

## Tiny Sparks: Science and Storytelling in Early Learning

Lesson Title: The Secret Life of Trees: A Hands-On Exploration

Grade Level: Preschool

Lesson Length: 50 minutes

<b>AZ Science Standard:</b>	K.L1U1.7 Observe, ask questions, and explain how specialized structures found on a variety of plants and animals (including humans) help them sense and respond to their environment.
<b>Learning Objective:</b>	<ul style="list-style-type: none"> <li>• Students will be able to sequence and describe the four primary stages of an oak tree's life cycle (acorn, seedling, young tree, mature tree) using age-appropriate vocabulary and visual representations.</li> <li>• Students will be able to create a textured autumn tree artwork using salt painting techniques, demonstrating hand-eye coordination, color exploration, and following multi-step art instructions.</li> </ul>

<b>Vocabulary</b>	<b>Materials</b>
<ul style="list-style-type: none"> <li>• Dendrochronology</li> <li>• Tree rings</li> <li>• Annual Rings</li> <li>• Leaves</li> <li>• Roots</li> <li>• Soil</li> <li>• Sun</li> <li>• Water</li> <li>• Photosynthesis</li> </ul>	<ul style="list-style-type: none"> <li>• The book "Listen to the Language of the Trees" by Tera Kelley</li> <li>• Oat Tree Life Cycle Worksheet</li> <li>• Yarn</li> <li>• Art materials depend on the selected art activity</li> <li>• Glue sticks</li> <li>• Scissors</li> </ul>

### Costume Element:

Costumes play a vital role in storytelling by engaging children in immersive experiences, visually representing characters and concepts, and boosting cognitive skills through interactive play. They encourage creativity and support multi-sensory learning, making scientific concepts more accessible and memorable for young learners.

- **Tree Costume:** Dress up as a tree with branches and leaves to introduce the concept of tree rings.
- **Forester:** Dress as a forester to emphasize the role of tree-ring analysis in understanding forest ecosystems.
- **Tree Fairy:** Dress like a tree fairy. Incorporate elements such as difference colored leaves (to link to photosynthesis).
- **Woodland Creature:** Dress as a squirrel or owl to connect tree rings with the animals that depend on trees for survival.

**Guiding Questions:**

- What do you think trees need to grow?
- How is a tree like a human?
- Can you tell me about the different stages of an oak tree's life?
- What do you think trees might say if they could talk?

**Engagement/Introductory Activity:**

- Gather children in a circle and introduce the book "Listen to the Language of Trees" by Tera Kelley.
- Ask children what they know about trees and how they think trees might communicate.

**Exploratory Activity:**

## Storytelling (15 minutes)

- Read "Listen to the Language of Trees" aloud to the children.
- Pause occasionally to ask questions and engage children in the story.
- After reading, discuss how trees communicate underground and help each other.

## Science Activity: Fungi Network (10 minutes)

- Create a simple model of the mycorrhizal network using yarn and paper cups.
- Have children connect paper cup "trees" with yarn "fungal threads" to show how trees are linked underground.

## Science Activity: Nutrient Sharing Experiment (10 minutes) – Option #2:

- Use colored water to represent nutrients.
- Have children transfer the "nutrients" between plant pots using pipettes or straws, simulating how trees share resources through fungal networks.

## Kinder extension - Tree Communication Game (10 minutes):

- Play a game where children pretend to be trees.
- One child is the "warning tree" and must send a silent signal (like a hand gesture) to other "trees" when they spot a predator (another child).
- This demonstrates how trees warn each other of danger.

## Science Activity: Oak Tree Life Cycle Sequencing – Option #3 (15 minutes)

- Provide learners with the Oak Tree Life Cycle worksheet.
- Students are encouraged to color and cut out the cards.
- Use oak tree life cycle cards to teach children about the stages of a tree's growth.
- Guide the children in coloring, cutting, and pasting the life cycle stages in the correct order.
- Assist children in folding their completed life cycle foldouts.
- Have them arrange the cards in the correct order and glue them to the worksheet.

## Art Activity: Bubble Wrap Tree (15 minutes)

- Materials needed: Bubble wrap; Cardboard tubes (different sizes); Elastic bands; Red, yellow and gold paint; and Card (cut out in tree shapes)
- Before beginning the activity, make a stamp to print with. Cut a piece of bubble wrap that is slightly bigger than the end of a cardboard tube and then use an elastic band to attach it to the tube.
- Squirt some red, yellow and gold paint onto a plate and use the stamp to print onto the card tree shapes.
- As you press the stamp down onto the card you should be left with lots of interesting patterns made by the bubble wrap.
- While the paint is drying cut up some cardboard tubes to make the trunks for the trees. Make two small cuts on each tube to slide the painted tree shapes into. You can make the tree trunks a variety of sizes.

#### Art Activity: Salt Painting Autumn Tree Art – Option #2 (15 minutes)

Materials needed: Tree template printed on white cardstock; Watercolor paint palette; Water; Paintbrush; White glue; and Salt

- With the tree template, start tracing over the image of the tree with glue.
- Then, take the salt, and just as you would with glitter, start to sprinkle the glue outline with salt. Gently tape the paper to settle the salt into any creases. Then, lift the paper slowly and shake it a bit to remove any excess salt.
- Take your paintbrush, dip it in water and start to blend the tip of the brush with watercolors to soften the bristles.
- Continue doing this until your brush is saturated with watercolor and then touch the salt with the paintbrush lightly and see how the color on your brush spreads around the salt outlines.
- Set the artwork aside to dry.

#### Conclusion and Transition (5 minutes)

- Gather the children back in a circle.
- Review what they learned about trees and their life cycles.
- Ask them to share their favorite part of the lesson.

This lesson plan combines storytelling with hands-on science and art activities, engaging preschoolers in multi-sensory learning about trees. It aligns with early childhood education best practices by incorporating various learning areas such as early literacy, science, and fine motor skills

#### **Explain:**

- "Tell me about your autumn tree painting. What colors did you use and why?"
- "Can you show me how an acorn grows into a big oak tree using your life cycle foldout?"
- "What was your favorite part of the story about trees talking? What did you learn about how trees communicate?"
- "If you were a tree, what would you want to say to other trees or to people? Why?"

#### **Extension Activity/Questions:**

##### Tree Communication Experiment

This activity expands on the concept of tree communication introduced in the story.

Materials: Small potted plants (2 per group); Water; and Measuring cups.

Procedure:

- Divide students into small groups.
- Give each group two similar potted plants.
- Instruct them to water one plant regularly and ignore the other for a week.
- Have students observe and compare the plants daily.

Guiding Questions:

- How do the plants look different after a week?
- If the plants could talk, what do you think the watered plant would say to the unwatered one?
- How might real trees in a forest help each other when one doesn't get enough water?

This activity helps students apply their understanding of plant needs and communication to a hands-on experiment, encouraging scientific observation and empathy for living things.

### Seasonal Tree Art Gallery

This activity extends the autumn tree art concept to other seasons.

Materials: Large paper or cardboard; and Various art supplies (paint, colored paper, cotton balls, etc.)

Procedure:

- Divide a large paper or cardboard into four sections, one for each season.
- Have students create a tree for each season using different materials and techniques.
- Spring: Use cotton balls or finger painting for blossoms
- Summer: Use green paper leaves or handprints for full foliage
- Fall: Apply the salt painting technique from the original lesson
- Winter: Use white paint or paper for snow-covered branches
- Guiding Questions:
  - How does the tree change in each season?
  - What colors remind you of each season?
  - How do you think the tree's "language" might change from season to season?

This activity helps students apply their understanding of tree life cycles to seasonal changes, while also expanding their artistic expression and reinforcing the concept of tree communication across different times of the year.

### Evaluation Activity:

Enlist the teacher's help to record the following data as needed.

Observational Assessment: Throughout the lesson, observe students' engagement and participation in activities. Pay attention to their ability to sequence the oak tree life cycle and their understanding of tree communication concepts.

Portfolio Assessment: Collect and analyze the students completed oak tree life cycle foldouts and salt painting autumn tree artworks. These artifacts will demonstrate their comprehension of tree life stages and their ability to follow multi-step art instructions.

Verbal Assessment: Use guiding questions during the conclusion to assess students' understanding. For



example:

- "Can you tell me about the different stages of an oak tree's life?"
- "What do you think trees might say if they could talk?"

Listen for responses that indicate achievement of the learning objectives.

Performance-Based Assessment: Have students demonstrate their understanding by explaining their oak tree life cycle foldout to a peer or teacher.