

A FOREST ADVENTURE

(2-3 hour class)

THIRD GRADE - RAHR MEMORIAL SCHOOL FOREST

ENDURING UNDERSTANDING

Ecosystems are continually changing. When people know more about forests they can better appreciate and care for them.

STATE STANDARDS

Science: A.4.1, A.4.5, C.4.5, E.4.1, F.4.1

ASSESSMENT

What are the differences between evergreen and deciduous trees? List animals that live at the School Forest.

CLASS OUTLINE

- I. Pre-trip Information
 - II. Introduction
 - III. Station Information and Answer Key
 - IV. References
 - V. Map of the Stations
 - VI. Additional Information
 - VII. Student Booklet
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MATERIALS NEEDED

Lesson plan
Student booklets
Rubbing crayons
Colored pencils

Pencils
Clipboards
Compasses (3)
Tree reference book

I. PRE-TRIP INFORMATION

The third grade tree trail and guide are intended to provide a meaningful experience at the School Forest. It is intended to provide a practical application of concepts studied in the science of plant classification, wildlife ecology, environments, and conservation. This class can be held in the spring or fall months of the year.

After setting up a date with the School Forest Coordinator, teachers are also responsible for filling out and turning in a field trip request form. Teachers should also schedule a time when the School Forest Coordinator can meet with them at school to discuss the visit.

All of the materials for this lesson can be set-up at the School Forest. Please notify the School Forest Coordinator of your class needs. Teachers will need to bring a few things from school: first aid kits, emergency contact information, extra clothing, a whistle/ bell, and any additional activities they feel necessary for the class. Students will need to bring a bag lunch (with a drink and nothing that needs a microwave) and adequate clothing for the day.

II. INTRODUCTION

During this hike, students will explore the forests and learn about many different components of a healthy ecosystem. While hiking, students should remain aware of their surroundings. Look, listen, smell, and touch. If we are quiet in the woods, we may be able to see some really neat things. There will be time to talk, be silly, and explore, but when we first get to each station, we want to gather as a group and figure out what we are learning about. If there are any times when you are away from the group working on something, I will call you back with a whistle/bell.

Let's go on an adventure!

III. STATION INFORMATION AND ANSWER KEY

1. With the class, work through the dichotomous key (see the "tree identification terms" sheet in the back of this packet for more information). Teach the group any new terms as you work through the chart. Figure out the name of this tree (*red pine*).
 - a. Why do you think this tree is called a red pine?
 - b. What might this tree be used for? (furniture, lumber, animal home)
 - c. Why does very little grow under the tree? (very little sunlight reaches the forest floor under the thick branches of this tree)
 - d. Show the class how to do a leaf rubbing in their booklet.
2. On this one, the group will learn to figure out the age of pine trees by looking at the branch groups. Each year the tree grows 2-5 branches from the same spot on the trunk. If you count the whorls of branches you can figure out the age of the tree.
 - a. Can you find a tree that is the same age as you?
 - b. Why do you suppose the sets of branches from one year to another are sometimes close together and sometimes far apart? (The places where they didn't grow as much mean it was probably a cool, drier spring and summer. The places where the whorls are spread apart indicate a wet and sunny spring and summer- good for growth.)
3. Use the dichotomous key to determine the name of this tree
 - a. Has leaves in winter (evergreen), long needles, in groups of 5 (*white pine*).
 - b. Why is this tree called an evergreen tree? (it has leaves on it all year round... ever green... always green)
 - c. Have the students do a leaf rubbing in their booklet.
4. Cedar – notice how the branches are missing from the bottom.
 - a. Why do you think there are no branches? (This tree is a popular food for animals.)

- b. The line that the deer can reach to and eat off is called the “browse line.” You may notice it we you are riding around town by the zoo, cemeteries, and some yards
 - c. What types of animals like cedar? (rabbits and deer)
- 5. Fire lanes –Direct students’ attention to the path and where it intersects with another trail.
 - a. How many plants do you see growing here?
 - b. Why are there so few?
 - c. If you have time, color the picture of the fire fighters.
- 6. Forest opening –
 - a. Are most of the trees on the sides of this area young or old? (Point out the huge trees on either side.)
 - b. Are the trees in the middle young or old? (young) How can you tell? (they are not very big around)
 - c. Why are there a lot of bushes and plants growing here? (Plenty of sunlight and the soil is moist)
 - d. What do you think this area will look like in 100 years? (Forest) why? (all of the small trees will grow up)
 - e. What do you think this area was like 100 years ago?
- 7. Figure out the name of this tree... leaves fall off in the winter, alternate branches, bark is white and flaky (*birch*)
 - a. How is this tree different from an evergreen tree?
 - b. Do you see any evidence or signs that this tree has reproduced? How do you know? (yes, small oak trees sprouting up around it)
 - c. Look for seeds from this tree
 - d. Why are the young trees not growing right under this large tree? (not enough sunlight and too many other plants)
 - e. Can you find the parents of this tree?
 - f. Have the students do a bark rubbing in their packet.
- 8. Use the tree key to figure out what type of tree this is... leaves fall off in the winter, opposite branching, simple leaves(*maple*)
 - a. Can you find any seeds from this tree? (they are the “helicopters”)
 - b. Any baby trees growing nearby?
- 9. Aquatic Invasive Species – stop at the AIS display.
 - a. What are invasive species? (things that are not from a place and take over where the natural plants or animals live)
 - b. Invasive species are plants and animals that have been introduced to our state from other countries or habitats.
 - c. Name 2 invasive mussels: Quagga mussel zebra mussel

- d. What can you do to help keep invasive species out of Wisconsin?
(don't move firewood or Christmas trees, wash off boats after using them, never release animals that do not belong in an area)
10. Beach – (no sign for this one) hike down onto the Lake Michigan beach. Use the compasses to figure out which direction is the water from the beach (east). Is it the same in Manitowoc? Do you see the city to the north? What city is it? (Kewaunee). If you have time, spend a few minutes looking for fossils on the beach.
11. Find the big old trees with dark bark and short needles. Use the dichotomous key to figure out the name of this type of tree.... Evergreen, short needles, not in groups, flat needles, stripes underneath, needles on a small stem from the branch (*hemlock*)
 - a. Is this tree young or old? Why?
 - b. Ask class to either go down in the gully or look down near the base of the tree. Describe what you see.
 - c. Why are there hardly any plants or grasses under these trees? Is the soil good? Is it moist? Then why so few plants? (They receive little to no sunlight)
12. Forest Management – this area of the forest was cut in the spring of 2011. Read the sign as a group and look at the photos of the forest right after it was cut. Does it look much different? Discuss the different tools that foresters use to make sure the forest is healthy... healthy for the trees and the animals.
13. These bushes are called (Junipers)
 - a. Have students feel the bush to see if the needles are prickly.
 - b. How many other bushes are like this one? (many)
 - c. Why do they all grow here? (There is the right type of soil, water, and sunlight) Dig underneath the bushes with a stick and see what type of soil they like (sandy)
14. Aspen – Notice the scratch marks on the smooth bark. These marks are made by animals running up the tree.
 - a. Why would an animal run up in a tree? (to find shelter or food)
 - b. What type of animal has this size feet and might go up in a tree? (squirrel)
15. Silent Sit – have the kids spread out along the trail and find a quiet place to sit. They can draw a sound map of what they hear around them. They can draw the thing that makes the noise or what the noise sounds like (ex. Dots on the page for the sound of a woodpecker tapping a tree).

16. This is a favorite tree for squirrels. Use the dichotomous key to figure out what kind of tree it is. ... deciduous, alternate branching, bark is not white, lobed leaf edges (*oak*)
17. Deer Trails – discuss the deer trails in the woods.
 - a. How do animals make them? (they don't use the tools we use, they just use their bodies)
 - b. Can you find any tracks or scat on the trails? Draw what you find.
18. Tree Shapes – the forest is filled with different shapes.
 - a. What shapes do you see?
 - b. Tree shape are based on the type of tree and also how the branches grow as they reach out for sunlight.
 - c. Draw a picture of the craziest tree you can find.
19. Brush Pile –
 - a. What animals could make their home here? (squirrels, birds, small mammals)
 - b. Can you find any signs that animals live here? (look for tracks, trails, scratches on the tree, and remains of food eaten)
 - c. Circle the animals that might live in/under a brush pile. (fox, mouse, snake, squirrel, raccoon, salamanders, rabbits, bugs, skunks... not all at the same time☺)
20. Conclusion – (no sign for this one)
 - a. During this hike, we studied plants, animals, and other components of forest ecosystems. We learned how to use a key to determine tree types. After learning about all of these different things, everyone should feel a sense of appreciation and stewardship for the land. (Review the different things that the students learned during this class.)
 - b. Ask each student to write or draw something they will remember from the adventure.

IV. RESOURCES

- Kochanoff, Peggy. *A Field Guide to Nearby Nature*. Mountain Press Publishing Company, Montana. 1994
- Farrar, John Laird. *Trees of the Northern United States and Canada*. Iowa State University Press, Iowa. 1995

Lesson Plan written by Harry O'Connell; revised by Patty Brodeen 2003; Patty Brodeen Maher 2012.