Chapter 4

Pre-field Trip Activities
Creating a Nature Journal

Classroom grades: 5-8

Objective
Students will be able to:
• record observations while visiting the refuge
• learn about the interactions of living and nonliving things
• remember how they felt while visiting the refuge
• reflect on actions that can make a positive difference in the world around them

Materials
• 3-5 sheets 8.5 x 11” paper for each student
• pencils
• erasers
• colored pencils
• black pens

Background
Nature journaling is not new. Humans have been recording their observations on cave walls, animal hides and stone tablets for thousands of years. Today, people of all ages use nature journals to record their experiences on vacation, at school, in the workplace and in everyday life.

Journaling can be done with words such as stories, poetry and notes. It can include sketches, detailed drawings, photographs and nature samples such as leaves, flowers, seeds and feathers. It can be recorded using pencil, ink, paint, black, white, color…..the possibilities are endless. Use a variety of recording styles such as curving your writing around a corner of a page, drawing from a microscopic viewpoint, writing with different font styles—small, large, fancy, bold, colorful, italic, etc. Everyone’s journal will look different. Nature journaling increases our awareness of the things that surround us, and gives us the opportunity to observe and sense the interactions that take place among living and nonliving things. It allows us time to “see” things that we normally wouldn’t see because we’re in a hurry. It creates a memory record of a specific time and place that we can go back to and reflect on so that we can see how our thoughts and feelings about the environment have changed over time. It allows you to be creative.

Method
1. Fold all sheets of paper in half to form a booklet that is 8.5 x 5.5”.
2. Attach the pages together using staples, yarn, raffia or any other method you choose.
3. The front cover should include a title, date, student’s name and colorful drawing. If you are going to use the journal only for your field trip, have students write “Steigerwald Lake National Wildlife Refuge” as their title and the day of your visit for the date. They can make the drawing on the cover before or after their visit.
4. You could have students do some or all of their recording in their journal. If they are doing a specific activity at a site, be sure they write a title at the top of their page.
5. Observe using all your senses: see, smell, touch, and hear (taste is optional).
6. Be sure to allow time for journaling. Have students pause before or after visiting a site to reflect, think, write and draw.
At school before visiting the Refuge, practice observing by choosing a site, make a large circle, sit down and record everything you see, hear, etc. for 10 minutes. No talking. Another method would be to sit and observe for 5 minutes without writing. When time is up, record everything you can remember. Introduce the “Journaling Ideas” to help students be more creative while using a variety of recording techniques. You may want to give students a copy of the ideas to refer to in case they have a hard time getting started. You can also prompt them by choosing an idea from the list that everyone should respond to.

**Journaling Ideas**

1. What is the season, time, weather or temperature?
2. Word pairs—blowing wind, chirping birds, scratchy grass, and sparkling water.
3. How are you feeling? What kind of mood are you in?
4. Read the history of the landscape. What happened here?
5. Give a voice to the voiceless:
   “I am a willow tree growing next to a creek.....”
   “I am a mallard getting ready to migrate....”
   “I am a brand new butterfly stretching my wings for the first time.....”
   “I am a very, very old rock who has seen a lot of changes over the years.....”
6. Describe a typical day as a frog, dragonfly, ant or??
7. Free write—write about whatever comes to your mind.
8. Draw a spider’s web in detail.
9. Find a bird and observe its behavior for as long as you can. Record your field notes.
10. Memories—standing near the pond reminded me of last summer when I went fishing.....
11. Find something outdoors to observe. Record a list of quantitative information (using numbers) and qualitative information (using adjectives).
12. Tell how something “feels” (rock, grass, moss, tree bark, leaf).
13. Compare and contrast living and nonliving things. How do they depend on each other?
14. Find an area that you consider to be beautiful or interesting. Sketch a small part of the scene without looking at your journal or pencil. How did this method help you observe more carefully?
15. Search the area for the largest plant and the smallest plant. Make a list of how they are the same and how they are different.
16. Keep a record of the things that “catch your eye.” Why do you think they attract your attention?
17. View from different perspectives: distance, up close, eye level, overhead.
18. Record animal sounds—chchch CHCHCHCH, stireeeep-stireeep-stireeep...
19. Write some poetry; there are lots of ways to do it!
Picture poetry—Draw the outline of a tree. On the inside of the tree, write all the uses of trees that you can think of.
Cinquain—consists of 5 lines and each line has a purpose and number of syllables.
   a. title has two syllables
   b. a description of the title using two words with two syllables each
   c. a description of action in six syllables
   d. a description of a feeling in eight syllables
   e. another word for the title in two syllables
Example: Forests,
         graceful, growing,
         climbing among the clouds,
         calmly awaiting the sunrise;
         Alive.
Acrostic—the first letter in each line, when read vertically, spells out the name of something or conveys some other kind of message.
Example:    T
            owering
            R
            eaching
            E
            xtending
            E
            mbracing the sky
20. Slow down, appreciate the details. Remember—there’s not a “right” or “wrong” way to do it.

Discussion
Ask the students the following questions about their journal:
   Did you use all of your senses while observing?
   Which one did you use the most?
   What did you observe that you have never seen before? Felt before? Heard before? Smelled before?
   What did you learn while recording in your journal?
When students return to school, have them reflect on things they can do which will make a positive difference in the world around them.

References
Project Learning Tree. *Poet-Tree Diversity*.
Outdoor Manners

Classroom Grades: 3-8

Objective
Students will be able to:
• recommend appropriate actions in the outdoors, especially when visiting national parks and wildlife refuges
• create a class list of rules for their field trip to the Refuge

Materials
• large size paper or tag board
• pencils, colored pencils, markers, etc.

EALRs
Sci. 1.3.1
SS 3.1.2, 4.1.1

Background
1. Ask students: “How does a visitor act in someone else’s home?”
   Connect their replies to how we should act at the Steigerwald Lake National Wildlife Refuge.
2. Have a discussion with students on the effects our actions can have on the outdoor environment – both positive and negative.
3. Make a student-generated list on the chalkboard of the types of outdoor behaviors and rules they recommend while visiting the Refuge.
4. Ideas should include:
   • Carry out all trash and if possible, pick up any litter left by others
   • Respect all wildlife and do not harass any animal
   • Stay on the trail
   • Taking shortcuts and going off trail can cause erosion and damage resources
   • Plants are protected and not to be picked, carved, or harmed
   • Loud noises / voices can scare off wildlife and disturb other people who are enjoying the Refuge
5. Have small groups of students choose one behavior statement or rule. Using the large paper or tag board each group neatly writes the rule and illustrates it, creating a poster.
6. Have each student write or type all the rules on one side of standard sized paper. If this is too much writing for the younger students the teacher could type the rules for students. Students illustrate this paper with a border so that it becomes a personal “mini-poster”. Students will put their poster in their field trip journal for their visit.
7. On the bus the teacher should have the students review the rules before they reach the Refuge.

Extension
Small groups could create and act out skits that show acceptable and unacceptable behaviors at the Refuge. The skits could try to incorporate as many of the rules as possible.
References
Project Learning Tree. *Outdoor Manners Coloring Book.*
Developing Nature Observation Skills

Classroom Grades: k-8

Objective
Students will be able to:
• become aware of and awaken their senses.
• use their new observation skills for detecting wildlife and the natural environment around them.

Materials
• blindfolds
• journals
• various liquids to taste, such as bottled water, tea, juice, etc.

Background
Naturalist Tom Brown, in his book Tom Brown’s Field Guide to Nature and Survival for Children, illustrates the importance of developing observation in order to experience nature with the following story:

“One night I couldn’t sleep, so I decided to go up to the Appalachian Trail and watch the sunrise. My wife, Judy, thought I was crazy because at that time of the year the trail was heavily used by backpackers. Disregarding her reservation I decided to go anyway, making my way up the trail and sitting under an old oak tree. The tree was located several yards away from a major crossroad, and a usually busy area, but it was early and the backpackers were not out yet. As I settled in, the sky began to grow light, and animal activity began to increase all around me. Birds landed on my head, chipmunks scurried across my legs, and deer passed along a run just a few inches from where I sat. The whole forest was active, and I sat unobserved, part of the whole life process.

Suddenly the whole woods went into a frenzy of animals running for cover. Squirrels chattered from high limbs, chipmunks dove down holes, and birds let out alarm cries. Within moments, the area that was once a peaceful blend of animal activity was now deserted. I knew also that to continue sitting would be somewhat futile, for most animals had now vacated the area, so I returned to the trail.

After a short walk, I encountered the origin of the disturbance. Three backpackers stumbled up the trail toward me, talking, shuffling, heads bowed toward the ground. They almost ran me down before they realized I was standing there. We got into a conversation and they told me that they had left their camp just before dawn, hoping to reach the second camp, twenty miles away, before nightfall.

It was then I asked, “Did you see any animals?” One of them answered thoughtfully, “Naw, just a few birds.” It was obvious their quest for time and destination overshadowed all they could have seen. In fact, I would venture to say they saw nothing more that day than “just a few birds.” Teach your children to sit, patiently watching nature unfold before them.”
Much of society today experiences nature disconnected, with dulled senses, and a strong sense of regimentation, schedules and time constraints. We are used to living in a fast-paced, technology- and industry-driven world. We no longer rely on our hunting-gathering senses to survive. As a result, we miss the richness that nature has to offer. Fortunately, we can reawaken our dulled senses with a few skills and practice to help us reconnect to nature. As an educator, remember to slow down and practice the nature observation skills you teach your students. Allow time for unstructured wondering and exploring, as students often will learn more at these moments than during any well planned lesson.

**Methods**

**Relaxation**
Relaxation and slowing down one’s pace is the key to becoming more aware of one’s own senses. Relaxation can be dynamic and moving. It is best to have students perform these skills in an outdoor setting.
Read aloud and have students follow these steps to develop patience and relaxation (may be adapted for different grade levels):

1. Clear your mind of all clutter that has accumulated during the process of daily living. This mental purification actually occurs quite naturally during an extended stay in the wilderness.
2. Slow down and escape the “time trip” of modern life. Walk and move at a snail’s pace. A slower pace makes it easier for your eyes to pick up the flash of a bird’s wing, the flick of a deer’s tail, or the claw marks of a raccoon.
3. Sit down and stop altogether. Don’t let speed and time rob you of discovery. Nature will begin to unfold its secrets.
4. Be quiet; it should be obvious that you will experience more in nature if you are silent. In nature, silence is the rule and noise is the exception. Most animals communicate more by gesture and touch than by sound. Since humans are the most lethal predator, the human voice almost always triggers a danger signal that causes wildlife to run and hide.

Have students practice the above steps on their own several times throughout the day. They may want to add a relaxation activity such as bead working, journaling, playing an instrument, etc. to help them relax.

**Sight**
1. Have students begin by going through their relaxing steps. It is important that students do not talk during this exercise. Have them practice quiet patience.
2. Once students are settled, have them pick out a color, texture, shape, shadow or movement on the landscape. You may want to facilitate this task by giving each student a slip of paper with one of the above items for the student to start with. For example, find something that is red, or find something that has a sharp edge to it.
3. Have students search the landscape for less subtle colors and textures.
4. Study details carefully, and look deeply at flowers, blades of grass, leaf shapes, etc.
5. Observe closely the pattern of an item nearby.
6. Push their sight from near to far, and have them scan the landscape in ever-widening semicircles, from their feet to the horizon.
7. If possible, hand out magnifying glasses to scan the ground looking intently at pebbles, plants, insects, etc.
8. If your students are working on a nature journal, they can journal what they see, or you can begin a nature journal with this activity.

**Wide-Angle Sight**
As a society we are trained to view our world with tunnel vision. Much of what we need to see is usually straight in front of us whether it is a TV screen, computer monitor, or the road on which we are driving. In nature, we must retrain our vision to encompass a wider view in order to develop greater observation skills.

1. Have students look out into the landscape. Then, tell them to widen their view as though they were looking at an entire painting on a wall. Tell them to push out and stretch their view as far as possible.

2. Some students will have a difficult time simply widening their field of vision. For these students, have them stretch their arms out to their sides (like they do when they do windmills with their arms). Have students look straight ahead, and tell them not to move their heads but use only their eyes. Tell them to wiggle their fingers and slowly move their arms toward the center. Tell them to stop moving their arms the moment they see their fingers in their peripheral vision. Challenge students to see how wide they can keep their arms apart, and still see their fingers. Then, have them keep this wide-angle view and look at the landscape.

3. Once students begin mastering the concept of the wide-angle view, have students practice moving in and out of wide-angle and focused views. To do this, tell students to keep their wide-angle view, and the moment they spot something of interest, focus on that item for a bit, and then return to wide-angle view to spy something else of interest. They will find that they can see and take in a great deal of the landscape using this skill.

4. Once again, have students journal what they see, or even list what they see.

5. It would be interesting to try this on a different day with the same landscape, and challenge students to use their new skills to find changes in the landscape.

6. Encourage students to keep their wide-angle sight while moving through nature. Look at more than just the trail ahead. Challenge yourself to see things that are normally unseen. Keep their senses active, and moving. Show them exciting things along the way, or have students quietly share what they have seen.

**Hearing**
1. Have students close their eyes, or blindfold them.
2. Listen near and far, and encourage them to pinpoint the location and source of the sound they hear.
3. Focus hearing by cupping their hands around their ears. Tell them to cup their hands in different directions, and see if they notice different types of sounds.
4. Birding and hearing:
   a. Listen closely to what the birds are saying.
b. Are they making long musical sounds? If so, they are singing and all is well with them.
c. Are they making short, choppy, and hard to locate sound? If so, they are calling to each other or sending an alarm. Birds use alarm sounds to signal to other birds and animals of approaching danger.

Touch
1. Have students close their eyes, or blindfold them.
2. Tell students to lie on the ground and use their sense of touch to feel the earth, and sky, noting temperature and dampness.
3. You may want to turn this into a game, and have students try to identify common items found in nature based on their sense of touch.
4. One such game: a student leads another student who is blindfolded to a tree. The blindfolded student is allowed to explore the tree through their sense of touch. Once the student is done exploring, the guide leads them to a central location, and takes the blindfold off. The student who was blindfolded is now challenged to find the tree they explored with touch.

Taste and Smell
1. Have students hone their sense of smell by taking taste tests. Have students smell then taste the unknown liquid. Try using different kinds of water (tap, bottle, and spring), teas, fruits and vegetables.
2. In nature, have students smell the ground in various locations, and see if they detect a difference. Smell animal dens, runs, and trails. Do different leaves, barks, rocks have distinct smells?

Moving in Nature
By learning to move in nature, students will actually learn the proper way to walk. The current modern method of walking and the surfaces we walk on, are actually very damaging to our bodies.

The Fox Walk
A fox moves through the woods undetected because he is silent, quick, and sly. If you spy a fox moving through the forest, your sensory skills have been honed.
To walk like a fox you must:
1. Stop talking; use your relaxation/patience skills
2. Slow down your pace to where you are moving in slow motion
3. Shorten your stride
4. Lightly touch your foot on the ground before the weight of your body is committed
5. Place only the outside edge of your foot on the ground
6. Gently roll your foot down inwardly flat
7. Slowly move your weight forward in a flowing motion
8. Center your gravity at the center of your hips
9. Do not look at the ground; you should be using your wide-angle sight

The Rabbit Game
1. Form a circle around one person pretending to be the rabbit. When the rabbit looks at you, freeze. If you do not freeze, you are out. When the rabbit is not looking at you, fox walk
toward it. See who can reach the rabbit first. Try two rabbits. This is the same way you sneak up on a real animal.
2. Practice the fox walk at home. See if you can sneak up on a cat or dog without scaring them.
3. Practice the fox walk outside. See if you can approach birds, beetles, frogs, squirrels, etc.

Extension
Have students turn in their journals for periodic checks. Do not grade them for artistic impressions; instead, grade on effort, insight, and attention to the smallest of details. Periodically change something in the classroom, and have students practice their observation skills to see if they can “spy” what it was that you changed. If you hear something, have students try to predict what made the sound before seeing the source of the sound.

References
Websites:
Salmon Watch® Education Program – Oregon Trout
What is a Wildlife Refuge?

Classroom grades: 5-8

Objective
Students will be able to:
• explain the mission of the NWRS and its importance to wildlife
• name at least two refuges and describe resources that they protect
• describe appropriate conduct on a refuge

Materials
• copies of student handout “National Wildlife Refuge Expert’s Notes”
• map of the United States
• push pins
• internet access
• National Wildlife Refuges: Video and Visitor’s Guide brochure

Background
Rachel Carson wrote the following about wildlife refuges in the introduction to her essay series, “Conservation in Action.”

If you travel much in the wilder sections of our country, sooner or later you are likely to meet the sign of the flying goose — the emblem of the national wildlife refuges.

You may meet it by the side of a road crossing miles of flat prairie in the Middle West, or in the hot deserts of the Southwest. You may meet it by some mountain lake, or as you push your boat through the winding salty creeks of a coastal marsh.

Wherever you meet this sign, respect it. It means that the land behind the sign has been dedicated by the American people to preserving, for themselves and their children, as much of our native wildlife as can be retained along with our modern civilization.

Wild creatures, like men, must have a place to live. As civilization creates cities, builds highways, and drains marshes, it takes away, little by little, the land that is suitable for wildlife. And as their space for living dwindles, the wildlife populations themselves decline. Refuges resist this trend by saving some areas from encroachment, and by preserving in them, or restoring where necessary, the conditions that wild things need in order to live.

Methods
1. Explain to the class that they will be visiting a national wildlife refuge on their field trip. On the trip, they will have the chance to explore the refuge and participate in activities. The purpose of this lesson is to discover what refuges are and why they exist.
2. Brainstorm with the class what they think of when they hear “national wildlife refuge”. Record students’ answers on an overhead or on the board. Save this list for wrap-up discussion.
3. Discuss the history of the Refuge System.
4. Organize the class into cooperative groups of 3 – 4 students. If the activities that you plan to do on your field trip require group work, you may wish to use this activity to establish the groups for the trip. Ask the students to think of a name for their group. Tasks for students working in groups may include the following:
a. Time keeper - makes sure the group stays on task and finishes in the allotted time
b. Recorder - records the group’s ideas or writes the group’s answers to specific questions
c. Reporter - presents the group’s findings to the class
d. Materials manager - responsible for any materials that the group needs
e. Facilitator - makes sure everyone in the group participates in the activity and feels that they are part of the process

5. Brochures on various wildlife refuges can be found by going to the National Wildlife Refuge System’s home page (http://refuges.fws.gov). Have students investigate the refuge you have assigned them on the Internet. Give each group one copy of the Student Page “National Wildlife Refuge Expert’s Notes”. Each brochure on the website contains a variety of information about a particular refuge. When the students map the location of their refuge, they will begin to see that some refuges play an important role in the migration of water birds. Such refuges provide resting and eating areas along migration routes.

6. Make learning about the different refuges fun by challenging your students. Tell them that each group’s assignment is to become experts on a refuge and that they need to create an advertisement, PowerPoint presentation or brochure that will encourage young naturalists like themselves to visit the refuge. Part of their task during the group presentation is to demonstrate their expertise to the class. They need to be convincing experts about their refuge. Explain that the Student Page will help them get started, but they will need to seek out other information in their brochure. If possible, provide them with props (hats, shirts, etc.) to help them get into their roles, or have students bring props from home.

7. Have each group present their advertisement for their refuge, and place a marker on the map of the United States where the refuge is located.

8. After the groups have presented their information, ask them if they notice a pattern on the map related to the locations of the refuges. The refuges picked for this lesson are all in the western area of the United States and illustrate a “pathway” for migratory birds. Discuss this as one of the values of the refuges. You may also want to remind the students that these refuges are just a few examples of the approximately 530 refuges. Show them the map included in the “National Wildlife Refuges – A Visitor’s Guide” brochure to give them a fuller understanding of the Refuge System, and show the movie “National Wildlife Refuge System”.

9. Ask the class if there is anything they would like to add or delete from the list they developed concerning what they think of when they think of a refuge.

10. Ask the students to make inferences as to what they think the purpose of the National Wildlife Refuge System is, based on what they know and what they have learned from the brochures. As a class, try to brainstorm a mission statement for the Refuge System.

11. Copy the National Wildlife Refuge System’s mission statement onto the board or an overhead (see Introduction section). Have the students compare the two statements and discuss the mission of the National Wildlife Refuge System.

12. Explain to the class that even though the National Wildlife Refuge System was established to protect our nation’s plants and animals, the U.S. Fish and Wildlife Service cannot do this job alone. The plants and animals that every refuge protects are threatened in some way. Environmental degradation, such as water and air pollution, loss of habitat, exotic plant and animal species, and other problems, affect natural resources. Vandalism, acid rain, adjacent development, and other problems also affect natural resources.

13. Explain that the Refuge System belongs to us all. It is everyone’s responsibility to learn about the care of the refuges.
14. Refer to Rachel Carson’s essay and discuss what the quote means (see Background Information). Ask the students to imagine they are on a talk show and the interviewer asks them to answer the question, “What do you think of the National Wildlife Refuges?” Have them record their own responses.
15. Close the session by having the students brainstorm a code of conduct for how they should behave when they visit the Refuge on their trip. Explain that because refuges are protected, Federal law prohibits removing anything from the refuge. Use the motto: “Take only memories leave only footprints.”

References
Rhythms of the Refuge: Educators Guide
Websites:
U.S. Fish & Wildlife Service
National Wildlife Refuge Experts’ Notes

Group Name: _________________________________

Group Members:

You and your group are about to become EXPERTS on a national wildlife refuge. The challenge is that you will not be able to visit this refuge in order to see the area firsthand. All you will be given is Internet access to a brochure from that refuge.

You will create an advertisement for your refuge to present to the class. Your ad must convince young naturalists such as yourselves to visit your refuge. Your presentation must include one visual aid that your group has created.

When speaking to the class, you will be able to use your notes, so use this worksheet to write down information that an expert would know about the refuge. The questions listed below will help get you started, but you will find that there are other interesting tidbits of information you want to write down and share with the class to convince them that they should visit your refuge.

1. Basic Information
   a. What is the refuge’s name?

   b. How long ago was the refuge established?

   c. In what town and state is the refuge located? (Be ready to place a marker on a map to show where the refuge is located.)

2. What kinds of plants and animals can people expect to see on this refuge?

3. What activities can people do on this refuge?

4. What are three things that make this refuge special?

5. What are two reasons this refuge should be preserved and protected for future generations?
National Wildlife Refuge Choices

Access refuge brochures by going to http://refuges.fws.gov and clicking on the refuge brochure button, then select one of the refuges below to investigate.

1. Alligator River NWR
2. Arctic NWR
4. Attwater Prairie Chicken NWR
5. Back Bay NWR
6. Bald Knob NWR
7. Oregon Coast NWR
8. Bayou Cocodrie NWR
9. Big Lake NWR
10. Savannah Coastal NWR
11. Blackwater NWR
12. Eastern Massachusetts NWR
13. Crystal River NWR
14. Farallon NWR
15. Florida Keys NWR
16. Imperial NWR
17. Lacassine NWR
18. Lake Woodruff NWR
19. Rocky Mountain Arsenal NWR
20. Refuge of your choice – check with teacher to verify
**A Visual Hypothesis**

**Classroom Grades: 3-8**

**Objective**
Students will be able to:
• use prior knowledge to anticipate what they will see at the Refuge by drawing what they think is there.
• work cooperatively in small groups
• cross out misconceptions they had about the Refuge and add details they learned about the Refuge once they've returned from their field trip

**Materials**
• approx. 1 yd. X 1 yd. white bulletin board paper
• pencils
• markers
• crayons

**Background**
The purpose of a hypothesis is to start the students with a “good educated guess” before they begin an experiment or experience. The students then build new knowledge based on what they already know. By creating a “Visual Hypothesis” students will use prior knowledge to create a detailed mural / poster of what they anticipate they will experience at the Refuge. After they return from their field trip students revisit their mural and decide what was correct with their hypothesis and what needs to be deleted or changed.

**Vocabulary**
riparian – an area of land adjacent to a stream, river, lake or wetland that contains vegetation that, due to the presence of water, is distinctly different from the vegetation of other areas
Oak Savanna – grassland containing scattered oak trees
hypothesis – an educated guess, estimation, or prediction

**Method**
1. Begin by asking students to think about a forest, meadow, or creek area in Oregon or Washington that they’ve visited and what they experienced there. What did they see? Hear? Smell? What were the plants and trees like? Did they see any birds or animals? Did they hear birds singing? Did they notice any insects?
2. Tell students to jot down notes of their outdoor memory, writing as many sensory things as they can.
3. Next divide the class up into 5 groups: one for each habitat of the Refuge. If the class is large or you want a smaller number of students in each group, two posters could be made of each habitat.
4. Give each group a large piece of white paper (poster size) and the name of one of the habitats of the Refuge:
   • Pond
   • Oak Savanna
   • Oak Savanna / Riparian Transition
• Riparian/ River
• Riparian Forest

5. Teach or review the terms “riparian” and “oak savanna” with the students.
6. Using their notes, students will cooperatively draw what they think their habitat will look like. They should try to draw as many details as they can. Even if they just heard an animal (birds, frogs, etc.) they should draw the animal that they heard. They should draw the types of trees (deciduous vs. conifers), bushes, and other plants they saw or think they will see.
7. Teachers’ input should be minimal so that students can analyze their drawings and find their mistakes when they return from the field trip.
8. The habitat drawing should take up most of the mural paper. Often students (especially younger ones) will use the top half of their paper to draw the sky. The sky should be minimal so that students concentrate on the vegetation and animal life of their habitat.
9. After the field trip students analyze their mural. They should cross out any incorrect drawings they made (perhaps using a red crayon or marker). Details should be added using their field journals for reference. For instance if they drew a “generic” duck on their mural but saw and identified a pintail, then they could draw a pintail, label it, cut it out and tape it on top of their generic drawing. Labeling specific plants, trees, and other animals they saw would enhance their mural as well.

Discussion
Have students share their murals with the rest of the class after they have created them.
Post field trip: Have students share their murals with the rest of the class to explain the changes they made after experiencing the Refuge.

References
Science and Children, Ecosystem