Trees in My Backyard
By: Michael A. Cosenza

Grade Level: 1st
Subject: Science

Unit Overview:
Through the course of this 6-day unit, students will be engaged in discussions and activities that will enhance their knowledge of local tree species. Students will learn to recognize leaves and seeds of trees found in their community. Students will also develop an appreciation for the forested areas that are becoming ever so rare in large, metropolitan areas throughout the country.

Materials and Sources:
Ring-a-ling Lesson. Online at: http://www.treetures.com/RingALing/RingTeacher.html
Tree Cookies Interactive Website. Online at: http://www.wonderville.ca/v1/activities/trees/trees.html

Learning Objectives:
Students will be able to:
1. Count the growth rings of a tree cookie to identify the age of a tree.
2. Describe three ways that seeds travel with 100% accuracy.
3. List at least 3 parts of a tree and the role they play in helping the tree to grow and survive.
4. Describe how trees are different from one another, and how they're the same (i.e. Looking At Leaves activity)
5. Sort a collection of seeds according to how they travel.
6. Record and interpret class data.

Grade Level Content Expectations (GLCE’s):
Science:
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.01.13 Plan and conduct simple investigations.
S.IP.01.14 Manipulate simple tools (for example: hand lens, pencils, rulers, thermometers, rain gauges, balances, non-standard objects for measurement) that aid observation and data collection.
S.IP.01.15 Make accurate measurements with appropriate (non-standard) units for the measurement tool.
S.IP.01.16 Construct simple charts from data and observations.
S.IA.01.12 Share ideas about science through purposeful conversation.
S.AI.01.13 Communicate and present findings of observations.

S.AI.01.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video).

S.RS.01.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

S.RS.01.12 Recognize that science investigations are done more than one time.

Math:
D.RE.01.01 Collect and organize data to use in pictographs.

D.RE.01.02 Read and interpret pictographs.

D.RE.01.03 Make pictographs of given data using both horizontal and vertical forms of graphs; scale should be in units of one and include symbolic representations, e.g., J represents one child.

ELA:
R.CM.01.04 apply significant knowledge from grade-level science, social studies, and mathematics texts.

W.AT.01.01 be enthusiastic about writing and learning to write.

Lesson 1: Tree Parts

Materials:
- Worksheet: Seed Sorting (laminated)
- Worksheet: TREE Scavenger Hunt (laminated)
- SON
- Ruler
- Hand Lens
- Paper Lunch Bags
- Seed Packet
  - This need to be prepared by the teacher (include 5-6 seeds that can be dispersed through the air, water, or by an animal carrier)
- Large Chart Paper
- Double-Sided Tape or Glue Dots
- Suggested Reading: The Tiny Seed, by: Eric Carle
- Suggested Reading: Fall Leaves Fall!, by: Zoe Hall

Day 1: Tree Part Scavenger Hunt (30 minutes)

Advance Prep: Preselect an outdoor area that has good collecting opportunities
  - an area where leaves, branches, and seeds are readily available on the ground
  - an area with a variety of common coniferous and deciduous trees

1. Class Discussion: (10 minutes)
2. Ask to class to think of tree parts that can be collected on school grounds.
   - Make a list of the student responses on large chart paper. (e.i. leaves, seeds, bark)
3. Activity: (20 minutes)
   - Collect tree part examples (leaves, branches, bark, seeds, etc.).
   - Pass out laminated worksheet: Scavenger Hunt
   - Pass out paper bags
   - Ask the students to pick up items that have already fallen to the ground.

**Day 2: Looking At Leaves Activity** —PLT, pages 228-230 (60 minutes)
1. Class Discussion: (10 minutes)
   - Show some leaves to the students.
     - What can you tell me about these leaves?
     - What is the same about these leaves?
     - What is different about some of these leaves?
     - What colors are the leaves?
2. Look through the magnifying glass, what do you see?
   - Veins, Colors, Size of the leaf seems to change
3. Activity: (40 minutes)
   - Today we are going to measure the leaves you gathered.
   - How can we measure this leaf?
   - Demonstrate how to measure a leaf?
     - How long it is?
     - How wide it is?
     - Write the results on large graph paper.
   - Ask the students to measure two leaves from their collection and record the data in their SON.
     - Have students round to the nearest whole number when measuring.
   - Follow the directions for the Leaf Crayon Rubbings on page 229
     - The students can observe the shape of the leaf and the veins in more detail.

Reflect & Share: (10 minutes)
- Allow the students time to practice leaf rubbing in their SON.

**Day 3: Seed Exploration** (60 minutes)
Class Discussion: (10 minutes)
- Engage students in a brief discussion about ways people travel from place to place.
  - Guide students to include such things as planes, boats, or horses.
- Record a student-generated list on the piece of large chart paper.
- Ask the students to pretend that they are seeds looking for a new home.
  - How will they travel to their new home?
- The students should brainstorm methods in which seeds are dispersed.
  - List student responses on another sheet of chart paper.

Activity: (40 minutes)
- Distribute a seed packet, hand lens, and worksheet to each group of students.
  - Students should examine and sort the seeds by method of dispersal.
  - During this activity, the students will classify the seeds in their packets into three methods of dispersal. They will discover that some seeds may utilize more than one method of dispersal.

Reflect & Share: (10 minutes)
- Allow students time to write or draw in their SON.
- After reflecting, allow a few students time to share their thoughts and ideas with the class.
Lesson 2: What Do Trees Need

Materials:
- Science Observation Notebook (SON)
- Suggested Reading: Tell Me Tree: All About Trees for Kids, by: Gail Gibbons
- Worksheet: Living Labels (PLT page 227)
- Pencils

Do Tree Factory Activity —PLT #63, pages 223-227
- Follow the directions for the Variation Activity on pages 225-226
  - Skip the enrichment activity on page 226
- Follow directions for Assessment Opportunity No. 2 on page 226
  - Pass out copies of, Living Labels
  - Assist students as needed
- Reflect & Share (10 minutes)
  - Allow students time to write or draw in their SON.
  - After reflecting, allow a few students time to share their thoughts and ideas with the class.

Lesson 3: Simple Tree Measurements

Materials:
- Classroom Set of Tree Cookies
- Worksheet: Age Me
  - Overhead Copy
- Ruler
- Hand lens
- Large Chart Paper
- Yarn or String
- Paper Plates
- Science Observation Notebook (SON)
- Crayons, Colored Pencils, or Markers
- Suggested Reading: The Giving Tree, by: Shel Silverstein

Day 1: Tree Cookies—Adapted from PLT 76, pages 289-292 (60 minutes)

Class Discussion: (10 minutes)
- How old are you?
- How often do you have a birthday?
- How can you tell you are getting older? How can someone else tell you are getting older if they haven’t seen you for a long time?
- What about the age of your pets? How can you tell your puppy or kitten is getting older?
- What about this plant here on the windowsill? How can we tell it is getting older? Or the seeds you plant in the garden? What about the trees in the park or yard? Do they have birthdays like people? How do we know they are growing? What happens?

Activity: (40 minutes)
- Follow the directions for the Variation Activity (My Life As A Tree) on page 291
  - Follow Steps 1 & 2
    - Pass out worksheet: Age Me
      - Do this activity with the class on the overhead
  - Follow Steps 3 & 4
    - Hang the finished products in the classroom or hallway.

Reflect & Share: (10 minutes)
- Allow students time to write or draw in their SON.
- After reflecting, allow a few students time to share their thoughts and ideas with the class.
**Day 2: How Big Is Your Tree**—Adapted from PLT, pages 239-243 (60 minutes)

**Class Discussion:** (10 minutes)
- Review class discussion questions from Day 1.
  - How can you tell you are getting older? How can someone else tell you are getting older if they haven’t seen you for a long time?
  - How can you tell your puppy or kitten is getting older?
  - What about this plant here on the windowsill? How can we tell it is getting older? What about the trees in the park or yard? How do we know they are growing? What happens?

**Activity:** (40 minutes)
- Follow the directions for the Variation Activity on page 241
- Revisit the wooded area where you collected tree parts in Lesson 2
- Place your students into teams of 3-4 children
  - Use classroom volunteers so this lesson goes as smoothly as possible (cutting yarn, team management, etc.)
- The students will use the circumference data to create a class pictograph of their findings.
  - Lead the class by setting up a basic pictograph on large chart paper
  - After the data is gathered, ask some basic questions to check understanding of graph reading
    - Who found the biggest tree? (Maximum)
    - Who found the smallest tree? (Minimum)
    - Were a lot of the trees the same size? (Mode)
  - If your class is at that level, have them find the difference between the biggest and smallest tree. You may want to set the problem up for them. (Example: 50 – 21 =)

**Reflect & Share:** (10 minutes)
- Allow students time to write or draw in their SON.
- After reflecting, allow a few students time to share their thoughts and ideas with the class.

**Unit Assessment:**

**Group Assessment:**
Each group of students will have a maximum of 5 minutes at each station to answer the questions on the assessment. An adult volunteer will assist students at each station so this assessment goes as smoothly as possible. The goal of this assessment is to measure for retention of the material presented in this unit, not to overwhelm the student with the pressure of taking a written test.

**Station 1: Guess My Age**
- Students will be given a tree cookie and asked to tell the age of the tree when it was cut down

**Station 2: Traveling Seeds**
- Students will be given three seeds and asked to place them in the correct “dispersal” box (wind, water, animal)

**Station 3: Tree Parts**
- Students will be provided a drawing of a tree and asked to label the parts of a tree

**Station 4: Tree Data**
- Students will be given a completed pictograph and asked to answer simple questions that can be answered by reading the graph

**Station 5: Final Reflection (SON)**
Students will be given 10 minutes to reflect on activities and facts they learned during the unit.

**Culminating Activity:**
A field trip to a botannical garden or nature study area in your community would be a fun culminating activity. I would choose the Matthaei Botanical Gardens because they offer school programs that address the Michigan Grade Level Content Expectations.
Matthaei Botanical Gardens
1800 N. Dixboro Rd.
Ann Arbor, MI 48105
734-647-7600
More information can be obtained online at: [http://www.lsa.umich.edu/mbg/](http://www.lsa.umich.edu/mbg/)
## TREE Scavenger Hunt

Can you find these tree parts?

<table>
<thead>
<tr>
<th>Pine Needle</th>
<th>![Pine Needle Image]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Cone</td>
<td>![Pine Cone Image]</td>
</tr>
<tr>
<td>Oak Leaf</td>
<td>![Oak Leaf Image]</td>
</tr>
<tr>
<td>Acorn</td>
<td>![Acorn Image]</td>
</tr>
<tr>
<td>Maple Leaf</td>
<td>![Maple Leaf Image]</td>
</tr>
<tr>
<td>Maple Seed</td>
<td>![Maple Seed Image]</td>
</tr>
</tbody>
</table>
Seed Sorting

Tape your seeds into the box that tells how it travels. Use your hand lens to look at your seed carefully.

<table>
<thead>
<tr>
<th>Wind</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal</th>
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<td></td>
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</table>

Age Me

How old am I?