

PREVIEW -- KINDERGARTEN NATURE WALKS

Kindergarten walks are based on:

1. Environmental Awareness.

- Sensory exploration/ Sense of wonder.
- Discover/ Joy of learning.
- Sharing the excitement.
- Experiencing nature's rhythms and cycles.

2. Developing attitudes of respect toward:

- The environment.
- Each other.
- Themselves as learners.

3. Learning through observing and sharing.

- Look, listen, smell, and touch to explore their schoolyard.
- Observe and share observations of seasonal changes.
- Make comparisons, note similarities and differences.
- Identify plant parts and observe how plants change with the seasons.
- Distinguish between living and non-living things.
- Make connections between their lives and the world around them.

A major challenge is helping young children learn how to behave on a Nature Walk, how to focus, observe, wonder, and thereby enjoy exploring, discovering, learning and sharing.

Remember your main goal is that children enjoy discovering and learning from their own observations, not specific science content. Be willing to:

- Follow children's interests and the unexpected discovery.
- Focus on one or two concepts/activities.
- Don't stay out too long.
- Be enthusiastic and have fun.
- Communicate with the teacher.

Walks usually last 30 minutes, but go in early if children lose focus. Groups should be no larger than six children.

KINDERGARTEN FALL NATURE WALK OVERVIEW

Plants and Seasonal Changes

OBJECTIVES:

- Explore the schoolyard by looking, listening, smelling, and touching.
- Observe and share signs of seasonal change in plants.
- Identify plant parts.
- Make comparisons, note similarities and differences.

PREPARATION:

- Schedule walk from mid-September to early October.
- Walk should last about 30 minutes.
- Schedule walk first thing in the morning before other classes come out for recess.

MATERIALS:

- Bug box (for the unexpected discovery).
- String circles, one per two students.
- Trowel.
- Hand lenses (1 for each child).
- Plastic bags for leaf and/or seed collections* (one per group).
- Clipboard, pencil.
- Signs of Fall Walk Report

ACTIVITIES:

- Close eyes. What can you hear, smell, and touch?
- Discuss fall and compare with memories of summer.
- Big Backyard walk leader fills out Signs of Fall Walk Report during the walk.
- Examine and collect* leaves in string circles.
- Dig up a plant and examine plant parts (roots, stem, leaves, and if possible, flowers, and seeds).
- Observe similarities and differences in fallen leaves.
- Find and collect* dried seeds and seedpods.
- Compare needles of red and white pines.

*Consult with the teacher about collecting material for the classroom

PRE-WALK ACTIVITIES: TO BE LED BY THE TEACHER

1. Ask the class: *Who likes to explore and discover outdoors? Why?* This year you will go on some nature walks outside in the “Big Backyard” of our school. *How do we learn about nature outdoors?* By using our eyes, ears, noses, and hands we can notice changes in our schoolyard. We can try to figure out what is happening to the plants and animals that live here. Ask: *How do scientists learn about nature?* The same way we do. They use their senses. They observe things very carefully. They compare things and look for changes. Then they try to figure out why things are happening and how nature works.
2. Tell children that they will soon go on a nature walk outside the school with a parent volunteer. They will be nature scientists as they look carefully at plants and other interesting things outside, just like a nature scientist does.

(Optional) Scientists also sometimes collect things to bring back to their laboratories to study further. Scientists are careful that what they collect doesn't harm the plants and animals they study. Each group will collect a few interesting leaf discoveries to bring back to the classroom. Groups may also find seeds or dried seed pods to bring back for later exploration in the classroom. We can look for fluffy milkweed seeds, acorns, burrs, hickory nuts, pine cones, etc.

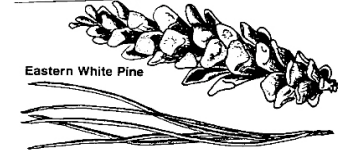
Acorn



Burrs



Hickory nut



Eastern White Pine

Ask: *Who can remember how the schoolyard looked the first day of school? What color were the trees and plants? How have things changed?* (leaf color, less sunlight, cooler). *How might these affect the plants and animals outside the school?*

3. Have each child think about what a plant looks like, and draw a picture of a plant. (Draw another picture after returning from the walk.)
4. Discuss how the children need to behave if they want to discover things about nature in their schoolyard. Let children tell you that they need to move slowly and quietly so that animals are not scared away. They also need to stay close together and near the leader so they can share their discoveries. You may want to suggest a “follow the leader” rule (where the Big Backyard volunteer is the leader). Remind children that looking closely and wondering about what they see is what nature scientists do.

NATURE WALK: TO BE LED BY BIG BACKYARD VOLUNTEER

During all activities encourage children to share their discoveries with the group using as many descriptive words as they can. Encourage children to think about and communicate what they are observing, and to make connections with their lives. Encourage them to discover what is special about each season, to compare seasons, and to think about the effect of seasonal changes on plants. *Remember, plant names are not important; simply enjoy the variety and beauty of fall.*

1. Sensing the school's Big Backyard. (Adult records children's observations.)

- Groups should exit the kindergarten wing, separate and walk toward the grove of pine trees at the perimeter of the grassy area, stopping on the way to look at ant hills, butterflies, worm castings, an interesting leaf—any interesting discovery.
- Have children sit down in the grass. To limit distractions, it helps to have children with their backs to the school. Young children are easily over stimulated outdoors and need help to focus. Ask: *What can you discover about this place without using your eyes? What do you hear? What do you smell? What can you feel?* Ask children to close their eyes and sit quietly to make observations. Direct children to hold up one finger for each new sound they hear.
- After a short period of silence (20-30 seconds—depends on group), have children open their eyes. Ask: *How many sounds did you hear?* (Traffic, birds, wind in the trees, insects buzzing, children playing). Ask: *What did you feel?* (Sun on their faces, the wind, grass, dead leaves, soil, a rock). Ask: *What did you smell?* Ask: *Did the ground feel like this last summer? How has it changed?* (Things are colder; there is less sunlight.) *What season is it? What do you think about when you think of fall?* (Leaves turning color and falling from trees. Wildflowers turning brown and dying. Cold weather so we have to wear a jacket.)

2. Leaf exploration in string circles.

- For each pair of students spread a string circle on the ground in an interesting patch of lawn or weedy edge. Be sure that the areas include some fallen leaves from trees.
- Enjoy any ants, ant hills, spiders, spider webs, worms and worm castings or other mini-creatures children may find.
- Then direct children's attention to leaves. Leaves are a plant part. Ask: *How many different types of leaves can you find in the circle?* Have them pick one of each kind of leaf in the circle, including grass. (Mowed grass is mostly leaves.) Note that the lawn mower will cut these leaves soon, so they are allowed to pick some. Ask: *What do you notice about the leaves in the circle? Are all the leaves the same?* Compare shape, size, color, texture, etc. Ask: *Who can find a hairy leaf, a fuzzy leaf, a*



White clover



Plantain

tiny leaf, a skinny one or a fat one? Are all the leaves green and soft, or are some dry and brown and brittle? Are there any chewed by an insect?

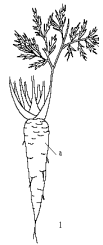
- Each group may collect a few leaves, seeds, or non-living discoveries of particular interest to bring back to the classroom. (Check with the teacher first to see if collection is desired. You can bring items back in the plastic bag.)
- Gather your small group, and let each child show and describe their favorite leaf. Ask: *Why is it your favorite? Who found the smallest leaf? The biggest? Were all the leaves in your circle growing there? Are the green leaves growing? How about the brown dry leaves? Where did the dry dead leaves come from? How did they get into the circle? Can you find where the loose leaves came from?* Encourage children to look for the plant these leaves came from. (Young children often don't connect a dead leaf with leaves growing on a tree. They also may not know that a tree is a plant.)

3. Looking at other plant parts: roots, flowers, and seeds.

- **Roots.**



- Ask children to name a plant part that grows under the ground. Carefully dig up two small clumps of grass, and shake most of the dirt off the roots. Pass the plants around with hand lenses so children can examine them. Encourage children to describe and talk about what they are observing. Ask: *Does anything surprise you about what roots look, smell, and feel like? Sometimes there is a worm in among the roots. What do roots do for a plant?* (Roots help to keep the plant upright in the soil. They also allow the plant to “drink” in water and nutrients from the soil, just like children suck up juice with a straw.)
- You may want to mention that you ate a root for supper last night and see children's reactions. Remark that, unlike a grass root, it was long and orange. This helps children make the connection between a root (carrot) and food. Ask: *Has anyone eaten any other plant parts? How about leaves?* (Lettuce leaves, spinach) Ask: *What part is celery?* (A stem.)
- Ask: *Where do these grass roots belong?* (In the soil.) Model respect for the environment by carefully replanting the grass where you found it, explaining that you want the plant to continue to grow. Collect hand lenses.

Dandelion
seed

- **Flowers.**

- Look for evidence of flowers still in bloom, such as asters, or a late dandelion or clover blossom. If there are no flowers, ask children to remember all the flowers last summer. Flowers are a plant part.

Asters



- **Seeds.**

- In fall many plants have seeds. If you found aster flowers, look for seeds on those plants. The seeds are the very tiny brown specks at the tip of the fluffy “parachute”. Children enjoy blowing these seeds. How far will they fly? Try to help children make the connection between flowers and seeds. Think about how many seeds one plant produces! (If children don't make the connection between flowers and seeds, don't worry about it. They will revisit the concept in spring by observing dandelions).

Aspen stem gall

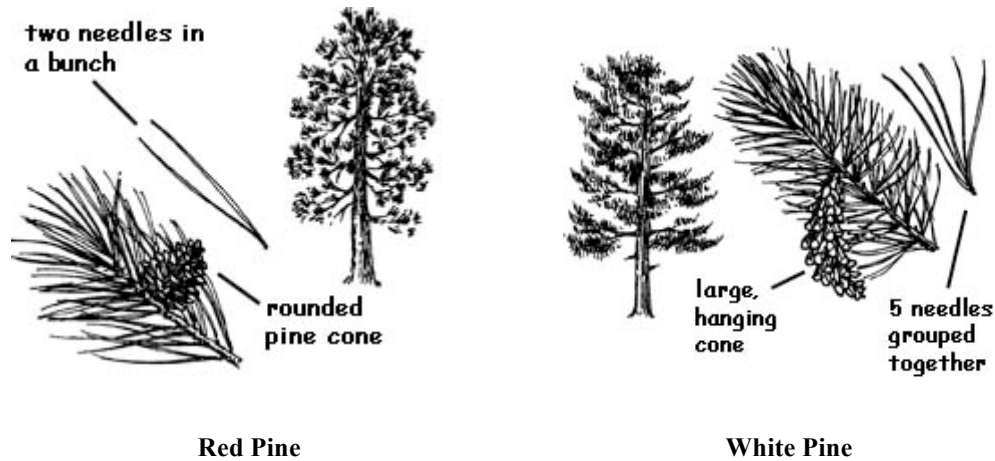
Near the wild flowers are several aspen trees. Point out to children the aspen leaves, many of which have a round lump on the stem. This lump is an animal home called a gall, where a little larva (caterpillar) will spend the winter. As scientists, the group can open one gall (because there are so many) and look at the larva. Use a hand lens. Explain that they shouldn't open more than one, because the galls are part of nature and should be left alone. When children are through looking close the gall and place on the ground, where it will be food for another animal.

4. Exposed tree roots.

- Walk into the woods and observe the large trees with exposed roots. Let them have fun exploring these wonderful roots. Ask: *Where do you usually find roots, under the ground or on top of the ground?* (Under) These roots used to be covered by soil. Ask: *Why do you think there is no soil around the roots now? What might have happened to make the soil go away? Can you see any clues that soil is being carried away?* (Rain sometimes washes soil away and leaves it somewhere else).
- Think about the roots from the grass clump. Ask: *Do you think trees have that many roots? Could we dig one up and see? What would happen if a tree didn't have many roots and the wind blew hard? Do roots help hold a tree in the soil? How far underground do you suppose tree roots spread?* Stand under a large tree. Look up at the branches and then have children stand under the tips of the branches. The tree's roots extend as far under ground as the branches stretch out from the trunk!
- Remind children of some of the plant parts they have seen: roots and leaves (grass), and stems, flowers and seeds. Ask: *Do you think that trees have the same plant parts as wildflowers? Why do you think so?* (Trees have roots, stems, and leaves. Children may not realize that trees also have flowers, but they will see these in spring.)

5. Pine trees

- Ask: *Do some trees stay green all winter?* Point out the pine trees. Ask: *Do they have leaves?* (Yes, pine needles are leaves) Ask: *Do they change color?* (They turn yellow, but not all at once; some are always green). Ask children to look carefully at the trees. Pick up pine needles that have fallen to the ground. Pine needles are leaves too. White pines have five needles in a bunch, Remember that naming the tree or plant is less important than discovering its special features.



6. Wrap up.

- Walk back to the school. As you walk ask: *What is your favorite sign of fall? What did you discover about plants?*
- Give the collection bag and Signs of Fall Walk Report to the teacher.
- Return all materials to the Big Backyard room.
- Fill out a Walk Report and leave in the Big Backyard room.

**POST-WALK CURRICULUM INTEGRATION OPPORTUNITIES: TO BE CHOSEN
AND LED BY THE TEACHER**

1. Make a class chart of what children saw, heard, smelled, and felt in their schoolyard in fall. Encourage children to talk about the things they think about when someone says "fall." Are these the same things they think of when someone says "summer"? Save to compare responses to winter and spring nature walks.
2. Display children's discoveries on the science table. Provide magnifiers. Dissect seeds and compare.
3. Have each child draw a picture of a plant, paying special attention to plant parts they looked at outdoors. Compare their drawing with the one they made before the nature walk. Does exploring and observing outside help them to learn about plants?
4. Follow up children's exploration of plant parts by asking children to list plant parts they eat; today's children don't always associate lettuce in a plastic bag or beans from the freezer with plants growing outdoors. Did anyone eat a plant part for lunch today? How about supper last night? What plant parts do they like best for eating?

Examples include:

roots----carrot, radish
stem----celery
leaf-----lettuce, spinach
flower---broccoli, cauliflower
seeds----corn, beans, sunflower, nuts

5. Have children sing "Do You Know the Parts of Plants" to help them remember plant parts. Try the first two verses, then later in the year as they learn about how plants grow, add the other verses

DO YOU KNOW THE PARTS OF PLANTS?
(Sing to “Head, Shoulders, Knees and Toes”)

Do you know the parts of plants,
Parts of plants?
Do you know the parts of plants,
Parts of plants?
All kinds of plants that grow and grow and grow.
Do you know the parts of plants,
Parts of plants?

The roots hold the plant in place,
Plant in place.
The roots hold the plant in place,
Plant in place.
The roots store food and water too.
The roots hold the plant in place,
Plant in place.

The stem moves water up the plant,
Up the plant.
The stem moves water up the plant,
Up the plant.
The stem brings water to the leaves.
The stem moves water up the plant,
Up the plant.

The leaves soak up the sun,
Soak up the sun.
The leaves soak up the sun,
Soak up the sun.
The sun helps the plant to grow and grow and grow.
The leaves soak up the sun,
Soak up the sun.

The flower grows into a fruit,
Into a fruit.
The flower grows into a fruit,
Into a fruit.
Inside the fruit are tiny little seeds.
The flower grows into a fruit,
Into a fruit.

Kindergarten Fall Nature Walk

Walk Leaders–Signs of Fall Walk Report
(Please give to teacher after walk)

Things the children **SAW**:

Things they **HEARD**:

Things they **FELT**:

Things they **SMELLED**:

Things that interested them and questions they asked:

NATURE WALK REPORT**Walk Leader:** _____**Grade and Teacher:** _____ **Date:** _____**Children in Group:** _____**1. What parts of the walk interested the children the most? (check all that apply)**

Closing eyes	String circles	Digging up a plant
Plant roots	Tree roots	Stems
Flowers	Seeds	Comparing leaves
Collecting	Celandine	Pine trees

Other: _____

2. What parts were not successful? (check all that apply)

Closing eyes	String circles	Digging up a plant
Plant roots	Tree roots	Stems
Flowers	Seeds	Comparing leaves
Collecting	Celandine	Pine trees

Other: _____

3. This walk was: (circle one) TOO LONG JUST RIGHT TOO SHORT**4. The children seemed adequately prepared: (circle one) YES NO****5. This was a good working group: (circle one) YES NO****6. I felt adequately prepared to lead this walk: (circle one) YES NO****Other comments or suggestions:**

SUPPLEMENT -- PLANT PARTS

C. FLOWERING PLANT PARTS AND THEIR FUNCTIONS

1. Roots

- obtain water and minerals from soil ^{need?}
- anchor plant to ground ^{air?}
(why?)

2. Stems

- transport water and minerals (sap) to leaves and transport glucose (food made by leaves) to all parts of plant

- raise leaves to the sun

3. Leaves

- breathe in air (using oxygen and carbon dioxide) and breathe out extra oxygen and water vapor

- absorb sunlight so chloroplasts (green structure within leaf) can make food from air, water, and minerals

- shade the ground underneath to keep roots and other plants cool

4. Flowers

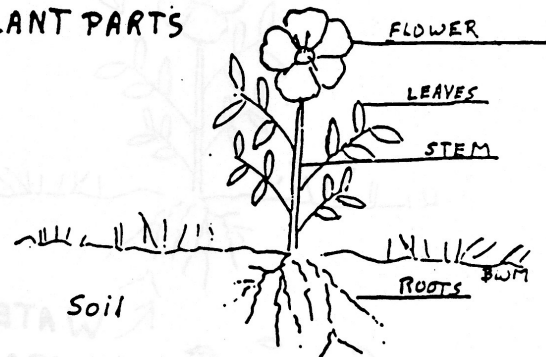
- enable plant to produce seeds
- pollen spread by wind, insects, or small birds

5. Seeds

- start new plants



FLOWERING PLANT PARTS



Non-flowering plants such as mosses and ferns reproduce by spores.
Conifers reproduce by seed-bearing cones.

