

BOWMAN 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.
- Discover what happens to plants in winter.
- Examine and compare tree buds on marked trees.
- Enjoy exploring and discovering.

PREPARATION:

Room Parent

- Call BBB coordinator to ensure trees have been marked
 - Logistics:
 - Walk Time: Shorter than the fall walk - 30 minutes or less. Don't stay out longer than the comfort level of the children allows.
 - When: January or February before vacation. Schedule walk first thing in the morning when the playground is quiet.
 - Groups: If possible only send 2 groups out at a time but 4 can go out if they spread out.
 - Sites: 1) red maple/white pines 2) pin oak at front 3) maple at front
- All sites are marked with orange surveyors tape labeled KDG and marked on map.
- Schedule parents for walk. Copies of walk are available in storeroom & web site.
 - Ensure no overlaps with other classes by checking the schedule outside the BBB office. Update BBB schedule with class time by writing Time/Grade/Teacher in correct date.
 - Be sure children are dressed appropriately.

Teachers

- Complete "Pre-Walk Activities".
- Complete "Post Walk Curriculum Integration Choices"
- Inform school office of time and date of walk

PTA Coordinator

- Label with orange surveyors tape marked KDG Sites: 1) red maple/white pines 2) Pin oak 3) maple in front of school
- Make copies of Signs of Winter Worksheet (1 per group)
- Update map of sites if necessary.

Questions?

Questions? Contact PTA Coordinator(s)

MATERIALS:

- Clipboard, Signs of Winter Worksheet, and pencil for leader only.
- Trowel.

ACTIVITIES:

- Observe and compare winter with fall.
- Briefly look at snow and ice.
- Observe plants/trees 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 Bowman'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, 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.)

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: *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: *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 too cold to sit on.)*
- Ask: *What is the biggest change from last fall? (It's cold!) Ask: 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.)*

2. Looking at snow and ice.

- Look at snow. Have the children walk on the snow. Ask: *Does it crunch when you walk on it? Have the children pick up some snow. Ask: Does it stick together to make a snowball or snowman? Put a little snow or ice on your warm hand and watch it melt. Ask: What makes snow sticky? (When it is close to the melting point.)*
- 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? Try digging in the ground. Ask: Can you dig into the ground or is it too hard? Why? Is the water in the soil frozen into solid ice? Can plants use frozen water?*

3. What happens to plants in winter?

Go to each of the tree sites and observe buds and roots

- Observing tree buds. Look at and compare the tips of the sugar and red maple, oak and other trees and shrubs. Ask: *What do you see? Is this a plant part? What do you think will happen to the buds? Why do you think so? How can you find out? (Wait and watch it in spring.)* Mention that this is how scientists learn.

(**Maples** - Sugar maple has brownish or gray twigs with brown pointed buds. Red maple has red twigs and reddish rounded buds and is better deer food.)

- Ask: *What is happening to the roots you looked at last fall?* The roots of many plants sleep in the frozen ground all winter. Scientists say that trees and many small plants become “DORMANT” in the winter, sleeping under a blanket of snow until it gets warm again. The snow helps to protect plants from the cold air. It’s hard to think of cold snow as a blanket protecting roots from getting too cold!

At White pine site look at the leaves.

- **White Pine trees.** Look at the white pine trees. The pine trees didn’t lose all of their leaves. (Yes, pine needles are leaves.) Look at the branches. Ask: *Do pine trees have buds?* (Yes, you can see end buds.)
- Learning how trees grow. Ask: *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: *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. Ask: *Can you find how much the branch grew the year before? Which was the best growing year? Do tree branches grow longer each year?*
- Look for seeds, especially on dried flower stalks. Remind children of the fluffy dandelion seeds they observed in the fall. Ask: *Has anything happened to all the seeds you found in the fall? Where are some seeds now?* (Fallen to the ground and covered by snow, blown away, eaten.)

Extra Information on buds for volunteers

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

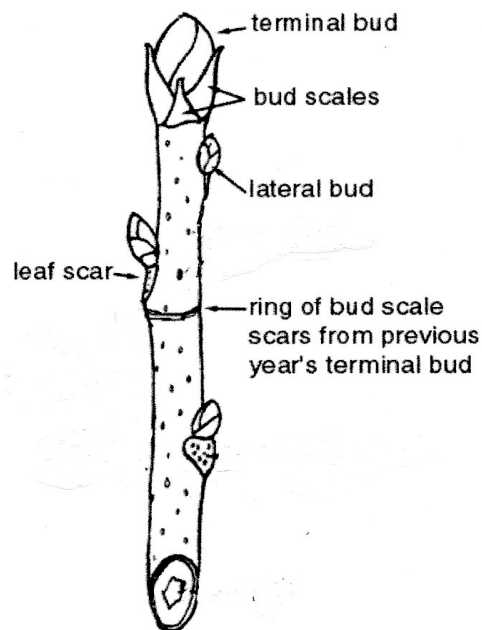
terminal bud: a bud that is at the tip of a stem or branch.

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.

Bracelets/ring of bud scale scar: the scar left on a twig when a bud scale falls (often looks like a “bracelet”).



4. Wrap up.

- Walk back to the school.
- Give the Signs of Winter Worksheet to the teacher.
- Return all materials to the Big Backyard room.
- Fill out a Nature Walk Evaluation and leave it in the Big Backyard room.

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

English/Language Arts Connection.

1. 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. Draw a picture of the schoolyard in winter or make a mural. **Keep this picture to compare with spring.**

Science Connections: Plants.

3. 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 Worksheet
(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 Room)

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	Pine trees	
Properties of snow	Maple trees	
Digging with trowel	Seeds	
	Tree buds	

Other: _____

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

Closing eyes	Pine trees	
Properties of snow	Maple trees	
Digging with trowel	Seeds	
	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: