STEM Collaborative Cataloging Project

# Trees Pre-K Discovery Kit Lesson Plan

## Context (InTASC 1,2,3)
**Lesson Plan Created By:** Rachel Strand
**Created:** May 6, 2016
**Lesson Topic:** Exploring all aspects of oceans including animals, plants, and related objects
**Grade Level:** Preschool
**Duration:** 5 lessons; each 25-30 minutes
**Kit Contents:** http://odin-primo.hosted.exlibrisgroup.com/nmy:NMY_ALEPH:ODIN_ALEPH007679384

## Desired Results (InTASC 4)
**Purpose:** The purpose of this unit is to explore different aspects relating to trees, including parts of a tree, products that come from trees, animals that live in trees, and how trees grow. Students will explore how all of these are related and what impact trees have on their lives.

**North Dakota English Language Arts & Literacy Content Standards:**
- Speaking and Listening Standards: Comprehension and Collaboration
    - SL.6 (Kindergarten) Speak audibly and express thoughts, feelings, and ideas clearly.

**North Dakota Library and Technology Content Standards**
- Personal Learning and Growth: Reading, Listening, and Viewing for Life-Long Learning
    - K-5.PLG.7 Make connections between current knowledge and new learning

**North Dakota Mathematics Content Standards**
- Measurement and Data: Classify objects and count the number of objects in each category
    - K.MD.3: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

**Objectives:**
1. Students will sort objects into groups based on whether they are from a tree or not from a tree with 100% accuracy with group participation.
2. Students will put all six sequence cards in order showing the life cycle of an apple tree after sequencing cards as a group.
3. Students will create a tree project showing what has been learned about trees including two out of three areas from the parts of a tree, animals that live in trees, and how a tree grows.

## Assessment Evidence (InTASC 6)
**Evidence of meeting desired results:** Students will complete art project with paints, crayons, and sponges showing evidence of learning including parts of a tree, animals that live in trees, or how a tree grows. If there are elements of two out of the three listed areas, students will be showing proficient learning from the trees unit.

## Learning Plan (InTASC 4,5,7,8)
**Instructional Strategy: (Check all that apply)**

☑ Direct  ☐ Indirect  ☐ Independent  ☑ Experiential  ☑ Interactive

**Technology Use(s): (Check all that apply)**

☐ Student Interaction  ☐ Align Goals  ☐ Differentiate Instruction  ☐ Enhance Lesson

☐ Collect Data  ☑ N/A

**Hook and Hold:**

Use the bird and the squirrel puppets from the kit to do a short puppet show for kids talking about trees. Have them talk back and forth about how much they love where they live in a tree and what they see each day living there. Have them tell the kids that they will complete a unit about trees and explore different things about trees.

**Materials:**

- Discovery Guide-Trees
- Paper bags-1 per student
- Paper
- Pencils
- 6 index cards
- "The Seasons of Arnold's Apple Tree" (optional)
- Tree Rings
- Crayons
- White paper plates-1 per student
- Leaves from Tree Walk
- Graphing Grid
- White Paper
- Collection of tree related items and non-tree related items
- Basket
- Posters of "From a Tree" and "Not From a Tree"
- "The Giving Tree"
- Tree Sponges
- Paint
- Bird and Squirrel puppets

**Procedures:**

**Day 1: Tree Walk**

1. Give each student a paper bag and go on a walk to an area where there are lots of trees of different sizes and shapes. Sit under the trees and ask students to talk about what they see, including the parts of the tree, what animals live in the tree, or the different shapes of the leaves.
2. Each student should find leaves of different sizes, shapes, and colors as well as other tree related items to add to their bag for later study.
3. Ask questions as you walk back to the classroom.
   a. How is that tree the same as or different from another tree? What kind of animal might live in that tree? What different kinds of things are growing on these trees?
4. Have students put their bags in a special tree center in the classroom to use with other activities during this unit.
5. Have students choose two trees they saw from the walk and draw a picture of the trees.

**Day 2: It's A Tree's Life**

1. Trees have life cycles just like other living things. Link this to student's life cycles and discuss how they started as a baby and have grown into a kid and will keep growing. Use index cards to draw the life cycle of an apple tree with student volunteers.
2. Read "The Seasons of Arnold's Apple Tree" or another story about tree life cycles.
3. Ask six students to draw the stages of the life cycle using a simple drawing, including seed, sprout, tree, blossoms, apples, harvest. Use page 12 of the Discovery Guide.
4. Shuffle the cards and ask another student to place the cards in order.
5. Ask other questions for discussion in pairs.
   a. What other things start very small and grow very big? How do people use apple trees? What things can you make from apples? What do you think happens to an apple tree's leaves in the winter?
6. Teach students the poem "Way Up High in the Apple Tree" on page 25.
7. Conclude with "The Ring's a Thing!" on page 14.
   a. Pass around the tree trunk cross-sections and ask students to discuss with partners what they notice.
   b. Point out the rings and discuss what they mean. A growing tree makes a new ring every year it is alive. Some rings are wider than others. The wider the ring, the more the tree grew that year. The amount of rings a tree has tells the age of the tree.
   c. Give children a white paper plate and instruct them to make a tree cross-section showing their own age. Have them think about spacing in terms of years they may have grown a lot.

## Day 3: Leaf Shapes (page 20)

1. Prepare in advance copies of different shaped leaves on colored construction paper from the Trees Stencils in the kit. Set them out on different desks or tables around the room.
2. Explain to students that different trees have different kinds of leaves, including sizes shapes, and colors. Have students take the leaves they collected during the tree walk and sort them into groups using the paper leaves as a guide.
3. Adapt the Graphing Leaves activity on pg. 19 to graph different kinds of leaves (by shape). Show students the graph and remind them how it works to count and keep track of how many of each object we have. Ask volunteers to bring up leaves from one of the leaf groups and tape or glue them onto the graph. Then continue with each leaf group.
   a. Ask questions to compare what kind of leaf was found the most, least, or any group ties. How else could we sort and graph the leaves? Why do you think a tree has leaves (to make food for the tree).
4. Conclude with Leafy Creatures on page 22. Show students a created leafy creature and discuss what it looks like.
   a. Give each student a leaf and instructions to add a head, legs, and other body parts to turn the leaf into a person, animal, or other creature.

## Day 4: Tree Sort (Page 18) and Let's Pretend (Page 29)

1. Collect tree and non-tree items and place in a basket. Create two posters saying "From a Tree" and "Not From a Tree." Use things from the kit (pinecone, bark, leaves) and things students collected on their walk, as well as things in the room that do and do not come from trees.
2. Discuss things that are on or come from trees with students and things that do not. Give each student an item from the basket and give time to discuss and sort them into correct groups. Students may need help with things that are not seen on a tree, such as toys made of wood or

maple syrup.
3. Use Let's Pretend to act out parts of a tree and how it grows and moves.
    a. Ask children to sit on the floor and copy your movements.
    b. Roll up in a ball and pretend you are tiny acorns on the ground.
    c. Now slowly push out your legs. See? You are growing roots!
    d. Now it's time to sprout up toward the sunlight. Poke your heads up!
    e. Now you're growing taller and taller. Kneel and then stand up.
    f. And as you grow, your branches are growing, too. Stretch out those arms!
    g. Now you're a full grown oak tree. Let me see you sway in the wind!

**Day 5: Who Uses Trees?**
1. Use "My Friend, the Tree" on page 21 to discuss how animals and humans use trees. Read aloud "The Giving Tree" and have students share about a favorite tree and how trees are special.
2. Use discussion questions from My Home in a Tree on page 23 to talk about animals that live in trees.
    a. What animals live in trees? (birds, squirrels, raccoons, caterpillars, insects)
    b. Why do these animals live in trees? What part of the tree do they live in?
    c. How do you make your tree home?
    d. What happens when many animals want to live in one tree?
3. Students will conclude the unit by creating a picture showing all the things they learned about leaves. Provide students with paper, paint, crayons, and tree shape sponges.
4. Give students directions to include the parts of a tree that they learned (roots, trunk, branches, leaves) and what can be found on a tree (pinecone, acorn, bark, animals).
5. Give students time to create their pictures using different tools.

**Summary:** Collect paintings and other activities from the unit to determine if students have learned the material. Leave books about trees in the reading center and exploration tools from the kit to allow for extra time with the materials for a few extra days. Ask students to share their favorite thing they learned about trees with a partner.

## Reflection (InTASC 9)
**Reflect On:**
- *Preparation*
- *Planning*
- *Teaching*
- *Student Engagement and Participation*
*Evidence of Student Learning*

## Standards
Council of Chief School Officers. (2011, April) *Interstate Teacher Assessment and Support Consortium (InTASC) model core teaching standards: a resource for state dialogue*. Washington DC. Retrieved from http://www.ccsso.org/documents/2011/intasc_model_core_teaching_standards_2011.pdf
North Dakota Department of Public Instruction. (2011) *North Dakota English language arts & literacy content standards.* Bismarck, ND. Retrieved from https://www.nd.gov/dpi/uploads/87/ELA_JUN0811.pdf
North Dakota Department of Public Instruction. (2011) *North Dakota mathematic content standards.* Bismarck, ND. Retrieved from https://www.nd.gov/dpi/uploads/87/math.pdf

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