North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Trees

ACTIVITIES

How Tall is Your Tree?

You can find out how tall a tree is by standing next to it on a sunny day and measuring the length of your shadow using the tape measure. You can then measure the length of the tree's shadow. Once you get both measurements, you multiply the length of the tree's shadow by your height and then divide the resulting number by the length of your shadow. This should give you the height of the tree! Make sure to use the same unit of measurement for all calculations. This activity works best on flat ground.

Leaf Collecting & Leaf Crayon Rubbings

Take a hike at the local park or in your neighborhood. Collect a variety of different shapes and sizes of leaves on the ground. When you get home, make a crayon rubbing: Lay the rough side of the leaf up, place a sheet of white paper over the leaf and using the length of a crayon, rub an outline of the leaf onto the paper. You can also try to identify tree your leaf came from with the Interactive Tree Identification Key at naturalresources.extension.iastate.edu/forestry/iowa_trees/

Acorn Hunt and Sort

Find the fruit of Iowa's state tree, the oak! Acorns come in a variety of shapes and sizes. Find as many different kinds of acorns as you can, then sort them. Do any have insect holes? Have some been partially eaten? After sorting, counting and matching the acorns, leave little 'acorn food piles' in the forest for the animals. What types of animals do you think will come to eat them? If you have time, sit very quietly at the base of a nearby tree and wait to see if anything comes to get them.

Life in a Log

Find a log in the forest and investigate the log for signs of life. What do you expect to find? You may want to have a magnifying glass handy to look closer at what you find. Please release the bugs when finished observing them.

Why are Trees Important?

Are trees important or not? What would nature be like without the trees? Get a hold of and read the book the Lorax by Dr. Seuss and discover what happens with the Truffla trees. Write your thoughts down and discuss how more or less trees in the world affects everything around us.

Adopt A Tree

Pick an existing tree or plant a new one to commemorate a special event in your life – a birth, death, or marriage, etc. Take pictures of your tree in each season of the year and after big events such as a big wind or ice storm. Use the tree's bark to make bark rubbings using crayons. Take the seeds from the tree and plant them other places where you want its offspring to grow. Watch for animals and birds that use the tree for food and shelter. If the tree dies, collect leaves and branches to remember it by.

BOARD GAMES

Photosynthesis
Arboretum
Bosk
The Wild Seed Game

BOOKS & INFO

Red Leaf, Yellow Leaf by Lois Ehlert (Ages 4-8)
Where Once There Was A Wood by Denise Fleming (Ages 4-10)
The Lorax by Dr. Suess (Ages 6-9)
A Golden Guide to Trees by Herbert Zim
Iowa's Plants: Seeds, Nuts, and Fruits of Iowa Plants, Iowa Association of Naturalists
Iowa's Plants: Iowa's Trees, Iowa Association of Naturalists
Iowa Woodlands, Iowa Association of Naturalists
Guide to Common Trees & Shurbs of Iowa
City of North Liberty Green Spaces Map

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Animals of Iowa

ACTIVITIES

Whitetail Deer and Wild Turkey Tracking – Ages 4 and up

Take a hike in a nearby woods and search for signs of Iowa's most popular game species. After looking over the information sheet, what types of sign do you think you will find? Why? Now actually look and see how many of the signs of this animal you can find. What do you think the deer or turkey was doing at the time it made the sign? Take a seat next to a tree and be very still and quiet. Watch for squirrels and if you are lucky, you may be able to spot a deer or turkey! Nearby Lake McBride State Park or Kent Park would be good locations for this. Do you think the deer or turkey in your area are overpopulated? Get in a group and discuss why you do or do not think so. What could we do as individuals to help this problem if you think there is one?

Shed Hunt – All ages

The spring is a great time to get out into the woods and look for discarded antlers from the whitetail deer. Each year the bucks drop their antlers after the breeding season. When the snow disappears, they can be found. Don't wait too long though because animals like squirrel love to nibble on them for extra minerals. A couple good places to start looking for sheds are areas where deer congregate such as bedding and feeding areas.

Animal Mates Game - Ages 6 – 12

Develop a list of common animals from Iowa and then assign each child in your group one animal in secret. Give each animal out twice. Have the children become the animal by walking, making sounds, and behaving like it. No talking is allowed. Have the children find their mate. When the mates are found, start another round.

Animal Crafts at Home

Visit this site and do some of the fun and creative activities listed: https://artsycraftsymom.com/10-wildlife-activity-ideas-for-kids

BOARD GAMES

The White's Tale
Into the Forest – Nature's Food Chain Game
North American Animals Card Game
Planet
Ecos
Ecosystem
Evolution

BOOKS & INFO

I Took a Walk by Henry Cole (Ages 4-8)
Critters of Iowa Pocket Guide by Wildlife Forever
Animal Tracks, by Olaus Murie,
Whose Tracks Are These? by Jim Nail (Ages 4-8)
Animal Habitats, Judy Press (Ages 9-12)
Iowa Wildlife Viewing Guide, A Falcon Guide
Deer Habitat and Clues sheet
Iowa's Wildlife Habitats, Iowa DNR
Mammal Tracks and Scat by Lynn Levine & Marta Mitchell
City of North Liberty Green Spaces map
Iowa Mammals, Iowa Association of Naturalists
Iowa Wildlife Management, Iowa Association of Naturalists
Iowa Food Webs and Other Interrelationships, Iowa Association of Naturalists
Iowa Biodiversity, Iowa Association of Naturalists
Adapting to Iowa, Iowa Association of Naturalists
Iowa Habitat Loss and Disappearing Wildlife, Iowa Association of Naturalists
Peterson First Guide Urban Wildlife
Mammals, A Golden Guide

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Aquatic Habitats

ACTIVITIES

Pond Study, Critter I.D

Find a pond or wetland and discover the life in a pond. Use the nets, bug viewers or jars you have at home to catch some insects in the pond.

Water Bug Search

Did you know that which bugs live in a wetland can tell you about how healthy that water is? Take a look at the water from a nearby creek. Does it look healthy? Are there smells or sights that don't seem right? Why do you think it is or is not a healthy? Use a net to scoop up tiny bugs under rocks, on grass around the water, in the water, and in the mud. Search through what you found and try to identify them using the IOWATER Benthic Macro invertebrate key and flow chart found here: https://www.winneshiekwild.com/wp-content/uploads/2019/11/Benthic-Macroinvertebrate-Key-IOWATER.pdf.

If you find critters from the high-quality group it means that the water is very clean. If you only find those from the middle quality group only it may mean that the water may be polluted. Discuss whether you were right. Also talk about what people might depend on this aquatic habitat for.

Catchin' Croakers

On a summer night, go to a local pond or wetland with a flashlight and look and listen for bullfrogs. Shine a flashlight around and look for two glowing eyes. If your light is bright enough, you can temporarily "freeze" the frogs in place by shining the light into their eyes. See if you can get close enough to catch them. You will have to be fast! Bring a bucket along filled with water to keep them in. When you are done, let them all go.

Crawdadding

Take part in reviving an old tradition. Tie a piece of liver or bacon on a string and visit a stream. Wait until a crawdad tugs and try to catch it. Be careful when handling the crawdad because they pinch!

Create Your Own Aquatic Habitat

Dig a backyard pond or establish a water garden on a porch or patio. Add aquatic plants and duckweed which look like miniature lily pads to attract other creatures. Add a goldfish or other small fish to keep mosquitoes away. Frogs and turtles are also welcome.

Water forms

Go online to google maps satellite view and take a look at the different rivers, lakes, ponds and streams around where you live. How close are they to where you currently live? Where does the water come from in your area and where does it go? Which rivers are closest to your home? What major river does the river closest to you drain into? Where does the water go from there?

Fishing

Poles can be rented at the recreation front desk. Inquire for details. 319-626-5716. Use the North Liberty Aquatic Habitat guide and the link to the Park map to find a place in town to go.

BOOKS & INFO

Pond Life Pocket Naturalist
Discover Nature in Water and Wetlands, Lawlor (Ages 7-14)
The Calls of Frogs and Toads-CD and Book, Elliot
Reptiles and Amphibians Peterson First Guide (Ages 7-adult)
City of North Liberty Aquatic Habitat Information Sheet
2013 Iowa Fishing Regulations
Iowa Reptiles and Amphibians, Iowa Association of Naturalists
Iowa Fish, Iowa Association of Naturalists
Iowa Wetlands, Iowa Association of Naturalists
Iowa Waterways, Iowa Association of Naturalists
Iowa Water Pollution, Iowa Association of Naturalists

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Birds

ACTIVITIES

Build a Bird Nest – Ages 3 - 8

Use a clothespin as a birds' beak and using natural items found on the ground, i.e. brown grass, fallen twigs, pine needles build a bird nest. Note: Use only "dead" natural items. Do not break tree limbs or use green plants or leaves. This activity should demonstrate the time and energy it takes to build a nest and the variety of natural items birds utilize. Extension: Go on a bird nest hike and see how many different nests you can find. NOTE: It is illegal to knock down or take a bird nest from the wild.

Build a Bird – Ages 3 - 10

Spend some quiet time drawing your own specifically adapted bird. Write or tell a story about what your bird eats, where it lives and how it catches its food.

Beginning Bird watching – Ages 8 to Adult

Did you know that the best way to identify a bird is by its colorful markings? You can also use the other five S's of bird watching. Use binoculars and a field guide (if you have one) to identify a variety of birds. You can also use https://www.allaboutbirds.org to ID different birds. Early morning or late afternoon is the ideal time to go birding.

Six "S's" of bird watching

Birds are extremely diverse with over 9,000 species worldwide and over 850 species in the U.S. Use these six key points as guiding tools in identifying birds. Now quietly go out and i.d. the feathered friends in your natural area. How many different birds can you find?

Size	Small (sparrow), medium (robin) or large (crow)
Shape	Tail, beak, feet, neck, head, etc..
Shading	Many species have similar size and shapes, but coloring can differentiate between species, 50% of species display different coloration between male and female
Song	Every species has a distinct song/call
Surroundings	Where did you see it, what is the habitat
Season	Is the bird a year round resident or does it migrate?

Flap Like a Bird- Ages 5 to Adult

Participants should bend their elbows and put their hands on their shoulders to form wings. Ask them to estimate how many times they think they can flap their arms (wings) in ten seconds. Separately time several participants for ten seconds. Compare with these rates:

Pelican: 10 wing beats per ten seconds
Crow: 20 wing beats per ten seconds
Pigeon: 50 to 80 wing beats per ten seconds
Chickadee: 270 wing beats per ten seconds
Hummingbird: 500 to 700 wing beats per ten seconds

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Birds

ACTIVITIES CONTINUED

Pine Cone Bird Feeder

Have fun with this easy-to-make feeder and enjoy watching the birds that it attracts! You will need the following:

- One large open pine cone
- Vegetable shortening, lard or suet
- Oats or corn meal
- Bird seed
- A few feet of string

Tie a few feet of string to a pine cone. Cover the pine cone with the mixture below. Roll the pine cone in birdseed and then suspend it from a tree branch outside. This is an especially good activity to do in the winter when it is difficult for birds to find food. They will need the energy from the food you provide.

Mix ½ cup vegetable shortening, lard or suet with 2 ½ cups cornmeal or uncooked oats until well blended. It is optimal to add chopped dried fruit, chopped nuts, seeds (especially sunflower and millet), and or suet, which are high energy foods.

Bird IQ Test

Despite their reputation for not being very intelligent, birds can be quite brainy when it comes to getting food. Test your birds' intelligence by offering them a snack in two containers, one of which is covered. You know to take the lid off, but do your birds? You will need:

- 2 small, clear flat-based containers
- Birdseed
- Piece of stiff cardboard or paper
- Tape
- Small pebbles
- Scissors
- Pen or pencil

1. Turn one of the containers upside-down on the cardboard or paper, and trace around the lid. Turn the container over, and set the paper to one side for the moment.
2. Fill both containers half-way with the small pebbles. This will prevent them from being knocked over while your birds eat
3. Make a lid for one of your containers by cutting around the outline on the cardboard or paper. Be sure to leave a small tab sticking out. Fasten the lid to one container by making a hinge with the tape.
4. Fill the remainder of your containers with birdseed, closing the lid on one.
5. Place the containers outside close to one another.
6. Watch your feathered guests from indoors or from an outside hideaway. See if your birds are brainy enough to open the lid and feed after the food from the open container is gone.

Eagle Eyes

Birds of Prey use keen eyesight and hearing to locate prey. Try to be like a hawk or eagle in this game in order to search for your prey. Choose one person to be the eagle. This person stands still in the eagle nest for 60 seconds while everyone else or the mice/voles/rabbits go and hide. These people must be able to see the eagle with one eye at all times. No hiding completely behind objects. After the 60 seconds, the eagle can open his/her eyes and look for the prey. The search is conducted in silence as the eagle uses all senses of sight and sound to locate prey. Once a person is found, the eagle must describe the shirt or hair color of that person. He/she must then come to the nest with the eagle. The eagle finds as much prey as he/she can. When no more can be found, the eagle closes his/her eyes for 30 seconds and all of the remaining prey move at least 5 steps closer to the eagle. The game continues until there is only one prey left. This person makes an eagle call to alert everyone else of their great hiding location. The winner becomes the next eagle.

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Birds

ACTIVITIES CONTINUED

Bird Migration Sensation (Activity credit to Aquatic Project WILD, Aquatic Education Activity Guide, 1987)
Materials: Large playing field or gymnasium; two paper plates for every three participants.

Procedure:

1. Select a large playing area about 70 feet in length. Place the paper plates in two patches on the playing field. Place plates at each end of the playing field, designate one end of the field as the Nesting habit (summer range) and the other the "wintering habitat". Count the number of plates to equal one plate per three participants at each end of the field.
2. Explain to the participants that they are waterfowl, i.e. ducks, geese and will migrate between these two areas at instructors signal. Tell them the paper plate represent "wetlands" These wetlands provide suitable habitat for water birds. At the end of each journey, the participants will have to have one foot on a plate "wetland" to be able to continue. If they cannot get their foot on a plate, that means they have not found suitable habitat. They "die" and have to move to the sidelines and watch. During migration, the birds may want to "flap their wings" moving their arms like birds in flight.
3. Let participants know only three birds can occupy a wetland (paper plate) at any one time. Explain to participants that there are limiting factors affecting wild populations. At times there will be abundant supplies of food, water, shelter and space. Yet, at other times the habitats will be stressed with many factors limiting the potential for survival.
4. Begin the activity with all participants at the wintering habitat. Announce the start of the first migration. Have the participants migrate in slow motion until they become familiar with the process. On the first round, all the birds will successfully migrate to the nesting habitat. Explain that there has been no loss in the area of available habitat. Thus, a successful nesting season is at hand.
5. Before the participants migrate toward the wintering habitat, turn over one plate from the wintering region. Explain that a large wetland area has been drained and used for agricultural purposes. Repeat the instruction to migrate and send the ducks to the wintering habitat. Have the three students that will be displaced stand on the sideline. Tell the participants that these three died as a result of loss of habitat. Remind the "dead birds" that they will have a chance to get back into the activity. They can come back as surviving hatchlings when favorable conditions prevail and there is habitat available in the nesting ground.
6. Before the next migration to the nesting region, turn over four plates in the nesting habitat. This represents a catastrophic loss. Tell the students that is a result of an oil spill in the local river, severely damaging shoreline habitat. Instruct participants to migrate.

   Note: A large number of participants will "die" from this migration. Before many cycles repeat, provide them with the opportunity for re-entry. Each time give the participants examples of favorable changes in the habitat that make it possible for the population to increase.
7. Repeat the process for eight or ten migrations cycles to illustrate changes in habitat conditions with resulting impact on the birds. See the table below for possible conditions.

Limiting Factors	Favorable Survival Factors
Wetland drainage	Preservation of wetlands
Drought	High rainfall
Pollution and contamination of water	Restoration of habitat
Conversion of wetlands to farm land	Dynamic balance with predators
Lead shot in food supply	Human action aimed at protecting and restoring wetlands
	Regulation of hunting & human predation

Migration is a mysterious topic. Scientists have proposed that birds use the stars, the sun and even the earth's magnetic field for guidance. Wetlands are required by many migrating waterfowl, such as, ducks, geese, swans, cranes, ibises, herons, rails, egrets, gulls, terns, and shorebirds. These birds all require the presence of wetlands in their breeding habitat and on their wintering grounds. Primary threats to the survival of migratory water birds are the disappearance and degradation of wetlands. Millions of acres of wetlands have been purchased and protected to actively preserve and restore habitat for local wildlife. Pollution, through pesticides such as insecticides and herbicides as well as the use of lead shot rather than steel shot during hunting, all take their toll.

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Birds

ACTIVITIES CONTINUED

Feathered Feast

Birds can be picky eaters just like humans can. From seeds and fruit to insects and worms, preferred foods can vary from bird to bird as much as the color of their feathers. You can find out what foods your backyard birds favor by hosting a special feathered feast. You'll need:

- Several identical bowls
- Mealworms
- Breadcrumbs
- Sunflower seeds
- Oats that have been soaked in water
- Animal fat
- Soft fruit, like a banana or strawberry

1. Locate a place in your yard that is close to bushes or overhanging trees.
2. Set the bowls in a row, placing different food in each one. Watch your feathered guests feast from indoors or from an outside hideaway.

Make sure your feast is out of reach of predators like cats. Be sure to clear away your feast before dark - leftover food could attract unwelcome guests such as raccoons, mice or rats.

BOARD GAMES

Wingspan
Bird Bingo
Evolution with Flight Expansion

BOOKS & INFO

Feathers for Lunch by Lois Ehlert (Ages 4-7)
Pocket Naturalist – Iowa Birds – An intro to Familiar Species
Birds at Your Feeder by Dana Gardner and Nancy Overcott
How Do Birds Find Their Way? By Roma Gans (Ages 5–9)
100 Birds and How They Got Their Names, Diana Wells (Ages 11 –adult)
Eastern and Central North American Birds, Peterson Field Guide
Songs of Wild birds Book and CD, Lang Elliot
Raptor: A Kids Guide to Birds of Prey (Ages 9-11)
City of North Liberty Green Spaces Map
Iowa Winter Birds, Iowa Association of Naturalists
Iowa Nesting Birds, Iowa Association of Naturalists

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Creatures of the Night

ACTIVITIES

Cricket Thermometer

Find a chirping cricket and use the following formula to determine the temperature. Pick out a field cricket's calls and have the children focus their ears on it. The colder the weather the more slowly the cricket chirps and the calling gets faster as the temperature climbs. Count the number of chirps in a 15-second period. Add 40 to this number and you will have roughly the current temperature.

Formula: ___ (number of chirps in fifteen seconds) + 40 = ___ F (degrees Fahrenheit)

Now do it several more times with different crickets and get the average temperature of all the calls.

Night Crawler Hunt

Take the flashlight covered with red cellophane if you have it out to your backyard and find the secretive night crawlers. When do you think the best time to find night crawlers would be? Why? Go and find out!

Catchin' Croakers

On a summer night, go to a local pond or wetland and look and listen for bullfrogs. Take a flashlight with you. Shine it around and look for two glowing eyes. If your light is bright enough, you can temporarily "freeze" the frogs in place by shining the light into their eyes. See if you can get close enough to catch them. You will have to be fast! Bring a bucket along filled with water to keep them in. When you are done, let them all go.

Calling all Owls

Take a hike and see if you can hear and maybe even see some owls. Use an owl call if you have one to get some to try and answer you. If not, Scheels has them. Try to imitate the barred owl call by saying "who-cooks-for –you" into the call. You can also say "Who, who, who-who...who-cooks-for-you." This will work best in the early morning, late evening, or at night.

Firefly Flashers

In the summer, use the flashlights and send "code" signals back and forth to other fireflies. Can you find your matching firefly and figure out the code? How many can you get to come close to your light? Have fun catching them and placing them into a jar and then releasing them. How many can you get?

Bat Hunt

This game is a version of Marco Polo that teaches the echolocation used by a bat to find food. Since a bat has very poor sight, it must rely on echolocation, a type of sound identification to locate prey. You can have a child be the bat by blindfolding him/her and having everyone else be insects. Have the insects spread out in a defined area and have the bat call out "beep, beep." The insects must respond by saying "buzz, buzz." The bat then has to try to touch the insects. When the insects are touched they must go to a certain area designated as the bat cave. The last insect to be touched becomes the next bat.

Moth Walk

Mix overripe fruit, stale beer or wine and sweetner (honey, sugar, or molasses) in a blender and then go outside at sunset and smear the mixture on a half a dozen trees or unpainted wood. Go back after dark and see what you have lured. Depending on the season, you can find moths, ants, insects and earwings.

Stargazing

Go out on a clear night and take a look at the stars. Bring a flashlight along with the constellations guide you can find online and see what ones you can identify. You can use this site to help you : https://stardate.org/nightsky/constellations

BOOKS, INFO & BOARD GAMES

Twighlight Hunt, Narelle Oliver (Ages 5-8)
Owl Moon, Jane Yolen (Ages 3-7)
Fireflies in the Night, Ellen Alexander (Ages 3-6)
Forest Bright, Forest Night, Jennifer Ward (Ages 3-8)
Bats, Holmes (Ages 7-9)
City of North Liberty Green Spaces Map
City of North Liberty Aquatic Habitat Location Map
Night Science for Kids, Terry Krautwurst (Ages 9-12)
NightSounds Frank Gallo and Lori Lohstoerter (Ages 4-8)
Guide to Nightsounds CD, Lang Elliot
Constellations, National Audubon
Keepers of the Night, Gaduto and Bruchac
Twighlight Hunt, Narelle Oliver (Ages 5-8)
Board Game: Shadows of the Forest

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Insects & Spiders

ACTIVITIES

Insect Safari/Hunt:
Take a trip outside to catch and discover the variety of insects in your backyard or local park. Use www.insectidentification.org to identify the bug's name and interesting information about the critter. Remember to release all critters when done studying them.

Build a Bug
Use miscellaneous craft items from around your house and build your very own bug. Include three body parts, two antennae and six legs. Explain what your bug uses each of its body parts for and how it survives.

Ant Hill Experiment
Find an ant hill. Place around the ant hill a variety of different foods, i.e. flour, sugar, salt, syrup or marshmallow. Put these samples about 1 yard from the ant hill. Take a prediction of which sample the ants will congregate around and a prediction of how long it will take the ants to find the food. Notice how the ants tell one and another about the food.

Bee Dance
One-way bees communicate is by dancing. Bees do two different dances; the circular dance and the wag-tail dance. The circular dance tells the bees that food is close to the hive. For the circular dance, the scout bee dances in a circle, while the other bees watch to learn the direction of the food source. The wag-tail dance is done when the food is a long distance away. When the scout bee does the wag-tail dance they trace a figure eight and then wag their abdomen in the directions of the food source. Dance and "talk" like a bee to tell others in your hive where the food is.

Make your own bug Net
Gather a clothes hanger, grocery sack and duct tape and you have the makings for your very own bug catchin' net. Have fun catchin' critters!

Cricket Math
The temperature can be calculated by listening to the chirp of one cricket. Count the number of chirps in 14 seconds and add 40. Now check the temperature gauge and see if the formula worked.

Firefly talk
Talk like a firefly by using the flashlights in this activity bag. How many can you get to come close to your light? Have fun catching and releasing them in the summer.

There are many places where you'll see fireflies (also called "lightnin' bugs"). You can get one to come to you by watching for its flash, counting 2 seconds, and then blinking a penlight for a half-second. No, really, it works. You need to be consistent, since any error will scare off your bug. They speak "light" fluently.

Moth Walk
Mix overripe fruit, stale beer or wine and sweetener (honey, sugar, or molasses) in a blender and then go outside at sunset and smear the mixture on a half a dozen trees or unpainted wood. Go back after dark and see what you have lured. Depending on the season, you can find moths, ants, insects and earwigs.

Hidden Universe
Find a piece of scrap wood and place it over a patch of bare dirt. Come back in a day or two and lift the board to see what types of insects and other creatures have made a home under the board. Use the field guides to identify them. Come back once a month to discover who is new.

North Liberty RECREATION

O.N.E. Packs
outdoor nature education

Insects & Spiders

ACTIVITIES CONTINUED

Butterfly Migration Route Restoration

Help restore butterfly migration routes by planting indigenous pollinating plants that provide nectar, roosting, and food for caterpillars. Milkweed works well for monarchs. See Audubon's guide (www.audubonathome.org/butterflies) an international database for host plants for butterflies.

Raise Butterflies

The website for Chicago's Leave No Child Inside initiative tells how to raise a butterfly from egg to caterpillar to chrysalis to emerging monarch. Visit http://www.raisingbutterflies.org/.

BOARD GAMES

Micropolis
March of the Ants
Hive

BOOKS & INFO

The Icky Bug Counting Book (Ages 3-8)
The Icky Bug Alphabet Book (Ages 3-8)
Are You A Ladybug (Ages 5-8)
Where Butterflies Grow (Ages 4-7)
National Audubon Society Field Guide to North American Insects and Spiders
Insects, a Golden Guide
Peterson First Guide to Bugs and Moths (Ages 7-adult)
Pet Bugs
City of North Liberty Green Spaces Map
Iowa Insects and Other Invertebrates Iowa Association of Naturalists