

KINDERGARTEN WINTER NATURE WALK
Plants, Animals, 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:

- Big Backyard coordinator should mark beech, oak, sugar and Norway maple, and pine 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 shorter than spring and fall ones, 30 minutes or less. Don't stay out longer than the comfort level of the children allows.

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.

Map – Kindergarten Fall Walk

1. Observe the schoolyard in winter. (Anywhere outside.)
2. Looking at ice and snow. (Anywhere outside.)
3. Exploring for signs of animals. (Edge of woods.)
4. Sugar maple.
5. Norway maple.
6. Red oak.
7. White pine.
8. Beech.
9. Looking for seeds. (Edge of woods.)

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, 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: *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.)*

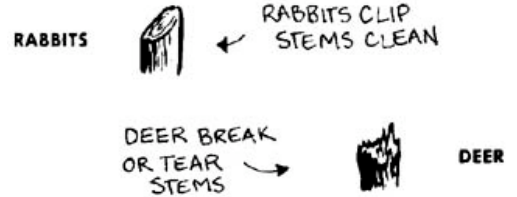
2. Looking at snow and ice.

- 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.)*
- Put snow and/or ice crystals on black squares of paper and look at the crystals with 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? 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?*

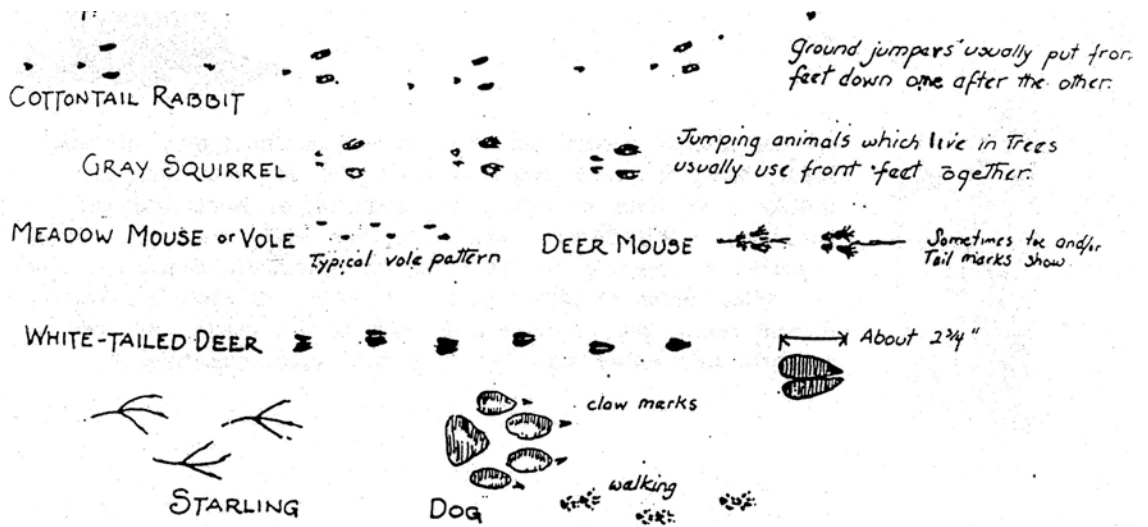


3. Exploring for signs of animals in winter. (See supplemental sheet.)

- Walk along the edge area and into the woods and see what signs of animals the children can discover. Look for stems bitten off by rabbits, squirrel nests high in trees, or perhaps abandoned bird nests. Children may see evidence of meadow mouse tunnels in the snow. If there is no snow, you may see small holes in the soil; these are tunnel entrances dug before the ground froze. Look for animal scat (droppings). Common scat can be found from rabbit, dog, deer, squirrel, mouse and coyote.

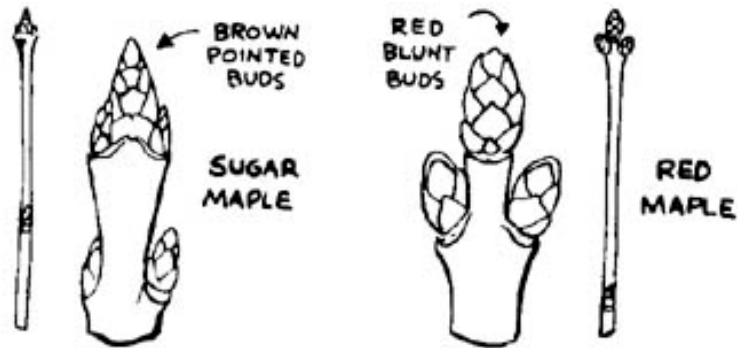


- If conditions are right, you may find animal tracks, possibly squirrel, dog, rabbit, fox, deer, raccoon, mice, or birds. If you find tracks, be careful that eager young feet don't trample the tracks into oblivion before children get a chance to see them! It helps to draw a circle in the snow around interesting tracks and ask children to not walk inside the circle. Ask: How big is the animal? *Can you tell which way it was going?* (If possible, note claw or toe marks—these would be toward the head of the animal.) Compare the tracks. Front footprints for rabbit, squirrel, or mouse are usually smaller and more circular than back footprints.
- If there is an expanse of fresh snow, it can be fun for children to make their own tracks and observe patterns, such as hopping like a rabbit or running like a mouse.



4. What happens to plants in winter?

- Observing tree buds. Look at and compare the tips of the sugar and Norway maple, oak, beech 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. Norway maple has brown twigs and red and green buds.)



- **Pine trees.** Look at the pine trees near the school. 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?*

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

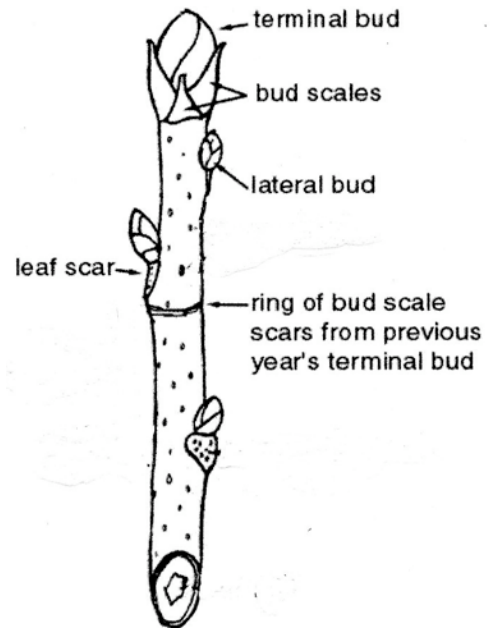
terminal bud: a bud that is at the tip of a stem or branch.

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”).



- 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.)

5. Wrap up.

- Walk back to the school.
- Give the Signs of Winter Walk Report 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**

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 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 | 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

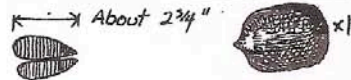
5. This was a good working group: (circle one) YES NO

6. I felt adequately prepared to lead this walk: (circle one) YES NO

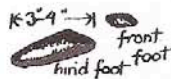
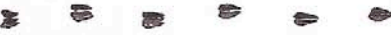
Other comments or suggestions:

A Beginner's Alphabet of Winter Tracks & Signs

FOOT PRINTS SCAT TRACKS OTHER SIGNS & NOTES



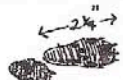
WHITE-TAILED DEER



COTTONTAIL RABBIT



Ground jumpers usually put front feet down one after the other.



GRAY SQUIRREL



Black walnut opened by gray squirrel.

Jumping animals which live in trees usually use front feet together.



RED SQUIRREL



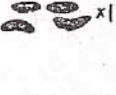
Opened by red squirrel.

Front feet tend to be together.

photo → feeding station



MEADOW MOUSE or VOLE



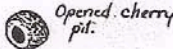
Typical vole pattern ..

Pattern of vole burrows under snow.



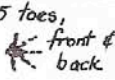
DEER MOUSE

leaps



Sometimes toe and/or tail marks show.

slow run



SHREW

tail dragging



much variety

Shrew trails no wider than 1 1/4"



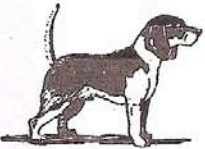
FOX



Dog family - fox, coyote, wolf & dog - toe nails show. 4 toes, front feet larger than rear.

running

walking



DOG

walking



PHEASANT



CAT



STARLING



REMEMBER, Tracks are variable and depend on the weather and ground conditions so use your head as well as your eyes and see what you can find.