of a composer (and perhaps compose themselves!) and try to envision that same process - taking in the world around you, and creating a musical composition based on your inspiration.	A lot takes place before (practice the piece), and then moving through the forest to take in what might inspire a musical composition	Students will already have their musical instruments and sheet music to perform from. Students could use their iPads to jot down notes.	It would be great to have areas along the path for seating, like benches or chairs.	7. Interacting with the natural environment inspires creativity.
7	SPED Math	CC.7.G.2 Draw, construct, and describe geometrical figures and describe the relationships between them. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	CC.7.G.2 Draw, construct, and describe geometrical figures and describe the relationships between them. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	After the students have been introduced to the necessary geometric figures that they need to be knowledgeable of (multiple days in class), then they will transition to the school forest for one class period. While in the forest, students will be assigned specific geometric figures that they need to find while in the forest. They will need to take a picture of the shape with the camera on their iPad and then sketch the figure on a sketchpad app. Depending on the figure, it may be necessary for the student to use a ruler and/or protractor. The class should only need to spend one class period in the forest.	Classroom and transition to forest	iPad (camera, sketch pad), ruler, protractor	areas in the forest for the students to be able to sit at (benches, rock areas)	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.
7	Science	NGSS MSLS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.	Small changes in one part of an ecosystem might cause large changes in another part.	Students will be introduced to native and invasive species in our area.  Tour school forest to identify both native and invasive species. Photograph examples.  iPads will be used to research different species and the ways in which invasive species arrive in areas and how they are managed/irradiated.  Design a plan to manage or irradiate 1 invasive species in the school forest and use evidence to support/defend the plan.	Class and school forest	iPad, boots, rain gear, gloves	None at this time.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
7	Science	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	STRUCTURE AND FUNCTION- All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1)	This lesson can show the level of diversity our forest has. Students will be asked to collect samples of various forms of living things in the school forest. These will include leaves, insects, water samples (algae), tree bark, etc. Samples will be brought back to the classroom. Using compound microscopes, students will observe, record and draw what they see. (An alternative method would include taking pictures with their iPads). Pictures/Drawings of the cell samples will be compared and discusses.	Various locations in school forest and classroom at beginning and end of the lesson.	iPads, compound microscopes, slides, cover slips, coloring supplies, paper.	critter cube boxes, collection containers for water, baggies for leaves/grasses.	Awareness of the wide variety of living things and their structure/function.
7	ELA	RL 7.5 W7.1c	students will be able to produce a form of poetry incorporating figurative language	Students will be writing poetry inspired by their surroundings utilizing figurative language in their pieces	In the forest while examining their surroundings	iPad	None	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 7. Interacting with the natural environment inspires creativity.

7	ELA	L.7.3a	Students can use precise language to convey intended meaning.	Students will write ten haiku poems in nature. The natural surroundings will inspire creativity and aid students in using precise language to convey their meaning.  Optional follow up activity: Students will pick their favorite poem to read to the class. The class has to guess what scene or place in the forest inspired the creativity.	Mini-lesson in class followed by allowing students to spread out in the forest.	Students can write using pencil and paper or they could use an iPad to write their poems.	I have all the necessary supplies.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
7	Math	7.RP.2.a	I can analyze two ratios to determine if they form a proportion by using a variety of strategies.	Students will go to the School forest and locate the invasive species Buckthorn. They will locate and count the amount of berries on a branch for various Buckthorn samples while measuring the length of the branch (random sampling). They will also do an informal observation if the tree looks healthy or not. The class will come back to the class to do a whole class analysis. We will determine the ratio of berries per linear foot of branch of a healthy tree and the same for an unhealthy tree. Students will then analyze data results of pre-set data from ratios of berries to branch length and prove mathematically if a ratio shows a healthy tree or an unhealthy tree. Students will then expand this idea by looking at entire areas of buckthorn (fictional data--or real if actual data can be found). They will have to determine which area is producing the most healthy buckthorn, and this would be the area that conservationists would attack first in order to eradicate.	Classroom, forest, classroom. This would take place over at least 2 days.	Tape measures, iPads.	Maybe accurate data /information about buckthorn and its growth.	3. Successfully managing natural resources depends on careful collection and analysis of data.
7	ELA	RL 7.4 RL 7.5	I can identify the form/structure of various types of poetry and drama.	After reading and discussing poetry, we would be able to go to the school forest for inspiration for our own poetry.	Before, during and after	iPad and paper	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
7	Math	CC.7.G.1	I can reproduce a scale drawing with a new scale.	Going out into the School Forest and doing scale drawings of a variety of invasive and noninvasive plant leaves (poison ivy, garlic mustard, honeysuckle, elm and ash tree leaves, etc.). Once those scale drawings are done, we will go back into the classroom and reproduce that original scale drawing with a new scale.	The School Forest and then the classroom.	Pencil, paper.	Clipboards, rulers.	3. Successfully managing natural resources depends on careful collection and analysis of data.
7	Art	C.8.7	Create designs and artwork that reflect an understanding of the characteristics of a material	Students will be drawing from real life in the school forest. They will have the opportunity take their art tools outside and draw just like plein-air artists did. Students will then, use their sketches and final drawings in the classroom to create Impressionist paintings of spring.	forest and art room	Pencils, paper, burshes, paint	Large drawing boards, floor easels	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
7	French	WI State Standards: A.3 - Students will ask and respond to questions. A.5 They will ask for clarification.	Students will be able to ask for directions to find an object in nature and will also respond to other students' questions by providing them with directions and descriptions about nature. They will use direction vocabulary, nature words, colors and size words in complete sentences.	I will give students a handout with images of plants, fruits, trees, and more, with the corresponding vocabulary words under each image. We will practice pronunciation of new words and review ways to give directions. Students will work with a partner and each partner will have a different map, showing 5-7 items in nature. They must use direction vocabulary and the nature vocabulary, as well as other words they know, to direct their partner to the desired nature objects. For example, they might say: "Go straight ahead and turn right by the tall tree. Look on your left. Look for honeysuckle." Student will ask questions in order to successfully locate the nature objects, and they will also ask for clarification as needed. Once they have found all items on the list, we will return to the classroom and talk about how well their communication went, what they enjoyed observing in nature, and what they discovered for the first time.	In the classroom and outside.	Everything is found in nature; I'll just have to prepare my activity sheet.	I'll create the activity sheet, perhaps using real photos that I take myself.	3. Successfully managing natural resources depends on careful collection and analysis of data., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.

8	ELA	L.8.5	I can demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	As a class, we will brainstorm a list of intangible concepts (Love, Harmony, Anger, Injustice, etc.) Then, we will define metaphors and discuss how they can be used to better understand difficult concepts. For example, you can compare an intangible concept (Love) to a tangible object (tree canopy) to create a metaphor that people can relate to (Love is like a tree canopy because...).	On a short nature walk	Writing materials & iPads	N/A	7. Interacting with the natural environment inspires creativity.
8	ELA	W.8.3 (d)	Develop a narrative with precise, descriptive, and sensory language.	Students will participate in observing the school forest using their 5 senses to produce "show-me" language rather than tell-me language. The goal would be to draw the reader into the scene.	Throughout the forest	N/A	Writing materials, iPad for photos and recording sounds	7. Interacting with the natural environment inspires creativity.
8	Math	8.G.1	I can find examples of objects with symmetry and find the line of reflection/mirror line	The students could take their iPads out to the school forest to find examples of symmetry. They could take a picture of a leaf, for instance, and then draw in the line of reflection to show they understand this concept. This does not outright meet an 8th grade standard, but it is a concept they need to understand before moving onto the transformation unit in geometry.	As the class moves through the forest.	iPads (camera function)	None	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
8	SPED	CC.4.OA.1., CC.4.OA.2., CC.4.OA.3.	I can understand that multiplication fact problems can be seen as comparisons of groups (e.g., $24 = 4 \times 6$ can be thought of as 4 groups of 6 or 6 groups of 4).	I would plot out various sections of land for the students to count how many certain types of trees, plant and bushes are found within that sections. From that information we would use a map and figure out how many sections of land would be in the entire school forest. From there we would calculate how many of each plant, tree, or bus that we found. For this lesson I would have students do this individually and then compare data. We would find different types of trees, bushes, and plants around the forest so the information would be different. From this then we could adventure into graphing, mean, median, mode, range or making a map of the entire forest and discuss how this is like plotting coordinates.	Start in classroom, go to forest, then back to classroom.	iPad	graph paper	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.
8	Science	MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.	PS.4.B WAVES: Identify how light rays change direction when they interact with various barriers (mirrors, lenses, air-water, air-glass, glass-oil). (K-DCI)	Determine the intensity of light in various locations (open areas, under various trees, under various bushes/undergrowth) by measuring the amount of ultraviolet light using one of many methods, the simplest being to expose UV sensitive beads to sunlight, move them into a dark box, and measure the time it takes for them to "lose their charge". If technology allows, use of Vernier UV and Light probes would enhance the data collected and could later be interpreted in graphical form. One could also add a temperature component, including below ground temperatures.	Various predetermined locations	Map of school forest, list of possible species found, UV sensitive beads, digital thermometers, iPads	Vernier UV/Light/Temperature probes and Labquests, boxes (brought by students)	5. Human health and environmental health are interrelated.
8	Math	Geometry	8.G.8	Students will analyze an overhead map of the forest and look for areas that the Pythagorean Theorem could be applied. Example: 2 paths that meet at a 90 degree angle forming sides (a) and (b). They will figure out how to calculate (c) - the length of the forested area (c) by teaming up and using measurement devices (tape measure) and incorporating their findings into the Pythagorean Theorem to calculate the missing lengths of the forested area. A Discussion will take place on why various answers were given for (c).  Area and Perimeter can also be incorporated into the lesson.  Also Area a	Both	Grid Paper Pencil Tape Measure Overhead Map	I have all I need	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 3. Successfully managing natural resources depends on careful collection and analysis of data., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.

8	Tech Ed	MNF1.d.3.m	Identifying Building Materials	Taking students out into the school forest to look at different growths of trees. We will find already broken branches to bring back into the lab and turn it into a useable material for a project.	Forest moving into classroom	Tools in the lab. Tree Identification	None	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 3. Successfully managing natural resources depends on careful collection and analysis of data.
8	Science/Math	Motion/Rate: (NGSS PS2)	What is the rate of overgrowth in the forest in given areas?	Students will use their ipads to collect measurements/photos/plant descriptors of overgrowth in a given area of the forest. They will calculate the rate of overgrowth. As an extension, they will infer whether this could affect the plant growth, habitats, or native species.	Classroom, forest path	Ipads, tape measures,	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
8	Spanish	Reading: Students will understand written materials on familiar topics that have strong visual support.	I can identify objects in the school forest in the target language.	Students will get a story or short excerpt in the target language incorporating animals and nature. From the story students will create a checklist of required items to locate, in target language, found in the school forest. Students will share their created checklist with another group. That group will go on a scavenger hunt, locate the items, take a picture of it with the Ipads and label it in the target language.	classroom then school forest	-Ipads -excerpt in target language	none	integration of languages
8	ELA	W8.4	Students will be able to create an argumentative paper with clear purpose and reasoning	Students will explore the school forest and the resources within the forest. Then they will take their knowledge of resources they discover in the forest and create a paper that will explain why the school forest is important to the school and community.	forest/classroom	Ipads laptops back in classroom	None	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
8	Technology	A.8.5 Use media and technology to create and present information	Students will demonstrate video editing and visual media skills in creating a multimedia presentation.	Students will create informational videos as part of the 21st Century Technology course that are related to the school forest and use apps and software from their iPads to create the videos. Students will be encouraged to select an informational topic such as identifying specific plants or trees, wildlife, or other related topics. Students will research their topic prior to going to the forest and plan their storyboard scripts.	This lessons will take place before heading to the forest and as we move through the forest.	Student iPads and MacBooks	None	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
8	Spanish	B.3 Students will understand written material with familiar topics that have strong visual support.	I can identify objects in the school forest in the target language.	We will create a short excerpt in the target language incorporating animals and nature. From the story, students will create a checklist of required items to locate (in the target language). In the School Forest, students will conduct a scavenger hunt to locate the items on their list. Students will use their ipads to take a photograph of the items and label them in Spanish.	classroom first, then school forest	ipads, excerpt in the target language,	none	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., integrating language
9	Social Studies	Geography 1.9-12. Use geospatial and related technologies to create maps to display and explain the spatial patterns of cultural and environmental characteristics.	Show evidence of spatial patterns of cultural and environmental characteristics on created maps.	Within our adaptation unit, students will brainstorm what makes people choose one environmental region over another in which to settle. We also look at how people modify the environment to suit their needs. Ideally, I would like students to look at the school forest as if it were an uninhabited area, ready for human settlement. They would work in groups to identify if and why the forest may be suitable to settlement and how they would modify the area to suit their needs as a society. We would connect the activity to the unit "issue" of how human settlement patterns affect both the ways in which humans live and the environmental consequences of our settlement patterns.	Brainstorming in the classroom, data collection in the forest, analysis and product in the classroom	iPads	Possibly, but not necessary: Ways of measuring the school forest area for additional data. I have archaeological experience with total stations, transits, and GPS cartographic systems. Geography standards within the C3 Framework specifically reference geospatial and map-making technologies.	8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.

9	SPED- Math	CCSS.MATH.CONTENT.8.EE.B.5	Student will understand and demonstrate how to create a data table and graph linear equations.	Students will identify two leaf species found in the forest and collect a number (less than 10) of each of those leaves. Students will then create a data table which represents the number of each leaf type found. Next, the student will write a linear equation with each leaf type representing the X and Y variables of the equation.	Classroom, then forest, then classroom.	Pen/Pencil, paper, clipboard or binder.	The leaves from the forest.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
9	Biology	HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.	Use research to construct an explanation on how human activities affect an ecosystem.(S-SEP)	This activity is to introduce the topic of invasive species and how they change the biodiversity of a forest. In the classroom the students collect their materials. When we go outside the students spread out and lay their string on the ground as the test area. The students begin to slowly pour the mustard solution in the area. As worms begin to emerge the students will collect the worms. Once the solution is gone and the students have collected all of the worms, they record a final count. Once inside they will compare and analyze their data on the effects of the worms on the ecosystem.	pathways in the forest	mustard, jugs, water, string, data collection sheets, forceps, collecting trays, paper towel, boots, rain gear, gloves	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
9	ELA	W9-10.2	Students are able to analyze the conflict between nature and civilization in the text.	Having read a text i.e. Lord of the Flies, Huck Finn or another piece of literature, students will what it like to live in a world where they are able to make all of their own choices and be responsible for themselves at all times.	As we move through the forest	iPads	None	8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9	World Studies	D2.Geo.1.9-12 Use geospatial and related technologies to create maps to display and explain the spatial patterns of cultural and environmental characteristics.	Create a map using collected data from geospatial and related technologies.	Students will use surveying tools to map the school forest using topographical tags and markings. The students will be able to use field markers and surveying tools in order to physically map the designated forest area. Upon returning to the indoor classroom, the use of satellite and other geospatial technologies can then be implemented to help students create a topographical map that identifies the environmental characteristics of the forest and how they interconnected to the human population and environment.	This would take place in both the school forest and the regular classroom	iPads	Survey wheels to calculate distance and possibly an iPad geospatial mapping app.	8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9	PE	Standard 2: Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities Standard 1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.	Students will formulate strategies and demonstrate team building skills in order to complete the low-ropes course.	Prior to going out to the course, we will have multiple in class lessons that include team building activities. They will learn effective communication, cooperation, trust and collaboration. In addition, they would learn the rope skills of belaying to ensure safety during participation. This also includes how to properly secure harness and helmet. When on the course they will work in teams to complete the specified activities depending on the ropes course purchased.	at stop 8 of the forest.	We will need team-building equipment such as: walking sticks, bucket/ball transfer	rock climbing wall, low ropes course, gloves, helmets, shed to store, harnesses	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
10	English	Writing 9-10.3b and 3d	Students will use descriptive details to create a setting for a narrative	After reading examples of personal narratives and looking closely at how author's use setting, students will closely observe the school forest and describe sensory details. Once they have developed their setting they will incorporate these descriptions into a personal narrative about their experiences.	Classroom activities, then at one location in the school forest	notebooks, writing utensils, iPads	none	7. Interacting with the natural environment inspires creativity.
10	Geometry	G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	I can use similarity to solve problems in a context that will be familiar to many; using geometric reasoning to set up the process.	Students will be using their iPads to take a picture of a tree and some object located on the ground. They will then take one measurement in the forest - the distance from the base of the tree to the object on the ground. In the classroom, students will be using the knowledge of similarity to calculate the ratio of the height of the tree on the picture vs. the height of the actual tree and compare this ratio to the ratio of the distance from the base of the tree to the object on the picture vs. reality. Ultimately, using similarity ratios, the students will be able to indirectly measure the height of a tree.	This can be done anywhere in the forest - probably in section #7 from the walk.	iPads, tape measures	None	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.

10	Social Studies	Human-Environment Interaction: Place, Regions, and Culture D2.Geo.4.9-12. Analyze relationships and interactions within and between human and physical systems to explain reciprocal influences that occur among them.	Explain how human and physical systems affect each other.	Students will investigate the effect humans have on their environments and how that interaction can have negative consequences for those same humans. They will relate what they learned about westward expansion and over-harvesting trees and other natural goods to the history of this particular piece of land and how that affected people in this area around that same time period. They will then compare that to what the land is like today and how it came to be this forest instead of farm land.	It'll be in the classroom and as the class moves through the forest.	Farm Game	History of this land over the past 100 years, including owners, how the land was treated, was it overharvested, etc.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
10	Chemistry	WSD - Develop a mathematical model to explain the relationship between acids and bases in aqueous solutions.	Identify and explain the concentrations of hydrogen and hydroxide ions to the classification of solutions as acid, base or neutral.	Students are introduced to the concept of acids and bases through a discovery lab, where they are given the opportunity to test acids and bases with a pH meter, litmus paper, red cabbage juice, and pH paper.  As a followup to this activity, students would collect a water sample from the various sources in the school forest and make predictions about the outcomes of different acid and base tests. After testing the water, they would come to a conclusion about whether the water is acidic, basic, or neutral. This would be followed up by a conversation about water pH, as well as a possible research project about sources of pollution that affect the pH of water sources and the impact a pH change has on the surrounding environment.	The lesson would take place at the various water sources in the forest (the different ponds and streams), and then in the chemistry classroom.	The chemistry classes already have access to pH meters, glassware, pH paper, litmus paper, and red cabbage juice. Students could use the school provided iPads to record data and to research the impacts of varying pH levels in water.	Updated pH meters would benefit this activity greatly.	3. Successfully managing natural resources depends on careful collection and analysis of data., 5. Human health and environmental health are interrelated.
10	Chemistry	STABILITY AND CHANGE: Relate acid-base changes to their affect on the environment and our bodies. (R-CCC)	To measure the pH of water in the Whitnall School Forest. Assess the impact of pH on water quality.	Students will have completed an introduction to acids and bases in the high school lab. They will research effects changes in acidity have on ecosystems.  Explore the WSD Forest and obtain water samples from the ponds and streams. Obtain samples of rain water and soils samples from corresponding locations.	Sampling and testing will occur at the water sites.	12 Venier pH probes and hand held devices 12 Venier temperature probes 12 collection containers	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
10	Chemistry	WSD 10	Apply scientific principles and evidence to explain factors that affect solubility	Obtain water samples from the ponds and creek in the WSD Forest.  Explore the oxygen content of the creek and ponds to compare levels at different locations.	Sampling and testing will occur at the site of the water in the forest.	12 Vernier temperature probes 12 Vernier Oxygen sensor 12 Sample containers.	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
11	ELA	Connections to Literature	Students will mimic Transcendentalist ideals and write reflectively in nature.	After reading Walden, go to the woods and write.	Classroom, then forest	paper and a pencil	none	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
11	ELA	RI.11-12.7 Integration of Knowledge and Ideas: Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.	Students will apply Thoreau's beliefs of communing with nature into their own experience	We will read Walden by Thoreau before going out to the School Forest and seeing if we can experience Thoreau's belief that to find the divine truths of life, one must commune with nature.	start in classroom and then go to forest	text	none	5. Human health and environmental health are interrelated. , 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
11	AP Physics	AP Physics - determine the uncertainty of a group of measurements	Determine the uncertainty of a group of measurements	Given a protractor , string, and a meterstick, design an indirect method to measure the height of a tree. Compare your value with all other groups. Estimate the percent uncertainty in the measurement	At the edge of the forest	Protractors, string, meter sticks	none	Uncertainty in Measurement
11	Computer Science	Analyze the beneficial and harmful effects of computing innovations	I am learning how computing innovations affect the environment and society	Students will observe the forest and its resources. They will write a list of what computer innovations could affect the growth or sustainability of this forest or others like it.	It will start in the classroom and then move through the forest	iPads or paper and pencil	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.

11	Social Studies	D2.Geo.4.9-12	Identify relationships and interactions between human and physical systems.	Prior to the lesson, students will have read comparative readings regarding guerrilla warfare tactics in the several wars. The essential question that students will respond in an essay is "How are warfare tactics influenced by the environment?" using their location as a backdrop.	As class moves through the forest	Not applicable	GPS Devices???	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 7. Interacting with the natural environment inspires creativity.
12	ELA	Using language to communicate with others.	Students will learn to work as a team to complete a task.	Students will work in teams to locate the 4 person walking ski's in the forest. Teams will then have to work together to move the ski's without falling off. The goal of this lesson is for the students to understand how important it is to work together to complete a task. My students must take this lesson into the workplace, so they understand that if they stray from the team, progress cannot be made.	Location 8 in the forest		0 4 person walking ski's Written directions for how to use the ski's Visual directions for the walking ski's.	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
1,2,3,4,5	Guidance	Personal/Social Domain - Standard F	Students will learn a wellness skill	Grief and Loss student support group. We will define coping skills. We will identify relaxation and exercise as coping skills. Relaxation: We will discuss using their sense of sight, smell, touch and hearing to describe the Forest. We will identify and describe how these skills can help them relax and cope with difficult situations. Exercise: We will discuss how exercise is a way to cope with difficult situations, while hiking in the Forest. We will combine our discussion of relaxation and exercise while observing different trees that have been planted on the WHS grounds, in remembrance of individuals. We will discuss different ways they/or their family can use to honor the individual that has died. We will discuss and make connections to how self awareness and use of coping skills (relaxation skills, exercise) can assist the student in coping with the loss of a loved one.	Begin lesson in student group (Guidance classroom) prior to departure. Continue discussion and apply concepts in the Forest.	-The Fall of Freddy the Leaf by Leo Buscaglia -Everett Anderson's Goodbye by Lucille Clifton	-Map for the paths and areas of interest in the Forest -Directory of foliage in the Forest -Transportation for students	5. Human health and environmental health are interrelated. . 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
1,2,3,4,5	Music	H:Relate music to other arts and disciplines outside the arts	Connect music to social, cultural, or other settings/environments	Using the song, "Big Yellow Taxi," from our book, we will read through the words, talk about the meaning and learn how to sing the melody in tune.	In the classroom.	-music -cd -video clips of Joni Mitchell & The Counting Crows performing the song	N/A	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
10,11	Geometry	G.SRT.8	I can use trigonometric ratios to solve right triangles in applied problems.	Using a clinometer, students will be able to estimate the height of natural objects otherwise unmeasurable without the use of measuring tape and a ladder, scissor lift, etc.	at the edge of the forest	protractor tape calculator	straws string hanging weights for a plumb-bob (fishing weights)	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., Seemingly unexplainable/describable phenomenon in nature can be explained/described/found out using mathematics.
10,11,12	PE	Standard 1(demonstrates competency in motor skills)Standard 2(Participates regularly in PE)Standard 6 Values physical activity for health, enjoyment,and challenge	Demonstrate skills for starting,stopping, falling while participating in cross country skiing	We will be outfitting the outdoor pursuits class with cross country skis, boots, and poles. The students will watch a 5 minute video on the basics of cross country skiing. The teacher will re-emphasize key points in the video and take the class outside to ski the trails made in the school forest. The students will be outfitted with heart rate monitors and record the time they were in their healthy heart zone.	This class will meet in the main gym to get equipped and watch the video. They will then ski throughout the school forest on the trails that were made.	Skiis Boots Poles Heart rate monitors	More skiis More Boots More poles	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.

11,12	Communication 110	SL.11-12.1a Comprehension and Collaboration: Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.	Students will transfer knowledge of textual material into group communication analysis.	Students will have previously read the introductory chapter in the text that discusses the importance of studying and practicing communication skills as well as viewing it as an ongoing process that is easily broken.  First, if the boards with the ropes are still out in the forest, we will use these in groups and then have a class discussion about how this activity relates to the communication process.  Next we will complete the following activity: Minefield Split the group into 3. One group will be the mines. They will be stationary in the playing area. One group will be the rowers trying to get across the playing field. The trick is, they will have their eyes closed. The third group will be the assistants. They will be located on the other side of the playing field and will direct the rowers safely across. If a rower bumps into a mine, they blow up. The groups should rotate so everyone gets to be everything. This activity was taken from <a href="http://www.projectnatureed.com/web%20library/Cooperative%20games.pdf">http://www.projectnatureed.com/web%20library/Cooperative%20games.pdf</a>  After returning to class, students will, individually, write how they felt as they took part in this activity, what the barriers to communication were, and how it relates to the communication process. Then, they will share with a larger group of 3-4 people. This larger group will have a spokesperson who will orally share the most prevalent responses and feelings within the group. We will, as a class, analyze the results, and	Specific location	The boards with the ropes if they are available for use.	None	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
11,12	Science	Apply scientific ideas to solve a design problem, taking into account possible unanticipated effects. (HS-PS2-3)	Investigate the way objects and organisms in nature survive when they fall.	Students will design and engineer a container that will protect an egg as it falls from a height of 10 m. They will spend time in the forest observing seeds and other organisms to determine structures they have that help them to survive as they fall.	In the forest, some research be done in the classroom before and after the visit to the forest.	This activity requires students to supply building materials for their egg drop container.	Eggs	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 7. Interacting with the natural environment inspires creativity., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
11,12	Science	AP Chemistry Science Practice #4: The student can plan and implement data collection strategies in relation to a particular scientific question.	LO 1.19 The student can design, and/or interpret data from, an experiment that uses gravimetric analysis to determine the concentration of an analyte in a solution.	Students will investigate the relative amounts of different ions in the watershed around Whitnall by collecting various samples throughout the forest and precipitating or titrating these ions. By analyzing their products, they can determine the original concentrations of these ions.	Samples will be collected at various points in the forest, but analyzed in the lab.	Conductivity meters, glassware, burets, filters, various chemicals.	Water sampling collection equipment.	3. Successfully managing natural resources depends on careful collection and analysis of data.
11,12	Anatomy/Physiology	A&P: Explain how allergic reactions arise from immune mechanisms. and/or A&P: Explain how two major types of lymphocytes are formed and activated, and how they function in immune mechanisms.	Create an infographic about a specific immune response.	After completing a unit on the lymphatic and immune systems, students create an infographic using a web-based program such as piktochart to demonstrate their knowledge of the immune response. Students could create an infographic on topics related to the school forest such as allergic reactions- poison ivy, bee stings or diseases such as Lyme disease.	About the Forest-Lesson takes place in the classroom	Computers and Internet access	None	Environmental factors have an impact on human health.

11,12	Economics	Students will apply the factors of production in a real world example.	Create an idea on how to make an improvement to the school forest with regard to the four factors of production involved (land, labor, capital, entrepreneurship)	In economics students will learn about the four factors of production: land, labor, capital, entrepreneurship (enterprise). In class students will be made aware of the school forest and the prospect of grant money for its improvement. Students will tour the school forest looking and brainstorming examples where adaptation/change or development could be made for the improvement of the school forest. In small groups students will design models, sketches, or provide written descriptions of what they could potentially build/or develop on site. Students will outline their suggested development by identifying the aspects of land, labor, capital and entrepreneurship involved in its design. Students will present their product to the class and determine as a class which ideas would be realistic and potentially a reality.	Starts in the classroom and heads throughout the the forest	Paper, colored pencils, i-pads, few supplies that are not out of the ordinary.	Paper, colored pencils, i-pads, few supplies that are not out of the ordinary.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
3,4	Art	C.4.5, C.4.9, D.4.1, D.4.3, E.4.1,	I can create pattern using color theory and make a successful weaving using a found loom in nature.	We will be using found trees and branches to create weavings. Each student will find two branches that are near each other, and use the branches as the basis for the loom. Students will spend time creating a weaving between branches, that will show pattern, texture and knowledge of the skills needed to create a proper weaving.	We will stake out a general area to create our projects, but it will spread throughout the forest as each student has their own space.	Yarn, scissors, combs	n/a	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
3,4	Social Behavior	Speaking & Listening	Students will successfully engage in appropriate conversational speech, following social norms and conventions (turn taking, changing topics, asking and answering questions, etc.).	With a peer, students will go on a nature scavenger hunt, taking photos of targeted items in the forest. They will engage in conversation with their partner to decide which items to photograph and where to look for them. Students will utilize visual supports to help them remember the social norms of a conversation and how to appropriately work with a peer. Students will then engage in a sharing session where they will ask and answer questions about their items in a presentation format.	Various locations in the forest	One iPad for each partnership, visual supports for conversation skills	none	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
3,4,5	Speech	N/A-Speech lesson	N/A- Speech lesson	My students would travel to the forest once in fall. They would be asked to identify and label various environmental items that we see in the fall (i.e., piles of red, yellow, green, orange, brown leaves; acorns, squirrels, etc.). They would be asked to then reflect on the items they saw and predict what they think may be the same or different in the Spring when they travel back to the forest.  We would travel again to the forest in the Spring, where the students would again have a scavenger hunt to identify and label various environmental items seen in the spring (flowers, budding trees, various animals, etc.). Students would then be given a Venn Diagram to compare/contrast the forest in the fall vs. the spring using the new vocabulary they have learned related to the forest.	As the class moves through the forest; ends in the classroom to predict (in the fall) or complete the Venn Diagram (in the spring)	Venn Diagrams, visual supports to aid in making predictions	Scavenger Hunt worksheets for both fall and spring vocabulary terms	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
6,7,8	PE	Standard 4: Achieves and maintains a health enhancing level of physical fitness.	Students will demonstrate the ability to complete all obstacles in the Tough Mudder course.	Students will be partaking in a school/age-appropriate version of the Tough Mudder. The course includes several obstacles as well as running varied distances in between obstacles. Obstacles in the past have included hurdles, traversing fences, stepping stones, army crawl and agility work jumping in and out of tires. Prior to participating in the course, students spend a week doing training activities all the way from cardiovascular/agility stations to climbing ropes.	Explanation of the course occurs inside before heading outside to the course. The students start the course outside the forest and then about halfway through, they enter the forest and run the trails. They end up coming out of the forest to complete several more obstacles on the athletic field before finishing the course.	hurdles (various sizes) dome cones tires stakes stop watches	Marking tape/ribbon Marking paint Wood to build more obstacles	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.

6,7,8	FACS	Work collaboratively with others	I can demonstrate how to work productively as a team member.	FACE students need to work cooperatively with each other during cooking experiences. To help them become familiar with each of their assigned kitchen members and to realize how important it is for all of them to work together in order to be successful, I would take them into the forest to participate in the "Walking Skies" activity.	Activity takes place in an open area in the forest	N/A	Walking Skies	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
6,7,8,9,10,11,12	PE	1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities B. Demonstrates advanced skill application.	3:4:A1 Willingly participates in a variety of activities to maintain or enhance a healthy lifestyle.	Students will learn the life-long activity of Kayaking. They will be taught how to safely get in/out of the kayak. They will also learn proper se and sizing for a life jacket and how to strap a kayak down on a vehicle to travel with it. Students will also be taught the proper rowing techniques to propel the kayak through the water and manipulate it in the water. Incorporated with the rowing students will learn the muscles in incorporate to row and stabilize the kayak while they are in it. with proper practice and repetition the students will take 2 field trips to demonstrate/practice the skills learned in an authentic environment.	Teaching would be in the pond and field trips will be in a river or lake.	none	Kayaks, paddles, Life jackets, strapping for Kayaks	5. Human health and environmental health are interrelated. . 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
9,10	Spanish	Standards dealing with speaking	Student will debate the pro and cons of the sale of the property to the Walmart corp. Presentations will be given to the school board in Spanish of course.	Student will decide on their position. They will form groups accordingly. Students will do research to defend their position. Presentations will be made in front of a pretend (AP Spanish) school board.  (They could later relate this to what is happening in Ecuador, mining companies are taking over villages etc.) Exon is polluting the environment....etc	Students will study the lay out of the forest and determine where the walmart would be placed. They would determine the environmental impact it would have on the area. What animals would be displaced etc.	ipads	Scientific equipment..perhaps....tree/plant/animal/pond life identification guides..  Depends how specific we get with plant and animal study...	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
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9,10	Mathematics	G.SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	I can use trigonometric ratios to solve right triangles in applied problems. I can use the Pythagorean Theorem to solve right triangles in applied problems.	Students will be finding the heights of trees using a clinometer.	First Classroom, then forest, then back to the classroom	A protractor, straw, a piece of string, and a weight.	n/a	4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.
9,10	Spanish II	C.3. Directions: Students will give a series of directions to someone, coaching the person in order to complete the task	I can give directions in the target language.	In Spanish II we talk about directions and locations in the city and in your town. I would use this as an authentic assessment to have the students give each other directions to get from one place to another around the nature pod. I would place markers around the site and their objective would be to give commands to one of their group members to get him or her from different points around the site.	classroom prep and the nature pod	markers, map	none	7. Interacting with the natural environment inspires creativity.
9,10,11,12	SPED	IEP specific	stress management	Taking student/s who are in need of movement (physical activity),emotional support and/or anger management into the forest to talk or problem solve and release stress/anxiety. Could also be used as a reward activity when students have had a successful week in terms of work production.	on the forest paths	not applicable/no specific materials needed	none	5. Human health and environmental health are interrelated. . 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.

9,10,11,12	SPED	Basic Study Skills/SpecEd	Stress Management	Taking students when in need of physical movement or "cool down" period in to the forest to talk, problem solve, and/or release stress.  Could also use as a reward activity with specific students in certain situations.	on the forest paths	N/A (no specific materials needed)	None.	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
9,10,11,12	Social Studies	D2.Geo.6.9-12. evaluate the impact of human settlement activities on the environment	What was this place like before Eurpoeans arrived? Whose land was it?	Before thanksgiving, addressing native cultures and the white people's habit of taking what they wanted from those they considered inferior, primitive, or uncivilized (their vales), students will be learning what really happened at the first thanksgiving and then transitioning to local events. The local events would be to research who was in this forest before white people and what they valued it for. What do we value the school forest for? Discussion and reflection with the possibility of students doing projects of their choosing on the topic.	classroom and forest	all	historical facts about who was here before white Europeans.	8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9,10,11,12	SPED	Self awareness/emotional control	To practice stress reduction techniques, specifically imagery and breathing.	Students who participated in Self Improvement group will review and discuss the various stress management techniques. Students will be given examples and observed modeling in the areas of imagery and deep breathing. We will walk to pond area with blankets. Students will place themselves in a comfortable position. I (teacher) will guide through an imagery activity, and then will be encouraged to practice deep breathing. After returning, students will reflect on the experience in their journals and discussion will follow.	class to forest and back to classroom	Have all needed supplies imagery materials breathing hand out breathing video journals a few blankets	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 5. Human health and environmental health are interrelated. , 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
9,10,11,12	Tech Ed	B.12.4 Illustrate how resources are essential to technological activity but that their availability and quality vary extensively throughout the world	Students will be able to explain how raw materials are used to make woodworking projects	Building process used in making wood projects	Classroom & Forest	Raw material to finished project	I have them	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.
9,10,11,12	Music	Student will demonstrate understanding to how music relates to areas outside of the arts	Student will capture, analyze, and compare the wavelengths of various animals in the Whitnall Forest	For this activity, students will use their ipads and/or portable field recorders to capture animal sounds within the Whitnall Forest (primarily bird and frog sounds). Once captured, students will use the program Audacity, available on iMac lab computers, to compare the wavelengths of various animals, analyze similarities and differences (pitch, timbre, frequency, amplitude, and overtone series).  An extension to this assignment would be to alter some part of the wave length or combine multiple sounds to create a new and unique animal sound. This lesson could be combined with other lessons in acoustic ecology. A second extension assignment would have student importing their recorded animal sounds into GarageBand (either on Mac or iOS) to create a unique composition using ONLY sounds from the forest. This assignment could be successfully completed by at least all middle and high school music student (and beyond). I'd be happy to share more information if you'd like. This could also be a great interdisciplinary unit. ~M.Hayden	Classroom, Forest, iMac Lab	Student iPads, portable field recorders & Audacity	None	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.

9,10,11,12	SPED	based on student IEP goals, not standards	Students will communicate clearly and respectfully when collaborating to solve a problem, using teams of 4 to move the wooden skis forward (ropes)	After an introductory activity geared toward: * identifying important steps and strategies to communicate effectively and respectfully * identifying and practicing taking on various roles in a group problem solving process * dealing with frustration when things don't go as planned and exploring strategies to reduce it  students will work in groups of 4 to walk forward on the wooden skis (ropes), using strategies to keep moving forward as a group if/when they get stuck. A number of different trials will be run and later compared: *self chosen groups *teacher chosen groups *verbal communication only *nonverbal communication only	in the classroom for several sessions and then in the forest	I have all supplies needed in my classroom, except the wooden skis (low ropes) that we used today.	Access to the wooden skis.	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9,10,11,12	Guidance	Content Standard H: Students will understand the relationship between educational achievement and career development.	Attain educational achievement and performance levels needed to reach personal and career goals.	Walk through the school forest and think about which careers one could choose that involve the environment/nature. Research these careers on WisCareers and gather info on what steps it takes to move toward these careers.	as the class moves through the forest	ipads, Wiscareers site.	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 3. Successfully managing natural resources depends on careful collection and analysis of data., 4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature., 5. Human health and environmental health are interrelated., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.
9,10,11,12	Music	WTS #2 - Students in Wisconsin will play, alone and with others, a varied repertoire of music on instruments.	Perform with technical accuracy	Jazz Band Performance near the open field/underground stream area.  How do we go about putting plans together to build an outdoor amphitheater? This would be an awesome area to create such a venue! It could be used for theater events (plays, etc...), musical ensembles (band, choir, etc...), even beginning and end of the year meetings! It could also be used for events such as Falcon Fest, the Back to School Block Party, or maybe even an outdoor graduation ceremony. I am 110% onboard to help in any way that is needed.	A specific location	A set of risers, chairs, music stands. A portable sound system.  Eventually an amphitheater-type set up would be wonderful!	Set of risers. Working sound system/speakers for the jazz band and other ensembles to use for sound amplification.	6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
9,10,11,12	Art	C.12.8 Use the natural characteristics of materials and their possibilities and limitations to create works of art.(SKILL-Craftsmanship)	Explain how traditional and non-traditional materials may impact human health and the environment and demonstrate safe handling of materials, tools, and equipment.	Students will find and dig their own clay for use in a ceramics project. In the first year we will take the clay back to the classroom to sculpt, fire, and glaze the items. In the future if there were a shelter we may use the shelter to sculpt the items, and even eventually fire the items in a wood fire or pit fire (raku style ceramics).	forest and classroom	kiln, buckets, glaze, sculpting tools	for raku firing: fire suits (for instructors), long tongs, raku clay and specialty glazes. Raku artist to conduct workshop.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 7. Interacting with the natural environment inspires creativity., Learning an origin point for naturally mined materials helps students be more aware of the cradle to grave system of industrial production.

9,10,11,12	ELA- Read 180	Writing standards in Read 180 course	Students will discuss environmental issues while taking a guided tour through the forest in order to analyze and determine solutions to help in the preservation of the environment.	Students in Read 180 complete various workshops in their r-books. The first is called Survivors, and it culminates with a writing assignment related to problems in the world today. The students need to brainstorm a list of different problems - social, emotional, physical, mental - and choose one to write about. Before they complete the assignment, we will take a nature walk in the forest to discuss environmental issues like invasive species, preservation of natural resources, etc. As a class, we will discuss possible solutions to those problems. Then, using their iPads, the students will choose a particular topic and begin writing about their problem and viable solutions.	Most of the lesson will happen in the forest,	Books iPads	More information about invasive species, preservation of natural resources, and other environmental issues  Also, we will need an area of the forest where we can sit and work on iPads.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 5. Human health and environmental health are interrelated. , 7. Interacting with the natural environment inspires creativity.
9,10,11,12	World Languages	Student can communicate information in writing.	I can write on a wide variety of familiar topics using connected sentences.	Students will write an informational flyer in the target language describing a community clean-up for the school forest. The target audience will be Spanish-speaking families in the community. Students will tour the school forest to become familiar with the various areas, trails, ponds, etc...  Student groups will choose an area to be responsible for. They will make sure that all litter and natural debris have been removed and that the areas are in good condition for the use of other groups.  The flyer will include photos from the school forest. If possible, it might also incorporate audio, depending on the final product.	The actual writing of the flyer will occur following the tour. As students pass through they may photograph various areas with their iPads and record observations for later use.	Students will use iPads to take pictures and record notes or observations. They will utilize Pages to create the flyer (or perhaps another App that will enable them to demonstrate the skill).	Perhaps another copy of the map of the school forest that I could utilize in a document for students. At this time I cannot think of another resource or supply I might need.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9,10,11,12	Math	CCEE 8.G.1.a	Students will use a map to navigate points on a map.	Prior to an outdoor experience, students will be introduced to a map of the Whitnall High School and Middle School areas. Given a map, label of the high school, and highlighter, students will locate the high school on a map. Given a label with 116th st., a manipulative (wiki stick), and a map, students will locate 116th st. on the map. Given a label for the middle school and map, students will locate Whitnall Middle School. After correctly labeling a map of the Whitnall area, students will watch a video on how to safely navigate the street and park area.  Students will utilize their school map to explore the Whitnall school area by foot with teacher support, Given a map, students will navigate the middle and high school area to locate the areas of water.	special Education	map labels of Whitnall High school, Whitnall Middle School, 116th st.,	map of the area labels of Whitnall High School, Whitnall Middle School, and 116th St	3. Successfully managing natural resources depends on careful collection and analysis of data., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity.
9,10,11,12	French	Presentational Writing	Students can produce a variety of creative writing.	Students will explore the school forest in order to observe and describe what they see in note-taking format. Depending on the proficiency level of the students, they will write a brief presentational piece such as advertisement, explanatory or persuasive outline on the topic related to one of the thematic units that the students have been exploring in class: nature preservation, describing own neighborhood or city, necessity to lead healthy lifestyle, etc.	before, during and after	all: students, paper, iPads:)	none	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.

9,10,11,12	SPED- Math	EE.1.MD.3.c: Identify activities that come before, next and after	Students will be able to identify the sequence of activities on a picture/word/object schedule.	<p>Students will be trekking to the forest to assemble a fire and make s'mores. In a previous lesson, students will have used a map to find a location within the forest. They will use that map to find the location in the forest where we will be making a fire and making s'mores.</p> <p>Once the students have reached the location, they will use a picture schedule/visuals to find the necessary materials to make a fire (sticks, brush) and gather the materials. The teacher will then start the fire.</p> <p>Next, each student will use a visual schedule to follow directions on how to assemble a s'more:  1. Get 1 graham cracker  2. Take 4 pieces of chocolate  3. Take 1 marshmallow  4. Put marshmallow on a stick  5. Roast marshmallow over fire until golden brown  6. Enjoy!</p> <p>Each student will have to discuss with their peers whether they enjoyed the s'more or not and what they might have done differently to make it better.</p>	in classroom prior to forest, then forest location	All	n/a	2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
9,10,11,12	ELA	W.11-12.3	I can create images using figurative language	Students will describe natural objects using figurative language. In other words, they cannot describe the object literally. This would work well with certain forms of poetry, such as an ode or elegy (elegy to the area that is now highway, ode to a fallen tree, etc.).	The clearing would work best (open area where students can sit and write while still keeping sight of them)	iPads and/or notebook with writing utensil	None.	7. Interacting with the natural environment inspires creativity.
9,10,11,12	Math	Prove the Laws of Sines and Cosines and use them to solve problems.	Students will use the law of sines to make indirect measurements	A distance from two points on the same side of a pond determined. A flag is placed on the opposite side of the pond. Using a clinometer, the angles from the two points to the flag is measured. Using the law of sines, the distance across the pond can be measured.	one of the ponds	Flag, meter tape and Clinometer	None have it all	Data points can be collected to gain more information about the growth and change of the forest
9,10,11,12	Guidance	Personal Social Domain - Standard F: Students will understand and use safety and wellness skills.	Students will learn a wellness skill: stress reduction technique.	Practice of Mindful Meditation (30 minutes) Students will practice the art of becoming aware of being fully present in their minds. An active, busy teenager has an active mind that can be difficult to still. Anxieties, stress of school, families can cause unhealthy reactions in students. Mindful meditation will allow students to stop their active thoughts, anxieties about upcoming events or the past, etc. . To be fully present in the moment will help students to learn to relax understand their minds and bodies. Students will train their minds to concentrate. All students should sit in a comfortable spot. The teacher will instruct them to relax. Students can first begin by concentrating on their breathing. Notice their lungs filling with oxygen, notice their stomachs rising and falling. Instruct the students to notice the smell of the woods. Listen to the sounds of nature. What do you hear? notice the taste in your mouth, what do you taste? Feel, the temperature of the air. Notice the parts of you body that are touching the ground. What are you feeling beneath you? Look at an object in the woods, what so you see, do you notice any patterns, textures. students should be fully present in mind and body in the woods. If their mind begins to wander, they should redirect their thoughts back to the here and now. If they have thoughts that pop up in their mind, the student should acknowledge the thought, then train your mind to go back to the awareness of their body and mind in the present here in the woods.	location in the forest	No supplies are needed. The counselor will guide students through a mindful exercise.	None are needed.	5. Human health and environmental health are interrelated.

9,10,11,12	Theater Arts	THEATRE PRODUCTION Content Standard Students will think and work as playwrights, designers, managers, and/or directors to create and interpret improvised and scripted scenes and adapted to environment. E.4.5 Make decisions regarding the scene's visual elements E.4.6 Rehearse and perform a scene or play for peers and invited guests	skills and creativity/innovation	Environmental design and use for theatrical scenes and monologues. Improvisational use of space and time Viewpoints and spacing for adaptable space and design outdoor theatre	Classroom and forest	Props and costumes used in classroom	N/A	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health., 7. Interacting with the natural environment inspires creativity., 8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment., 9. Living (biotic) and non-living (abiotic) factors in the environment influence each other., <u>Thinking outside the box</u>
9,10,11,12	PE	Participates regularly in physical activity, Student maintains a health enhancing level of physical fitness.	Students will be able to use	Students will be using a geocaching app to locate caches that are hidden within the nature pod. Students learn about the etiquette involved when geocaching; the most important rule being to leave things as you found it. This unit piggybacks on our orienteering unit. Each group is given coordinates to put into their phone app and then they follow their compass to the location to find the cache.	classroom and school forest	We already have what we need, however the PE department might want to look into buying a better app. We used a free app and it wasn't too accurate. We still have a cache sitting in the forest somewhere that we can't find.	A better app. The problem is that students need to use their own phones for this activity to stay connected to wifi. In addition that app we used was only good on iPhones so it was a little limiting. Need to look into what a better app would be.	1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens., 6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.

## **District Commitment**

The Whitnall School Board is committed to the development of the Whitnall School Forest as both a learning environment and a community resource. **Appendix C** contains the Memorandum regarding the forest as well as the minutes reflecting the Whitnall School Board's approval of the land as the Whitnall School Forest. Additionally, once the education plan has been written and approved, commitment and support of administrators, teachers, and the Board will be secured through:

- Accurate and specific communication
- Responding to staff/community feedback
- Staff development days
- Successful grant writing
- Positive experiences for students
- Data that demonstrates improvement in test scores and attendance
- Community events

# Appendix B: School Forest Map, Points of Interest, Scavenger Hunt

## Whitnall School Forest Tour



When in the school forest, remember to...

- **Dress appropriately**- long pants, proper shoes, and bug spray are recommended.
- **Keep moving** so that you complete the course.
- **Be attentive** as you never know what may happen when you least expect it. The forest is full of surprises!
- **Reflect:** What can I teach *about* and/or *in* the forest? What have I learned and what can I share?

The numbered stations on this map indicate points of interest throughout the Whitnall School Forest at both sites. Descriptions of these are attached to this map. If this is your first time in the forest, or you are up for a bit of forest fun, be sure to test your observation skills and forest knowledge with the Whitnall School Forest Scavenger Hunt. What did you see, hear, or smell?

**Please return this packet to the holder on the sign at the main entrance for future visitors. Remember, conservation starts with you!**

### School Forest Key Concepts

1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.
3. Successfully managing natural resources depends on careful collection and analysis of data.
4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.
5. Human health and environmental health are interrelated.
6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
7. Interacting with the natural environment inspires creativity.
8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.
9. Living (biotic) and non-living (abiotic) factors in the environment influence each other.

## School Forest Tour Points of Interest

1. Site: Between the two ponds behind the football stadium

\*Not all school forests include bodies of water. We are lucky to have several ponds as well as the Root River included in our school forest area. At one point in time biology students at the high school used this pond for fishing. Students in PE class have found newly-hatched snapping turtles wandering around the property, and crawfish have been spotted walking behind the bleachers of the stadium. This is a great spot to do some bird-watching, observe different types of vegetation, or perhaps, sometime down the road try kayaking.

2. Site: Discus area and open grass space of Falcon Field (enter via gate North of team rooms)

\*One goal of the school forest curriculum is to introduce students to lifelong activities they can enjoy in the outdoors. Make sure you are aware of local ordinances when planning lessons that involve fire.

3. Site: Point where the stream has been diverted underground

\*Many times humans change the physical environment in order to meet their own needs. At this point, the stream was previously above ground and it was possible to actually crawl under the road along the stream (just ask some of Ms. Cerletty's former students). When the stadium was built the stream was diverted underground in order to fit a full sized soccer field. The army corp of engineers determined that the stream was non-navigable and was therefore able to be covered without affecting the natural flow of the stream.

4. Site: Vegetated area along 116th street behind the practice fields

\*Deer and bunnies are not the only ones who can find a satisfying meal in the forest. Along the road here there are grape vines, and raspberry bushes can also be spotted along the trail. Aside from berries, the cattails visible in the ponds are a great source of food. Did you know:

The United States almost won WWII with cattails.

No green plant produces more edible starch per acre than the Cat O' Nine Tails; not potatoes, rice, taros or yams. Plans were underway to feed American soldiers with that starch when WWII stopped. One acre of cattails can produce 6,475 pounds of flour per year on average (Harrington 1972).

Source: <http://www.eattheweeds.com/cattails-a-survival-dinner/>

5. Site: Entrance to school forest (look for markers to the south of the entrance)

\*As you walk through the forest, you will notice that aside from where the trail has been cleared, you won't see very much bare ground. Invasive species have out-competed native plants in the area for space and nutrients. The three major plant species of concern in our forest are honeysuckle, buckthorn, and garlic mustard. Even though the plants are not currently flowering, honeysuckle and buckthorn can be identified all through the forest. A community volunteer day is being organized later this fall to begin removing some of these invasive plants. Also if you know someone with a herd of goats, please contact one of the task force members. Businesses are being developed around the state where herds of goats are used to control invasive plants.

6. Site: On the main trail where the creek passes underneath.

\* If you look down the slope, you can see a dry or mostly dry creek bed. During the spring as the snow melts, the water flows quickly through this area. Seasonal changes in weather can impact the features present in a forest. Different species of birds make the forest their home in the summer and some migrate for the winter while others stay. The trees and the understory of the forest look different today than they will in a month or two. Thankfully those pesky mosquitos will be gone for a few months as well.

7. Site: Open area at the end of the Poplar Cove trail.

\* This portion of the trail is called Poplar Cove. If you look around, you can see several tall Poplar trees, specifically cottonwood trees. The trees can be distinguished by their tall stature, grayish bark, and slightly silver underside of the leaves. Large trees like these could be used to measure circumference, triangulate height, and calculate how many cords of wood or board-feet of lumber could be harvested.

This area of the forest used to be an outdoor classroom with desks as recently as the year 2001! It was called the "learning center".

8. Site: Open area at back of the school forest.

\*Many school forests incorporate low ropes courses and team-building activities into the curriculum. Let's see if we can make it from one cone to the other on the skis!

9. Site: On the trail west of the open field.

\*It's important to plan ahead for safety when you come to the school forest. Make sure you know what poison ivy looks like, there is a lot of it along the trail here. Ask students to dress appropriately (long pants, closed toed shoes, coat if needed) and stay on the trails. You should also bring a first aid kit with epi-pens for bee stings, have a cell phone with you, and make sure the school secretary knows where you are in case of emergency.

10. Site: on the portion of the trail heading east along I43.

\*Many of the plants we can see here have been used by humans for centuries. Sumac, for example, is frequently seen along roadsides in Wisconsin. For centuries people around the world have used sumac for many purposes. Native Americans used Sumac to treat bladder, digestive, reproductive, and respiratory problems as well as treat injuries and arrow wounds. Early pioneers used berries for reducing fevers, making cough syrup, and wine, inducing vomiting, and making dye for clothing.

It is clear that if so many uses can be found from one plant, a whole forest full of plants and animals, rocks and rivers, vistas and history, it can act as a muse for all of us as we plan lessons that will utilize the forest.

11. Site: Heading south along the trail through the less-wooded area of the forest.

\* The more open landscape in this area is reminiscent of the prairies that used to exist in Wisconsin. In fact, this whole area was once open enough that it could be used as a sledding hill. Todd Smith was on the evening news as a kid sledding down this very hill. With the dwindling prairies of SE Wisconsin, perhaps this area could be restored to a prairie in the future.

Also, in this open area you can probably see lots of plants bearing large burrs. George de Mestral came up with the idea to invent velcro after returning from a hunting trip and removing burrs from both his clothing and his dogs fur. You just never know when or where inspiration will strike.

# School Forest Scavenger Hunt

Check off the following items as you identify them on your hike.

## Invasive Species of Plants

<input type="checkbox"/> Honeysuckle	<input type="checkbox"/> Buckthorn	<input type="checkbox"/> Garlic Mustard
		

## Native Species of Plants

<input type="checkbox"/> Poison ivy	<input type="checkbox"/> Poplar
	
<input type="checkbox"/> Elm tree	<input type="checkbox"/> Ash tree
	
<input type="checkbox"/> Sumac	<input type="checkbox"/> Willow Tree
<input type="checkbox"/> Grape Vines	<input type="checkbox"/> Raspberries

## Animal Signs

____ Deer tracks	____ Insect with a proboscis	____ Scat (Can you tell which animal left it?)
		
____ Birds (Can you identify any? Which ones are they?)	____ Bird songs (Can you identify any? Which ones are they?)	____ Evidence of human presence - describe what you saw, heard, smelled...

## Inspiration

\_\_\_\_ An object, or process that is mimicked in a human-made object or process

\_\_\_\_ A spot that makes you feel a sense of calm

\_\_\_\_ A spot that makes you feel a sense of fear

\_\_\_\_ A spot that is beautiful

\_\_\_\_ A spot that is ugly

\_\_\_\_ An object or place that causes you to recall memories

\_\_\_\_ A place that makes you think of conflict

\_\_\_\_ A place that seems unchanged by time

## Key Concepts

1. Awareness of local, regional, and global environmental issues, as well as time spent learning in the outdoors, influence the development of environmentally responsive citizens.
2. Humans rely on natural resources for both industry and private use. The sustainability of those resources (economic, social, and environmental) must be considered in resource management plans.
3. Successfully managing natural resources depends on careful collection and analysis of data.
4. Many items designed and engineered by humans are based on the structure and/or function of objects found in nature.
5. Human health and environmental health are interrelated.
6. Time spent in the natural world can provide opportunities to enhance our physical, social, cognitive, and emotional health.
7. Interacting with the natural world inspires creativity.
8. Cultural, economic, social and political factors influence a person's values, understandings, and attitudes toward his or her environment.

## Appendix C: Whitnall School Board Memo and Minutes

**WHITNALL SCHOOL DISTRICT – School Board Meeting**

**Agenda Item:**

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**Date:** November 11, 2013

**To:** Whitnall School District Board of Education

X Attachments

**From:** Anthony Brazouski, Executive Director of Academic Achievement

X Reference

**Subject:** Whitnall School Forest

X Action Item

### **Reason for Board Consideration and/or Board Action:**

*Approval of Whitnall “nature pod” as Whitnall “school forest”*

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Laura Cerletty, WHS science teacher and K-12 science coordinator, approached Dr. Holtz and Mr. Brazouski about investigating possibilities for the Whitnall Nature Pod in approximately May of 2013. Mrs. Cerletty has in-depth experience with school forests, the approval process, and cross-curricular outdoor education. The process begins in conjunction with the Wisconsin Department of Natural Resources where a State Forester visits the site to determine its eligibility and proposes a school forest management plan. This plan was completed, and the site was deemed eligible for school forest status on August 30, 2013 by Mike Sieger, WDNR State Forester for Southeastern Wisconsin and Whitnall alumnus. The site map, as well as the “Whitnall Nature Pod School Forest” forest management plan, are attached.

The next step in the process requires Whitnall School Board approval of the land as a school forest. Such approval does not change the ownership, status, or responsibilities associated with the land in any way whatsoever. Instead, the approval represents a commitment by the School District to maximizing the use of the school forest for learning experiences. An approved “school forest” is eligible for grants to be used to develop curricula, purchase goods and services, and manage land in order to build outdoor and environmental education experiences. In Year 1, the school district is eligible for funding up to \$5000.00 for teachers to develop school forest- based curricular opportunities. Such opportunities may be cross-curricular (science, math, engineering, physical education, art, technology education, etc.), extra-curricular (cross country, environmental club, outdoor club, etc.), and community-based (invasive species management, harvesting, educational nature walks). The Whitnall school forest also includes the unique opportunity for water management and the inclusion of water-related environmental issues and studies. For subsequent years, the District is eligible for annual school forest grants up to \$10,000.00 to further develop curricula and/or purchase related goods, services, and equipment.

The Wisconsin School Forestry program (LEAF) is run by and through the University of Wisconsin, Stevens Point in partnership with the Wisconsin Department of Natural Resources. Services provided to school forests include:

- Guidance and consultation in developing school forest programs and their education plans
- Connecting schools with forest management resources
- Networking and providing information for educators
- Professional development for educators, administrators, and natural resource managers
- Information about funding sources and education resources

The mission of the program is “to integrate learning in and about Wisconsin’s forests into K-12 schools to provide the knowledge, skills, and ways of thinking necessary to sustain our forests and communities.”

Further information may be found at <http://www.uwsp.edu/cnr-ap/leaf/Pages/default.aspx>.

### **Recommendation:**

The Whitnall School District administration recommends School Board approval of the Whitnall Nature Pod as the Whitnall School Forest.

**WHITNALL SCHOOL DISTRICT**  
**Regular School Board Business Meeting: Monday, November 25, 2013**  
**Board/Community Room**  
**5000 S. 116 Street, Greenfield, WI**  
**MINUTES**

Board Members Present: Ms. Bird, Mr. Brunette, Ms. Richter, Mr. Shaw, Ms. Valaitis,  
Ms. Zaborowski

Board Members Excused: Mr. Anderson

Administrators Present: Dr. Holtz, Mr. Johnson, Mr. Brazouski, Mr. Green, Mr. Gran

Verification of Meeting Notice and Adoption of Agenda

Board Members affirmed they received proper notification and adopted the agenda. Meeting called to order at 6:30 pm.

Comments from the Audience Regarding Items for Future Consideration

None

**CONSENT AGENDA**

- a. Approval of Whitnall School Forest
- b. Approval of New Course Proposals for the 2014-15 Academic Year
- c. Approval of Chapter 220 Agreement and number of seats for the 2014-15 Academic Year
- d. Approval of October 28 and November 11, 2013 School Board Meeting Minutes, and the November 4, 2013 Special School Board Meeting Minutes
- e. Approval of November Vouchers and Vouchers Payable
- f. Approval to Accept Donation from Edgerton Elementary PTO for Playground Equipment
- g. Approval of Line of Credit

Mr. Shaw asked if anyone wanted to remove an item from the consent agenda. Ms. Richter asked that item "f" be removed; Ms. Valaitis asked that items "d, e & g" be removed.

Item d: Ms. Valaitis noted that in the Special School Board minutes, Mr. Anderson was the board member excused towards the end of the meeting. Ms. Bird made the correction that the vote took place before Mr. Anderson left, and Ms. Zaborowski was not present for the vote. The vote was 3-3. Also, Mr. Brunette corrected the November 11 Minutes, he only wanted financials on the Golf Outing not Falcon Fest.

**Motion by Ms. Bird and second by Mr. Brunette to approve item "d" as amended. Motion carried 6-0-0.**

Item e: Ms. Valaitis asked for clarification regarding the payment to DPI for Educator Effectiveness system, would we get a reimbursement? Dr. Holtz confirmed that DPI requires that we pay, and then we are reimbursed.

**Motion by Ms. Valaitis and second by Ms. Bird to approve item "e" of the consent agenda. Motion carried 6-0-0.**

**Item f:** Ms. Richter expressed the board's appreciation for the donation received from Edgerton PTO for the Playground equipment. She thanked our PTO's for all that they do for our schools.

**Motion by Ms. Richter and second by Mr. Brunette to accept the Donation from Edgerton PTO for Playground equipment. Motion carried 6-0-0.**

**Item g:** Ms. Valaitis noted this item needs to be tabled until additional documentation is provided.

**Motion by Ms. Valaitis and second by Mr. Richter to pull item "g" from the consent agenda pending additional documentation. Motion carried 6-0-0.**

**Motion by Ms. Bird and second by Ms. Richter to approve items "a, b, & c" of the consent agenda. Motion carried 6-0-0**

### **NEW BUSINESS**

Discuss and Take Possible Action on proposed 2.07% increase for all non-academic Whitnall School District employees

Dr. Holtz discussed the 2.07% increase for employees. This is an increase for all employee groups. He discussed the difference between the 2% increase vs. 2.07%. It equates to an \$11,681 difference for the entire salary base. This would be a retroactive increase to July 1, 2013.

**Motion by Ms. Bird and second by Ms. Zaborowski to approve the 2.07% increase for all non-academic Whitnall School District employees. Motion carried 6-0-0.**

Discuss and Take Possible Action on December meeting date(s)

Traditionally if a scheduled Board meeting falls within a day of Christmas Eve we usually go with one meeting date, holding both December meetings on one date. Mr. Shaw clarified that the date would change to December 16<sup>th</sup>. Dr. Holtz confirmed that was correct.

**Motion by Ms. Zaborowski and second by Mr. Brunette to change the December meeting date to December 16, 2013 only. Motion carried 6-0-0**

Comments from the School Board Regarding Agenda Items for Future Consideration

Mr. Shaw noted that the financials of the Golf Outing would be on a future agenda. Mr. Brunette noted that he might not be present at the December meeting and requested that this be an item for the January agenda.

Board Member Announcements (no discussion or action will be taken)

Ms. Bird commented that there are more Forward Thinking conversations scheduled, and distributed a schedule of those.

Ms. Bird also mentioned that the Forward Thinking group is presenting at this year's WASB convention on Friday, January 24<sup>th</sup> at 8am.

Ms. Valaitis announced that the early bird registration for the WASB convention is due by December 13<sup>th</sup>. There is a price break for early registration. If you want to attend please let Kathie know, by Wednesday December 11<sup>th</sup>, and she can take care of