

GETTING READY FOR WINTER



* Please share this kit with all the teachers that will be coming with you to FWA.

GOAL

To provide students with an understanding of how different organisms prepare for winter.

OBJECTIVES

Students will:

1. Describe differences between winter and summer
2. Explain some ways that plants cope with changing seasons
3. Explain some ways that animals cope with changing seasons

VOCABULARY

Active: when animals neither change their body temperature or metabolism, or “hole up” in a burrow or den for the duration of the winter. e.g. deer, lynx, jackrabbit.

Hibernation: when an animal enters a dormant or resting state, lowering body temperature and metabolism to conserve energy. e.g. turtles, thirteen-lined ground squirrels.

Leaf-droppers: deciduous trees that lose their leaves in winter to conserve moisture.

Leaf-keepers: evergreen trees that keep their leaves in winter. These trees have leaves that are needle shaped and that have a waxy coating: special adaptations that prevent moisture loss.

Migration: when animals live in one geographical area in the summer and another in the winter. The scale of migration varies enormously: olive-sided flycatchers may migrate from Canada to Ecuador, whereas some soil invertebrates merely move below the frost line. e.g. geese, ducks, robins.

Supernap: a winter-resting state, but without the lowered metabolism of true hibernation. Supernappers live off extensive stored fat reserves, and may wake and become mobile if the temperature increases. e.g. black bears, most other mammals that appear to “hibernate”.

PRE-VISIT ACTIVITIES

1. Discuss with your students how some animals and plants adapt to survive the winter season. What do the students do to adapt for winter? Are there any similarities between what people do and what animals do to get ready for winter?

Animals in winter	People in Winter
<ul style="list-style-type: none"> - grow thicker fur, fluff up their fur or feathers to keep warm - grow feathers or fur on their feet (e.g. grouse, lynx) - gain weight in autumn to insulate and provide energy in winter -eat food collected and stored in summer 	<ul style="list-style-type: none"> - dress warmly in layers, use fluffy jackets - wear boots and mittens, may wear snowshoes - eat a good meal before playing outside - eat jams, pickles and vegetables grown and stored in summer

2. Discuss how fall is different than the summer. Review things that they do in summer but do not do in fall. What will they do in winter?
3. Make collections of fallen leaves. Use them to do leaf rubbings in the colours of fall and summer, contrasting the difference between these two seasons. Recreate the colours of summer and fall in the classroom with various media.
4. Practice observational skills (these skills are essential for nature walks). Cover 6 to 8 different coloured, natural items with a cloth. Expose the objects for 15 seconds while the children observe them carefully. Replace the cover and ask the students to recall the colour and nature of the items.
5. What can we do in our homes to get ready for winter? Has anyone in your house worked on the insulation or caulking of doors and windows? Do you have any new winter clothes yet? Why do we do these things now, instead of waiting until winter?
6. Two books which provide good background information on trees and forests are: The Kids Canadian Tree Book, by Pamela Hickman, which has tree-related activities for every season; and The Forest, by David Bellamy, which explores the activities of plants and animals with the changing seasons. Another good reference for the changing seasons is Pond Seasons, by Sue Ann Alderson.

POST VISIT ACTIVITIES

1. Review the animals and plants seen at FortWhyte Alive. What are they doing to get ready for winter? Show what they are doing with drawings, paintings or clippings from magazines. Create a collage or mural showing seasonal changes
2. Ask the students to divide a piece of art paper into four areas, to represent the four seasons. They would then draw a picture of their favourite animal in each box, to show what the animal does each season.
3. Investigate places where it is always "winter" (i.e. there is always snow and ice) and places where it is never "winter" (i.e. there is no ice or snow) through stories, books, films and discussions. How do animals and plants in these places differ from animals and plants here? How are they similar?
4. Imagine how our lives would be different if we hibernated, migrated or napped through the winter. Describe the daily routines of imaginary people who live in these ways. Would you like to migrate or hibernate every winter? (Maybe some of the students have relatives who **do** migrate to Florida each winter!)
5. Make bird feeders with milk cartons and plastic pop bottles (see figures). What sort of foods do birds (that don't migrate) eat at feeders? What is suet? Discuss winter birds and bird feeding. What birds do you see at your feeder? Can you draw them?



SUPPLEMENTARY INFORMATION

SQUIRRELS AND WINTER

None of our tree squirrels hibernate, although bad weather keeps them indoors for several days at a time. They dislike cold, snow, rain, or high winds. They are busiest during the fall, gathering nuts, which they store, as every child knows, in preparation for winter. Strangely, they do not store all of their nuts in their nest or even near it. They may actually store their nuts as much as a hundred feet from their nest tree where they may bury nuts in shallow depressions which they cover with leaves. These buried treasures are not necessarily for personal use. With their keen sense of smell they locate caches of other squirrels and eat what they find. This does not seem to lead to any particular social disorder. Many of the buried nuts lie uncollected until sun and rain combine and a new tree sprouts. The squirrels are the Johnny Appleseeds of the animal kingdom!

Squirrels den alone, but when the weather turns really cold a number will curl up together for warmth. Though they prefer hollow trees for their dens, they will readily construct a leaf nest if no trees are available. An individual's territory (range) will extend for some two hundred yards around a single nest tree, but this is seasonal. As different crops mature they will shift ranges, moving over a five-square-mile area in the course of a year. If things go wrong in their neighborhood, whole populations will move off to a new area.

BLACK BEARS AND WINTER

Contrary to popular belief, black bears do not truly hibernate. In the northern parts of their range they do den up for the worst of the winter in a self-made bed of grass, twigs, bark, and leaves. This nest may be in a hollow tree, cave, sheltered under roots or a fallen tree, or may be just a shallow excavation in a wooded area. They are frequently exposed to falling snow during their dormancy.

This winter sleep of the black bear is deep, but his body temperature remains near normal. During a warm spell a bear may move around a bit and then return to his nest. In the southern parts of his range, during the winter the black bear takes naps for a few days at a time, even in Florida and Louisiana. Bears usually den alone, although on occasion a sow will allow her cubs of the previous season to hole up with her. During the summer, black bears have no permanent home but sleep in trees or on the ground whenever they get tired.

Both articles from **North American Mammals**, by Roger A. Caras. Meredith Press, NY. 1967.