ENVIRONMENTAL SCIENCE

LESSON PLANS

GRADES K-5

2010

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CREDITS

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PHILOSOPHY

There are many reasons to teach outdoor education to children. Outdoor education heightens awareness, awakens enthusiasm, and instills appreciation for the environment and the natural world. Learning about nature and environment is often best done outdoors. When students become "one with nature," they really understand and appreciate the world around them. Outdoor education programs are the perfect means for integrating the curriculum. It is not just science—it is and can be every subject. The goal of this guide is to help teachers prepare their students to become active participants in the natural world.

Lesson Plan

Content Area: Science / Environmental Education				**Grade: Kindergarten**			
Lesson Title: Color Crazy				**Timeframe:**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy	X	ICT Literacy		Life and Career Skills		

Interdisciplinary Connections: Art, Language Arts, Math

Integration of Technology: KidPix

Materials Needed: Pictures of animals and plants found in our environment, shoe box

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.2.D.2	Lesson Sequence: 1. Open the discussion by asking students to name and describe things they could find outside. Discuss what colors they are, i.e. grass – green, tree trunk – brown, etc. Show and discuss pictures of animals and plants. 2. Distribute colored paint squares to the students. Take them outside and see which colors can be matched with the natural things around. 3. When the children have matched ten colors, place them in the box and look in the box. 4. Discussion: These are the colors of nature in Spring. (*You can try this activity in different seasons.) Have the students share what they found and the color they matched. Extensions: 1. Paint a spring picture using the colors they matched in nature. 2. Save picture from spring and compare and contrast in the fall.	Results of student response and ability to name color and match to an article in nature.
Goals / Objectives Students: WBAT recognize and generalize that there are many colors in nature.		

Differentiation: Signs of the season; descriptive sentences using favor color word; use Spanish words; graph for math

Resources Provided: Sample paint chips, seasonal pictures

Lesson Plan

Content Area: Science / Environmental Education				**Grade: Kindergarten**			
Lesson Title: Animal Charades				**Timeframe:**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		
Interdisciplinary Connections: Visual and Performing Arts							
Integration of Technology:							
Materials Needed: Picture cards of wild and domesticated animals							

Standards	**Learning Activities / Instructional Strategies**	**Formative Assessment Tasks**
5.3.4.A.2 5.3.4.E.2	Background Info: Wildlife animals live in a natural state, providing for their own food, shelter, and other needs. Domesticated animals are those that humans have kept in captivity. Humans feed and provide shelter for these animals. Lesson Sequence: 1. Create a space for an audience area. 2. The students will take turns choosing a card and acting out the animal on it. The audience members call out their guesses for the charade. 3. The audience will discuss and decide if that animal is wild or domesticated. 4. Follow charades with a summary discussion, asking students to clarify their definitions of wildlife and domesticated animals. Extensions: 1. Bring large lengths of yarn and make two large *circles—one would be labeled "domestic" and the* other "wildlife." After the student performs the charade, have them group the animal in the correct circle. Early Childhood Extensions (Project Wild, K-12 Curriculum and Activity Guide): Ask students how does this animal move? Can you make a face of this animal? What does this animal look like when it is eating?	Observe whether students can classify the animal they portrayed into the correct category
Goals / Objectives Using charades, SWBAT distinguish between domesticated and wild animals.		

Differentiation: Chart descriptive words; use jump rope to sort students
Resources Provided: Animal pictures in grade-level packets

Lesson Plan

Content Area: Science / Environmental Education						**Grade: 1**	
Lesson Title: Good Night, Owl						**Timeframe:**	
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Interdisciplinary Connections: Art, LA, Recycling (make a journal out of recycled paper to draw and label pictures)

Integration of Technology:

Materials Needed: Paper tubes for binoculars, journal to draw observations

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.2.C.1	Lesson Sequence: Preparation: Demonstrate real binoculars (scientific tool) 1. Read story "Good Night, Owl" aloud to students. 2. Discuss the story: What sounds did the animals make? What was each of them doing there? How did they use the tree? 3. Make a T-chart and list animals from story and then compare animals on walk. 4. Have students make binoculars out of toilet paper tubes to study tree habitats. 5. Lead students on a nature walk and discuss / describe what they observe, i.e. nests, leaves, animals climbing, insects, etc. 6. Stop along the way to make notes in a journal and discuss various habitats. Extension: Focus on signs of Fall or observe seasonal changes	Discussion of observations on T-charts and journal completion
Goals / Objectives Students: WBAT identify interrelationships between organisms and their habitat.		

Differentiation:

Resources Provided: "Good Night, Owl" (found in school library), sample of journal, sample of binoculars

Lesson Plan

Content Area: Science / Environmental Education				**Grade: 1**			
Lesson Title: Butterflies and Moths				**Timeframe:**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
X	Creativity and Innovation		Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy	X	ICT Literacy		Life and Career Skills		

Interdisciplinary Connections: Art, LA, Math

Integration of Technology: Monarch butterfly website

Materials Needed: Butterfly garden, white construction paper, paint, brushes

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.4.D.1	In class, prior to visiting Environmental Center: 1. Read and discuss the story "I'm a Caterpillar." 2. Discuss the life cycle of a butterfly. 3. Observe life cycle of a butterfly using "live butterfly garden." At Environmental Center: 4. Release butterflies and observe behavior. 5. On white paper, place large blobs of different colored paint on one side of paper, fold in half and smooth. The image will be symmetrical and can look like butterfly wings Extensions: 1. Paint a watercolor image of a butterfly. 2. Write/recite a poem about butterflies. 3. Pretend you are a butterfly. Write a short paragraph about where you would fly.	• Discussion questions • Draw a picture of the stages of a butterfly's life cycle
Goals / Objectives Students: WBAT identify the stages of the life cycle of a butterfly WBAT identify if an image is symmetrical		

Differentiation:

Resources Provided:
- Reading Street Anthology – Unit 3
- Live butterfly garden – insect lore (needs to be ordered in Fall)

MOTHS AND BUTTERFLIES

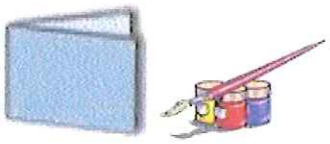
"Did You Know?" Facts

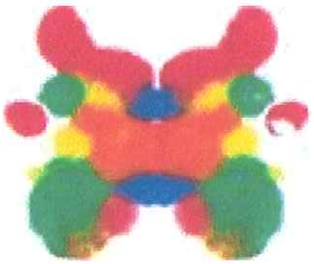
Butterflies

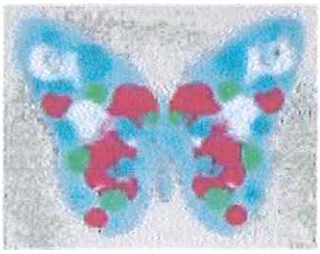
Both moths and butterflies are insects which start life as an egg. They then change into a caterpillar, then into a pupa, and finally into an adult. Because they are both insects, they have many things in common. They have three parts to their bodies, two pairs of wings, six legs, and antennae.

Butterflies only fly by day. Their wings trip the sun's warmth to give them the energy needed to fly. Some have large "eyes" on their wings, which make the butterflies look larger than they really are and which can make predators think twice before eating them. You can tell butterflies from moths when they are at rest. Butterflies' antennae always have knobs on the ends, and butterflies hold their wings erect over their bodies when resting.

The caterpillar stage has powerful chewing mouthparts, but the adult butterfly has only sucking mouthparts and lives off nectar. It uses its long proboscis to suck nectar from the base of flowers. As it does this, pollen from the stamen sticks to its legs and is passed on to the female parts of the next flower that the butterfly visits.







Moths

Moths get all the energy they need to fly from the food they eat. They fly, and eat, at night and so do not need bright colors to attract each other. Instead the female gives off a strong smell which can attract males from a great distance. Moths usually come in dull colors, which provide camouflage against their normal surroundings, making it hard for predators to find them.

Moths have fragile wings, so if you catch one, handle it very carefully. Put a box with a saucer of sugar solution inside (one teaspoon sugar mixed with one tablespoon water) next to a lamp. The moths will fly toward the light and may go to the sugar to feed.

Moths navigate using the light of the moon, and they always keep light to the same side of them when they fly. This is why moths fly in circles around your lamp.

Lesson Plan

Content Area: Science/Environmental Education				**Grade: Grade 2**			
Lesson Title: Adopt a Tree				**Timeframe: 30 minutes (Fall & Spring)**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
X	Creativity and Innovation		Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		
Interdisciplinary Connections: LA – Writing, Visual Arts – Drawing, Math							
Integration of Technology:							
Materials Needed: Writing/drawing paper, crayons, camera, journal							

Standards	**Learning Activities / Instructional Strategies**	**Formative Assessment Tasks**
5.3.2.C.3 5.3.2.E.2	Lesson Sequence: 1. On your first visit, pick a tree and take its picture! Have your students draw a picture of the tree and its location in their journal. 2. Draw a map to its location. 3. Is your tree alive or dead? How can you tell? Is it healthy? Are people helping or hurting it? 4. In your journal, draw the tree from different views: from a distance, from a high place (if able to), or lying underneath looking up. 5. Write a poem or paragraph about your tree. 6. Draw a picture of a leaf from your tree. How does your leaf smell and feel? Take a picture of it! 7. Identify our tree. What kind of tree have you *adopted? Does it have fruits, nuts, or seeds that* help identify it? 8. Make a rubbing of your tree's bark. How does it feel and smell? 9. Are there any animal homes near your tree? 10. Share your work with your classmates. Extensions: Measure the tree's circumference, estimate its age, discuss its symmetry	Completion of student's work, i.e. journal, drawing, poem
Goals / Objectives Goal: To enhance students' observation skills by comparing and contrasting seasonally		

Differentiation:

Resources Provided: Any tree identification book (in library); "Tell Me, Tree" by Gail Gibbons

Lesson Plan

Content Area: Science/Environmental Education				**Grade: Grade 2**			
Lesson Title: Rocks				**Timeframe: 20 minutes**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		
Interdisciplinary Connections:							
Integration of Technology:							
Materials Needed: A variety of rock types; examples of "hard" (a piece of wood); "soft" (a stuffed toy); "rough" (sand paper); "smooth" (aluminum foil); "shiny" (mirror); "dull" (construction paper); paper bags, charts and pencils							

Standards	**Learning Activities / Instructional Strategies**	**Formative Assessment Tasks**
5.2.2.A.1 5.4.2.C.1	Lesson Sequence: 1. Display these four sets of words: shiny/dull; hard/soft; rough/smooth; big/little. Discuss the meaning of each word by showing examples of each and allowing students to feel and see examples. Explain that rocks may be classified by how they look and feel. Show a rock for each type of feel/look description. Allow students to hold and observe these various rocks. (Use these rocks for a class rock collection.) As a class, classify each rock next to a corresponding descriptive index card. (Note: If students notice that rocks can be classified into three or more categories, make an appropriate card for those rocks.) 2. Break the students up into small groups and give them paper bags. Have each student collect one or two rocks in the open field. Also have students collect rocks in shaded trail areas. 3. Have students come back and tally rocks on a chart (example: //// = four shiny rocks). 4. Put rocks back where they were found. Extension (Teacher's Extra Reading Strategy): *Rocks and Minerals* by Illa Pondendorf is an excellent resource for making abstract concepts related to rocks understandable. You may decide to delete chapters or pages if you feel they are too complicated for your students. Discuss the text and pictures as the pages are being read. Refer back to the class rock collection for hands-on understanding. Have students make a special sound (snap of fingers, whistle, clap) when they hear a word they have been introduced to during previous rock activities or lessons.	Student's ability to identify characteristics of different rocks on tally paper.
Goals / Objectives Students: WBAT understand and apply descriptive terms WBAT classify rocks by physical attributes		

Differentiation:
Resources Provided: "Rocks and Minerals" by Illa Pondendorf (in Foss kit)

CLASSIFYING ROCKS

Shiny	
Dull	
Hard	
Soft	
Rough	
Smooth	
Big	
Little	

Lesson Plan

Content Area: Science / Language Arts				**Grade: 3**			
Lesson Title: ABC Hike				**Timeframe: 40 – 60 minutes**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy	X	ICT Literacy		Life and Career Skills		
Interdisciplinary Connections:							
Integration of Technology: PowerPoint / Word (optional)							
Materials Needed: ABC worksheet, clipboards, pencils, drawing paper							

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.4.A.1	Lesson Sequence: 1. Students will be given their clipboards and pencils and will begin the walk on the trail. The class will stop multiple times, and the children will be able to record their findings.	Student observation and recordings of 20 natural resource items found on their trail walk.
Goals / Objectives	2. After going through the trail, the students will get together with partners to fill in any letters they couldn't find.	Students' ability to illustrate three of their resources and create a PowerPoint slide (optional)
Students: WBAT write down the natural resources they see in their ABC chart according to the first letter WBAT illustrate three of the letters	3. Students will then come together as a group and fill in whatever letters are left and discuss what is natural in nature and what is not. 4. Lastly, students will be able to take three of their letters and illustrate what they have found. 5. *(Optional) After returning, the students will be* assigned a letter of the alphabet to create a PowerPoint slide (letter, picture). Students may use a digital picture rather than drawing a picture or import one from Google for the PowerPoint. 6. (Optional) The class will then have an ABC PowerPoint of the Environmental Center. *Lesson should end with Sharing Circle questions.	

Differentiation:

Resources Provided: Camera (optional); Computer lab (optional)

ABC Hike

Name: _____

A_____	B_____	C_____
D_____	E_____	F_____
G_____	H_____	I_____
J_____	K_____	L_____
M_____	N_____	O_____
P_____	Q_____	R_____
S_____	T_____	U_____
V_____	W_____	X_____
V _____	Z_____	

SHARING CIRCLES

A sharing circle is a quiet way of bringing morning or afternoon activities to an end. It's wonderful for bringing closure to a whole program as well. Have students sit in a circle. The leader offers a topic—a statement that each student will complete with a simple answer. Below are some good Sharing Circle topics.

- *My favorite thing about the experience was...*
- *The neatest thing I saw today was...*
- *I got to know my classmates better when...*
- *One memory I don't think I'll ever forget is...*
- *The most exciting thing that happened was...*
- *The most important thing that happened today (this week) was...*
- *Two words that describe how I felt during this program are...*
- *The thing that bothered me most about this experience was...*
- *Today I learned that...*
- *Today I discovered...*
- *Nature is important to me because...*
- *I want to learn more about...*
- *One of the hardest things for me to do was...*
- *For the first time in my life, I...*
- *The thing that took the most courage was...*

Lesson Plan

Content Area: Science / Language Arts				**Grade: 3**			
Lesson Title: Scavenger Hunts				**Timeframe: 40 – 60 minutes**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		*ICT Literacy*		*Life and Career Skills*		

Interdisciplinary Connections:

Integration of Technology:

Materials Needed: Pencils, clipboards

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.4.C.1 5.3.4.E.2	Optional Pre-Lesson: Have the students explore the school grounds during recess. When they come in have them write down a possible scavenger hunt item on a small piece of paper. Collect all pieces and create the School Grounds Scavenger Hunt. The next day take the whole class out and see if they can complete the scavenger hunt. (See sample School Grounds Scavenger Hunt List)	Students' ability to find 25 items on their scavenger list. Students' ability to compare and contrast different environments (rain forest, environmental center, outside their house, parks, etc.)
Goals / Objectives		
Pre-Lesson: SWBAT understand the process of the scavenger hunt and discover what the Wantage School grounds contain Lesson: SWBAT use their senses in their natural environment to find the items on their scavenger list.	Lesson Sequence: 1. After receiving all their materials, students will have 10-minute increments to go out and search for items on their scavenger list. 2. The teacher will keep time at the "meeting area" and blow a whistle at 10-minute intervals to assess how they are coming along. (This process will be repeated as many times as necessary.) 3. Discuss, compare, and contrast various habitats and environments. Extensions: 1. If time permits, students can take one of their items and illustrate it. 2. Evaluate similar populations in an ecosystem with regard to their ability to thrive and grow. *Lesson should end with Sharing Circle questions	

Differentiation: (Groupings) Students can work independently the first time out, then with a partner, and then with a different partner; OR: Students can work in high-low groups.

Resources Provided: Scavenger worksheet

Name: _____

School Grounds Scavenger Hunt

Find the following items and check them off your list.

1. Insect ____
2. Rock ____
3. Wooden fence ____
4. Crow ____
5. Swings ____
6. Grass ____
7. House ____
8. Brown leaf ____
9. Green leaf ____
10. Lady Bug ____
11. Blue bird ____
12. Metal fence ____
13. Flower ____
14. Nest ____
15. Squirrel ____
16. Pole ____
17. Water ____
18. Acorn ____
19. Something smooth ____
20. Something hard ____
21. Something round ____
22. Something rough ____
23. Something soft ____
24. Something squishy ____
25. Something smelly ____

SCAVENGER HUNT LIST

Name: _____

See:

__Wild Flowers
__Dead tree
__Pine cone
__Berries
__Vine
__Poison ivy
__Stream or creek
__Blade of grass
__Clover leaf
__Moss
__Pine tree
__Seeds or seed pod
__Eroded soil
__Smooth/shiny rock
__Mud
__Grain of sand
__Fern
__Y-shaped twig
__Trash
__Pine needles
__Acorn or other nuts
__Tree with blossoms
__Hole in a tree
__Ponded area in a creek
__Small pebble
__Unusual shaped leaf
__Rocks with many colors
__Animal tracks

__Worm
__Caterpillar
__Squirrel
__Bird
__Ant
__Butterfly or moth
__Snail
__Beetle
__Feather
__Lizard
__Ladybug
__Spider web
__Birds nest
__Insects on a tree
__Deer tracks
__Animal hole in the ground
__Deer
__Frog
__Leaf with insect holes

Listen to:

__Leaves under your feet
__Wind in the trees
__Sound of a bee
__Birds singing
__Cricket
__Water running in a creek
__Noises in the woods

Feel:

__Tree bark
__Prickly plant
__Wet mud
__Rotten wood
__Wind blowing on face

Smell:

__Pine tree
__Flower
__Mud
__Fresh air

Watch:

__Animals eating
__Leaf falling to the ground
__Spider web w/insect
__Ant moving something
__Wind blowing the leaves
__Fish jumping
__Clouds going by
__For something funny
__For something unusual
__Sunrise or sunset
__Reflection in the water
__Trail markers
__Animal homes or shelters

SHARING CIRCLES

A sharing circle is a quiet way of bringing morning or afternoon activities to an end. It's wonderful for bringing closure to a whole program as well. Have students sit in a circle. The leader offers a topic—a statement that each student will complete with a simple answer. Below are some good Sharing Circle topics.

- *My favorite thing about the experience was...*
- *The neatest thing I saw today was...*
- *I got to know my classmates better when...*
- *One memory I don't think I'll ever forget is...*
- *The most exciting thing that happened was...*
- *The most important thing that happened today (this week) was...*
- *Two words that describe how I felt during this program are...*
- *The thing that bothered me most about this experience was...*
- *Today I learned that...*
- *Today I discovered...*
- *Nature is important to me because...*
- *I want to learn more about...*
- *One of the hardest things for me to do was...*
- *For the first time in my life, I...*
- *The thing that took the most courage was...*

Lesson Plan

Content Area: Science / Environmental Education					**Grade: 4**		
Lesson Title: Predator / Prey					**Timeframe:**		
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Interdisciplinary Connections:

Integration of Technology:

Materials Needed: 10 copies of mouse and fish sheet, enough copies of fox and otter sheet for each student to get a square

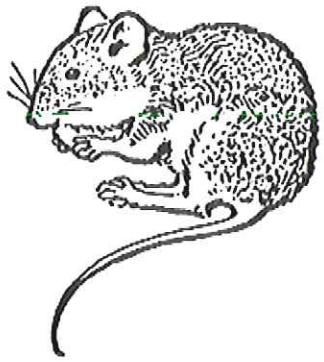
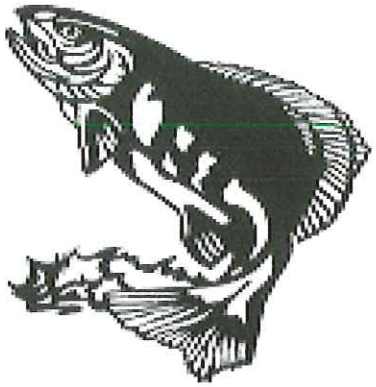
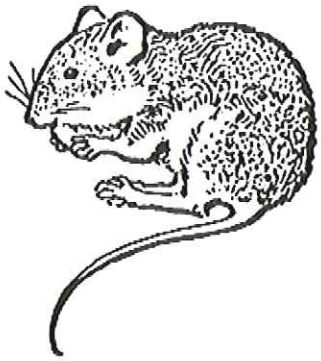
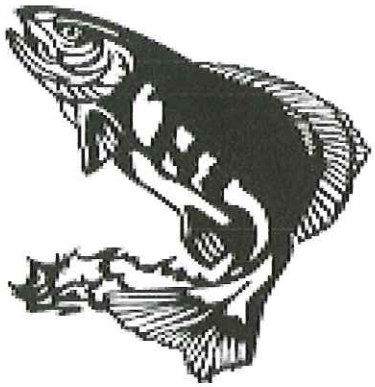
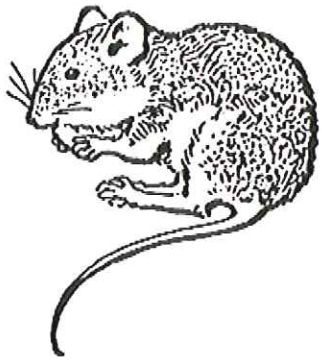
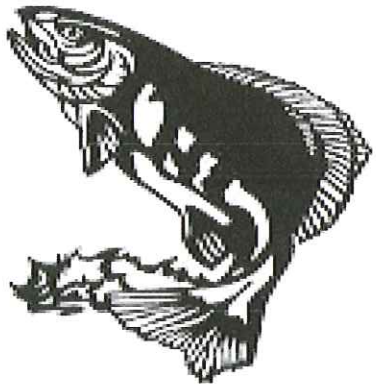
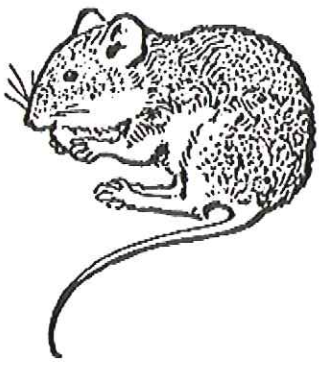
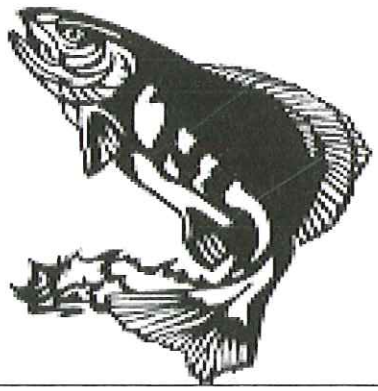
Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.4.E.1 5.3.4.E.2	Lesson Sequence: 1. Divide the class into two groups. 2. Give each student a fox or otter square. Have them line up. 3. Scatter the fish and mice cards around the playing field. 4. Review that the fox hunts on land and eats mice. The otter hunts for its food in lakes and rivers and eats fish. 5. At your signal, each student will collect as many food cards as he/she can. Foxes may only pick up mice. Otters may only pick up fish. 6. Students may only pick one card and return to the line before getting another card. 7. Once all the food cards are collected, bring the students back to the central area. 8. Discuss/Assessment questions: • When was it easy to find food? • When was it hard? Why? • Have students count their cards. Is anyone still hungry? • What would happen to an animal if it didn't find any food? • What are reasons why an animal would not find enough food? 9. Variation: Have certain students use a clothespin to collect cards or wear socks on their hands so that it is more difficult for some.	Discussion after activity about the relationship between predator and prey
Goals / Objectives To study that animals need food to live, and the relationship between predator and prey		

Differentiation:

Resources Provided: Photocopies of animal pictures

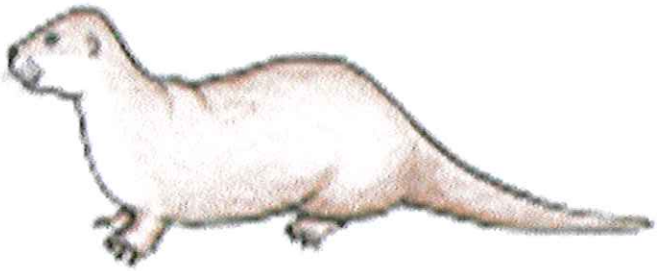
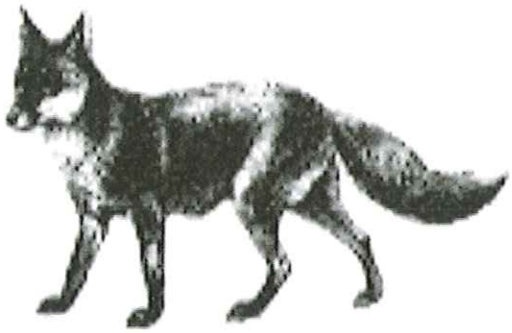
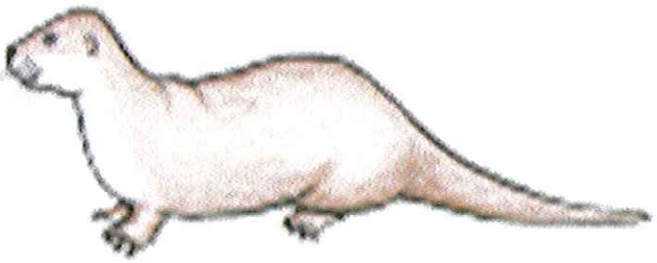
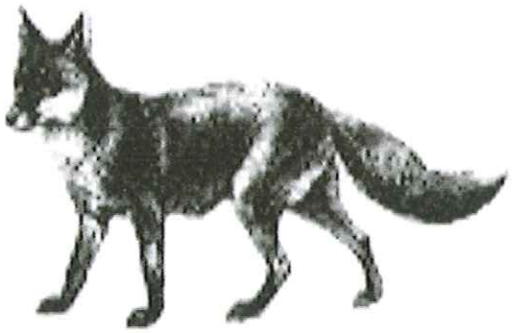
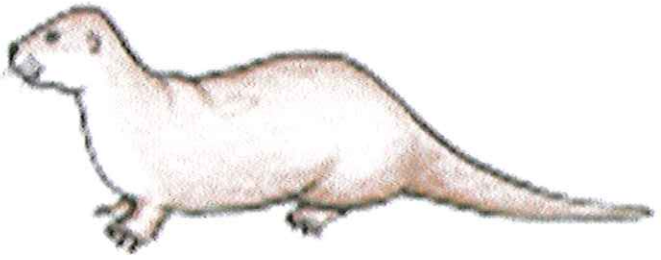
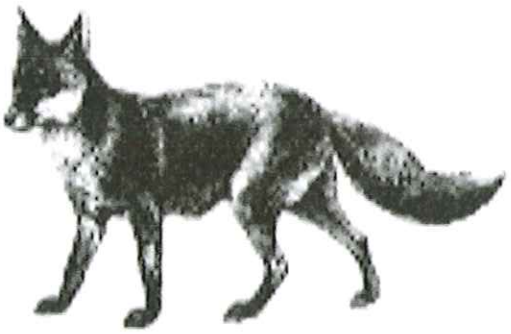
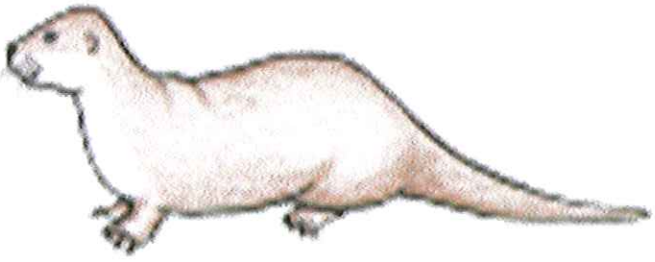
Mouse and Fish (Prey)

Photocopy the images below and trim. Mount on index cards. See Preplanning for details.

Mouse 	Fish 
Mouse 	Fish 
Mouse 	Fish 
Mouse 	Fish 

Fox and River Otter (Predators)

Photocopy the images below and trim. Mount on index cards. See Preplanning for details.

Fox 	Otter 
Fox 	Otter 
Fox 	Otter 
Fox 	Otter 

Lesson Plan Forms

Content Area: Science / Environmental Education				**Grade: 4**			
Lesson Title: Your Natural House				**Timeframe:**			
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Interdisciplinary Connections: Art

Integration of Technology:

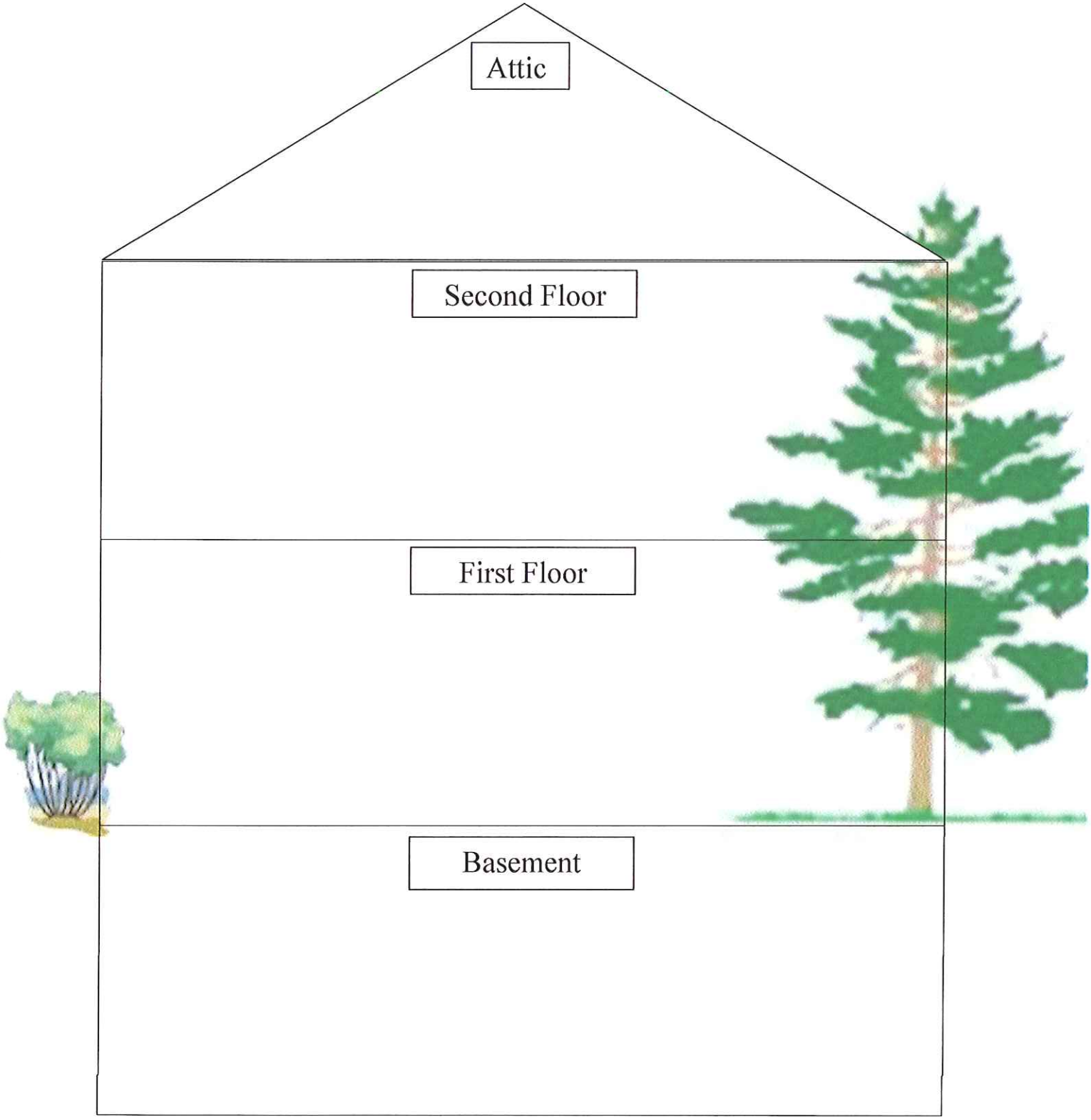
Materials Needed: Clipboards, pencils, paper

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.4.C.1 5.3.6.C.3	Lesson Sequence: 1. On the blank side of your paper, draw a quick sketch of your house. 2. Discuss what can be found in your basement? What are some of the rooms on the main floors used for? What is the purpose of the roof? 3. Using the graphic organizer, have students observe the surrounding habitat. What part is the basement? (underground) Draw what can be found there (roots, worms, etc.). Draw what you see on the first story (fox, deer, ferns, mosses, flowers). Draw what you would find on the second story (bushes, squirrels, songbirds, shrubs, trees). Draw what you would find in the attic (hawks, eagles). 4. Walk through the forest and have students draw additional corresponding items. Extensions: 1. Observe with magnifying lenses insects and animals found in the basement and under the leaf litter. 2. Discuss the most common species found. Where and why? 3. Why is it important for us to know what plants and animals live here? 4. How do they help us? How can we help them?	Final drawing
Goals / Objectives To observe the layers of a habitat		

Differentiation: Use a different location to compare

Resources Provided: Graphic organizer

THE FOREST AS A HOUSE



Lesson Plan

Content Area: Social Studies / Ancient Civilizations					**Grade: 5**		
Lesson Title: Archaeological Dig					**Timeframe:**		
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
X	Creativity and Innovation		Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		
Interdisciplinary Connections: Connections to Social Studies (past civilizations)							
Integration of Technology:							
Materials Needed: Prepared artifacts, brushes, small trowels, clipboards, pencils, ruler, grid map, pail of water							

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.4.6.B.2	Lesson Sequence: 1. Divide the class into four groups. Have each group collect or make artifacts indicative of a real or fictional civilization. 2. Take the artifacts to the dig site. Have each group seed a box with the artifacts they have chosen. 3. When the boxes are all prepared, the groups will rotate and begin to search and record found objects. 4. After all the objects have been recovered, each group will write a short report describing the unearthed civilization and its inhabitants. 5. Restore the site to its original condition. 6. Follow-up: Ask the class to choose ten objects to be placed in a time capsule which would tell others about our present civilization. Collect items and bury. 7. Other activities: A. Allow one class to prepare a "culture" to be unearthed by another class. Encourage creative thinking. Example: You have just landed on another planet and are digging to reconstruct their culture. B. Write a description of the culture as they reconstruct to compare it with the description done by the preparing class.	Students will be able to write a journal entry explaining steps in the process and describing artifacts found.
Goals / Objectives Students: WBAT understand how we learn about people who previously inhabited a geographical area.		

Differentiation: Two classes may want to create civilizations and exchange artifacts to be excavated. ("Other Activities – 7A")
Resources Provided:

ARCHAEOLOGICAL DIG

By Robert F. Mainone

How could we learn more about people who lived before history was written? What did they look like? How did they live? What tools did they have? What plants and animals shared their environment? What was the climate like?

Archaeologists are detectives who dig into the past for answers to these questions. From bits and pieces unearthed in caves and village sites, and with the aid of space-age technology, the archaeologist can tell us much about the happenings at some distant point in time.

Acid bogs preserve ancient pollen layers that indicate the kinds of plants living here long ago. Plants like spruce and fir trees that do best in a cold, moist climate give indications of climatic change where sun-loving oak and hickory trees now grow.

Living things give off radiation from their carbon-14. At their death, the radiation begins to slow down at a known, uniform rate, giving the scientist one of his many ways of dating ancient living materials such as the charcoal remaining from a cooking fire, bones of a mastodon, or clam shells from a prehistoric dump. Things found in close association with these carbon-dated materials can often be assumed to be of the same age: the spearhead embedded in the elk's vertebrae; the flint knife blade and other artifacts where wooden post holes indicate the shape of a lodge floor.

From non-living materials that do not decay, and from living things that decay slowly (tools, ornaments, bones), the archaeologist gathers information that may help him know more about an ancient people. Tools and food buried with the dead would seem to indicate a belief in life after death. The elaborate burial of a few individuals under giant mounds would seem to indicate a social caste system, with priests or chiefs held in high esteem.

Indians hunted and explored everywhere, quite possibly camping near your home or school. In order to find a camp site and its scattered chips of flint, broken pottery, and arrowheads, you would have to search in an area that was free of vegetation. Cultivated fields and eroding stream banks are possibilities.

An Indian village site may hold many chapters of American prehistory. Some sites, favorably located by water, were occupied off and on for hundreds, and even thousands of years. Many of our largest cities were built over former Indian towns.

Why not set up an archaeological dig on school property? Museums, universities, and private collectors sometimes have stone tools and other Indian artifacts that you might borrow. These materials could be buried with a good deal of thought, for your students to "discover" and interpret. You might even wish to set up your dig with several other teachers. Two or more adjacent sites for different age levels might work quite well.

Lesson Plan

Content Area: Language Arts					**Grade: 5**		
Lesson Title: Survival Game					**Timeframe: 4 – 5 hours**		
Lesson Components							
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
						X	Environmental Literacy
21st Century Skills							
X	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Interdisciplinary Connections: Language Arts

Integration of Technology:

Materials Needed: One copy of "Letter A" and packet of pocket treasures for each group of students

Standards	Learning Activities / Instructional Strategies	Formative Assessment Tasks
5.3.6.C.1 5.3.6.E.1	Lesson Sequence: 1. Before leaving to attend trip, have class divided into groups of four to five.	Debriefing: group walk-through and discussion of process of what they accomplished
Goals / Objectives Students: WBAT work in small groups to construct a survival shelter from found materials. WBAT react to a written situation which allows them to use learned knowledge from reading the novel, Hatchet, by Gary Paulsen.	2. Each group will need a copy of attached "Letter A" and pocket treasures in packet. (Teacher should prepare these packets in advance of trip.) These pocket treasures are items the children will use to assist with construction. 3. Upon arrival at the site, children will be placed in an assigned work area. 4. When all children are placed, work begins. 5. Children will read the letter and follow the instructions. 6. Take picture of shelters and return materials back to nature.	

Differentiation:

Resources Provided: To be used with novel, Hatchet, by Gary Paulsen

HATCHET

By Gary Paulsen

Team Adventure: Survival Day (Letter A)

Your group has spent the weekend at a Gary Paulsen seminar asking the author questions about his book. He was a wonderful speaker and your group learned many valuable things about him and how he learned to survive in the wilderness. The seminar broke up late last night. You called your parents and told them you would be leaving with the group this morning and would arrive home in the afternoon.

You boarded the twin-engine Cherokee plane at the small airport outside of Albany, NY. Everything seemed fine and since it was a short flight, your pilot did not need to file a flight plan. After flying for two hours, the smell of electrical smoke could be detected in the rear of the plane. Suddenly, a puff of smoke and flames!

The plane quickly crashed into this wooded location. The pilot appears to be dead in the burning plane. Member A of your group has a broken leg and must be treated by the group first. You must stay close to the crash site if you have any hope of rescue.

Together with your group, you must construct a weather resistant shelter that will hold all members of the group. You also need to look for food sources. (**EAT NOTHING!**) Stay close to the crash site and only go 50 steps from the plane in any direction. Keep an eye out for rescue planes.

Remember…Safety first! Any injury could mean death in the wilderness.

GOOD LUCK!

Hatchet – Grade 5

Pocket Treasures – Materials List

Prepare a large envelope containing the following items for each group participating:

- One-foot piece of aluminum foil
- 3-foot length of string
- One section of newspaper
- Small plastic bag

These items could perhaps help the children of the group prepare for survival. Observe how each group incorporates the items into work.