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Leader Note:
Lessons are grouped by subject themes and are not necessarily in sequence. Check the leader notes at the beginning of each lesson for sequence suggestions.
Urban Wildlife
Wildlife Groups Wildlife, Level IV

What Members Will Learn...

About The Project
- That wildlife can adapt to live in an urban and suburban environment
- How humans affect the habitats of animals
- Animals that have benefitted from an urban setting

About Themselves
- Humans can have an impact on wildlife in an urban setting

Materials Needed
- Field guides, magazines, and library books about the animals listed on the activity sheet
- Cards made out of the Activity Sheet #1, Adaptive Wildlife
- Pencils
- Paper

Activity Time Needed: 60 minutes

Activity
People change the habitats of animals all the time. One of the biggest transformations happening right now is urban sprawl. People are moving out of the cities and into the country. This act changes the rural countryside into suburban communities. Human populations bring with them their trash, manicured lawns, aesthetic ponds, ornamental plantings, and pets.

When humans move in, some animals are forced out, while others learn to co-exist with their new neighbors. There are animals whose populations have decreased due to the intrusion, but some have grown beyond their historical numbers. It used to be a rare sight to see a white-tail deer. Now, the deer’s natural predators have been eliminated and urban areas provide protection from hunting, which is not as popular in urban communities. The deer populations have grown to large numbers and the Kansas Department of Wildlife and Parks has opened additional hunting seasons to try to regulate the population growth. Although the deer’s numbers seem high now, they could plummet with mismanagement – consider the bison that had numbers in the millions and now is all but extinct in the wild.

The urbanization of some animals has caused them to become a nuisance to human residents. The animals may cause property damage or become a hazard on the road. We have to accept that we either need to change our perception of nuisance animals, or take preventative measures to keep them from doing harm.

Leader Notes
There are other animals listed on the activity sheet who have benefitted and become “nuisances” from the transition to an urban population. Your group members are at a level where they should be doing the background research for the project. Be sure to provide them with an adequate number of library books or wildlife magazines. The Kansas Department of Wildlife and Parks Regional offices (there are five scattered throughout the State), will often have extra copies of their magazine.

Discuss the term “urban sprawl.”

Remind them of what is needed for habitat and how those elements of habitat may have shifted with urbanization.

Divide the members into groups of two or three. Inform them that they are going to receive an animal card that they will be researching.

Pass out the cards from Activity Sheet #1, Adaptive Wildlife, and have a central location for the research materials. (When they are done with a book or magazine, have them return it to the community pile so that someone else can use it.)

Give them 20 to 30 minutes to draw some conclusions about their animal’s population.
Dialogue For Critical Thinking

Share
1. What urban wildlife animal did you study?
2. Has the animal become a nuisance, or is it a valued member of the community? Why?
3. Is anything being done to control the animal’s numbers?

Process
4. How has urbanization changed the habitat in your area?
5. What are the choices in dealing with nuisance wildlife?

Generalize
6. What are some of the major conflicts between people and urban wildlife?
7. What can you do to help solve some of these conflicts?

Apply
8. What are some long-term solutions of urban sprawl on the environment and wildlife?

References
Any books from the library about the animals on the activity cards
Bats, Zoobooks (Available from Kansas Department of Wildlife and Parks (KDWP) 512 SE 25th Ave. Pratt, KS 67124-8174)
City Animals, Zoobooks (KDWP)
Nocturnal Animals, Zoobooks (KDWP)
Sharing the World with Animals, Zoobooks (KDWP)
Hawks for Kids, Sumner Matteson (1995)

Authors
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
<table>
<thead>
<tr>
<th>White-tail Deer</th>
<th>Virginia Opossum</th>
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<tr>
<td>Bats</td>
<td>Fox or Gray Squirrels</td>
</tr>
<tr>
<td>Hawks</td>
<td>Rabbits</td>
</tr>
<tr>
<td>Pigeon</td>
<td>Raccoon</td>
</tr>
</tbody>
</table>
Prairie Mammals

Wildlife Groups

What Members Will Learn...

About The Project

• Characteristics common to mammals
• Mammals that live on the Kansas prairies

About Themselves

• Observation and reasoning skills
• Observations are unique

Materials Needed

• Skins and skulls set from Kansas Department of Wildlife and Parks Reference Center (containing furs, skulls, antlers, etc. from deer, elk, bison, pronghorn, and coyote)
• Reference books on mammals
• Pencils
• Activity Sheet #2, Prairie Life Invention

Activity Time Needed: 60 minutes

Activity

Some interesting prairie mammal information as listed in What Makes A Mammal? facts include:

The fur on a deer is hollow like a straw that is pinched shut at one end. This makes the fur light so that the deer can evade predators, but keeps them warm at the same time.

Skunks are striped differently just like people have different hair color. There are other types of skunks, but not all striped skunks look alike. If you look closely, not all coyotes are alike, either. There are variations in fur color. So animals have differences just like humans.

One very unusual Kansas mammal is the opossum. It is the only North American mammal that is a marsupial (carries babies in a stomach pouch, like a kangaroo), and that has a prehensile tail (like a monkey), that can wrap around a branch, etc.

Leader Notes

You will need to lay out the furs of prairie mammals (and any matching skulls, claws, etc.) Just before the meeting. This way, the youth may walk through the room and view all of the skins and skulls. After they have had a chance to see all the prairie animals, have them take their seat. Divide the youth into groups of two or three and hand them one of the furs. Make sure that there are plenty of resource materials on the tables. Have the youth find everything they can about the animal. You may need to provide some scratch paper if they want to make notes. This should take about ten minutes.

Hand out the Activity Sheet #2, Prairie Life Invention. The instructions of the activity sheet states, “After viewing the skins and skulls of native prairie animals imagine that you are living 150 years ago. Your family needs you to invent a new item that will make daily life easier. All you have are the material resources from the prairie – grasses, dirt, rocks, and the skins and bones of prairie animals. Use this sheet to sketch what you would invent and write down what materials you would use.” Have the students follow these directions – give them 15 minutes or so. Have the students then present their invention to the rest of the groups.
Dialogue For Critical Thinking

Share
1. What did you invent? Why?
2. What prairie resources did you use?

Process
3. How were prairie animals used by native and colonizing peoples?
4. What do you think was the most beneficial prairie animal to people? Why?

Generalize
5. How did observation of prairie animals help native and colonizing peoples?
6. What observation and reasoning skills helped you with your invention? Why?

Apply
7. When and how can you use observation and reasoning to solve current situations?

Going Further
Take a field trip to a prairie preserve and view some of these animals. Ask a wildlife biologist to visit or guide the field trip.

References
Mammals in Kansas, Bee, Glass, Hoffmann, and Patterson (1981)
Skins and Skulls Discovery Box from the Kansas Department of Wildlife and Parks Reference Center or Great Plains Nature Center
The Life of Prairies and Plains, Durward Allen (1967)

Authors
Libby Albers, Naturalist
Deb Hiebert, Education Director, Botanica
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
After viewing the skins and skulls of native prairie animals, imagine that you are living 150 years ago. Your family needs you to invent a new item that will make daily life easier. All you have are the materials from the prairie – grasses, dirt, and the skins of prairie animals. Use this sheet to sketch what you would invent and write down what materials you would use.
What Members Will Learn...

About The Project
- Each habitat has its own characteristics
- How to compare habitats
- How humans can have a positive or negative influence on wildlife habitat

About Themselves
- Observation and data collection is unique to each person
- Value of cooperation

Materials
- Thermometers
- String
- Towels
- Tape
- Pencils
- Clip boards (or cardboard, book, etc. to write on)
- Hand lenses
- Poster board
- Rulers
- Stakes
- Plastic bags
- Watch
- Markers
- Pruners/clippers
- Hula hoops or string circles of about that size (2 feet across)
- Activity Sheet #3, School Yard Habitat

Activity Time Needed: 60 minutes

Leader Notes
Your group needs to be very comfortable with the concept of a habitat. A short review is needed. If the group does not have a good understanding of the components of habitat, you may need to use a lesson or two from another level to get this across (Can’t Do Without It and Habitat Observation Walk from Level I).

The group will be comparing two or more types of habitat if you follow this activity with To Each Its Own: The Prairie. For this activity though, you should choose a human-made area with easy access. These could include a vacant lot, school yard, cemetery or other property around a church, or an area around a business. Be sure that you have permission to visit the property you have chosen (if it is private property). This is an important concept to pass on to the group members – you need to ask permission before going onto property owned by someone else, whether an individual or a business.

Go to the habitat area. Approach quietly and observe the area. Record any animals seen, special plants you observe, trash, and anything else of interest.

Divide the members into groups of three. Hand out Activity Sheet # 3, School Yard Habitat, clipboards, and pencils, one set per group. Each group should also get a hula hoop or string circle. Each group should spread out to a different area of the habitat and toss their hoop or string, and study the area inside it (wherever the string fell, have the group gently pull it out into a circle without trampling where the circle is/will be). They will have to make allowances for trees and bushes. For example, if the hula hoop hits a tree and falls, the tree should be considered part of their circle.

Before touching anything inside the circle, the members should first sit and observe. Can they see any signs of animals, like scat (manure), tracks, hair, insects (alive or dead), anthills, partially chewed vegetation, etc.? What is the vegetation like?
inside their circle? Thick grass? Just a small dandelion and nothing else? What are the signs that this is a man-made habitat? Record observations on the activity sheet.

Hand out a metal stake, plastic bag, and a ruler to each group. Have them push it into the soil as far as it will go, and record the results on the sheet, making the other observations asked for. This measures soil compaction. Observe the soil. Is it sandy? Mostly clay (you can tell this if it sticks together and is kind of slimy when you scratch a little of it up)? Color? Lots of chunks of wood in it? Lots of trash ground in? Using your stake, scrape up a small handful of soil and put it in your plastic bag.

Hold the thermometer a foot over the ground, leave it for at least a minute, and record the temperature. Now lay it on the ground, leave for a minute; record. Is there a difference? Any guesses why?

Go back to the meeting and use a poster board and markers to make a chart showing all of the results for the site. For example, if the lowest air temperature was 77 degrees and the highest was 81 degrees, record the air temperature as 77 - 81 degrees. (Leader Note: If you prefer, you can average all of the data and record the average, but this will take longer and some youth will lose interest.) Complete the chart, taping the bags of soil to the bottom. Is the color of the soil the same or different. (If you plan to complete To Each Its Own: The Prairie, you may want to save this poster for comparisons.)

---

**Dialogue for Critical Thinking**

**Share**

1. Where did you go for this man-made habitat? Why?
2. What was the most intriguing item in the habitat? Why?

**Process**

3. What kind of animals can survive in man-made habitat? Why?
4. What ways did humans influence this habitat? Was it positive or negative? Why?

**Generalize**

5. What observations were unique to each member of your group?
6. How much data would you have missed, if you had done this activity by yourself?
7. What is the value of cooperation?

**Apply**

8. What will you do differently next time you observe and collect data for a project?

**References**

*Nature For Children of All Ages*, Sisson (1982); p. 167-170

**Authors**

*Lori Hall*, Director of Education, Rolling Hills Refuge Wildlife Conservation

*Deb Hiebert*, Education Director, Botanica

*Libby Albers*, Naturalist

*James P. Adams*, Associate Professor, 4-H Youth Development, K-State Research and Extension

**Reviewed by**

Wildlife Review Team
Description of habitat:

Initial observations of the total habitat:

A CLOSER LOOK:

Signs of life:

Description of the soil:

1. Texture:

2. Hardness:

3. Color:

4. Moist or dry:

5. Other observations about the soil:

Temperature:

1. 12 inches above the ground

2. On the ground

Other observations:
What Members Will Learn...

About The Project

• Each habitat has its own characteristics
• The similarities and differences between two or more habitats

About Themselves

• Observation and data collection is unique to each person

Materials

• Thermometers
• String
• Towels
• Tape
• Pencils
• Clip boards (or cardboard, book, etc. to write on)
• Hand lenses
• Poster board
• Rulers
• Stakes
• Plastic bags
• Watch
• Markers
• Pruners/clippers
• Hula hoops or string circles of about that size (2 feet across or so)
• Activity Sheet #4, The Prairie Habitat

Activity Time Needed: 60 minutes

Leader Notes

Your group needs to be very comfortable with the concept of a habitat. A short review is needed. If the group does not have a good understanding of the components of habitat, you may need to use a lesson or two from another level to get this across (Can’t Do Without It, and Habitat Observation Walk from Level I).

The group will be comparing two or more types of habitat if you preceded this activity with To Each Its Own: The Schoolyard. For this activity though, you should choose a natural area with easy access. These could include a prairie, Conservation Reserve Program ground, a wildlife area, or a refuge. Be sure that you have permission to visit the property you have chosen (if it is private or government property). This is an important concept to pass on to the group members – you need to ask permission before going onto property owned by someone else, whether an individual or a business.

Go to the habitat area. Approach quietly and observe the area. Record any animals seen, special plants you observe, trash, and anything else of interest.

Divide the members into groups of three. Hand out Activity Sheet # 4, The Prairie Habitat, clipboards, and pencils, one set per group. Each group should get a hula hoop or string circle. Each group should spread out to a different area of the habitat and toss their hoop or string, and study the area inside it (wherever the string fell, have the group gently pull it out into a circle without trampling where the circle is/will be). They will have to make allowances for trees and bushes. For example, if the hula hoop hits a tree and falls, the tree should be considered part of their circle.

Before touching anything inside the circle, the members should first sit and observe. Can they see any signs of animals, like scat (manure), tracks, hair, insects (alive or dead), anthills, partially chewed vegetation, etc.? What is the vegetation like...
inside their circle? Thick grass? Just a small dandelion and nothing else? What are the signs that this is a man-made habitat? Record observations on the activity sheet.

Hand out a metal stake, plastic bag, and a ruler to each group. Have them push it into the soil as far as it will go, and record the results on the sheet, making the other observations asked for. This measures soil compaction. Observe the soil. Is it sandy? Mostly clay (you can tell this if it sticks together and is kind of slimy when you scratch a little of it up)? Color? Lots of chunks of wood in it? Lots of trash ground in? Using your stake, scrape up a small handful of soil and put it in your plastic bag.

Hold the thermometer a foot over the ground, leave for at least a minute, and record the temperature. Now lay it on the ground, leave for a minute, record. Is there a difference? Any guesses why?

Go back to the meeting site, and use a poster board and markers to make one chart showing all of the results for the site. For example, if the lowest air temperature was 77 degrees and the highest was 81 degrees, record the air temperature as 77 - 81 degrees. (Leader Note: If you prefer, you can average all of the data and record the average, but this will take longer and some group members will lose interest). Complete the chart, taping the bags of soil to the bottom. Is the color of the soil the same or different. (If you plan to complete or have completed To Each Its Own: The Schoolyard you may want to save/use this poster for comparisons.)

Dialogue For Critical Thinking

Share
1. What type of a prairie setting did you go to? Why?
2. What was most interesting about this habitat? Why?

Process
3. How much temperature difference was there? Why?
4. How did this temperature difference compare to the school yard?
5. What differences did you observe in soil type and degree of compaction between the school yard and prairie?
6. Which habitat had more diversity? Why?

Generalize
7. How did your observing and data collecting skills change from your previous habitat investigation?
8. How was cooperation affected?

Apply
9. How can you improve or preserve the positives of each type of habitat? Individually? As a group?

References
Nature For Children of All Ages, Sisson (1982); p. 167-170

Authors
Lori Hall, Director of Education, Rolling Hills Refuge Wildlife Conservation
Deb Hiebert, Education Director, Botanica
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
Description of habitat:

Initial observations of the total habitat:

A CLOSER LOOK:

Signs of life:

Description of the soil:
1. Texture:

2. Hardness:

3. Color:

4. Moist or Dry:

5. Other observations about the soil:

Temperature:
1. 12 inches above the ground:

2. On the ground:

Other observations:
Wetlands In Kansas: What is a Wetland?

Ecosystems and Habitats

Leader Notes

This activity should be done prior to Wetland Values.

Before the meeting, use the Activity Sheet #5, Wetland Cards for each wetland type.

For the best description of Kansas wetlands, go to your local library and check out Kansas Wetlands: A Wildlife Treasury, by Joseph T. Collins, Suzanne L. Collins, and Bob Gress. They may have to find it on interlibrary loan, so leave yourself plenty of time. Refer to pages 12 - 17 for an easy-to-understand look at all the types of wetlands in Kansas. This book, and others on the reference list, also have color photographs of wetland animals to use as reference during the meetings.

Divide the members into groups of three and give each group one wetland card.

Using books from the reference list, have groups explore some of the different types of wetlands found in Kansas, and the plants and animals that live in them. Each group should then share their information with the rest of the members.

Field Trip Option: If possible, visit a wetland when it has water. Observe the plants and animals found there. This could be as simple as finding a ditch in the spring that has frogs. If a field trip is not possible, view Conserving America: The Wetlands, (VT-109 from Wildlife and Parks), or other similar video. Discuss.

What Members Will Learn...

About The Project

• Characteristics of a wetland
• Types of wetlands in Kansas

About Themselves

• Research and presentation skills

Materials

• Activity Sheet #5, Wetland Cards
• Books picturing wetlands and wetland animals
• Conserving America: The Wetlands, (VT-109 from Wildlife and Parks)
• Pencils
• Paper

Activity Time Needed: 60 minutes (plus 60 minutes for field trip)

Activity

Wetlands are unique and special places, and are home to a variety of plants and animals. Some are common, and some are found nowhere else. Even animals not considered “wetland” species rely on these places to improve their habitat.

Wetlands are defined as transition areas from an aquatic habitat to a terrestrial habitat (for example, the marshy area between a stream and a field). Technically, wetlands also have periods of wet and dry, with animals and plants that are adapted to this cycle. A stream that flows all year is not considered a wetland, although there may be wetlands around the stream. One way to decide if a habitat is a wetland is by the animals. If the habitat were to dry out completely for several months, would the animals still be able to survive? A stream may go dry, but the fish will die. However, a marsh can dry out, and the frogs will burrow into the muddy bottom and wait until it gets moist again. Wetland animals are used to the wet-dry-wet way of life.

Wetlands are found in every county in Kansas, ranging from small, temporary “puddles” to large permanent areas such as Quivira National Wildlife Refuge. Each has something to offer Kansas wildlife and human inhabitants.
Dialogue for Critical Thinking

Share
1. What type of wetland did you study?
2. What was unique about this wetland? Why?

Process
3. What are the characteristics of a wetland?
4. Why are there different types of wetland?
5. What is the difference between a wetland and a pond or stream?

Generalize
6. What research skills did you need to study one type of wetland?
7. What method did you choose to report your information to the rest of the group? Why? What would have worked better if given more time to prepare?

Apply
8. How can you support wetland development or maintenance as an individual? Group?

Going Further
Give your wetland reports to the community club, school, class, or public meeting.

References
Any books picturing wetlands and wetland animals
Kansas Wetlands: A Wildlife Treasury, by Joseph T. Collins, Suzanne L. collins, and Bob gress
Conserving America: The Wetlands, (VT-109 from Wildlife and Parks)

Authors
Deb Hiebert, Education Director, Botanica
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by:
Wildlife Review Team
### Wetland Cards

<table>
<thead>
<tr>
<th>Woodland Flood Pools</th>
<th>Backyard Rain pools</th>
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<tbody>
<tr>
<td>Roadside Ditches</td>
<td>Big Marshes</td>
</tr>
<tr>
<td>Oxbows</td>
<td>Wet Meadows</td>
</tr>
<tr>
<td>Railroad Ditches</td>
<td>Playas</td>
</tr>
</tbody>
</table>
What Members Will Learn...

About The Project
- Types of wetlands in Kansas
- Types of wetlands in their county

About Themselves
- How to examine a pre-conceived idea about an issue

Materials
- Wetland cards completed during *Wetlands in Kansas: What is a Wetland*
- Natural Resource Conservation Service maps
- Colored pencils
- Pencils
- Paper

Activity Time Needed: 60 minutes (plus 60 minutes for field trip)

Activity
Wetlands are found in every county in Kansas, ranging from small, temporary “puddles” to large permanent areas such as Quivira National Wildlife Refuge or Cheyenne Bottoms.

Leader Notes
This activity should be done prior to *Wetland Values*, and should follow *Wetlands in Kansas: What is a Wetland*. Use the information that the group members have gathered during *Wetlands in Kansas: What is a Wetland?* to complete this activity.

You will need to get soil maps from your local Natural Resources Conservation Service (NRCS), which have the county mapped out by soil type. If you choose, you can assign this between meetings, or do as a field trip, using an NRCS employee to give the members information. You would have them call during an earlier meeting, so they are taking the responsibility for gathering the needed information. NRCS will usually mail out the information.

Divide the youth into small groups of two to five people, and hand out the cards and previously collected information. Go over the basics of reading the soil surveys, and what they should look for on the maps to locate wetlands. Divide into groups. Using the information from the NRCS office, each group should locate wetlands in a different part of the county and try to guess if these are “active” wetlands. There may be wetland soil types in the middle of a plowed crop field – this wetland is probably drained and plowed so it does not function as a wetland. Some wetlands will still hold water and produce wetland wildlife during some parts of the year. The map may provide some of this information. The group can color code the wetlands, filling in the active wetlands with one shade of colored pencil, and the destroyed portions with another shade. This provides a good visual of the wetlands present on their map. Don’t forget that ditches can also be wetlands.

From the information gathered and the guesses about whether a wetland has been destroyed or is active, have each group calculate what percentage of wetlands in their map section are active, and which have been destroyed.
Dialogue For Critical Thinking

Share
1. What types of wetlands did you find in your county?
2. Were they plentiful or scarce? Why?
3. How easy or difficult was it to find wetlands on the maps? Why?

Process
4. Do people in your area perceive wetlands as a valued piece of property or a nuisance? Why?
5. What forms of wildlife benefit from wetlands?
6. What affect do wetlands have on the environment? Water quality, etc.?

Generalize
7. How has your beliefs about wetlands changed as a result of this lesson? Was there a change in group attitude? Why? Why not?

Apply
8. Has the amount of wetland in Kansas increased or decreased since 1800? 1950? Why?

Going Further
Take a field trip to one of your map areas for on-site inspection.
Debate the value of wetlands.

References
Any books picturing wetlands and wetland animals
Natural Resource Conservation Service maps

Authors
Deb Hiebert, Education Director, Botanica
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
Habitat Inventory

Living in the Wild

What Members Will Learn...

About The Project

• The value of each habitat component
• Small urban spaces are habitat

About Themselves

• Observation skills

Materials Needed

• Activity Sheet #6, Habitat Inventory
• Pencils
• Clipboards

Activity Time Needed: 60 minutes

Activity

As we know from earlier activities, a habitat is made up of certain components: food, water, shelter, and space. It is the arrangement of these four items that distinguishes one habitat from another. There is often a dominant plant or feature in the habitat that gives the habitat its name. For example, woodlands are made up of trees, grasslands are composed of grasses, and wetlands have an abundance of water at certain times of the year. All around us there are smaller, un-categorized habitats. They are our backyards, parks, and schoolyards. Often, very little attention is paid to these small green spaces.

Leader Notes

Your group members will visit one of those green spaces and take an inventory of what is in the habitat. In this way, they will be able to determine if it has all the necessary components to support wildlife. Be sure to record any wildlife that they see while observing the habitat.

Divide the members into groups of three. Hand out clipboards, pencils, and Activity Sheet #6, Habitat Inventory. Choose an area outside of your meeting place to create a habitat inventory. Give the members 15-20 minutes to record what they see. Ask them to be as thorough as possible, using the back of the activity sheet, if needed.

Return to the meeting place. Use the Dialogue for Critical Thinking questions to lead a group discussion.
Dialogue for Critical Thinking

Share
1. What was the most dominant feature in your habitat?
2. What wildlife did you observe?

Process
3. What basic components of the habitat were present?
4. How could this habitat be improved?
5. How would you rank the importance of the basic habitat components? Why?

Generalize
6. What other ways can we evaluate habitat besides counting its parts?
7. How can you improve your observation skills?

Apply
8. What can you do to help other people realize the importance of a good wildlife habitat?

References

Sharing the World with Animals, Zoobooks (Available from Kansas Department of Wildlife and Parks (KDWP) 512 SE 25th Ave. Pratt, KS 67124-8174)

Joy of Nature, Reader’s Digest (1977)

Authors
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
Habitat Inventory
Living in the Wild

Activity Sheet
# 6
Habitat Inventory

Number of trees: Number of shrubs:

How many different species of trees can you count?

How many different species of grasses do you see?

Are there any brush piles?

Are there any dead trees or fallen logs?

Can you see a water source?

Are there any other potential places for shelter? If so, describe:

Describe the water source:

Please give an overall evaluation of this habitat. Is it excellent, good, fair, or poor? Be sure to include any animals that you see in this habitat. Give suggestions on how this habitat could be improved.
Wildlife For Us?

What Members Will Learn...

About The Project
- Humans place a value on wildlife based on its usefulness to us
- The value of wildlife
- The acceptable way to debate an issue

About Themselves
- The value that they place on living things
- Disagreeing doesn’t mean disliking

Materials
- Paper
- Pencils
- Member Handout #1, Statement cards

Activity Time Needed: 60 minutes

Activity
This activity is a debate activity. Small groups will prepare arguments to support a statement that has been given to you. There are several important guidelines to be aware of: a) you cannot chose your statement – you must take what is given to you and must prepare an argument whether or not you personally agree with the statement, b) no rudeness will be tolerated – you will listen while a group presents their prepared argument without interrupting, booing, etc., c) name-calling and anger are not allowed, you must learn to talk about disagreements without escalating into anger and, d) each group is allowed to ask one question after the presenting group has finished their presentation.

Leader Notes
Review the difference between wild and domestic animals (refer to Level I, People and Wildlife, Wild and Domestic) for explanations.

It will be your job to let the group members know the guidelines and to enforce them. At this age, the competitive drive should outweigh the sense of injustice of having to defend a point they disagree with (although this may vary between boys and girls). A discussion period at the end of all of the presentations will give the members a chance to vent about their frustrations, discuss the issues, and evaluate the effectiveness of other presentations. Be prepared for this to be loud, but do not allow rudeness.

Divide the members into groups of three (can be more, but three works best). Explain that they will have ten minutes to prepare an argument supporting the statement on the card they receive. The important thing is the argument, not whether or not they agree. Hand out the cards, listen to the moans, and remind them of the time limit. Let the groups work for ten minutes, then ask for a volunteer group to present first. If no one volunteers, do a quick lottery to chose order. Let each group present, followed by one question from each of the other groups (a few minutes between presentations and questions allows the groups to choose a question, and give the presenters a chance to relax). When all the groups are finished, have everyone pull the chairs into a circle and discuss the activity by using the dialogue for critical thinking and other questions. What was uncomfortable? Why? Did this help them understand various viewpoints? Can they use this technique to understand their parents, etc. when they have disagreements? Do not let this turn into a debate about the statement cards, but rather a discussion of how to disagree.
Dialogue For Critical Thinking

Share
1. How did you feel about the topic card you were given? Why?
2. What did your group do to develop your statement?
3. How did each group member handle their feelings toward the topic?

Process
4. If you disagreed with the topic, what did you do to try to understand the opposing view and defend it?
5. Why is it important to understand various viewpoints?

Generalize
6. Why is it important to learn to “agree to disagree”?

Apply
7. How can you use this technique to better understand your parents, friends, and issues that you disagree with?

Going Further
Do activity with topics or situations suggested by the youth.
If a specific topic evolves for greater interest, take a field trip or invite a guest speaker on the topic to meet with your group.

Authors
Deb Hiebert, Education Director, Botanica
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
<table>
<thead>
<tr>
<th>Statement 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landowners should have the right to do anything they want to the wildlife that wanders onto their property. They own the land, after all, and they should be able to own whatever else is on it.</td>
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<table>
<thead>
<tr>
<th>Statement 2:</th>
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<tbody>
<tr>
<td>It is wrong to hunt. Hunting kills our wildlife and may cause injury to people too. People should buy their food at grocery stores and leave wildlife alone.</td>
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<thead>
<tr>
<th>Statement 3:</th>
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<tbody>
<tr>
<td>Any animal that causes harm to people and livestock, should be eliminated. We don’t need snakes, wolves, bears, coyotes, or other predators living where people live.</td>
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<thead>
<tr>
<th>Statement 4:</th>
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<tbody>
<tr>
<td>The biggest loss of habitat and the extinction of animals are due to humans. People should not be allowed to cut down trees, dig up the prairie or build dams.</td>
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<tr>
<th>Statement 5:</th>
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<tbody>
<tr>
<td>Re-introducing extirpated animals will help bring back a natural ecosystem. People will just have to adjust to living with animals such as wolves and grizzly bears again.</td>
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<table>
<thead>
<tr>
<th>Statement 6:</th>
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<tbody>
<tr>
<td>People should be allowed to hand raise wild animals. Some might be dangerous, but wild animals are cute and there are plenty of them around, anyway.</td>
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<tr>
<th>Statement 7:</th>
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<tbody>
<tr>
<td>Having reserved hunting seasons is a good idea. These special times of the year keep people from hunting animals during nesting season or other times that may harm the populations.</td>
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<tr>
<th>Statement 8:</th>
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<tbody>
<tr>
<td>Collecting feathers and nests and eggs from the outdoors is a great way to learn. It is ridiculous to have laws that forbid this. How can taking an egg hurt?</td>
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<table>
<thead>
<tr>
<th>Statement 9:</th>
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<tbody>
<tr>
<td>People should do everything in their power to protect endangered species. If this means eliminating industry, okay. People can find other jobs because animals are more important.</td>
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<table>
<thead>
<tr>
<th>Statement 10:</th>
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<tbody>
<tr>
<td>Education is the best way to change how wildlife is viewed. Classes should be taught in school about our native wildlife, habitat, conservation, and how to improve the environment.</td>
</tr>
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</table>
Wetland Values

People and Wildlife

What Member Will Learn...

About The Project
- The importance of wetlands to wildlife
- The value of wetlands to residents of Kansas

About Themselves
- A rating system to place value on objects
- How individual opinions affect group dynamics

Materials
- Activity Sheet #7, Natural Area Map, copied onto 11" x 17" paper
  (one map for every 3-5 club members)
- Activity Sheet #8, Town Components
- Member Handout #1, Requirements and Considerations For the Town
- Video listed under resource list if the students need a refresher on wetlands

Activity Time Needed: 60 minutes

Activity

We have studied wetlands in Kansas and know that they have value to wildlife and people. Sometimes, however, not everyone can agree on what value a wetland does possess. Communities often must make decisions about their natural resources — including wetlands. Community planners, groups who study an area and lay out the best plans for a town, must take many things into consideration. Industry, agriculture, schools, small businesses, jobs for town members, recreation, and more all enter into the discussions. Let’s try to experience some of the issues and questions that may be part of planning where and how to put a town.

Each of your groups represent a company that is putting together a plan for a future town on this site. After planning the town, each group will present their plan to the financier of the project. The financier (or his/her representatives) will ask questions if they want. They will then try to choose the best plan that has been presented. Each group will have the same requirements and resources for planning the town.

Leader Notes

It is preferable to complete Wetlands In Kansas, lessons prior to this activity.

Divide into groups of five (at least three per group, and preferably no more than five). If your group is small, they can all work together. Hand out Activity Sheet #7, Natural Area Map. There are plans to put a town in this area. Hand out the maps.

Hand out the Town Components envelopes. Inform the groups that they do not have to include all the components in their plan, but they cannot change the size of any of their components (cut a building in half, for example). Let the groups work for at least 15 minutes, and up to 30, if they are really into it. Be sure to warn them five minutes before the end of the activity that they need to finalize their plan. You also may need to encourage every member of a group to participate, and be aware of inappropriate or discourteous behavior. Although spirited debating and noise are expected during this activity, name-calling, belittling, and other aggressive behavior should not be tolerated.
Activity
Have each group present their plan. Arrange ahead of time for some parents or other adults to be the representatives of the financier. As each group presents their plan, Member Handout #1, Requirements and Considerations for the Town, suggest other questions to ask. Remember, these are questions to make them think. Don’t ask one group all of the questions, and come up with questions you think are applicable. There are not right and wrong answers, only individual viewpoints (just like in a real community!). You can also discuss the parts of the plans that everyone liked or thought needed some changes.

During the Dialogue For Critical Thinking, your main job is to emphasize the concept of working together to find the best solution, even if that solution is not 100% without fault. Very few of these situations are black and white, and every individual has a different way of looking at things. Let the groups talk about the strong and weak points of the plans (in a constructive manner).

Dialogue for Critical Thinking
Share
1. What were some of the tough parts of doing this plan?
2. How would this process be better if everyone in the club worked on the same plan?
3. How would the process be more difficult if the entire group worked together?

Process
4. What were the strong points of each plan? (You may want to list them on a flip chart.)
5. What were the weak points of each plan? List.

Generalize
6. Is it possible, given the components available in a real (your) community, to meet all of the needs of the people and wildlife? Why? Why not?

7. What is the significance of economics?

Apply
8. What are some of the questions and concerns with natural resources in your community? How could they be dealt with?

References
Conserving America: The Wetlands, (VT-109 from Wildlife and Parks)
Cheyenne Bottoms: Jewel of the Prairie, (VT-118 from Wildlife and Parks)
The Playa: Oasis of the Plains, (VT-114 from Wildlife and Parks)

Authors
Deb Hiebert, Education Director, Botanica
Libby Alders, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
Wetland Values
People and Wildlife

Questions for financiers to ask:

1. If you have all houses with little industry, where do people get their money?

2. Are there places to shop for food, clothes, etc.?

3. Are the fire and police stations accessible to all parts of the town?

4. Are there enough places for the people who work in the businesses and industries to live?

5. Is there still good habitat for wildlife?

6. Are there recreational opportunities?

7. If you did not include any of the outlying agricultural industries, how is your town getting food? Are there roads into town to truck it in? Can they afford the higher prices?

8. What happens when it floods?

9. Where does the pollution from the homes, businesses, and industries go?

10. What is downstream?

11. What is upstream from them? How do they know the water supplying their community is good?
The Prairie: A Historical Perspective

People and Wildlife

What Members Will Learn . . .

About the Project
• An ecosystem that has become extinct due to human actions
• Ecosystems are made up of many different species
• How humans can alter an ecosystem through the addition or subtraction of elements

About Themselves
• Their feelings about the prairie
• How to communicate prairie history to others

Materials Needed
• Books or magazines about the prairie and its inhabitants. Consider some of the materials listed on the reference list.
• Pencils
• Activity Sheet, #9, Prairie Ecosystem Species
• Paper

Activity Time Needed: 60 Minutes

Activity
Since the settlement of Europeans, the prairie in North America has changed dramatically. Most of the species that the prairie used to support have declined in numbers and flirted with extinction. Most have been extirpated from Kansas.

Herds of millions of bison used to seasonally roam across the prairie. The Native Americans were aware of these movements and planned their hunting seasons accordingly. They also knew that burning the grass early in the year would cause a quick green-up of new grass. This encouraged the bison to come and feed. The bison herd would not only heavily graze the grass, but also till up and compact the soil with their sheer numbers. It was behind this that the prairie dogs would move in. The closely cropped grasses provided food. The grass was also short enough that the prairie dog burrows provided homes for many other creatures such as: burrowing owls, rattlesnakes, black-footed ferrets, plains spadefoots, and other rodents and insects. It is because so many other creatures depend on the prairie dog that they are referred to as a “keystone” species.

Leader Notes
Give the background on the history of the prairie and divide the group if needed.
A few facts about the items listed on the cards from the Activity Sheet, Prairie Ecosystem Species. Your group members need to do more research with the resource materials that you provide. Use these facts if needed to fulfill their research.

**Bison**
Nearly extinct 100 years ago
In 1890, about 540 out of 60 million animals were left
Historically had seasonal movements
Native Americans were aware of their seasonal movements
Only natural predators are humans, grizzly bears, and wolves
Railroads, cattlemen, and soldiers lead to their destruction

**Big Bluestem**
Tall prairie grass
Grazed by bison
99.9% of the prairie has been destroyed (not as bad in Kansas)

**Golden Eagle**
Found worldwide on grasslands
Hunts rabbits, prairie dogs
Loss of habitat, starvation, collisions with fences, power lines, cars, poisoning, and poaching are their problems

**Lesser Prairie Chicken**
Gathers on high, open mounds called leks
Males “dance” and “boom” on leks
Eat seeds from grassland plants that helps to encourage the spread of these plants

**Weed & Forbe Encroachment**
These plants can take over a prairie dog town. They are usually the first plants on bare ground before grass is established
The seeds of the plants may be eaten and spread by small animals

**Prairie Dog**
Originally 5 billion on 250 million acres
Shooting, poisoning, destruction of habitat are their problems
Eats plants
Eaten by coyotes, hawks and eagles
Shares their burrows with burrowing owls, badgers, black-footed ferrets, reptiles and amphibians

**Burrowing Owl**
Often found in prairie dog towns
Eats small rodents, insects, frogs, salamanders, and snakes

**Western Rattlesnake**
Commonly use prairie dog towns
Live above ground April through October
Eats rodents, amphibians, and songbirds
Eaten by the Golden Eagle

Depending on the size of your group, you may need to divide them into pairs. Hand out the cards from Activity Sheet #9, Prairie Ecosystem Species, except for the “Fire” card. The member or member pairs should research their card as thoroughly as possible. They may need note-taking materials. Give them about ten minutes. Whoever is holding the “Big Bluestem” card starts the food chain. First, have your group members form a straight line by who eats what. Here is an example of how the line up may look. It should end up in a circle with connection back to the “Big Bluestem” card.

Example: Big Bluestem- Bison- Native Americans- Prairie Dogs- Plains Spadefoot- Burrowing Owls- Western Rattle Snake- Blackfooted Ferret- Golden Eagle- Weed/ Forbe Encroachment - Lesser Prairie Chicken- Big Bluestem.

After the chain is complete, use the Dialogue for Critical Thinking questions to discuss what happened.
**Black-footed Ferret**
Totally dependant on the prairie dog for food and shelter
Thought to be extinct until a small population was found in Wyoming in the 1980’s

**Plains Native Americans**
Based their culture and existence on prairie species, especially the bison
Aware of the bison herds’ movements
May have intentionally set prairie fires to encourage the return of the bison

**Plains Spade Foot**
Amphibian found in the grassland
Uses rodent burrows
Eaten by hawks and snakes

**Fire**
Started by lightning
May have been intentionally set by Native Americans
Causes the grassland to be renewed quickly

Now, you should get involved by using the “fire” card at some point in the sequence. Have your students line up again. How did the “Fire” card change the arrangement of the ecosystem? Discuss.
Dialogue for Critical Thinking

Share
1. What part of the prairie did you research?
2. How easy was it for your groups to complete the food chain?

Process
3. How were bison used as resources for native people?
4. Why are prairie dogs considered a “keystone” species?
5. What significance did prairie fires have?

Generalize
6. How did settlers change the face of the prairie?
7. What did the loss of the bison do to the culture of the native people?

Apply
8. What can you do as individuals or as a group to help preserve the prairie ecosystem?
9. How can you help others appreciate the prairie?

References
Mammals in Kansas, Bee, Glass, Hoffman, and Patterson (1981)
The Life of Prairies and Plans, Durward Allen (1967)
Amphibians and Reptiles in Kansas, Collins and Collins (1993)
Roadside Wildflowers of the Southern Great Plains, Freeman and Schofield (1991)
Birds in Kansas Volume 1, Thompson and Ely (1989)
Prairie Dogs, Bernhard and Bernhard (1997)
*Any other resources, magazines, or books on the prairie ecosystem and its inhabitants

Authors
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

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<table>
<thead>
<tr>
<th>Species</th>
<th>Prairie Ecosystem</th>
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</thead>
<tbody>
<tr>
<td>Bison</td>
<td>Big Bluestem</td>
</tr>
<tr>
<td>Golden Eagle</td>
<td>Lesser Prairie Chicken</td>
</tr>
<tr>
<td>Weed/Forbe Encroachment</td>
<td>Prairie Dog</td>
</tr>
<tr>
<td>Burrowing Owl</td>
<td>Western Rattlesnake</td>
</tr>
<tr>
<td>Blackfooted Ferret</td>
<td>Native Americans</td>
</tr>
<tr>
<td>Plains Spadefoot</td>
<td><strong>FIRE</strong></td>
</tr>
</tbody>
</table>
What Members Will Learn...

About the Project
- How to critique photography
- How to set up an art display

About Themselves
- Self-evaluation and choosing their best work
- How their work can influence others

Materials Needed
- One 3” X 5” matte per person
- Clear tape
- Computer labels
- Pens
- Access to a display area such as a bulletin board, etc. (tape, plastic adhesive picture hangers, etc.)
- Place to display such as a school, town hall, community center, library, etc.

Activity Time Needed: 60 Minutes

Activity
People are influenced by what they see. This is evident in the suggestive power of magazines and television. In this same way, the pictures that your group members have taken of a local environmental issue will hopefully influence others to help clean up this problem and make your community safer for people and wildlife.

Leaders Notes
The activity in outdoor skills, Photographing the Issues last lesson in Level IV MUST be completed before attempting this activity. You will need to have pre-arranged a place to display the photos such as a school, town hall, community center or library.

Your group members have put a lot of creativity into their photography. This activity is a way to take their work and feelings about a community environmental issue and present it to the public. You will need to have pre-arranged a place to display the photos such as a school, town hall, community center or library. You should also have had the pictures from Photographing the Issues developed.

It can be difficult to critique one’s own work because there is pride in everything that a person creates. But, the first thing that they should do is go through their pictures and choose three that they think are the best pictures. All three must have the local issue as their subject. Have them lay these three photos out on a table. Have all of them walk around and view each other’s three best photos. Have the members go back to their seat and now choose the best one out of their three photos. Place all the other photos back in their envelope.

You will want to handout the 3” x 5” mattes and a label to each member. Make sure that the labels are small enough to stick to the mattes — computer labels typically work best. Ask the members to come up with a title for their photo. Have them write the title and their name on the label. Have them place their label on the bottom of the matte where their picture will be. This may vary depending on the orientation of their photo. To keep the picture on the matte, place the matte label-side-down on the table, and then place the photo picture side-down on top of the matte. Tape the edges of the back of the photo to the back of the matte. In this way, when you
Turn the framed picture over; no tape will show. You may want to create an example of this before the meeting so the group members have something to follow.

Travel to your place of display. Make sure that you take any supplies that you will need to hang the pictures. Create your display and then return to your meeting place. Once back, take a few minutes to discuss with the members what they think the impact of their photography will be. (Use the Dialogue for Critical Thinking questions.)

When the time comes, be sure to break down your display and return the framed photos to the members.

Dialogue For Critical Thinking

Share
1. What criteria did you use to select your best photographs?
2. How difficult was it to select the best photo taken by each person? Why?
3. Where will your group display be? Why?

Process
4. What impact do you think your display will have on the community?
5. Why is it important for your group to create a display around this issue?

Generalize
6. If your display is effective, what do you want the end result to be? Why?

Apply
7. What are other ways to effectively educate the public on specific issues?

References

Photography Outdoors, Mark Gardner and Art Wolfe (1995)
The Sierra Club Guide to 35 mm Landscape Photography, Tim Fitzharris (1996)

Authors
Libby Albers, Naturalist
James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

Reviewed by
Wildlife Review Team
Nature Journals

What Members Will Learn...

About the Project
- Ways to express the complexities and beauty of nature
- How to observe nature in a way that can be translated into written thoughts

About Themselves
- That they can convert their feelings and observations into a written form

Materials Needed
- Pencils
- White or off-white construction paper
- Scissors or a paper cutter
- Poster board in natural colors
- Craft paint
- 2-3 medium paintbrushes
- Newspaper
- Paper plates
- Leaves (taken from the ground and not off living plants)
- Waxed paper
- Rolling pin
- Markers
- Paper punch
- Yarn or sisal twine
- Clipboards

Activity Time Needed: 60 Minutes

Activity
Journaling is an activity that takes practice. When journaling, you will need to pick a quiet area outdoors away from distraction. Your area should have something that you can depict through prose, poetry or drawing. This can be as abstract as the wind, or as solid as an oak tree. The season and the time of day may influence the subject matter.

Leader Notes
You can leave this assignment open, or set boundaries by requiring a sketch or structured writing assignment.

Before you can turn your group members loose on journaling, you must first create a journal. It would be a good idea for you to make one up before the meeting. That way, you are familiar with the procedure, and they will have an example of a completed journal.

It's best if you can have the construction paper pre-cut and pre-punched before the meeting. The construction paper has a neutral, rough-feel, homemade paper or drawing paper but less expensive. Cut the sheets to whatever size you desire, but keep it consistent (a paper cutter works great if you have access to one). Each individual will need twenty of your cut up sheets for his/her journal. Cut the poster board just slightly larger than your pages and punch these also. Each individual will need two sheets of the cut poster board for a front and back cover.

To design the cover you will need leaves, paper plates, paint, wax paper, and a rolling pin. Depending on the size of your group, you may want to create an assembly line or if you have a small group, you can break up the supplies among groups. Lay out the newspapers so your work surface isn’t damaged by the paint. Have the members write their name on the front and back cover before beginning to paint. Place some of the paint on paper plates (you may use different colors but stay with nature tones). Brush a moderate amount of paint on a leaf, place the leaf paint side down on a journal cover, cover it with a sheet of wax paper, and lightly roll the rolling pin over the leaf. This should give you an even leaf print. If you don’t mind your members getting messy, leave out the wax paper and rolling pin and have the members press evenly with their fingers. When all the covers have 2-3 prints on them, stop the printing process and clean up your supplies.
Have the group members leave the wet cover to dry on the newspaper.

While the covers dry, give them their pages for their journal, a pencil, and a clipboard. Give them instructions on how to journal and assign them a specific task if you have one. For example, they might find an object and describe it from their point of view and then imagine how they might feel to be a tree, rock, butterfly, or whatever object they choose. Allow 15 minutes or so to complete their journaling. (They may use as many pages as they need to do this.)

By this time, the journal covers should be dry. Assemble the covers by tying the covers and pages together with twine through the punched holes. Be careful not to tie them too tightly or they will not open easily. Encourage them to continue to use the journals on their own time.

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**Dialogue For Critical Thinking**

**Share**

1. What type of leaves did you pick for your journal cover? Why?
2. What topic did you chose to journal about? Why?

**Process**

3. How does writing affect your perspective of nature?
4. What other ways are there to express your observations and emotions about nature?

**Generalize**

5. Why is it important to learn to express your observations and emotions and feelings?

**Apply**

6. How can you use your writing to help others understand the importance of nature?

**References**

*Sharing the World with Animals, ZOOBOOKS* (Available from Kansas Department of Wildlife and Parks (KDWP) 512 SE 25th Ave. Pratt, KS 67124-8174)

*Sharing Nature with Children, Joseph Cornell* (1979)

*Journal of Nature, Reader's Digest* (1977)


**Authors**

*Libby Albers, Nauralist*

*James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension*

**Reviewed by**

Wildlife Review Team
What Members Will Learn...  

About the Project  
- Ways to express the complexities and beauty of nature  
- Basic techniques of photography  
- Local environmental issues affecting both people and wildlife

About Themselves  
- How to convert their feelings and observations into a visible form  
- That they can view an abstract issue and concrete their vision on film

Materials Needed  
- One disposable camera per person, plus 2 extras in case of malfunction (does not need a flash)  
- One 3”x5” picture frame matte per person (for this activity these will be used to look through to visualize a picture before using the camera.)

Activity Time Needed: 60 Minutes

Today we are going to use photography to focus on a local environmental issue. First, let's brainstorm about the environmental issues that you are aware of.

You will be using disposable cameras that do not require a flash. This means that your pictures must be taken outside during the day. Some concepts of good photography are:

- Consider where you are standing – to get the picture you want, you may need to be at ground level or standing above your subject.
- Make sure you always stay 4 feet away from your subject. If you are any closer the disposable camera will not focus and your picture will be blurry.
- Try not to always put your subject in the center of the photograph. Instead, divide the picture in thirds and place your subject in 1/3 of the photo and leave the other 2/3 full of landscape, color, etc. This will add interest to your photos.
- Make sure that your own shadow is not in the picture.
- Never point your camera at the sun.
- Be sure that no one is standing in the background of your photo

Leaders Notes  

This lesson MUST be completed before Pictures Speak Louder Than Words in Level IV

This will most likely lead to discussion of the rainforest, global warming, or something else worldwide. Now ask if they think there are any local issues. Even within walking distance of your meeting place. This might include:

- Places where litter collects
- Poorly maintained industrial areas
- Fertilizer pollution in residential ponds characterized by bright algae
- Rivers or streams lined with trash
- Roadside trash
- Oily water runoff in parking lots

All of these local environmental issues can be photographed. Inform your group members that they are going to be taking pictures on one of the local environmental issues that you have just discussed.

The first thing to hand out to your members is the 3” x 5” mattes. They will hold these at arm’s length to view what a photo will look like. In this way they can see instantly how a picture will look. Walk outside and have them create different “pictures.” Use the rules listed as a guide. You will want to spend about 5-10 minutes doing this. Return inside and discuss what you saw.

Hand out cameras. Ask them not to take any pictures without your instruction, due to the fact that there are a limited amount of shots on the camera. Go outside. First, go around and visit each member, take their camera, and for the first shot, take their picture. In this way, when you develop the photos, their picture will be on the top and you will know whose photos are whose. After that, ask the members to use the next five shots working on the techniques like the 2/3 rule and perspective. Now, travel to the site of the environmental issue that you selected.
Use the last 18 shots taking pictures of this problem. In order to keep them on task, make sure to tell the group members that in the activity, *Pictures Speak Louder Than Words*, that their photos will be on display.

Return to the meeting room and collect the cameras. You will need to develop the film before doing the activity, *Pictures Speak Louder than Words*.

**Dialogue For Critical Thinking**

**Share**

1. What type of environmental issue did you photograph? Why?
2. How do you think your pictures will turn out? Why?

**Process**

3. Why did you practice “framing” with the 3” x 5” mattes?
4. What other rules of photography did you apply?

**Generalize**

5. How does photography change your focus of the world around you?
6. What pictures have you seen that made an important impact on your life?

**Apply**

7. What other ways can you express your observations of nature?
8. What do you hope to accomplish with your group’s photo display?

**References**


*The Sierra Club Guide to 35 mm Landscape Photography*, Tim Fitzharris (1996)

**Authors**

Libby Albers, Naturalist

James P. Adams, Associate Professor, 4-H Youth Development, K-State Research and Extension

**Reviewed by**

Wildlife Review Team