

**KINDERGARTEN WINTER NATURE WALK**  
**Plants and Seasonal Changes**

**OBJECTIVES:**

- Look, smell, listen, and touch to explore winter and seasonal changes in the schoolyard, with a special focus on snow and ice.
- Observe signs of animal activity in winter.
- Discover what happens to plants in winter.
- Examine and compare tree buds on marked trees.
- Enjoy exploring and discovering.



**PREPARATION:**

Before going out the *Big Backyard Coordinator* should

- Fill out and give teachers Upcoming Walk Announcement flyer as well as copies of sections on pre and post walk talks from this walk guide
- Mark maple, spruce, white pine, weeping cherry, oak, and white pine sapling trees with surveyor's tape.
- Schedule walk in January or February before vacation.
- Schedule walk first thing in the morning before other classes come out for recess.
- Be sure children are dressed appropriately.
- Winter walks are always about 30 minutes; don't stay out longer than the comfort level of the children allows.
- Notify the school nurse of the scheduled walk.

**MATERIALS:**

- Clipboard, Signs of Winter Walk Report, and pencil
- Squares of black paper, approximately 4"x4", one for each student (for ice or snow)
- Hand lenses & Trowel

**ACTIVITIES:**

**(Note: If there is ice or snow, you may choose to spend less time looking at plants; if there is no snow or ice, spend more time on plants and animal signs not related to tracks.)**

- Observe and compare winter with fall.
- Look at snow and ice.
- Explore for signs of animals in winter.
- Observe plants in winter.
- Compare tree buds. Predict what will happen to the buds.
- Discover how trees grow/tips of branches.

**PRE-WALK ACTIVITIES: TO BE LED BY THE TEACHER**

1. Invite children to think about their fall walk. Ask the class: *What did you discover about your school's Big Backyard in the fall?* Discuss things they saw, smelled, touched, and heard on their fall walk, and refer to drawings or murals they made.
2. Science Connection: Investigating Water Unit.  
Ask: *What do you expect to discover now that it is winter? How will the schoolyard have changed since your last walk? Will colors be the same? Smells? Sounds? Is the air as warm as it was last fall-- would you be comfortable in shorts outside now? How has the temperature changed?* Winter means that the air and the ground are cold, and there are fewer hours of sunlight. Ask: *What happens to water when it gets very cold? How do you make ice cubes? Does it rain on a very cold winter day? Will you find wet puddles on the ground on your Big Backyard walk, or will you find ice or snow? Why do you think so?* (If water is cold enough, it changes to ice.)
3. Science Connection: Plants and Animals Unit.  
Ask: *What do you think is happening to plants outdoors in winter? Could you make a good leaf collection now? What has changed for plants?* (Some plants have died, roots can't get liquid water, leaves fall off many plants, no flowers, seeds are dried and may still be on plant, and no new growth.) Have the children think about plants in their classroom. Ask: *Are they still green and growing? How is the environment different for plants in the schoolyard?* (It's cold outdoors. Water is frozen and plants can't use frozen water. There isn't as much sunlight.)

Tell children that some animals also do different things when winter comes. For example, monarch butterflies migrate to a place where it is warmer. Some sleep the winter away. But some animals stay here and are active. Ask: *Which animals have you seen outside this winter?* (Squirrels, birds, etc.) *If you don't see an animal, are there any clues that an animal was there?* (Tracks, scat (droppings), plants or other animals that have been eaten.) You will be animal detectives on your Big Backyard walk!! Look out for clues!!

## **NATURE WALK: TO BE LED BY BIG BACKYARD VOLUNTEER**



### **1. Observing the schoolyard in winter**

- Have children stand with their eyes closed and listen. **\*Ask the students:** *What does winter sound like? Are the sounds different from fall? What can you smell? How does your skin feel?*
- After a short period of silence (20-30 seconds—depending on the group), have children open their eyes. **\*Ask the students:**
  - *What has changed since fall? Colder, fewer bird sounds, no insects.*
  - *Have the colors changed?*
  - *What did you find and feel as you explored the ground last fall? Grass, dead leaves, soil, a rock, bugs.*
  - *Why are you standing instead of sitting? Ground is too cold to sit on.*
- **\*Ask the students:**
  - *Was it dark when you got dressed this morning? Was it when we took our fall BBY walk?*
  - *Is the sun shining as many hours during the day or does it get dark earlier?*
  - *Is the air as warm?*
  - *What happens to water when it gets very cold? Are there any rain puddles outside today?*
  - *Did you see any snow or ice last fall? Why not?*
  - *What is ice and snow? Frozen water*
- If conditions are right, you may find animal tracks (possibly squirrel, dog, rabbit, fox, raccoon, mice, or bird) or other evidence of animal life. If you find tracks, be careful that eager young feet don't trample the tracks into oblivion before children get a chance to see them! Remember to play freeze frame or to practice for the Patriot Day parade. It helps to draw a circle in the snow around interesting tracks and ask children to not walk inside the circle.

## 2. Looking at snow and ice.

- Look at the snow. Have the children walk on the snow. **\*Ask:**
  - *Does it crunch when you walk on it?*
  - Have the children pick up some snow. *Does it stick together to make a snow ball or snowman?*
  - Put a little snow or ice on your warm hand and watch it melt. *What makes snow sticky? When it is close to its melting point*
- Put snow and/or ice crystals on black squares of paper and look at the crystals with the hand lenses. This is especially successful if the paper is cold. If you are lucky enough to be out during a snowstorm, take the squares of black paper and catch the snowflakes as they fall.  
**\*Ask:** *What do you notice? Color, shape, melting, etc.*  
Collect the hand lenses.
- Have the children look for places where the sun has melted ice/snow to make liquid water. **\*Ask:** *What will happen to this water when it gets cold again?*
- Take the trowel and dig under the snow to see what you can find. **\*Ask:**
  - *What is underneath the snow surface? Is the grass still there?*
  - *Can you dig into the ground or is it too hard? Why? Try it.*
  - *Is the water in the soil frozen into solid ice?*
  - *Can plants use frozen water?*



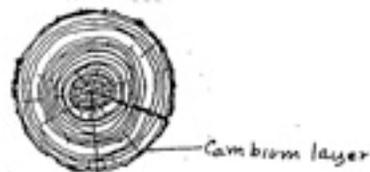
## 3. What happens to trees and plants in winter?

- Review the 6 parts of a plant: roots, stem, leaves, flower, seeds, and fruit.
- **\*Ask:** *Have you ever seen a snowsuit on a dandelion? Mittens on an apple tree? How about a winter hat on a rose bush?* When plants can not keep warm or get enough sunlight to make their food in the winter, (for most plants) their leaves die and fall off. However, the roots under the ground can still be alive. Plants enter what is called a dormant phase, which is similar to a winter's sleep.
- Snow forms a “blanket” on the ground, insulating it against the cold winter air.  
**\*Ask:** *Is the grass still under the snow?*
- Some plant stems are less affected by less sunlight and the cold. Bark keeps trees warm, acting like a snowsuit. Flower stems tend to die for they do not have a protective covering. Have you ever tried to grow celery in January?

- **\*Ask:** *Do all plants lose their leaves in the winter?* No. Remember raking leaves around Halloween? Many trees drop their leaves all at once in the fall. However, some lose their leaves a little at a time. These are called evergreens—for they are ‘forever green.’ Remember, needles are leaves too.
- Look for the seeds on dried flower stalks or bushes. The birds know where they are for they rely on them for food in the winter. **\*Ask the students:** *Where are all the seeds we saw in the fall?* They may be under the snow, eaten by rabbits or squirrels, or blown away by the wind.

#### 4. How trees grow

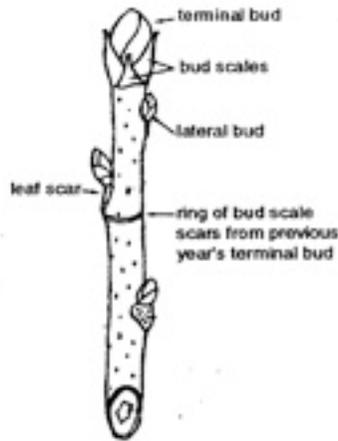
- Look at and compare the tips of the labeled tree branches.  
**\*Ask the students:**
  - *What do you see? Is this a plant part?*
  - *What do you think will happen to the buds? Why do you think that?*
  - *How can you find out?* (Wait and observe it in spring. Mention that this is how scientists learn.)
- Each tree bud is different from the next. They can be brown, grey, red; round or pointed; flat or protruding; few or many
- Trees grow in two ways. Some trees grow in a circular pattern around the stem (trunk), the exact opposite of how people want to grow! Other trees grow from the very tip of their branches.



**\*Ask the students:** *Do trees grow taller each year? Why do you think so? How can you find out?* Show children the leaf scars on a branch where last year’s leaves were attached. Show them the mark at the base of the end bud that encircles the branch.

**\*Ask the students:** *Can you find another line circling the branch like a bracelet?* This is where last year’s end bud was. The branch grew that much last year.

- Can you figure out how much the branch grew the year before?
- Which year did it grow the most?
- Do tree branches grow longer each year?



Note: Most of the terms on this diagram are not for use with the children, although you may use the terms “bud” and “bracelet.”

**terminal bud:** A bud that is at the tip of a stem or branch

**bud scales:** a small, modified leaf on the outside of a bud.

**lateral bud:** a bud that is situated along the sides of a branch and not at the tip

**leaf scar:** the scar left on a twig when a leaf falls off

**bracelets/ring of bud scale scar:** the scar left on a twig when a bud scale falls off (often looks like a bracelet).

##### 5. Who is older, you or the white pine?

- Visit the white pine sapling in the woods near the culvert (past the oak trees to the left of the Administration building). It is safe to visit in the winter because the poison ivy and underbrush are gone.

**\*Ask the students:** *Who is older, you or the sapling?* In white pines, new branches grow in a circular plane about the tree called a whorl. By counting the whorls, one can tell the age of the tree.

**\*Ask the students:** *Who grew more last year, you or the tree?* Measure the distance between the last two whorls with your hands and compare that next to the students.

- Don't worry if you smell skunk in this area in late February. Some of our local skunks live near the culvert. They leave their winter's sleep at this time to mate, and then retreat back to their dens. Skunks are active at night.

## 6. Wrap up

- Walk back to the school. **Ask:** *What new discovery did you make about winter?*
- Give the Signs of Winter Walk Report to the teacher.
- Return all materials to the lobby.
- Fill out a Nature Walk Evaluation and leave it in the Big Backyard mailbox.



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

1. English/Language Arts Connection.

Have a whole group discussion based on what children saw, heard, touched, and smelled on this winter walk. Ask: *What was the most interesting thing that you observed? What surprised you? What do you wonder about?* Follow with a request to draw and write about their Big Backyard in winter. Compare these impressions with observations made on their fall trip and save to compare discoveries on spring walks.

2. Science Connections: Plants.

You may arrange for the Big Backyard volunteers to cut some buds outside to bring into the classroom. If you put these in water, the buds will open. It is interesting to compare two different types of buds. This is a great opportunity to make predictions and draw changes. Sometimes branches will even sprout roots, so use a clear container! The next time the children see the branches on their spring Big Backyard walk, most likely leaves will have emerged from the buds.

**Walk Leaders–Signs of Winter 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 EVALUATION**

(Please leave in Big Backyard mailbox)

**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	Animal tracks	Pine trees
Properties of snow	Other animal signs	
Snow on black paper	Seeds	
Digging with trowel	Tree buds	

Other: \_\_\_\_\_

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

Closing eyes	Animal tracks	Pine trees
Properties of snow	Other animal signs	
Snow on black paper	Seeds	
Digging with trowel	Tree buds	

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:**