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Building Environmental Awareness Through Children's Literature

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Student Population

The following curriculum unit is designed to be used in a special education classroom within a small public secondary school located in an urban community. The school provides an alternative academic setting for pregnant teens and young mothers. Students, ranging in age from thirteen to twenty, are enrolled in grades six through twelve.

The special education population attending the school includes students who are mentally retarded, learning disabled, brain damaged, and or seriously emotionally disturbed. Ability levels within the special education classes cover a wide range. Most of the students have limited reading and writing skills. Some students tend to exhibit negative behaviors, which are best addressed in small groups within a highly structured setting.

This curriculum unit is planned for students who have a limited background in science education. Many have had little exposure to environmental studies. Often poor school attendance has resulted in large gaps in the academic education of these students. Whole sections of information may be missing from their fund of knowledge for various reasons. Therefore, simple basic concepts will be reviewed, along with the presentation of new information and ideas.

It would be appropriate to include all or selected sections of the curriculum in a high school parenting class or as a unit in a regular education general science class. Individual sections of the unit could be presented based on interests and needs of particular students.

Unit Goal: To promote literacy across the curriculum district-wide

Unit Objectives:

Students will demonstrate academic progress and developmental growth in science education through teacher presentations and the study of children's literature relating to environmental topics.

Students will demonstrate academic progress and developmental growth in reading through the study of children's literature relating to environmental topics.

Students will demonstrate academic progress and developmental growth in writing though the process of composing and editing the text for a child's book which relates to the environment.

Students will demonstrate creative expression and developmental growth in art through the process of illustrating and constructing a child's book which relates to the environment.

Rational

There are three main reasons why I have chosen to develop this curriculum unit to be used with my students. One is to focus on environmental concerns and in doing so promote consciousness raising and awareness of environmental issues. Students need to first think about problems before any positive action can take place. A second reason is to prepare students to be able to read to their own children in a competent, confident manner. Most students in my classes need to substantially improve reading skills in order to accomplish this goal. A final reason for creating this unit is to encourage the bonding between parent and child through the experience of exploring books together and nurturing a mutual respect for the environment which they share.

It is my belief that one way to effect the environmental public policy issues of the future is to plant the seeds of respect and responsibility at a very early age. A sense of caring for all living things needs to be instilled from the very beginning of understanding.

Curriculum Materials

The core of the unit is the use of children's literature to provide factual and fictional information on environmental topics. I have begun to gather a group of books which I find particularly appealing in both text and illustration. These will be used and referred to as the primary source for the teaching of this unit. They will be added to and supplemented by the addition of library books, as needed. The books described in the unit are suggested titles which I have found appropriate. Many other books, with similar messages, could be used as well. The selection of reading materials will be influenced by the individual students within the group.

Other materials include general art supplies and a computer with a printer. (specifics given in project plans)

Field Trips

Early in the school year one or two visits to neighborhood public libraries are planned to familiarize the students with the children's section of the library. If necessary, library cards will be obtained and the students will be given the opportunity to select children's books to read in the classroom or enjoy at home. Students will be encouraged to return to the libraries on their own to choose additional books. These books will be used to augment the titles selected for the curriculum unit.

Culminating Project

It is intended that all parts of the curriculum unit will contribute to the creation of the final project. Upon completion of the unit of study, each student will create a book relating to some aspect of the environment. An alphabet book, story book or counting book are some possible choices. These books will be made in school by the students. They will learn to read them well for the expressed purpose of bringing them home to be read to a young child. Students may wish to personalize these books by dedicating them to their own child.

Introduction: Why Read To Children?

When babies are first born they begin to make sounds. The cooing, gurgling and crying of all human babies is their way of expressing feelings and making their needs known. When their parent or caregiver responds in a positive way, a bond begins to be established between parent and child. Most babies will be soothed by a familiar human voice uttering pleasant sounds and comforting words. Babies respond to singing, rocking, and cuddling. Through caring verbal and physical interaction a positive emotional climate is established and language begins to develop. Parent and child strive to communicate with each other, thus establishing the habit of verbal give-and-take. Parents may recite nursery rhymes, such as, "One two, buckle my shoe," or play interactive games like, "Pat-A- Cake, Pat-A- Cake," to strengthen the bonds of communication. The natural progression is to continue this relationship by reading aloud to the child. Children will enjoy the attention and nurturing. They will continue to experience emotional closeness with their parent while growing in language development and communication skills. They will improve their listening skills and gain information, all the while enjoying the process. Virtually all children like to be read to. Children who have been read to from an early age read more easily themselves and generally experience school success.

This poem was found in *The New Read-Aloud Handbook* by Jim Trelease:

You may have tangible wealth untold:

Caskets of jewels and coffers of gold.

Richer than I you can never be-

I had a Mother who read to me.

"The Reading Mother" by Strickland Gillilan

from *Best Loved Poems of the American People* (Trelease, forward)

Unit Book *The Baby's Lap Book* is a collection of traditional nursery rhymes, beautifully illustrated with expressive drawings in pastel colors by Kay Chora. Fifty seven well known rhymes such as: Rock-A-Bye Baby, Twinkle, Little Star, Jack Be Nimble, Humpty Dumpty and The Cat and the Fiddle are included. An example of a lesser known, but interesting rhyme is Derry, Down Derry, which goes like this:

"Derry, down derry, and up in the air

Baby shall ride without pony or mare

Clasped in my arms like a queen on a throne,

Prettiest rider that was ever known"(Chora 54)

Unit Book *What To Expect The First Year* is a comprehensive guide to the growth and development of children during the first twelve months. This 650 page book tells what a parent needs to know; from medical concerns to changing diapers, to choosing caretakers. There is a section on creating a good environment, with practical tips for learning and playing. Each chapter covers a month of growth and development in a baby's life. It explains what is expected at the monthly checkup, what to feed the baby, what there may be concerns about,

and what is important to know about a particular stage. This is an excellent reference for expectant and new parents. It would be useful in a parenting class curriculum or in a school setting where students are also young parents.

Unit Book *Games to Play with Babies* begins with a section entitled 'Guidelines for Growth' which lists skills generally accomplished by babies at various stages of growth and development during the first twelve months of life. The games and activities that are described in the book relate to the progressive skills which babies develop. The games encourage nurturing, and bonding. They are focused on fostering language skills, coordination, imagination and confidence. The suggested activities are presented in a clear, easy to understand format. After each game there is an explanation of what the baby will learn. Some examples are; language skills, listening skills, observation skills, coordination, body awareness, balance, cognitive skills, etc. Two hundred and fifty games and activities are included in this comprehensive book on infant development.

Unit Book *The Mother Goose Word Book* is a sturdy book with thick cardboard pages suitable toddler fingers. Each rhyme is illustrated in a visually descriptive manner. All of the nouns in the pictures are labeled with words, such as; spoon, dish, fiddle, cat, and cup in the poem 'Hey, Diddle, Diddle'. Preschool children would enjoy this book.

Unit Book *The Family Treasury of Children's Stories* is a 312 page book which includes nursery rhymes, poems, songs, and well known stories, such as, 'The Three Little Pigs' and 'Jack and the Beanstalk.' The amusing illustrations are done in black and white. It would be suitable for a child's growing interest, preschool and beyond. .

Unit Book *Let's Sing Together* is a volume of nursery rhymes set to music. Words, music and colored illustrations are included for each rhyme. Typical selections include 'Old MacDonald Had A Farm', 'Row, Row, Row, Your Boat', and 'Yankee Doodle'. Preschool and early elementary school children would enjoy this book. The musical notation follows a simple piano melody line.

Unit Book *The Best Book of Nursery Rhymes* contains an interesting collection of untitled rhymes including the interactive:

"Round and round the garden

Like a teddy bear;

One step, two step,

Tickle you under there!" (Dinan 3)

The print is large and easy to read. The illustrations, which include people of various ethnic backgrounds, are especially interesting and well done. The illustration for the 'crooked man' poem depicts a rather disheveled man sitting by his fireplace holding a cat, with coffee and cookies nearby. The door is curving, the mantle place is slanting and the picture on the wall is askew, yet there is a warm glow and a feeling of happiness represented in the illustration. Children of all ages should enjoy this book.

Core Unit Topics

A Brief History of the Earth

The earth is about 4.6 billion years old. Scientists are able to estimate this by establishing the age of rocks by a method called radioactive dating, which measures the amount of uranium in the rocks.

Most scientists agree that the early atmosphere lacked oxygen. If oxygen had been present, rocks that formed at that time would have been different chemically. They believe that many gasses came from inside the Earth, from volcanoes. During the first few billion years of the Earth's history, the atmosphere was probably a mixture of nitrogen, hydrogen, carbon dioxide, and water vapor.

The first organisms had to be able to live without oxygen. Gradually, some of the organisms developed the ability to use the sun's energy to take the carbon dioxide and water that were in the environment and make food to sustain themselves. This process is called photosynthesis; what all green plants do today. Gradually the oxygen level in the atmosphere rose as more and more organisms became green plants and carried out photosynthesis. In time, there was enough oxygen for animals to emerge on land. Simple one-celled green plants first made the earth livable for animals, including humans.

Unit Book *The Wump World* is a classic Bill Peet book with which I begin the reading. It sets the stage for the rest to come. The story starts in a world perfect for the grazing, grass-eating Wumps who wander around just as they please with nothing to worry about. Their peaceful life is rudely interrupted one morning by roaring potbellied monsters in the sky heading for the Wump world. "And down the ramps came a horde of tiny creatures swarming out onto the meadow. These were the Pollutians from the planet Pollutus. They had left their worn-out old planet to start a new life in a new world. After such a long journey the Pollutians were overjoyed to find themselves on solid ground once more" (Peet 6). The invaders proceed to gobble up the trees with their giant machines. The Wumps retreat from the frenzy and noise to an underground world of darkness and mushrooms. The predictable outcome occurs after the Pollutians have ruined the Wump world with noise, traffic exhaust, trash piles, and endless heaps of wreckage and rubble. "One day an angry crowd gathered outside the World Tower building demanding to see the World Chief. When the chief appeared on his balcony all the Pollutians began to shout at once. "We can't breathe the air! WE can't drink the water! And we can't stand the noise! We've had enough!" "Ah-ah-ker-choo!" sneezed the chief. "I know just how you feel. And something will be done at once. I promise"(28). Henceforth, top outer-spacemen set out to find a new bigger and better world. The Pollutians board giant spaceships and exit the Wump world. The Wumps creep out of their hiding place and are "staggered by the size of the huge buildings with walls and walls of windows looming up on every side, and the broad layers of hard, flat crust covering the earth which felt strangely cold to their feet. There was no sign of any tree or tuft of grass. Even the sky was gone. And the Wumps wondered if there was anything left for them"(39). After exploring miles and miles of waste and devastation, they bound off the freeway to discover a meadow. "In time the murky skies would clear up and the rains would wash the scum from the rivers and lakes. The tall buildings would come tumbling down and the freeways would crumble away. And in time the green growth would wind its way up through the rubble. But the Wump World would never be quite the same"(44).

Unit Book *My First Green Book* is a practical guide for children on how to help protect our planet and its environment. Problems are presented and solutions suggested. Simple experiments, such as observing the effects of acid rain, are carefully described and clearly illustrated with photographs. There is a section on

disposing of garbage and related waste in packaging. Included is a project with directions for making a wildlife garden in a window box. The 'Green Code', which follows, is presented on the final page.

"Find out as much as you can about environmental problems. Get your family and friends interested too.

Do not use the car unless you have to. Walk, bicycle, or use public transportation.

Recycle your garbage.

Take care of your pets and plants.

Never litter. Pick up litter you see lying on the ground.

Do not waste electricity or water. Remember to turn off lights and faucets.

Look carefully at what you buy. Avoid buying overpackaged goods, processed foods, strong chemicals, and other wasteful or harmful items.

Avoid using chemical pesticides or fertilizers in your garden.

Begin a campaign to stop pollution or to save an area of unused land for wildlife" (Wilks 48).

This book would be suitable to use with elementary and middle school students.

Unit Book *The Earth Is Painted Green* contains a collection of almost one hundred poems about our planet. The beautiful watercolor illustrations reflect the text of the poetry in a pleasing way. People of all ages and hues are represented. It is the kind of book which deserves time and reflection to fully appreciate. This is a good book for reading aloud together with children. While some selections are thought provoking, others are light and humorous. The authors include award-winning poets and young children. Two interesting selections from the collection are these:

Leaves	Nicely, Nicely
The winds that blow-	Nicely, nicely, nicely, away in the east,
ask them, which leaf of the tree	the rain clouds care for the little corn
will be next to go?	plants
	as a mother cares for her baby.

Soseki (Brenner 56)

Zuni Corn Ceremony (Brennen 35)

Unit Book *Miss Jester's Garden* is a fictional story about Miss Jaster who lives by the sea and spends her days planting and tending her garden. "The flower bed was on the south side of the house, a protected nook, out of the wind, and full of sun. It was the first spot Miss Jaster planted each spring. She raked the bed lightly with a small rake. She sprinkled the seeds evenly: Marigold and Baby's Breath and patches of Sweet William. She showered it all with her watering can, never suspecting that a small, spiky animal was in the middle of it"(Bodecker 8). Hedgie the hedgehog engages in escapades which amuse and confound Miss Jaster. There is an escape and a meeting with the Chief Constable. The last page finds Miss Jaster at the end of the breakwater, with her feet dangling in the water, and Hedgie resting his nose on his paws. "And there was nothing but peace and sunshine and a touch of Sweet William" (28).

Unit Book *Putting The World To Sleep* is a bedtime storybook with great appeal. The text is simple and lyrical,

with repetitions that build to create a rhythm. "The moon climbs over the mountain each night, putting the world to sleep. The crickets start singing farewell to the day, as the moon climbs over the mountain each night, putting the world to sleep. The stars shine across the sea and the land, as the crickets start singing farewell to the day, as the moon climbs over the mountain each night, putting the world to sleep..." (Thomas 1-4). Detailed colored etching follow the text on each page. This is a beautiful book to listen to and look at.

Unit Book *The Earth and I* is a book with a very simple text, suitable for a preschool child. It would be an excellent book for a student with limited reading ability to read to a young child. The full page illustrations are painted in rainbow watercolors. Each page contains a simple sentence along with a colorful illustration. "The Earth and I are friends. We play together in my backyard. I help her grow. She helps me grow. When she is sad, I'm sad. (shows polluted river) When she is happy, I'm happy" (Asch 1, 12, 13, 14, 21, 22,25, 26).

Pollution

Pollution is the addition of harmful materials to our water or air. Litter in our environment and noises assaulting our ears are also forms of pollution.

Individuals and manufacturing companies dump oil, soap, chemicals, and many other wastes into rivers, lakes, and oceans. This makes the water dirty and dangerous to many living things. Putting wastes into water is called water pollution. Fish, plants, and other organisms cannot live in badly polluted water. People cannot drink polluted water and stay healthy. Clean water is important to all living things.

Nearly all living things need oxygen in order to get energy from food. The pollution of our air has become a danger to living things. In the United States, millions of tons of harmful things are added to the air every day. Polluted air can contribute to lung diseases. Harmful gases from cars, power plants, and factories pollute the air.

Unit Book *Look Inside the Earth* is a heavy cardboard book with cutout sections which show the earth from the outside to the inner core It compares the earth to a piece of fruit having many layers. Oceans and continents are illustrated on the skin of the planet with coal mines and natural gas wells forming parts of the next layer. The earth is shown in relation to the other planets. "When astronauts saw the earth from space, it looked blue because of the sunlight on the oceans. That's why the earth is sometimes called the blue planet"(Ingoglia 9). The last two pages of the book depict two versions of an urban scene. In the first the colors are grey and tan. The air is dirty and garbage is shown piled high at the edge of a dried up lake bed. Few people are shown outside. In the second picture on the opposite page, the reds, yellows and greens are warm and cheery. The lake is full and children and animals are everywhere. "We try to make less trash by using things more than once. This is called recycling. People are the only ones who can destroy the earth. People are the only ones who can take care of the earth. Which kind of person will you be"(14)?

Unit Book *SOS Planet Earth Nature In Danger* is a fairly comprehensive paperback with colored illustrations. It is written on about a fourth grade level and includes such topics as food chains, cycles of nature, global changes, tropical rain forests, the green revolution and more. Topics are presented in a brief, concise manner. This book would be good for gathering factual information, but not particularly suitable to be read to a young child.

Unit Book *Messy Room* is a paperback cartoon book which describes the antics of the Berenstain Bear family. Their house is freshly painted and neat on the outside and clean inside. "The pictures were straight. The piano

was dusted. The kitchen was spick-and-span”(Berenstain 3). All was well except for Brother and Sister Bear’s room, which was”A dust-catching, wall-to-wall, helter-skelter mess” (5)! Mother Bear is angry and the children argue. Father Bear hears all the commotion and yells *QUIET!* “Now, the mess has really built up in this room,” he said. “In fact, it’s the worst case of messy build-up I’ve ever seen!.....it isn’t fair to you, because you really can’t have fun or relax in a room that’s such a terrible mess”(21). All agree that the room needs organization. A pegboard is made and boxes are labeled. “And Papa had been right too. It was so much more enjoyable to live in a neat, clean, well-organized room— and so much more relaxing”(29).

Unit Book *Water Pollution* is a factual book with excellent photographs and large clear print which is easy to read. It describes above and underground water sources and both fresh and salt water pollution problems. It depicts the way people use water and the things which pollute it. “Almost 200 chemicals that might be dangerous to our health can be found in drinking water today. (1990).....Not all polluted water looks dirty. A lake killed by acid rain looks beautiful and clean. Its water is very clear. This is because no plants or animals live there”(Stille 21). From the section on protecting our waters...”Water that has been polluted can be cleaned. Chemicals can be vacuumed off the bottom with big hoses. But this is very expensive. Scientists are trying to develop bacteria that will break down the oil and make it harmless. Lakes can be protected from acid rain by making factories and power plants burn hard coal or clean the smoke from furnaces that burn soft coal”(44-45).

Unit Book *Don’t Pollute* features the Berenstain Bears and Professor Actual Factual who informs the Bear children that...”We bears and all other creatures need certain things to survive: clean air to breathe, pure water to drink, and good soil to grow food in. If we don’t do something about pollution, we’re all going to become endangered species”(Berenstain 13). The trio then boards the Factualmobile on a journey to identify sources of pollution in their environment. The story concludes with the formation of the Earthsavers Club. “The cubs didn’t expect to solve all of Bear Country’s pollution problems, but the Earthsavers Club made a very good start”(29).

Recycling

People in the United States throw out about 500 million kilograms of garbage a day. About one-third of what the average American throws out is packaging. Finding places to put all the garbage is getting to be harder and harder. In the past everything went to the dump. Now dumps are called sanitary landfills, where tractors push dirt over the garbage. About 80% of our trash goes to landfills. The rest is incinerated or recycled. Materials which can be recycled include glass, metals, paper and plastic.

Another way to recycle is to treat garbage so that it can be made into useful material. This is being done in some sewage treatment plants, where bacteria are added to garbage to speed up the decay. This decayed garbage is used to enrich the soil in the form of fertilizer.

Unit Book *Recycler* is another heavy cardboard book in the shape of a big truck, which is green and has a female driver on the cover. Children and adults are shown loading plastic jugs and bundles of newspapers into the truck. “The driver makes dozens of pickups in the neighborhood. Then she hurries back to the recycling center”(Barkan 5).

Unit Book *Where Does the Garbage Go?* has colorful, clear and interesting drawings. The text describes the disposal of garbage in the past and as it is today. “At one time New York City used the ocean for its dump. It loaded its waste on flat boats called barges. Tugboats pulled the barges out to sea, and the waste was dumped overboard. Most of the trash sank, but some of it floated. Often it floated right back to the beaches

where people were swimming. *Ugh! Yecch!*" (Showers 10-11). The landfills of today are nicely illustrated, including a pie chart clearly representing the makeup of a land fill. (1% glass, 6% metal, 50% paper, etc.) Informative diagrams depict how an incinerator works. Paper mills and aluminum factories are shown recycling products. The recycling of glass and plastic is also described and illustrated.

Unit Book *50 Recycled Crafts for Kids* is a step by step arts and crafts project book designed to explore creative projects for children through the use of recycled materials. The colored photograph illustrations are clear and complete. The text is straightforward and easy to understand. The book is filled with good ideas and project suggestion. Tin-can stilts, paper-plate masks, button clackers, rhythm sticks, and nail chimes are a few examples. A project using wood twigs and bark to create a nature frame looks very interesting, as does a papier-ma'che' decorative bowl. Most of the projects shown in the book would be suitable for children of all ages. Very young children would need adult assistance and supervision. It is the kind of book which inspires one to save cardboard tubes, foil pie pans, and old newspapers.

Unit Book *Reducing, Reusing, and Recycling* is a book suitable for upper elementary and middle school students. It shows real kids working on recycling projects in which they are involved. There are sections on developing a new attitude, becoming a careful consumer, and how to take action. The photographs are clear and interesting and the text is informative and to the point. Included is a list of some sample Earth Day pledges, with the challenge of - Which one have you put into practice?

Food Chains and Webs

The food chain is a way of showing the food relationships among a group of organisms. A web is a way of showing how food chains are related. In every ecosystem, the organisms are related by how they get their food. In a food chain, each organism is a link. It eats the organism below it, and it is eaten by the organism above it. The organisms in a food chain almost always eat more than just one kind of organism. Or they may be eaten by more than just one other organism. A food web is a more complete way of showing food relationships. A food web shows how a number of food chains are related.

Unit Book *The Magic School Bus Gets Eaten* is a paperback storybook about a school class going on a field trip to the beach. When they get to the ocean the bus turns into a dolphin-like creature who swims under the water with the children aboard. Along the way the students begin to understand about the food chain, as they observe larger creatures eating smaller ones. When they return to school Arnold and Keesha give their report. " It's like a chain, with everything connected," said Arnold. "Tiny plants—like the scum on my shoe—are eaten by zooplankton. The zooplankton are eaten by anchovies." "The anchovies are eaten by tuna fish," continued Keesha. "And last of all, the tuna fish is eaten by ME! I guess that puts me at the top of *this* food chain, and am I ever hungry"(Cole 25)!

Unit Book *Who Eats What?* is a beautifully illustrated book which explains the concept of food chains and webs in a very clear and easily understood manner. It begins...."A caterpillar is eating a leaf on an apple tree. Later the caterpillar is spotted by a wren. It becomes part of the wren's dinner. Still later the wren is eaten by a hawk. Leaf, caterpillar, wren and hawk are all linked. Together they form a food chain. The hawk is the top of the food chain, because no other animal attacks and eats hawks. The animal at the top of the food chain is always the last eater—the one nobody else eats"(Lauber 4-7). The text continues with explanations of more complex scenarios along with fine illustrations.

The Water Cycle

The water cycle is the movement of water from the atmosphere to the earth and then back again to the atmosphere. Water falls to the earth as rain, snow, sleet and hail. Some of this water flows to oceans, lakes and rivers. Some water evaporates, or changes into a gas. Some water soaks into the ground to be used by plants. All animals drink water. Water is given off by animals and plants during respiration.

Unit Book *The Magic School Bus Wet All Over* is a book about a fantasy in which a bus load of school students actually turn into droplets of water. Their voyage is fascinating as they rise to the sky to become water vapor in clouds and then rain into a real rain forest. They continue their journey down streams to eventually reach the ocean. Their adventure continues as they float their way through the water works. "We felt ourselves being sucked into a big pipe with a lot of dirt and gunk from the reservoir. "I can't believe we drink this stuff!" said Carlos. "It gets...I mean we get cleaned first," said Arnold. "Here comes the strainers"(Cole 22)! Safely back at school Ms Frizzle asks the children what they thought of the water cycle. Wanda smiled and replied, "As usual, Ms Frizzle, you're field trips really make a splash"(28).

Unit Book *Water, What it is and What it Does* is a simple introduction to the topic of water. It is designed as an easy reader, suitable for elementary school students. The factual information is clearly presented along with engaging illustrations and diagrams. There are sections on the water cycle, the power of water, keeping water clean, and water shortages.

Unit Book *The Trip of a Drip* is a How the World Works book which traces the journey of water to and through our lives. It is comprehensive and factual, yet easy to read and understand. "When experts determine how much water is needed by a city or town, they add up how many people live there. Then they figure that each person needs about 150 gallons of water a day. You need water for more than drinking. You need water for cooking, laundry, bathing, and flushing the toilet" (Cobb 13-14). Water movement is described in the following way. "A drop of water that was once in your house can go many places after leaving a sewage treatment plant. It can travel through lakes and rivers. It can become part of the ocean. It can also turn up again in your faucet. Water travels in circles. Nature is the greatest recycler of all time. All because water is a truly amazing substance" (34-35).

Unit Book *Water, Water Everywhere* describes the importance of water and how it has shaped the earth. The simple text is illustrated by striking color photographs of water in all forms, from vast oceans to droplets on a leaf. It ends with the words; "Being near water keeps us in touch with the life of the earth" (Rauzon 32).

Natural Habitats, Endangered Species and Balance

An organism's habitat is the type of environment where it lives. Fish live in water. Water is their habitat. The habitat of an organism has the food and water the organism needs to live. An organism's habitat also provides shelter and a place to reproduce. There are many different kinds of habitats. Some are very big, while others are small.

Environments are constantly changing. There is a delicate balance in the environment of the three resources necessary for life: air, water, and food. Too much or too little of a resource can affect life and upset the balance. A change in the balance of just one species can be harmful to the other organisms in the environment. Natural causes such as a volcano or forest fire can upset the balance of an environment. These disturbances destroy organisms and their habitats.

People can also upset the balance of an environment. Their actions often destroy the habitats of organisms.

They cut down forests in the name of progress. They build dams and dig mines. Often these disturbances cause permanent damage to the environment and it cannot return to normal.

People also damage the environment by polluting the air, water, and soil, which in turn upsets the balance of nature. Upsets in the balance of an environment have made it hard for many species to survive. Endangered species are those who are in danger of dying out. In the past most species became extinct because of natural causes. Now the cause is because of what humans do. There are now over five billion humans, but other species are disappearing fast.

Unit Book *Farewell To Shady Glade* , as the name implies, is the story of a group of animals being disrupted from their natural habitat. “They lived together in a peaceful neighborly fashion. These simple woodland creatures were content to believe that nothing could ever spoil their quiet little world.....Then one spring day there came a deep rumbling sound” (Bill Peet 1). The birds left and the monstrous diggers and bulldozers arrived. The animals decide to leave Shady Glade and go far, far away. They climbed a tree with a branch that stretched out over the railroad tracks. “Now don’t jump until I give the signal,” shouted the raccoon, “and when you land, remember to land flat!”..... When the diesel locomotive came rushing under them, the raccoon raised a finger—“Get set!”— and as the streamlined cars flashed by he gave the signal—“All aboard”—and they jumped, each one in a perfect flat four point landing”(18). The train sped through the open countryside and then came to a stop in the city. “What a sorry sight,” sighed the raccoon. “What a stench,” squeaked the skunk”(22). They waited in the station on top of the train until it slowly started to move again. The streamliner raced on through the evening past forests and winding streams, but a jump to the ground was impossible. Suddenly there was a screech of wheels and the train stopped. “A rock slide,” growled the engineer”(32). The animals scrambled off the top of the train car. “The next morning when they awakened for their first view of their new surroundings they were overjoyed..... “This is more like it,” boomed the bullfrog.....“Exactly like it,” exclaimed the raccoon. For it was indeed almost exactly like Shady Glade with a towering sycamore, a winding creek, and all the trimmings”(36).

This book was dedicated to Rachel Carson.

Unit Book *Are You My Mother?* tells the well known story of a baby bird who hatches and falls from his nest while the mother bird is off gathering food. He does not see his mother nearby, so he sets off to find her. “He did not know what his mother looked like. He went right by her” (Eastman 20). The baby bird meets various animals along the way and inquires of each—‘Are you my mother?’ “I did have a mother,” said the baby bird. “I know I did. I have to find her. I will. I WILL” (37)! His quest continues as he encounters cars, boats, airplanes, and finally a digger. At each meeting he asks... ‘Are you my mother?’ In the end the baby bird is returned to his natural environment; a nest in a tree, by Snort the backhoe. Mother and baby bird are reunited on the final page.

Unit Book *Will We Miss Them?* is a wonderful picture book with detailed drawings of endangered animals in their natural habitats. The text explains who these animals are and why they are in trouble. “Elephants are endangered because of two problems- hunters and farmers. As more people try to farm the land, there is less space for the elephants. Also, hunters kill elephants for their valuable ivory tusks”(Wright 5). Alexandra Wright, the sixth grade author of this book, wrote it in the hopes that other children would start to care about some of these very special animals. This book is suitable for children of all ages.

Unit Book *Endangered Animals* is a book with large print and simple sentences. It describes various endangered animal species and tells why they are in danger. It offers solutions concerning what can be done to save them. “Endangered means they are in danger of becoming extinct. If all the animals of a kind die, that

kind of animal is extinct”(Stone 5). This is a good book for students with limited reading ability.

Unit Book *Protecting Endangered Species* is an interesting paperback full of facts and information presented in an eye catching manner. An example of one extinction fact: “Species are becoming extinct 1,000 times faster than they did before humans appeared” (Cartwright 3). There is a section on ‘success stories’ which tells of peace for polar bears, action for alligators, victory for vicunad, success for swans, and tortoise triumphs. The food chain is explained and natural habitats are discussed. This ‘Tree Fact’ is presented in the silhouette of a tree: “When one oak tree is cut down, it may affect as many as 280 other species. This is because they are all connected to the tree in some way in a food web”(4). This book would appeal to students through high school.

Teaching The Unit

Goal Students will demonstrate academic progress and developmental growth in literacy skills

Objectives Students will expand their knowledge and gain experience in:

1. Environmental Science
2. Reading for pleasure and understanding
3. Writing for communication and self expression
4. Art for creative expression and communication

Methodology Students will gain an understanding of the unit topics in a variety of ways, according to their individual learning styles and ability levels. Materials will be presented in the following manner:

1. Books relating to the environment will be made available to the students.
2. Students will select books to study and read based on individual interests and reading levels.
3. Books of common interest will be shared with the class or another student.
4. Students will be encouraged to read to the class and each other.
5. The teacher will interact with the students in order to inform, and clarify information.
6. The teacher will model expressive interpretation by reading aloud to the class.
7. Students and teacher together will develop lists of words in alphabetical groupings in anticipation creating a book.
8. Students will record unknown words in their reading in order to expand their vocabulary.
9. Students will visit neighborhood libraries to select children’s books on the environment. These books will be read to their babies and young brothers and sisters.
10. Students will complete various assignments and worksheets relating to their area of study.
11. Students will participate in the experience of creating an original book.

Evaluation Knowledge, understanding and academic growth gained by the students will be evaluated using the following criteria:

1. Teacher corrected worksheets
2. Completed assignments
3. Teacher observation of group participation and interaction
4. Teacher observation of individual involvement in reading materials
5. Teacher observation of interest and participation in field trips
6. Teacher observation of student interest and effort relating to creating and completing the culminating project
7. Progress in reading and writing as measured by teacher observation and standardized testing

Sample activity Unit Topic: The Environment

This worksheet should be assigned following generalized study of the unit topics.

Directions : Choose the best answer from the words in the box below. Write that answer in the blank to complete the sentence.

Pollution recycle
water cycle earth
Endangered species web

1. _____ are those who are in danger of dying out.
2. The _____ is the movement of water from the atmosphere to the earth and back again.
3. A food _____ shows how a number of food chains are related.
4. A way to ³¹ is to treat garbage so that it can be made into useful materials.
5. _____ is the addition of harmful materials to our water or air.
6. Simple one-celled green plants first made the _____ livable for animals.

Sample test Unit Topic: Introduction

This test should be given following the study of the unit topic: Why read to children?

Directions : Answer the following questions with the words TRUE or FALSE. If you think a statement is false, please correct it.

1. When babies are only a few hours old they can make sounds. _____
2. When a baby cries, he is usually trying to tell you something. _____
3. Babies may be soothed by a human voice which they know. _____
4. Most babies do not like singing, rocking, and cuddling. _____
5. Playing games like 'Pat-A-Cake' helps babies develop language. _____
6. Little children are too young to be read to. _____
7. Reading to children helps sharpen their listening skills. _____
8. Children often feel a closeness with parents who read to them. _____
9. Children usually have trouble in school when they are read to at home. _____
10. Almost all children are happy when someone reads to them. _____

Sample project Unit Topic: Creating a book

This project should be completed following the study of the entire environmental unit.

Directions : Students will create individual books in the following manner:

A. Preparation

1. Early in the presentation of the unit the teacher will explain the final project to the students so that they might start thinking about a direction to follow in order to achieve the intended end result.
2. Throughout the study of the unit, students and teacher will record "book" suggestions and

ideas as they occur. These could include topics of interest, storylines, alphabet sentences, or illustration possibilities.

3. While the unit is being studied, lists of new vocabulary will be generated by the teacher and students.

4. Alphabet charts, listing words beginning with the same letter, will be made by the students. These can be added to throughout the study of the unit.

5. In addition to the unit books, number books and alphabet books will be read and studied in order to gain ideas about format and presentation.

6. The preparation process for the culminating project will be ongoing throughout the environmental curriculum unit of study.

B. Making the book

1. The types of books produced will depend on the particular classroom population working on the project. The possible varieties are limitless.

2. Subject content may be simple to complex. However, it is intended that the student will be able read his book fluently to a young child.

3. A generalized rough draft of the text and layout, done with pencil and paper, should be completed first.

4. Text may be typed using a word processing program connected to a printer. Students usually enjoy experimenting with style, font and size. Illustrations, if included could, be computer generated as well. Results of both text and illustrations could be used 'as is' for pages in a book. Another way to work with this printed material would be to cut out sections to be used on another type of backing material, such as colored paper. These sheets could then be laminated for durability. (printing shops provide this service for a nominal cost)

5. Text could be hand written, possibly in calligraphy or some other interesting style. Original illustrations might be done in black and white pen and ink, watercolor paints, or colored pencils. These techniques could be executed directly on the book pages, or done separately, and then transferred to another type of page backing. Designs created with cut or torn colored paper, as well as pictures from magazines, could also be utilized for illustrating the text.

6. Books may be put together in a number of ways. Double pages may be sewn together with the binding, adding front and back covers to create a book. This is a satisfying process for some students, but time consuming and frustrating for others. A more simple method involves putting together separate pages. These pages can be combined using fasteners, rings, ribbons, braided yarn, etc. depending on the number of pages and thus the thickness of the book. When using this method, it is best to use a puncher and reinforce the holes. Another alternative is to use a book which has already been put together, such as a notebook with blank pages. These can then be covered in a suitable manner. Books with attractive covers and blank pages may be purchased in book and stationary stores. Other suggestions include the use of photo albums, or discontinued

wallpaper books.

Suggested reading for the book project

Benjamin, Carol. *Writing For Kids*. New York: Thomas Y. Crowell, 1985.

DeJohn, Marie. *Little Golden Picture Dictionary*. New York: Western Publishing, 1981.

Jenkins and Schiller. *My First Picture Dictionary*. Illinois: Scott, Foresmen and Co.. 1975.

Miller, Roberta. *Chipmunk's ABC*. New York: Western Publishing, 1963.

Purdy, Susan. *Books For You To Make*. New York: Lippincott Co., 1973.

Rodger, Elizabeth. *The Bunnies' Counting Book*. New York: Western Publishing, 1991.

Shaw and Dyches. *First Science Dictionary*. New York: Franklin Watts, 1991.

Woodcock, John. *Binding Your Own Books* . Great Britain: Penguin Books

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Asch, Frank. *The Earth and I*. Singapore: Harcourt Brace and Co., 1994.

Barkhan, Joanne. *Recycler*. New York: Simon and Schuster, 1996.

Berenstain, Stan. *The Berenstain Bears and The Messy Room*. New York: Random House, 1983.

Berenstain, Stan. *The Berenstain Bears Don't Pollute*. New York: Random House, 1991.

Bodecker, N. M. *Miss Jaster's Garden*. New York: Golden Press, 1972.

Brenner, Barbara. *The Earth Is Painted Green*. New York: Scholastic, Inc., 1994.

Cartwright, Mary. *Protecting Endangered Species*. London: Usborne Publishing, 1990.

Chorao, Kay. *The Baby's Lap Book*. New York: Dutton Children's Books, 1990.

Cobb, Vicki. *The Trip of a Drip*. Boston: Little, Brown and Co., 1980.

Cole, Joanna. *The Magic School Bus Wet All Over*. New York: Scholastic, 1996.

Cole, Joanna. *The Magic School Bus Gets Eaten*. New York: Scholastic, 1996.

Dinan, Carolyn. *The Best Book of Nursery Rhymes*. New York: Byeway Books, 1989.

Donovan, Melanie. *The Mother Goose Word Book*. New York: Western Publishing, 1987.

Eastman, P.D. *Are You My Mother?* New York: Random House, 1960.

Eisenberg, Murkoff and Hathaway. *What To Expect The First Year*. New York: Workman Publishing, 1989.

Elliot, Marion. *50 Recycled Crafts for Kids*. New York: Anness Publishing, 1996.

Evans, Pauline. *The Family Treasury of Children's Stories*. New York: Doubleday and Co., 1956.

Harlow, Morgan. *SOS Planet Earth Nature in Danger*. New York: Kingfisher, 1995.

Ingoglia, Gina. *Look Inside The Earth*. New York: Grosset and Dunlap, 1991.

Kalman, Bobbie. *Reducing, Reusing, and Recycling*. New York: Crabtree Publishing, 1991.

Lauber, Patricia. *Who Eats What?* New York: Harper Collins, 1995.

Peet, Bill. *Farewell To Shady Glade*. Boston: Houghton Mifflin, 1984.

Peet, Bill. *The Wump World*. New York: Houghton Mifflin, 1970.

Rauzon and Bix. *Water, Water Everywhere*. San Francisco: Sierra Club Books for Children, 1994.

Seixas, Judith. *Water, What it is and What it Does*. New York: Greenwillow Books, 1987.

Showers, Paul. *Where Does The Garbage Go?* New York: Harper Collins, 1994.

Silberg, Jackie. *Games To Play With Babies*. Maryland: Gryphon House, 1993.

Stein, Ralph. *Let's Sing Together*. New York: I. C. F. Inc., 1988.

Stille, Darlene. *Water Pollution*. Chicago: Childrens Press, 1990.

Stone, Lynn. *Endangered Animals*. Chicago: Childrens Press, 1984.

Thomas, Shelly. *Putting The World To Sleep*. New York: Houghton Mifflin, 1995.

Trelease, Jim. *The New Read Aloud Handbook*. New York: Penguin Group, 1989.

Wilkes, Angela. *My First Green Book*. New York: Alfred Knoph, 1991.

Wright, Alexandra. *Will We Miss Them?* Watertown, MA: Charlesbridge Publishing, 1992.

Suggested Reading

Butler, Dorothy. *Babies Need Books*. New York: Atheneum, 1985.

Carson, Rachel. *Silent Spring*. Boston: Houghton Mifflin, 1962.

Colborn, Dumanoski and Myers. *Our Stolen Future*. New York: Penguin Group, 1996.

Harr, Jonathan. *A Civil Action*. New York: Random House, 1996.

Kudlinski, Kathleen. *Rachel Carson Pioneer of Ecology*. New York: Penguin Group, 1988. (suitable for young readers)

Porritt, Jonathon. *Save The Earth*. Atlanta, Georgia: Turner Publishing, 1992.

UNICEF. *The State of the World's Children*. New York: Oxford University Press, 1997.

Wargo, John. *Our Children's Toxic Legacy*. New Haven: Yale University Press, 1996.

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