Michigan’s Terrific Trees (1st, 2nd, & 3rd)  
Program Information Sheet

Theme: Terrific Trees  
Recommended Grade Levels: 1st, 2nd, & 3rd grade  
Seasons Offered: Fall  
Program Length: 1.5 hours (can be adapted upon request)  
Maximum # of Students: 60

Program Synopsis: This hands-on program allows students to explore and observe Michigan trees up close as they hike through a Beech Maple Forest. Students will learn how to identify common types of Michigan trees by looking at unique characteristics, such as branching patterns, bark, leaf shape, and seeds. They will also participate in an activity that demonstrates the needs of a tree, as well as act out the life cycle of a tree through a dramatic reading. If time allows, students may also have the opportunity to examine various tree cookies and make leaf rubbings with leaves they found in the forest.

Key Concepts: Basic tree identification (deciduous vs. coniferous, branching patterns, bark, fruit and seeds, leaf shape), basic needs of a tree (sunlight, water, air/CO₂, nutrients, space), photosynthesis, life cycle of a tree (seed, sprout, sapling, mature tree producing seeds, dead tree, rotting log), Beech Maple Forest

Teaching Objectives: Students will ….  
- Use their senses to explore a variety of Michigan trees and a Beech Maple Forest  
- Learn basic tree identification skills and some common trees of West Michigan  
- Identify the survival needs of a tree  
- Discover how trees are affected by natural changes in the environment (drought, overcrowding, storms, nutrient deficient soil)  
- Act out the life cycle of a tree and find trees in various stages of the life cycle

MI GLCE Standards:  
1st Grade  
- S.IP.01.11: Make purposeful observation of the natural world using the appropriate senses.  
- S.IP.01.12: Generate questions based on observations.  
- S.IP.01.14: Manipulate simple tools (hand lens) that aid observation and data collection.  
- S.IA.01.12: Share ideas about science through purposeful conversation.  
- S.IA.01.13: Communicate and present findings of observations.  
- E.ES.01.12: Demonstrate the importance of sunlight and warmth in plant growth.

Tips for a successful field trip

Preparing for an Outdoor Program: Students, teachers and chaperones need to dress for the weather. During inclement weather, outdoor activities may be shortened and conducted inside the nature center; but, unless the weather is severe, we will still go outside. Please have students wear lots of layers, hats, gloves, boots and coats in cold weather and rain gear when needed. Clothes and apparel may get dirty or wet during outdoor programs—please advise your students’ parents of this. During certain times of the year, insect repellent may be needed.

Before arriving, please remind your students and chaperones of the following:  
- Walk quietly. Quiet hikers see more wildlife.  
- Staying on the trails protects you, as well as the plants and animals that live in the preserve.  
- Stay behind the leader and listen carefully to instructions.  
- To care for our plants and animals, we need to be kind and not hurt them.
2nd Grade

- S.IP.02.11: Make purposeful observation of the natural world using the appropriate senses.
- S.IP.02.12: Generate questions based on observations.
- S.IP.02.14: Manipulate simple tools (hand lens) that aid observation and data collection.
- S.IA.02.12: Share ideas about science through purposeful conversation.
- S.IA.02.13: Communicate and present findings of observations.
- S.RS.02.15: Use evidence when communicating scientific ideas.
- L.OL.02.14: Identify the needs of plants.
- L.OL.02.22: Describe the life cycle of familiar flowering plants including the following stages: seed, plant, flower, and fruit.
- L.HE.02.13: Identify the characteristics of plants (for example: leaf shape, flower type, color, size) that are passed on from parents to young.

3rd Grade

- S.IP.03.11: Make purposeful observation of the natural world using the appropriate senses.
- S.IP.03.12: Generate questions based on observations.
- S.IP.03.14: Manipulate simple tools (hand lens) that aid observation and data collection.
- S.IA.03.12: Share ideas about science through purposeful conversation in collaborative groups.
- S.IA.03.13: Communicate and present findings of observations and investigations.
- S.RS.03.15: Use evidence when communicating scientific ideas.
- S.RS.03.18: Describe the effect of humans and other organisms have on the balance of the natural world.
- L.OL.03.31: Describe the function of the following plant parts: flower, stem, root and leaf.
- L.OL.03.41: Classify plants on the basis of observable physical characteristics (roots, leaves, stems and flowers).
- L.EV.03.11: Relate characteristics and functions of observable parts in a variety of plants that allow them to live in their environment (leaf shape, thorns, odor, and color).
- E.ES.03.52: Describe helpful or harmful effects of humans on the environment (garbage, habitat destruction, land management, renewable, and non-renewable resources).

Program Activities:

**Basic Tree ID:** (S.IP.01/2/3.11, S.IP.01/2/3.12, S.IA.01/2/3.12, S.IA.01/2/3.13, S.RS.02/3.15, L.HE.02.13, L.OL.03.41, E.ES.03.52)

Students will become junior botanists (scientists who study plants) and will identify common types of Michigan trees by looking at unique characteristics such as branching patterns, bark, leaf shape, and seeds of each species while exploring the preserve.

**Every Tree for Itself (Needs of a tree):** (S.IA.01/2/3.12, E.ES.01.12, L.OL.02.14, S.RS.03.18)

During this activity, students will pretend to be trees and try to get the requirements they need in order to produce their own food and to grow tall and strong. Various situations that trees may face (such as drought, overcrowding, and nutrient deficient soil) will be discussed and photosynthesis will be discussed at a level that is age appropriate for the students.

**Life of a Tree Reading (Life Cycle of a Tree):** (S.IA.01/2/3.13 E.ES.01.12, L.OL.02.14, L.OL.02.22, L.OL.03.31, L.OL.03.41)

Using their imaginations, students will have a better understanding of the life of a tree in a forest by acting out the life cycle of a tree from seed to rotting log. Based on what they learn from this dramatic reading, they will then identify trees in various stages of a tree’s life cycle as they explore the preserve.

**Optional - Reading the Rings:** (S.IP.01/2/3.11, S.IP.01/2/3.14, L.OL.02.22, L.OL.03.41, L.EV.03.11)

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As time allows, students will have the opportunity to use hand lenses to examine a variety of tree cookies from various Michigan trees. They will try to identify the different parts of a tree and figure out the age of the tree.

Optional – Leaf Rubbings: (S.IP.01/2/3.11, L.HE.02.13, L.OL.3.41)
Students will collect a few dead leaves, use field guides to identify the leaves they found, and then make leaf rubbings of the leaves they found. Like real scientists, they will label and date the data they collected.

Ideas for Pre & Post Classroom Activities:

Activities:

Tree to Tree Game: Scatter 9-12 hula hoops on the ground. Each hula hoop represents trees in various stages of the life cycle. Trees in varying stages of the life cycle can support varying amounts of life. Label the hula hoops with the following labels:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of Animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed</td>
<td>0 animals</td>
</tr>
<tr>
<td>Sprout</td>
<td>0 animals</td>
</tr>
<tr>
<td>Sapling</td>
<td>2 animals</td>
</tr>
<tr>
<td>Mature tree</td>
<td>7 animals</td>
</tr>
<tr>
<td>Standing dead tree</td>
<td>5 animals</td>
</tr>
<tr>
<td>Rotting Log</td>
<td>5 animals</td>
</tr>
</tbody>
</table>

*Based on the number of students, make multiples of any of the tree’s stages and add or remove hula hoops as needed.

The students will pretend to be animals in the forest walking among the trees while the teacher plays music. As soon as the music stops, the students must find a tree to make their home. However, each tree cannot exceed the number of animals on its label. As the rounds progress, the teacher can remove loops to symbolize a tree dying or being cut down, or rotting logs being removed from the forest. This will show how animals are affected when their habitats are destroyed and how challenging it can be for animals to find a home as humans invade their habitats.

Art:

Tree Portraits: Collect leaves, twigs, and seeds from the ground. Have students create tree portraits by gluing these items onto a paper as the main parts of a tree such as roots, trunk, branches, leaves, and seeds.

Leaf Rubbings: Collect leaves of various shapes and sizes from the ground. Have students place a leaf underneath a piece of paper and use the flat side of a crayon to color over the leaf. The leaf’s shape and venation should appear on the paper as the student continues to color over the leaf.

Exploration & Experiments:

Adopt a Tree: Take your students to an area with trees nearby the school. Allow the students to walk through the trees and choose one tree to “adopt” for the next few weeks. Provide the students with various colored ribbons to tie around a branch on their tree in order to identify their tree on future visits. Encourage the students to use their senses to explore and observe their tree. Have them take a notebook with them to record their observations during each visit. Have the

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students return to visit their tree weekly or bi-weekly in order to observe and note the changes that they observe. Some of the following questions/activities may be useful in guiding their observation and exploration:

| Introduction Questions | What can you tell me about this tree?  
Is this tree alive or dead? How do you know?  
How old do you think it is? |
|------------------------|-------------------------------------------------------------------------------------------------|
| Size                   | How large is the tree? Give the tree a hug.  
Can your arms fit around the whole tree?  
Use yarn to measure the circumference of your tree. |
| Bark                   | How does the bark feel?  
Have the students make bark rubbings by placing paper against the bark and rubbing with a crayon. (*This works best if you peel the wrapper off the crayon and rub it horizontally instead of rubbing with the point.) |
| Leaves, Fruit, Seeds   | What do the leaves look like?  
What shape are the leaves?  
Are there any leaves on the ground?  
Make a leaf rubbing of your tree’s leaves.  
Does the tree have fruit or flowers? |
| Other                  | Lay on the ground and look up at the tree to view from a different perspective.  
Look at the tree from different locations: far away, up close with a magnifying glass.  
Are there any animal signs on or around your tree? |
| Application            | Draw a picture of the tree  
Write a journal entry involving your senses – what do you see, feel, hear, touch?  
Use a tree field guide to identify your tree |

*Adaptation in the fall: Encourage the students to only choose one branch to observe. By just studying one branch in the fall, students should notice smaller details such as buds developing and leaves changing color.

**Life Cycle of a Plant Exploration:** Have students collect seeds from trees (acorns, walnuts, beech nuts, maple samaras, etc.) or bring in seeds such as sunflower seeds or beans and have students plant them in potting soil. Students can watch the process of germination. This would also work with placing beans or avocado seeds in water.

**Meet a Tree:** In pairs, have one student wear a blind fold. Their partner must lead them to a tree (within the perimeter you’ve set). The blind folded students must use their senses—other than sight—to explore their tree. They can hug it, sniff it, rub their cheeks on it, listen for what might be living on it, etc. After they have explored the tree, their partner should lead them back to the starting point and then, with blindfolds removed, the students must try to locate the tree they explored. Switch places and have the leader wear the blindfold. This a great introduction activity to teach students about the different characteristics of trees by using a variety of senses other than sight. It is also a wonderful activity to teach the importance of teamwork and trust.
Sharing/Discussion:

Nature Station: Set aside an area in your classroom for students to bring in nature items to display. Have the students share where they found the item, why they think it is special, how it feels, smells, looks, etc. A nature station also creates a unique resource for other sensory activities where students can blindfold each other and try to identify the object by using their other senses such as touch, smell, and hearing.

The Lorax: Read the story of The Lorax by Dr. Seuss in class and have a class discussion with the students about the message of the book. Some questions to guide the discussion include:

- How does the story relate to us and what we are studying in class?
- Does it remind you of anything happening around us?
- What can we do to help save our forests, the animals, and the natural community?
- What are some things that we can do every day to help protect the earth?

Extension activity: Reading The Lorax should bring up some questions about issues like deforestation. With your students, examine the implications of forest depletion. Use this new knowledge to work with your students on a service project to help the problem by planting trees and flowers around your school or in a local park.

Writing:

Tree Reports: Have each student pick a Michigan tree that they are going to research. They can practice using resources such as field guides, libraries, the internet and experts to write a presentation for the class. You could have the class take notes on each presentation, or have each student make a fact sheet for their tree so that you can create a class field guide from each student’s research information.

Great Resources for the Classroom

Our Favorite Tree & Forest Storybooks include:

- *A Log’s Life* by Wendy Pfeffer
- *Around the Forest: Who’s Been Here?* by Lindsay Barrett George
- *Forest Explorer: A Life-Size Field Guide* by Nic Bishop
- *In a Nutshell* by Joseph Anthony
- *Leaf Man* by Lois Ehlert
- *Red Leaf, Yellow Leaf* by Lois Ehlert
- *Sky Tree* by Thomas Locker
- *The Apple Pie Tree* by Zoe Hall
- *The Busy Tree* by Jennifer Ward
- *The Gift of the Tree* by Alvin Tresselt
- *The Giving Tree* by Shel Silverstein
- *The Lorax* by Dr. Seuss
- *The Tin Forest* by Helen Ward
- *The Tree in the Ancient Forest* by Carol Reed-Jones
- *Where Would I Be in an Evergreen Tree?* by Jennifer Blomgren
- *Who Will Plant a Tree?* by Jerry Pollatta
Internet Resources:

Beach Maple Forest Unit Plan- This unit plan was created for teachers in the Great Lakes region to use in their classrooms to learn more about Beach Maple Forests. Includes five lesson plans correlated to Michigan’s GLCE standards for 1st to 3rd grades and accompanying background information and handouts. Lesson plans include: Forest Overview, Michigan Trees, Decomposers, Terrarium Observations, and Forest Web. Created by April VanderMolen, Senior Elementary Education student at Calvin College and CCEP student staff member under the direction of Jeanette Henderson, CCEP Program Manager, January 2012. www.calvin.edu/academic/eco-preserve/programs/school.html

Focus on Michigan Forest: Michigan PLT Lesson Plans- This free guide is intended to be used as a supplement to the Project Learning Tree (PLT) Pre K-8 Environmental Education Activity Guide. It has been structured for educators who wish to teach about Michigan’s amazing forests. Each section provides correlations to the Michigan frameworks, additional resources and contact information for public and private organizations that manage and/or protect natural resources in the state. www.michiganplt.org/pdf/PLTcurriculum1101.pdf

Mesic Southern Forest (Beech Maple Forest) Community Abstract- This is a great scientific description of a Beech Maple Forest community on the Michigan Natural Features Inventory's website. http://mnfi.anr.msu.edu/abstracts/ecology/Mesic_southern_forest.pdf

Michigan Forest Forever Teacher's Guide – This is a resource on the web about Michigan’s forests. It is comprehensive source of information about Michigan's forests and Michigan forestry. Designed especially for the needs of Michigan educators and students and benchmarked to the Michigan Education Middle School Standards. It contains a lot of wonderful resources and a tree identification primer. http://mff.dsisd.net/TreeBasics/TreeBasics.htm

Lesson Plans:

- Growing Up Wild: Exploring Nature with Young Children Published by Council for Environmental Education. Here are some lesson plans connected to this program:
  - Looking at Leaves (p. 16)
  - Who Lives in a Tree? (p. 30)
- Hands-On Nature: Information and Activities for Exploring the Environment with Children Edited by Jenepher Lingelbach & Lisa Purcell. Published by: Vermont Institute of Natural Science. Here are some specific lesson plans connected to this program:
  - Rotting Logs: Temporary Homes on the Forest Floor (p. 80)
  - Meet a Tree: The Sum of Many Parts (p. 129)
  - Winter Twigs: Signs of Four Seasons (p. 157)
  - Variations on a Leaf: The Great Producers (p. 191)
  - Cones: Cradles for the Conifers (p. 198)
- Project Learning Tree: Environmental Education Activity Guide for Pre-K-8th Published by American Forest Foundation. Here are some specific lesson plans connected to this program:
  - Get in Touch with Trees (p. 20)
  - We All Need Trees (p. 65)
  - Adopt a Tree (p. 97)
  - Trees as Habitats (p. 102)
  - The Fallen Log (p. 105)
  - Every Tree for Itself (p. 117)
  - Three Cheers for Trees (p. 130)
  - Plant a Tree (p. 132)
  - And many more tree lessons!
- **Science is Simple** By Peggy Ashbrook. Published by: Gryphon House Inc. Here are some lesson plans connected to this program:
  - What do seeds need to grow? (p. 41)
  - Why do some tree leaves change color? (p. 47)
  - A Tree is Nice (p. 98)
- **Small Wonders: Nature Education for Younger Children** by Linda Garrett & Hannah Thomas. Published by Vermont Institute of Natural Science. Here is a lesson plan connected to this program:
  - The Year of a Tree (p. 47)

For questions and/or additional information about this program please contact:

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