

Engagement and Empowerment in Natural Science at Klehm Arboretum

Journey into the Field

Prehistoric Adventure

Backpack Tour Detail

Part 1: Observation

- Arrive and Examine Prehistoric Garden: What Do you See? (5 min)
 - Guiding questions may include: What do you notice about the trees? How might you tell how old or young the trees are? What size are the trees growing? What do you notice that might be the same or different about the trees?

Part 2:

- Team leader (Adult) demonstrates tree analysis.
- Students examine the Ginkgo Biloba, noting various properties of the tree and its various parts.
- Students examine and record findings on paper
- Students design investigation for obtaining information from other locations.
- Students execute and discuss- team leader (Adult) leads discussion.
- Students create LEAF FOSSILS (models)

Part 3:

- Team leader (Adult) demonstrates tree analysis.
- Students examine the Dawn Redwood, noting various properties of the tree and its various parts.
- Students examine and record findings on paper.
- Students design investigation for obtaining information from other locations.
- Students execute and discuss- team leader (Adult) leads discussion.

Part 4:

- Look closely at your observation notes for both trees. What do you notice that is unique about each tree? Identical? (10 min)
- Comparison Activity: Compare the Ginkgo Biloba tree to the Dawn Redwood tree. Compare and Contrast features of the two prehistoric trees.
- What features are unique to each tree. Why does one tree have different characteristics than another?

Field Adventurer Supplies:

- 1 Backpack
- 1 Magnifying Glass
- Klehm Map
- Pencil
- Clay
- Clipboard
- Paper Handout/School Journal



Each Curriculum Component will Cycle Through:

Discuss	Participants brainstorm and activate prior knowledge
Listen, Watch & Predict	Participants build knowledge and make predictions based upon experience
Explore	Participants engage in activities like a scientist or engineer to test and create
Think About It	Participants activate schema through prompts related to the activities
Extension (read & write)	Participants extend their thinking and knowledge through various media



Drilling Deeper: A Look at One Activity

Analysis of a Tree

Part 2 of Prehistoric Adventure (3-5)

Observe a specific tree and **examine** using magnifying glasses. Look for specific details many of which can be seen with the naked eye. Attempt to identify unique features. Record features found in a single tree

Learner Experience Paths & Objectives	Instructional Skills	NGSS* Skills
<p>Learners will:</p> <ul style="list-style-type: none"> • Experience and investigate the various prehistoric trees • Analyze elements of different prehistoric trees • Evaluate features to determine if all trees are the same • Identify parts of the trees • Observe and analyze elements unique to each tree • Create a map model and indicate where they found different tree with specific ic features • Evaluate differences and determine similarities in tree features, resources, needs, etc. <p>Design a plan for comparing features of trees. Collect additional tree information from the location of the student's' choice in the prehistoric garden. Compare trees and discuss</p>		
<p>Embedded Vocabulary: Sample, Magnifying Glass, Elements, Habitat, Movement, Patterns, Locomotion, Compare, Analysis, Model, Map, Resources</p>		

Materials	Inquiry Procedure
<ul style="list-style-type: none"> <input type="checkbox"/> Pencil <input type="checkbox"/> Clipboard <input type="checkbox"/> Paper Handout/School Journal <input type="checkbox"/> Magnifying Glass 	<ol style="list-style-type: none"> 1. Team leader (Adult) demonstrates tree analysis. 2. Students examine the Ginkgo Biloba, noting various properties of the tree and its various parts. 3. Students examine and record findings on paper 4. Students design investigation for obtaining information from other locations. 5. Students execute and discuss- team leader (Adult) leads discussion.

Curriculum Symbol Key:

(*NGSS: Next Generation Science Standards. Modern K-12 Science Standards, adopted in Illinois in 2014)

Instruction Practices:								
	Gross Motor	Fine Motor	Visual Motor	Sensory	Language	Literacy	Social	Mathematics
NGSS Practices:								
	Ask & Answer Questions	Develop & Use Models	Investigation	Using Data	Math Thinking	Explanations & Solutions	Arguments with Evidence	Obtain Information