

WINTER EXPLORATIONS

Kindergarten- Rahr Memorial School Forest

ENDURING UNDERSTANDING

Wisconsin animals deal with winter in different ways. Snow has unique properties that we can study. Snowshoeing is a winter sport.

ASSESSMENT

Students will be able to demonstrate their understanding by listing different ways animals cope with winter conditions, showing where small mammals spend most of their time in the winter, participating in snowshoeing, and explaining basic snow properties.

OUTLINE

- I. Set-up
 - II. Sample schedule
 - III. Introduction
 - IV. Animals in winter
 - A. Snooze, stay, or go away
 - B. Mouse houses
 - V. Snow study
 - A. Experiment
 - B. Make a flake
 - C. Snow hike
 - VI. Snowshoeing
 - A. Why use snowshoes?
 - B. Snowshoeing
 - VII. Conclusion
 - VIII. Clean-up
- Safety
Optional Activities
Resources
-

MATERIALS

storybook

Snowshoeing

snowshoes
key for shelter

Snow Study

plastic cups
markers
circle pages
scissors
crayons
cup
crumpled paper

Animals in Winter

tracking guide books
track poster
animal photos
paper
crayons
thermometers

CLASS PROCEDURES

I. Set-up

After setting up a date with the School Forest secretary, teachers are also responsible for filling out and submitting a field trip request form. Teachers can also schedule a time when the School Forest coordinator can meet with them at school to discuss the visit. Teachers will be asked to teach or co-teach one of the activities while the student groups rotate through the classes during the day. The School Forest coordinator

may also be available to teach at one of the stations during the day. Preparation time will be needed to review the activity.

All of the materials needed for this day will be set-up at the School Forest. Teachers will need to bring a few things from school: the School Forest keys, first aid kits, emergency contact information, extra clothing, and any additional activities they feel necessary for the class. Students will need to bring a bag lunch (with a drink and nothing that needs a microwave) and adequate clothing for the day (snow pants and boots).

II. Sample schedule

9:00	depart from school
9:30	arrive at the School Forest
9:30-9:45	introduction and welcome (in the Krejcarek building)
9:45-10	snack and hot chocolate
10-10:45	rotation 1
10:45-11:30	rotation 2
11:30-noon	lunch
noon-12:15	story time
12:15 – 1:00	rotation 3
1 – 1:10	conclusion
1:10 – 1:25	free time and bathroom break
1:30	board buses
2:00	return to school

III. Introduction

Explain the guidelines for a day at the School Forest. Give the students an overview of the day and the classes.

IV. Animals in winter (See extension at the end of lesson plan)

A. Snooze, stay, or go away

What do animals in Wisconsin do in the winter? Animals will snooze, stay, or go away. Talk about different animals that do these things. Use the animal photos to aid in the discussion. Act out what each type of behavior would look like. Gather the children in a circle and have each complete the sentence: “I’d like to be a _____ in winter, and I’d stay warm because I would _____.”

B. Mouse houses

In small groups, have the children look for animal holes and tunnels in the snow. Watch out for tracks and try to figure out what animal left these signs.

V. Snow study

A. Experiment

Have each student fill a plastic cup with snow. Bring the cup inside. Discuss what the students think will happen to the snow. As the snow melts, ask the children what is happening. Ask why it is melting. Discuss the temperature indoors and out. Once the snow is completely melted, mark the much lower water level. The reason for the lower level can be demonstrated easily. Show the students a cup full of crumpled paper. Flatten the pieces out and show how much less space is used. You may want to then make predictions about what will happen to the cup full of water when it is placed outside again. Investigate.

B. Snowflakes

While you are waiting for the snow to melt, you may want to make snowflakes. Use the provided circle sheets, cut the circles out, fold into a cone, and cut.

C. Snow hike

Hike around the buildings and look at how the snow has formed in different areas. Notice how snow melts around the base of a tree. Where does the wind create snowdrifts? Does the snow have patterns in it? Dig down into the snow and examine the different layers within the snow.

VI. Snowshoeing

A. Why use snowshoes?

Discuss why we might want to use snowshoes. (They help us stay on top of the snow, they make hiking easier in the winter, snowshoeing is good exercise, and it is fun.) The first snowshoes were created by Native Americans. They were made of wood and sinew. Some snowshoes are still made of wood and some are made with aluminum, metal, or plastic.

B. Snowshoeing

The snowshoes are stored in the shelter south of the Ehlert Lodge. The students should open the bindings completely and slide the heel of their boots into the back of the binding. Now, the binding can be closed around their boots.

When walking (or running) in snowshoes, there are a few things to remember:

- stay on snow (gravel and concrete can ruin the snowshoes)
- walk wide (like a duck)
- try not to step on uneven terrain or branches
- start slow

Take the students around the forest. If there is enough snow, play games in the dunes or open areas. Take your time and enjoy traveling to areas that would be difficult to travel without snowshoes (go off the trail). Also, watch for animal tracks and use your senses to explore.

VII. Conclusion

Discuss what the students did at the School Forest. Have the class demonstrate their understanding of animals in winter and snow.

VIII. Clean-up

- Return supplies to building
- Take garbage out to dumpster
- Close windows, shut off all lights, lock doors, shut driveway gate
- Give the School Forest Coordinator feedback on how to make this trip better in the future.

Safety

While at the School Forest, teachers should carry first aid kits. You can bring these from your school or use the ones at the School Forest. The first aid stations can be found in the

Ehlert Lodge office, ELC classroom, and the upstairs of the Krejcarek Building. Please report any safety issues to the School Forest coordinator.

We must pay close attention to the comfort and health of our students. Watch for shivering, proper dress, and exposed skin.

Students should be supervised at all times. If you decide to go off trail, go in a clear area where branches cannot swing back and hit someone. Be aware of the plants you are traveling around so as not to pass by thorn covered plants.

Optional activities - These activities can be done if the weather is poor or if there is extra time during an activity. Please notify the School Forest coordinator if you plan to teach any of these activities. ***You may want to teach these activities at school after your School Forest trip as a follow-up.***

- What shapes can you find in nature? – discuss what types of shapes can be found in nature. Look at photos of natural objects and look for shapes.
- Hike in search of shapes – go out on a hike and stop in various places to look for shapes.
- Shape collage – gather natural objects and make a collage of different shapes found in nature.
- Descriptive Hike -while on this nature hike, encourage students to use their five senses and to think of words to describe the forest. As a class or in smaller groups, list possible words to describe the area on a sheet of paper. Provide experiences to encourage the use of the students' senses. Crush plants to smell, touch different types of bark, taste pine needles, smell the soil.
- Quiet Observations - find a quiet place along a straight trail to do this activity. Tell students that you will be asking them to sit quietly along the trail, to not move from their spot until an adult tells them to, and to observe nature. The teacher can walk down the trail and assign a spot for each student to sit. Make sure to space the students out so they do not distract one another. Extra adults should space out along the trail for supervision. Watch students carefully. After the five minutes are up, the last adult will need to walk along the trail and gather the students until they reach the teacher. Ask students to sit down as a group and discuss what they experienced. Did anyone see anything interesting? What different colors could you see? What could you hear?
- Where am I? - ask the students to find a partner. Give one blindfold to each group. One student in each group will now be blindfolded. The student that does not have a blindfold will lead the other student to a tree. The blindfolded student should explore the tree with their hands, nose, and ears. Then both students should return to the starting point (with blindfolds still on). The blindfolds now can be taken off and the students that were blindfolded should try to find their tree again. Remind the students not to talk during this activity.

RESOURCES

Cornell, Joseph Bharat. Sharing Nature with Children. Anada Publications. 1979.

Rockwell, Robert E., Elizabeth A. Sherwood, Robert A. Williams. Hug a Tree. Gryphon House, Inc., Maryland. 1996.

Western Education Development Group. The Snow Book. University of British Columbia, Vancouver. 1978.

Animals in Winter

Time: 45 minute to 1.5 hour (In 45 minutes you can do the introduction, game, cones and setting cones outside near ELC, to extend station spend more time outside looking for places to set cones and for animal tracks.)

Students: Kindergarten

Materials: Winter Jacket, apron, kitchen utensil (spatula), sunglasses, beach towel, pillow, pajamas, pictures of animals, masking tape, crisco or peanut butter, cones, bird seed, craft sticks, plates

Greeting grabber: As you are “putting on” all the props (apron, jacket, sunglasses, wrap towel around waist, hang pjs over your arm, hold pillow and spatula) greet the group. *“Well hello friends, thank goodness you are here! I have a big decision to make and I think you can help me. I am trying to figure out how I should spend the winter. I have been going to the library and reading books and learning about how what some of the animals that live here at the school forest do in the winter but, I just can’t decide what I should do.”*

Introduction: Test group knowledge: *“Have you learned about different ways animals from Wisconsin spend the winter?” How they change their behavior when it starts getting colder and winter is on the way. . . .* Acknowledge answers and let as many kids answer as you have time for. When they are finished answering explain *“I figured out there are three main ways animals spend the winter”*, explain the three different methods and hang the props on the large white board. Note: I usually hang the pajamas over the middle and set the pillow on the ground, hang the towel on one side and hang the jacket and apron on the other to signify the three different methods.

Note: As you are explaining the three methods reference some of the kids answers, *“like Ben said some animals will store food before winter, these are the animals that stay active. . . .” “like Abby said some animals migrate for the winter.”*

Three methods:

Snooze/Sleep: Hibernation (Pillow and Pj’s) – *“Some animals sleep ALL winter their heart rate slows down (woodchucks slow to 3 or 4 beats per minute) they don’t eat, they don’t go to the bathroom for months! Other animals that are considered hibernators will sleep for a few weeks at a time and wake up if it gets warmer or they want a little food, go to the bathroom then go back to sleep.”* Show them a sign for hibernate or sleep, I use hands together for a pillow and head tilted placed on hands. Note: there is a range of hibernation from those that slow down metabolic functions and sleep all winter to those that go through periods of wake and sleep but stay in a state they easily arouse from, they can all be considered “hibernators.”

Stay: Remain active (Apron with spatula and winter coat) – *“This one sounds like fun, but animals who are active all winter have to eat a lot. Many of them also grow extra fur and feathers to keep themselves warm. They can’t go and get a nice warm jacket like we do.”* Show them a sign for stay, I bring my hands to my mouth pretending I am eating, eating, eating.

Go Away: Migrate (Sunglasses and beach towel) – *“Animals that migrate go to places where it is easier for them to find the food that they need. Looking outside today what are some of the things that are gone that you remember seeing here when you visited in the fall? Flowers, insects, green plants all important food for animals. To find the food they need some animals migrate all the way to the southern United States like Florida, Texas and some even to South and Central America to places like Mexico and Costa Rica.”* Show them a sign for migrate or go away, I use my hands to make sunglasses.

NOTE: It is lack of food that drives migration not cold weather.

The Game: *“Before we make our decision on how WE want to spend the winter, let’s play a game to learn a little more about what some of the animals that live here at the school forest do in the winter. I am*

going to show you a picture of an animal. I want you to guess what each animal does by doing one of the signs. If you think the animal snoozes all winter “put your head on the pillow” “if you think they stay in Wisconsin and stay awake looking for food in winter I want you to pretend to eat, if you think they migrate, put on your sunglasses.” As you show the pictures explain that scientists have figured out what an animal eats has a big influence on what it does for the winter. Most pictures show the animal eating, for each one explain what the animals food source is; for example: “this is a picture of deer mouse, deer mice eat seeds, does anyone know where seeds come from? They come from plants; many seeds fall on the ground before winter. Do you think deer mouse would be able to find seeds in winter?” “The ruby-throated hummingbird drinks nectar, a sweet liquid, kind of like juice, that they find in flowers, do you see any flowers outside in winter?” As you talk about what animals eat, hopefully their guesses will get better. If they CAN find the food they need they will stay awake, if they CANNOT find the food they need they will migrate or hibernate. After you have done two animals that migrate and two that hibernate see if the kids can explain *what is the same about the animals that migrate?* OR *what do the animals that migrate have that the animals that hibernate do not have?* One of the answers you are looking for are, wings. Explain that it would be really hard for woodchuck/frog/raccoon to migrate a long distance without wings; all they have is their legs. Explain that to get to a place with green plants and insects we would have to spend all day driving in the car. Have you ever seen a woodchuck or frog driving a car? They can’t get to a place warm enough to find their food so instead they eat a lot before winter starts and put on fat and then sleep. Many animals that migrate have wings. NOTE: Not all animals that migrate have wings but for our purposes it is an easy distinction, and most in WI that migrate do have wings. Other animals that migrate but do not have wings are whales, caribou, elephants etc.

As you tell the kids what each animal does, tape it to the white board near the props. Note: If you think the kids need more action, rather than sitting in their chairs and doing the signs you can have them physically move to a designated area where the props are sitting to “vote” on what they think each animal does. Depending on the group you can have them sit down between each animal to maintain a little more control or continuously show them the animals and have them move.

Note: I usually save the black-capped chickadee for last, though it has wings, it CAN find what it needs in winter so stays in Wisconsin rather than migrates. A tricky one. ☺

Animal	Food
(Sleep) Woodchuck	Herbivore: Plants, grasses
(Sleep) Raccoon	Omnivore: Crayfish, fish, eggs, berries, roots, insects, small animals (in winter water freezes making it harder for raccoon to find food from ponds, what time of year do animals usually lay eggs? Spring/summer not winter.)
(Sleep) Wood Frog	Insects, insect larvae, other invertebrates (animals without backbones)
(Migrate) Rubby-throated Hummingbird	Nectar from flowers
(Migrate) Monarch butterfly	Nectar from flowers
(Migrate) Common	

Yellowthroat	Carnivore: Insects and spiders: flies, beetles, ants, termites, bees, wasps, grasshoppers, dragonflies, damselflies, moths, butterflies, caterpillars, and other larvae.
(Active) Red Fox	Omnivore: small mammals like mice, miles, voles, rabbits, also eats berries, apples, nuts, fish, insects and dead animals
(Active) Deer Mouse	Omnivore: seeds, plants, fruit, nuts, insects, earthworms, baby birds, baby mice, dead animals
(Active) Cottontail Rabbit	Herbivore: In winter they eat twigs and bark and other woody plants, in summer they do eat grass, dandelions, other green plants, berries
(Active) Black-capped Chickadee	Omnivore: Seeds, insects, spiders, fruit

When you are finished going through the animal pictures have the kids *“put on their thinking caps” and decide how they would like to spend the winter and why.* After giving them time to think call on a few of the kids to share their answers. End by telling the group *you have finally made up your mind. You are going to do all three! You are going to stay active during the day so you can snowshoe and ski and sled and do all the fun winter activities, you are going to sleep at night when the sun goes down and it gets really cold and maybe later in winter when you are sick of all the cold you will take a vacation to somewhere warm to see flowers and insects. It is fun studying animals; we can make our lives better and easier by learning about how they live.* (Could also tie this concept into snowshoeing and how we “learned this trick” from animals like snowshoe hare and grouse that make their feet bigger for the winter as well!)

The Feeders: When you have gone through all the animals, ask the kids *“when you are outside today which group of animals might we see signs of? Like their footprints, scat, where they have been eating? Yes – the group of animals that stay active.”* Each animal picture is taped on a blue envelope. In the deer mouse envelope are pictures of mouse tracks and rodent tunnels under the snow you can show the kids. *Ask why the mice might be going under the snow?* Protection from cold, snow is like a blanket and actually helps to keep the animals warm, also remember where those seeds that have fallen off the plants might be. . . . under the snow, though of course some can be found on top of the snow too. In the deer envelope is a picture of deer scat (poop) in the rabbit envelope are pictures of rabbit scat and tracks, also show the kids the large red poster of the animal prints they may see. NOTE: It is nice to show kids pictures of the animal signs before heading outside so they know what to look for.

Explain: *“We can actually help the animals that stay active all winter. Show them the cone and explain animals know to look on cones for seeds, explain the seeds have already fallen off these cones for the winter so we can put more on.” Do you want to help the animals?”* Show how to put the fat or peanut butter on their cone (or piece of bread if we do not have cones) and then how to put the seed on it.

Outside: Depending on the amount of time you have you can put the cones/bread by the bird feeders. Stand back and watch to see if any birds come, whose cone do they come to first? Or you can have the kids look for animal tracks like mouse/squirrel/deer and they can put their cone on the tracks. There are quite a few tracks just behind the ELC, you can walk

down the trail toward the kids nature play area. They can also find a shrub to put their cone in for birds.

Or if you do not have time you can put them by the ELC in view of the windows and keep an eye out the rest of the day for animals. The chickadees have already figured us out and have been hanging around the ELC, we also saw a mouse one day with the group after we had put them out. In winter we can go off trail without fear stepping on nests, plants ect. Feel free to follow some of the animal tracks. If conditions are right some great rabbit tracks and scat can be found behind the ELC, in the woods, near the brush piles.

Lesson plan developed by Kelly Vorrone, School Forest Coordinator, December 2013.