Unit Plan for Forest Ecology Workshop  
Identification of Trees  
By Doreena Scharlow

**Target Grade:** Kindergarten

This tree unit will educate kindergarten students about tree identification. I will focus on six trees of the western part of Michigan’s Upper Peninsula. We will study oak, maple, birch, poplar, white pine and red pine trees. Students will show an understanding of a tree’s basic needs and identify its parts. They will learn characteristics of each tree and learn simple vocabulary words to describe the trees.

**Vocabulary**

1. **Tree**- a large perennial plant with a woody trunk, branches, and leaves.
2. **Conifer**- most trees that are evergreen and bear cones.
3. **Deciduous**- describes a plant that periodically loses its leaves once a year.
4. **Needle**- the needle-shaped leaf of a pine tree.
5. **Leaf**- one of the thin, green parts that grow on the stem of a tree or a plant. 
   - Advanced students- toothed leaf
   - lobed leaf
   - compound leaf
   - simple leaf
6. **Canopy**- the forest layer formed by the leaves and branches of trees. There may be several canopy layers.
7. **Trunk**- the main stem of a tree apart from its branches.
8. **Branch**- part of the tree growing out from the trunk.
9. **Roots**- part of the plant that grows downward, usually into the ground, to hold the plant in place.
   - tap root
10. **Season**- one of the four periods of the year.
11. **Oak tree**- a large tree with hard durable wood and nuts called acorns.
12. **Maple tree**- grown for shade, sap, and wood.
    - Fruits have two wings and opposite leaves without stipules.
13. **Birch tree**- a slender tree with smooth bark that peels off in layers.
14. **Poplar tree/Aspen tree**- a poplar tree whose leaves tremble in the slightest breeze.
15. **Red Pine tree**- an evergreen with a cluster of two long needles.
16. **White Pine**- an evergreen with a cluster of five long needles.

[Definitions from Thorndike/Barnhart dictionary, 1968.]

**Children’s Books**

1. The Secret Life of Trees by Chiara Chevallier
2. Trees, Leaves, and Bark by Diane L. Burns
3. Sounds of the Forest
4. The Empty Lot by Dale H. Fife
5. Look What I Did With A Leaf by Morteza E. Sohi
8. A Handful of Dirt by Raymond Bial
9. Wangaris Trees of Peace by Jeannette Winter
10. In The Woods by Ermanno Cristini/Luigi Puricelli
11. Looking at Trees and Leaves by Grosset/Dunlap
12. Leaves by Patricia Whitehouse
13. A Log’s Life by Wendy Pfeffer
15. Discovering Trees by Keith Brandt
16. From Acorn to Oak by Jan Kottke
17. See Through the Forest by Millicent Selsam
18. The Chestnut Tree by Pam Ayres
19. The Acorn by Ellen Tarlow
20. Tell Me, Tree by Gail Gibbons
21. Now I Know Trees by Sharon Gordon
22. Look at a Tree by Eileen Curran
23. The Apple Pie Tree by Zoe Hall
24. A Tree Is Nice by Janice May Udry
25. The Giving Tree by Shel Silverstein
26. Trees by Helene Nyce
27. In the Woods, Who’s Been There? by Lindsay Barrett George
28. The Tree by Dana Lyons
29. An Ancient Forest by Guy J. Spencer
30. Be a Friend to a Tree by Patricia Lauber

**Informational/Activity Books for Teachers**

1. Project Learning Tree 202-463-2462
   Ex. Lesson 27 Every Tree For Itself
   Ex. Lesson 2 Get In Touch With Trees
2. History of the Lake State Forests, excellent background for teachers,
   [www.ncrs.fs.fed.us/gla/reports/history.htm](http://www.ncrs.fs.fed.us/gla/reports/history.htm)
3. Trees of Michigan Field Guide by
4. Mammals of Michigan by
5. More Nature In Your Backyard by Susan S.Lang
   Ex. Trees Breathe Out Enough Water to Fill a Swimming Pool Each Year pg. 44
6. Take It To Your Seat Science Centers by Evan-Moor Educational Publisher
   Ex. Parts of a Plant pg. 99
   Ex. The Importance of Rain pg. 353
   Start a New Tree pg. 355
   Matching Leaves With Trees pg. 365
8. Michigan Forests Publication by Tree World 1-800-252-6051
9. Project Wild by 301-493-5447
   Ex. Forest In a Jar pg. 108
   Ex. Lightly On the Earth pg. 292
   Ex. Learning to Look, Looking to See pg. 62
10. The Everything Kids Nature Book by Kathianne M. Kowalski
    Ex. Preserve Fallen Leaves pg. 30
Lesson Plans

Monday: Introduction of trees and their characteristics.

Michigan GLCEs:
Science
S.IP.00.11-Make purposeful observation of the natural world using the appropriate senses.
S.IP.00.12-Generate questions based on observations.
S.IA.00.12-Share ideas about science through purposeful observation.
L.OL.00.11-Identify that living things have basic needs.
E.SE.00.11-Identify Earth materials that are used to grow plants.

With homemade or forest props dress up one student as a deciduous tree and one student as a conifer tree. Have students talk about similarities, differences… Talk about each tree’s characteristics and discuss parts of the trees.

Next have index cards with pictures and words of parts of a tree. Example would be to have a leaf on one card, a pine needle on another… Choose children to put the cards in the appropriate place on each tree, tape would work.

Later in the day schedule a field trip to you School Forest or were you might be able to observe trees. During the trip identify our six trees and review their characteristics.
Then complete Lesson 63 pg. 223 in Project Learning Tree.

1. Children sit around a tree. Ask- how do trees get the water they need? Where does the water come from? How does it get it to all the parts of the tree? Ask the same questions about food.

2. Children stand up and wrap their arms around the trunk. Ask- what does the trunk provide? Then students can pretend they are a trunk.

3. Children feel the bark and describe it.

4. Children look for seeds, fruit, nuts, or cones on/around the tree. Ask- what do these do? Then children can act out a tree seedling.

5. Ask the children what keeps the trees from blowing over? Students lie down and pretend they are roots. Some make slurping noises to take up water while others chant ‘stay in place’ to show that roots help trees stay in place.

6. As a group build a tree. Some students will be the root system, others the trunk…

Next complete Lesson 27 pg. 83 in Project Learning Tree.

1. Students simulate how a tree competes for food. Cut squares of blue-water, yellow-sunlight, green-food paper. Students stand around, some bunches, some separate, a few together… Sprinkle the squares around the children. The children are trees and they must collect as many pieces of paper as they can. They cannot move their feet. Have students count how many of each color they have. If they didn’t get say 10 of water, they died. If they didn’t get 7 of yellow, they die… Then discuss how this relates to real trees.
Tuesday:

- **Math:**
  Sorting, counting, matching, graphing, more/less of leaves.

  1. Give each child a bag with a combination of app. 10 leaves/needles of the trees you are studying
  2. Children sort the leaves according to likeness.
  3. Children count how many leaves they have in each pile.
  4. Children graph the groups.
  5. Help children to read and complete questions on the bottom of the graph.

  Forex. How many oak leaves do you have? Are there more or less maple leaves than birch leaves…

  Benchmarks covered:
  N.ME.00.01-count/recognize sets
  N.ME.00.04-read and write numerals
  N.ME.00.02-3-use terms more/less/same
  G.GS.00.02-identify, sort, classify
  P3.1.2-use simple graphs

- **Language:**

  Reading- comprehension.

  [Adjust to the level of the child and time of year]. Using known sight words write a story, 2-3 sentences, about a tree. For example, I see orange, red, and yellow leaves [picture] on my tree [picture]. See my big cat in the tree. Or, I have a big orange leaf [picture] for my mom. She likes my orange leaves [picture].

  1. Children read the story.
  2. Children copy the story for penmanship.
  3. Children draw a picture of the story using detail.

  Benchmarks covered:
  R.WS.00.06-07-recognize frequent words
  R.WS.00.08-follow text while reading
  R.CM.00.01-activate prior knowledge
  R.CM.00.02-connect with personal happenings

- **Social Studies:**
Seasons in Michigan

Use inquiry and background information to discuss what changes children have seen in each season. Discuss briefly using a map about weather changes in different parts of the world. Narrow the discussion to trees. What changes have they noticed with respect to trees? Briefly talk about uses of trees. Narrow further to maple trees, pine, and oak… For this activity we will only do one tree per day. Children will make a seasonal tree book with respect to the maple tree. If time permits they can do a book for all the trees you are studying.

First page is a summer tree.

1. Write summer tree at the top of the page.
2. Draw a trunk, ground, roots, and branches.
3. Color the parts of the tree.
4. For the leaves, tear shades of green and glue on the branches.
5. Add some detail to the picture, ex. flowers, birds, sky…

Benchmarks covered:
G1.0.1- Use maps/globes to show places
G5.0.1- Ways people use their environment
S.IP.00.11-Use of observation

- Science

Leaf Rubbings.
Lesson 62 pg. 210 from Project Learning Tree: To Be a Tree

1. Students collect leaves from home or school. If real leaves are not available you can buy plastic samples from school supply books.
2. Do a leaf rubbing collage on white paper.
3. Start to identify the leaves and their characteristics.

Benchmarks covered:
S.IP.00.11-Make observations using senses
S.IP.00.12-Generate questions
S.IA.00.13-Share findings
S.RS.00.11-Demonstrate concepts through illustrations
E.SE.00.11-Identify Earth materials
Wednesday:

Math:
Creating patterns.

1. Using leaf, acorn, needle, pinecones, trees… cutouts make patterns. Patterns should correspond to what level the child is at.

Benchmarks covered:
N.MR.00.10-make simple patterns

Language:
Rhyming.

1. Have index cards with items connected to our trees. For example, birds, trees, flowers, bees, colors… You may have to add some extra to get a rhyme.
2. Children match the rhyming pair. Example, one card has tree and another card has bee.

Benchmarks covered:
Prerequisite to reading

Social Studies:
Continue with tree book-Autumn tree.
1. Again, children draw branches, trunk, ground, and roots.
2. Color parts of the tree.
3. Take appropriate colors of tissue paper, rip/cut and glue on the branches and maybe a few on the ground and in the air.
4. Add detail to the picture.

Benchmarks covered:
G1.0.1-Use of maps/globes to show places
G5.0.1-Ways people use environment
S.IP.00.11-use of observation

Science:
Lesson 79 pg. 302 from Project Learning Tree Trees Life Cycle [do variation].
1. Have pictures of an oak tree’s life cycle, ex. seed, sapling… Put the cards in the correct order, using a circle shape, and glue on paper. Add arrows to indicate how the cycle flows.
Thursday:

Math:
Adding/fact families.
1. Children have cards or manipulative of trees, acorns…
2. Children have number cards with numbers 1-10 on them plus a card with an addition sign and equal sign on it.
3. Teacher puts a number on the board such as 5.
4. Students must show an addition fact to get the answer of 5. They then use the number cards to make an addition problem. Instead of number cards you can use small chalkboards to write the problem on.

Benchmarks covered:
N.ME.00.01-Count
N.ME.00.04-Read/write numbers
N.MR.00.07-Compose numbers
N.MR.00.08-Make drawings for addition
N.MR.00.09-Record problems

Language:
Writing stories.
1. Children draw a picture of their family, friends, and pets… in a forest. It might be fictional or real. Add detail.
2. Children dictate their story to the teacher and the teacher writes it down OR children write their own story.

Benchmarks covered:
W.GN.00.03-Write an informational piece for a book
W.PR.00.02-Generate ideas
W.PR.00.03 Use semi-phonemic spelling to write
W.PS.00.01-Show originality
W.SP.00.01- Spell correctly some simple words
W.HW.00.01-Form upper/lower case letters
W.HW.00.02-leave spaces between words
W.HW.00.03-write from left to right

Social Studies:
Continue with tree book-Winter tree.
1. Children draw trunk, roots, ground, and branches.
2. Color the parts.
3. Add pieces of white cotton balls to represent snow on the branches, ground, and in the air.
4. Add detail to the picture.

Benchmarks covered:
G1.01-Use of maps/globes to show places
G5.01-Ways we use our environment
S.IP.00.11-Observation skills

Science:
Lesson 43 pg. 139 in Project Learning Tree. How Seeds Travel.

Friday:
Math:
Subtraction/ fact families.

1. Children have cards or manipulative of acorns, trees…
2. Children have number cards 0-10, a subtraction and equal card.
3. The teacher puts a number on the board and the children must use a subtraction problem to find the number on the board.
4. After finding the difference with manipulative they then transfer that into a written problem using the cards or small chalkboards.

Benchmarks covered:
N.ME.00.01-Count
N.ME.00.04-Read/write numbers
Language:
Comprehension.
1. Read one of the stories found on the children’s list at the beginning of this unit or a forest one of your own.
2. Discuss events that happened in the beginning of the story, middle, and end.
3. Have children fold the paper in three parts, [or have it done ahead for them], a sheet of white paper. Label one column beginning, another middle, and the third ending.
4. Now have the children draw a picture of something that happened in the beginning of the story under the beginning column…

Benchmarks covered:
R.MT.00.04-order information
R.CM.00.03-retell up to three events from a story

Social Studies:
Continue with tree book-Spring Tree
1. Children draw the trunk, roots, branches, and ground for a tree.
2. Color these parts.
3. Use a dab of glue to represent a bud on the branches and then add glitter.
4. Add detail to the picture.

Benchmarks covered:
G1.01-Use of globes/maps to show places
G5.01-Use of ways we use the environment
S.IP.00.11-Use of observation

Science:
Lesson 64 pg.228 in Project Learning Tree, Looking at Leaves. Sorting/leaf ID

1. Have a basket full of different leaves you are studying plus seeds. Children sort these into piles putting the correct seed with the correct leaf. They then verbally identify them as oak, maple…

Benchmarks covered:
S.IP.00.11-Observation skills
S.IP.00.12-Generate questions
S.IP.00.13-Plan and do investigations
S.IA.00.12-Share ideas
S.IP.00.13-Present/communicate findings
S.RS.00.11-Demonstrate concepts through activities
M.UN.00.04-Compare objects by height, length…
G.GS.00.02-sort/classify

**Assesments:**

1. Show each child a leaf and they will verbally be able to identify it correctly. Continue this with each tree you studied.

2. Give each child a blank tree. Using different colored crayons, the child will color each part as you call it out. For example. Teacher, “color the branches brown.” Child colors the branches brown. Teacher, “now color the roots black.” Etc

3. Give each child a piece of paper with four bare trees on it. Have the child color the first tree to represent a summer tree. Do the second tree to present an autumn tree-OR- The teacher can show the child pictures of trees in different seasons and the child can identify them as a summer tree, winter tree etc…

4. Have several pictures of conifers and deciduous trees. Have children point to the correct one when asked which is a conifer and which is a deciduous tree. –OR- Give children several conifer/deciduous trees that need coloring. Ask them to color the conifer tree green and the deciduous tree brown.

5. Give child pictures of a tree’s life cycle. They will correctly put them in order from birth to death. –OR- Have pictures of a tree’s life cycle on paper. Don’t put them in order. Put a line next to each one. Have the child sequence the order by putting a 1 etc… next to each picture.