



Greetings!

Thank you for choosing the McHenry County Conservation District's Winter Woods and Prairie program for your class. The in-school portion of this program prepares students for their time outside at Living Land Farm, and includes hands on activities to help them understand the importance of insulation for animals. We use a couple of buckets of ice water, so please have an area in the classroom where this activity can take place. The outdoor portion of this program at Living Land Farm includes a hike and activities based on how the woods, prairie, and the inhabitants contend with the winter conditions. Activities vary depending on the amount of snow.

Please make sure all teachers and chaperones attending the field trip are aware of the following information.

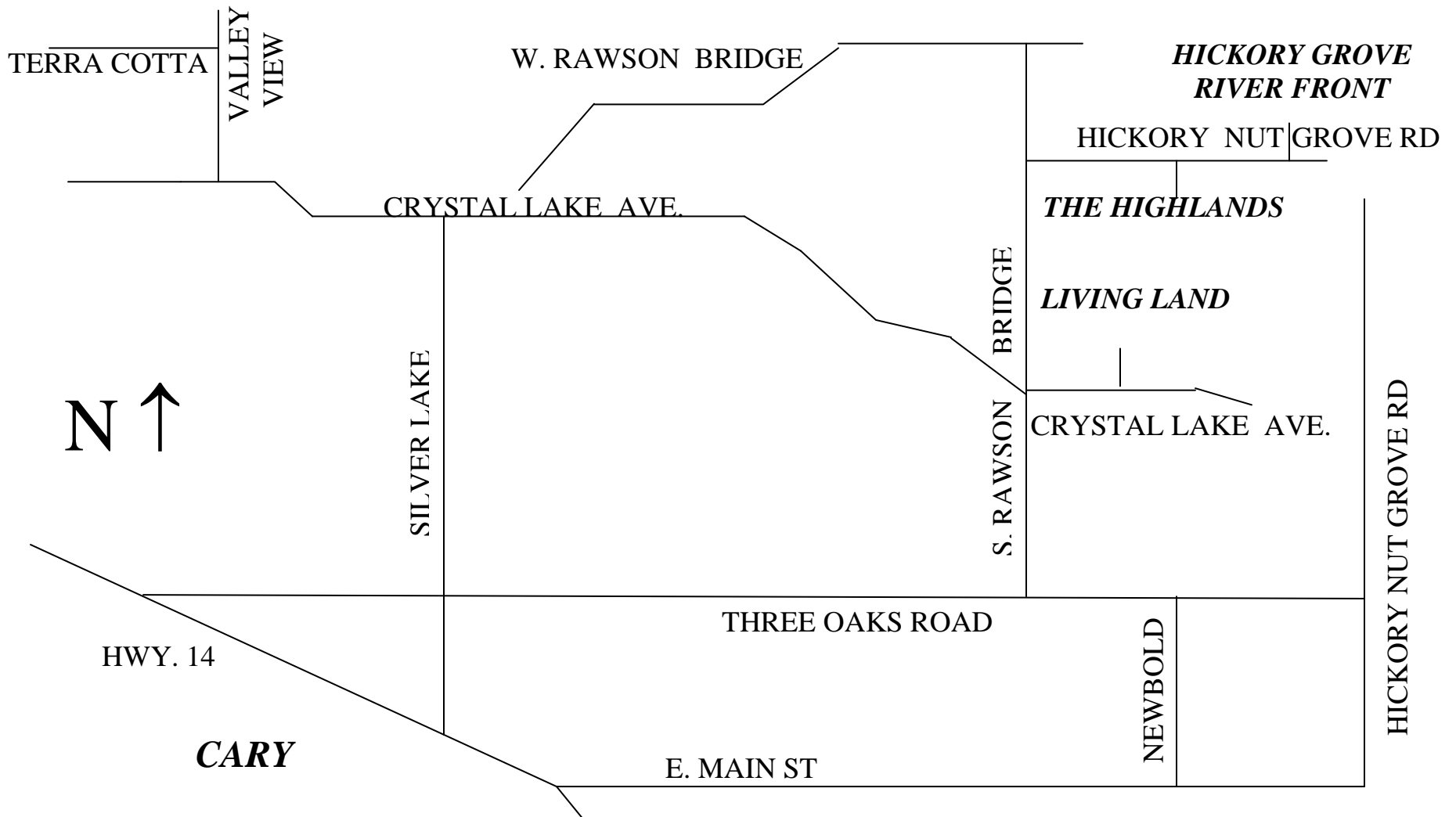
1. Teachers, chaperones and students should dress for the weather as we are outside for the entire program at Living Land Farm. Warm winter boots are a necessity.
2. During the outdoor program, two chaperones in addition to the classroom teacher are necessary to ensure the safety of the students. We expect chaperones to monitor student behavior and participate in the field trip as well.
3. All students should wear a **nametag** at both the indoor and outdoor programs.
4. Background information as well as pre and post-trip activities are available for this and all McHenry County Conservation District school field trips in your choice of format. Completion of the activities ensures a more successful learning experience for your students.
 - Download information from our website at www.mccdistrct.org; click on the Education tab.
 - Request that information be sent to your email or school address (call Leslie Krebs at 815-479-5779.)
5. In the event of inclement weather on the day of your field trip, contact Leslie Krebs at 815-479-5779 to discuss rescheduling options.

I look forward to seeing you soon!

Sincerely,

Leslie Krebs
Education Program Coordinator

HICKORY GROVE AND LIVING LAND FARM



DROP OFF: Students will be dropped off at the Hickory Grove River Front (500 Hickory Grove Road, Cary) located on the north side of Hickory Nut Grove Road, just east of South Rawson Bridge Road.

PICK UP: Students will be picked up at Living Land's parking lot (716 E. Crystal Lake Ave., Cary), located on the north side of Crystal Lake Avenue, just east of South Rawson Bridge Road.

Background information for Winter Woods and Prairie Class

Winter:

Often we associate snow with winter. Snow has texture, shape and chemical compositions. It has uses in insulation, transportation, construction, and most importantly, life. Snow stores tons of water, gives us track stories, insulates and protects many living plants and animals from this harshest of seasons. When it remains on the ground for a length of time it takes on a “life” of its own!

If possible, we will take a snow profile. This is an examination of the layers of snow, noting their similarities, differences and uses. We should end with a picture of the layer, its depth and temp, allowing students to understand how important snow is in winter survival for these areas inhabitants.

Using a shovel, instruct students to dig a trench in the snow so we can profile it.

-**Top Layer**—is the “*New Snow*”—this layer is often most difficult to determine: it often has sharp crystals lying loosely and slowly being compacted by additional falling snow and temperatures.

-**Middle Layer** is the *Firn*—this layer is often best identified by the snow’s texture, these crystals have lost their sharp edges due to being compacted over time and are more like ice crystals.

-**Bottom Layer** is the *Depth Hoare*—the crystals here are also different shape due to temperature and compaction. The temperature difference is due to the radiated from the earth.

Winter survival for Mammals:

Mammals need to maintain a constant body temperature. Small mammals must eat large amounts of food to provide the energy needed to generate heat. Most put on a layer of fat to help insulate and keep warm. For example, the shrew must consume 3 times its weight in food every day!

Each uses different methods of retaining heat. The deer has hollow hair, which gives a thick cushion of hair and air spaces that slows down the heat loss. Small mammals use the insulation provided by the snow and spend much of their time underground as well.

Some mammals take long “naps”, and yet, do not hibernate. So we occasionally see chipmunks, squirrels, rabbits out and about, taking in a snack. True hibernators are those that seem dead when their body temperature goes very low and their heart rate is typically 1/20th of normal. They get energy from stored “brown fat” which is then converted into energy, helping to keep them warm.

Winter survival for Birds:

Birds adapt to winter as do other mammals, though they may do so differently, the need to stay warm and find food is still most important. Some species will come here from the north, while others will remain and “deer”/adapt with the change of season. Many birds pass through this area on the way to more southern wintering sites. Still others here leave, and we know when spring is soon to follow by the first appearance of the vocal redwing blackbird among others. Dependence on the need for the varied food source often dictates who remains as well.

The larger the bird, the less they need to move or eat to stay warm. On the other hand, chickadees and nuthatches for example will be found searching under bark for insects once the seeds are gone. Most winter birds have great insulation provided by the downy feathers which trap insulating air around their bodies.

Winter Survival for Plants:

Many plants, including trees go dormant for the winter. Deciduous trees drop their leaves and cease producing food, not so much because of less daylight, but the ability to take up water ends for the season. Not to worry, as these prepared and adapted giants are already for spring with their terminal buds, just waiting for something to drink. Other plant life dies back, and then produces new growth when the time is right.

Evergreen trees keep their leaves year round. However, watch in the fall, as some do fall to the ground as part of the natural cycle. These trees are especially adapted to the cold, with leaves that can deal well with winters "draught". You will notice as you travel farther north, that more trees are evergreen than deciduous.

While plants respond to warmth, they mostly respond to "photoperiod", the amount of daylight. As the length of day increases, they react, the earth also begins to warm and the growth process begins again. No wonder spring is such a magnificent time!

Some Vocabulary to review:

Hibernation

Migration

Camouflage

Adaptation

Insulation

Resources:

Whose Tracks are These? *A clue book of Familiar Forest Animals*, by Jim Nail.

Who Lives in the Snow?, by Jennifer Berry Jones.

The Reasons for Seasons, by Linda Allison.

Animal Tracking and Behavior Field Guide, by Donald and Lillian Stokes