THE DEVELOPMENT OF A RESOURCE GUIDE
THAT WILL INTEGRATE CHILDREN'S LITERATURE
WITH THE MINNESOTA DEPARTMENT OF EDUCATION'S
ENVIRONMENTAL EDUCATION LEARNER OUTCOMES
INTO A WHOLE LANGUAGE CURRICULUM

by

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ABSTRACT

If environmental education is going to become a valued part of an already overcrowded curriculum, methods of integration are imperative. *The Natural World and the Natural Word, A Resource Guide of Children's Literature and Environmental Education Activities* was developed to promote the integration of environmental education into an existing language arts curriculum.

There are a multitude of children's tradebooks on the market as well as curriculum resource guides available to educators. This study critically reviewed and evaluated trade books and environmental education curriculum sources to develop this Resource Guide. The Resource Guide identified five themes based on the State of Minnesota's Goals for Environmental Education. For each theme a list of the following is provided: reviewed children's literature, recommended children's literature, literature response activities and environmental education activities. Referenced books were put into alphabetical order by author and title. Resource books were divided into whole language curriculum sources and environmental education curriculum sources and were alphabetized by author.

Several workshops were presented to introduce literature, show examples of students work, participate in an activity and to receive an overview of the Resource Guide. Survey results from workshops showed high interest in using children's literature to teach environmental education concepts and that the Resource Guide was potentially a valuable reference.
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CHAPTER I
INTRODUCTION
STATEMENT OF THE PROBLEM

Major Problem

The purpose of this project is to design an environmental education resource guide which utilizes children’s tradebooks as a strategy to integrate the State of Minnesota Department of Education’s goals for environmental education into an existing curriculum.

Subproblems

1. To research and identify appropriate children’s literature that have environmental themes.
3. To publish an environmental education children’s literature resource guide.
4. To create and lead a workshop for teachers that will promote the integration of environmental education into a whole language or a traditional language arts curriculum using children’s literature.
5. To develop and administer a survey that will determine the effectiveness of the resource guide.
Delimitations

1. This study will not attempt to evaluate the effectiveness of children's literature as a tool.
2. This study will not attempt to make teachers proficient in Whole Language.
3. This study is not intending to create a product that is a comprehensive listing of literature with environmental themes.
4. This study is not attempting to be a juried evaluation of the quality of individual pieces of literature.

Definition of terms

1. Integrate—for the purpose of this study, integrate is the process in which environmental concepts are incorporated into an existing whole language or traditional language arts curriculum.
2. Literature Circles—small student directed and teacher guided discussion groups that happen when a book is being read together.
3. Literature Response—a written or verbal reaction to a written text.
4. Tradebooks—literature that is written, published and distributed by and for the general public and is not part of a graded or developmental series.
5. Whole Language—a philosophy of teaching reading and writing through integrating the language processes of reading, writing, speaking and listening.

Abbreviations

EE is the abbreviation for Environmental Education.
Assumptions

The first assumption is that children's literature is a viable tool to integrate environmental education.

The second assumption is that the goals for environmental education can be integrated into a whole language curriculum using children's literature.

The third assumption is that children's literature has value regardless of age.

The fourth assumption is that combining children's literature with environmental themes with environmental education activities creates a more meaningful experience.

Importance of the Study

The need for environmental education (EE) in today's school curriculum is greater than ever. With the continual rise of environmental issues related to deforestation, ground and surface water contamination, global warming, and solid waste disposal, it is an opportune and vital time to educate children to become knowledgeable, responsible, active decision makers.

The need is apparent. The means of getting EE into the curriculum is the challenge. With currently overloaded curriculum expectations, there appears to be no room for any other additions. If EE is to happen within the school curriculum, the integration of EE concepts into the existing curriculum is the most likely and desirable avenue. The philosophy and teaching strategies of teaching reading and writing through whole language combine well with the philosophy and teaching strategies of EE. By bringing children's literature together with EE concepts, the burden of adding one more curricular topic will be lightened. The integration of the two will meet the educational and social needs of more children and it will foster
more open discussions amongst children which will result in creative/critical thinking and problem solving skills.
CHAPTER II
REVIEW OF LITERATURE

Goals of Environmental Education

"Environmental education means many things to many people" (Volk, 1993). In the past, education about the environment focused on nature studies, outdoor education and conservation education. Each of these areas of study included knowledge about, appreciation of and sensitivity to the environment but not until recent rising concerns of environmental quality has EE focused on human relationships and impact on the environment (Disinger, 1993). "Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve those problems and motivated to work toward their solutions" (Stapp, et. al., 1969 as found in Disinger, 1993).

In schools, EE has progressed throughout the years from being a scattered lesson here and there to a mandated component of the curriculum in some states. Until recently, EE has been primarily the responsibility of science teachers and those educators who have had an interest in the topic. These isolated incidents, along with the lack of a consistent EE curriculum, have not resulted in any overall impact on individuals attitudes or behaviors towards the environment (Volk, 1984).

With the creation of clear curriculum goals for EE by Hungerford, Peyton and Wilke (1980), curriculum development and instruction can be more focused and directed, and therefore, more effective. The Superordinate Goal of Environmental Education is:
...to aid citizens in becoming environmentally knowledgeable and, above all, skilled and dedicated citizens who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment." (Hungerford, et. al., 1980).

From this overall goal, curriculum can be further defined and developed based on the following environmental education objectives:

**Awareness**: to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.

**Knowledge**: to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems.

**Attitudes**: to help social groups and individuals acquire a set of values and feelings of concern for the environment and motivation for actively participating in environmental improvement and protections.

**Skills**: to help social groups and individuals acquire skills for identifying and solving environmental problems.

**Participation**: to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems. (Hungerford, et. al., 1980).

More specific goals for curriculum development by Hungerford, Peyton and Wilke (1980) were written to be more definitive and directive in the creation of EE materials (Appendix A).

In Minnesota, a state plan for environmental education was prepared and presented in 1993 by the Office of Environmental Education and the Minnesota Environmental Education Advisory Board called *A GreenPrint for Minnesota*. The
primary target audience for this plan was preK-12 students and it included seven goals:

To understand ecological systems.

To understand the cause and effect relationship between human attitudes and behavior and the environment.

To be able to analyze, develop, and use problem-solving skills to understand the decision-making process of individuals, institutions, and nations regarding environmental issues.

To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.

To understand the potential complementary nature of multiple uses of the environment.

To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.

To provide information citizens need to make informed decisions about actions to take on environmental issues, (Minnesota Office of Environmental Education, 1993).

These established state goals along with the international goals and objectives are a strong foundation on which to build an EE curriculum.

Environmental Education in the Curriculum

In addition to traditional academic disciplines and specialists, current classroom curriculum is overcrowded with many special interest topics including drug education, multicultural education, conflict resolution, health issues education not to mention environmental education. Due to the fact that EE isn't considered a traditional academic subject, finding a niche in the curriculum has been difficult over the years. Therefore, “The common wisdom is that it should be approached in
an interdisciplinary manner and infused in all content areas” (Disinger, 1993). There are many references and recommendations that EE be infused into existing curricula (Samuel, 1993) and according to research by Disinger (1989) infusion of EE into the curriculum is common practice in most states across the country.

Environmental education incorporates the holistic focus of progressive education in which education is more responsive to the needs of children. The primary premise being that children learn by doing (Disinger, 1993). Environmental education can be experiential and interactive. It can allow for opportunities to meet a variety of learning styles, interests and abilities of children. Based on the premise that EE curricula such as Project Wet (1995) integrates thinking, feeling and acting in meaningful learning experiences, EE curricula can meet the needs of the “whole child” (Brody, 1995). EE provides opportunities for students to study real life environmental problems that rely on developing and using higher order thinking skills including reasoning, analyzing, predicting, estimating and problem solving (Disinger, 1993).

According to Volk (1993), the skills for issues investigation in EE include:

- generating research questions
- accessing information from print and other resources
- comparing information from a variety of sources
- synthesizing information from a variety of sources
- developing research questions
- collecting data
- generating data-based conclusions, inferences and recommendations
- interpreting and communicating data.

These particular skills along with the aforementioned higher order thinking skills blend well with the skills of literature study groups and inquiry, thus making the integration of EE into a language arts (reading and writing) curriculum possible and promising. Biographical literature studies of naturalists and environmental advocates such as Rachel Carson, John Muir, and Aldo Leopold can teach about the
genre of biography as well as model environmental ethics and action. Thus, language arts curriculum is one viable discipline in which environmental content can be integrated without threatening the integrity of the subject (Volk, 1993).

By integrating the goals and objectives of EE, the areas of science, art, social studies, language arts and music can be enriched to promote the importance of caring for and improving the quality of the environment. If EE is going to flourish and be successful in the schools, it is going to be up to educators to integrate it into other curricular areas (Krueger, 1988).

Whole Language in the Curriculum

The current trend in language arts education is towards a whole language and literature based curriculum. Although somewhat controversial in some school districts, whole language theory and philosophy is based on children learning to read and write for function and purpose while being exposed to a variety of reading and writing experiences. As a baby learns to talk through continual exposure and experimentation with language, so does a child learn to read and write. Children learn language and about language as they use it (Goodman, 1986). Whole language is a philosophy of teaching reading and writing in whole parts (function and purpose of language and making meaning), rather than broken, unrelated pieces (phonics, spelling, grammar and punctuation). Whole language integrates reading, writing, speaking and related skills with a child's developmental needs in context with what a child is learning (Goodman, 1986). Curriculum, therefore, is inspired collaboratively between the teacher and the child and is based on the needs of the learner. When language experiences are meaningful, purposeful and relevant, children become more motivated and involved with their learning. The *Foxfire Books* edited by Eliot Wigginton (1972) are excellent examples of student/teacher
curriculum collaboration which led to meaningful language experiences that revolutionized a high school English curriculum in rural Georgia.

Learning to read with tradebooks based on topics that are interesting and engaging, involve the reader and encourage her to seek more opportunities to read as opposed to textbooks which are often dry and uninspiring. On account of the high interest and appeal of literature with environmental themes, it can facilitate the process of learning to read with the learning of environmental skills and concepts.

**Literature Circles and Response**

One strategy used to develop literacy in a whole language classroom is literature groups or circles. Within this framework, children choose books to read together that have the same title, theme, genre or author. They gather together throughout their reading of the book for discussions. These discussions can be based on personal or assigned questions, observations, literary elements, thoughts and opinions. Independent inquiries or projects inspired by literature can arise from these discussions. It is in this vein that environmental education concepts and skills can be integrated.

Through guided discussions and modeling by the teacher and/or experienced students, literature circles are forums for learning how to think and respond critically and thoughtfully along with analyzing the content and author’s craft of writing (Short, 1990). Students can ask their own questions, seek their own answers and respond to others’ thoughts and wonderings. They can teach and learn from each other, which involves a multitude of social skills-including collaboration, creative thinking, problem solving, stating personal opinions respectfully and listening carefully (Short, 1990). All of these skills are critical in the process of
Responding to literature is a natural consequence of reading (Hindley, 1996). As a reader reads, she creates her own images and meaning from the text and then responds to it by forming personal thoughts and opinions. Often a response to literature may not occur until much later and it may be a composite of responses to a variety of readings (Munson, 1991).

An integral part of literature circles are response journals in which students record their responses for later discussions with their peers. Response journals are an avenue for children to write their thoughts, opinions, information, ideas, favorite passages, wonderings and questions as they are reading. These musings can be used as seeds to generate group discussions, writing projects and/or inquiry projects.

Children's literature with environmental themes, by its nature, invite children to respond. When well written they portray cause and effect relationships, give vivid descriptions and pictures, and can provide vicarious experiences for children (O'Brien, 1987). Rosenblatt (1982) distinguishes between two types of response to literature 1) efferent (giving back facts and details) and 2) aesthetic (reflecting connections between reader and text through imagination, prediction, interpretation and evaluation). The later is more emergent and holistic for a child (Sebesta, 1995). These responses tend to be more thoughtful and reflective and show more emotional connections to the story. They involve the reader in picturing and imagining the content of the story, identifying with characters and situations and then applying it to personal values (Hindley, 1996). Aesthetic responses are therefore more authentic and meaningful resulting in a deeper awareness of the story and its elements. It is the aesthetic response to environmental literature that may encourage students to take some type of environmental action. When a child
responds to literature thoughtfully and makes connections, they are responding in the affective domain. It is this area of learning in which positive attitudes towards the environment can be encouraged. Researchers have found that “attitudes are crucial in determining whether people take part in maintaining environmental quality” (Lane, et. al., 1995). Developing and encouraging aesthetic responses to literature is a valuable strategy for educators to use when studying environmental literature.

Responding to literature can take many forms from journaling in response notebooks (reflections, questions, opinions, notes, facts,) to creating skits, to studying independent projects to writing personal stories. In learning about the environment through literature, whether it be a tradebook, magazine or newspaper article, we want children to connect with the natural world, learn about it, ask questions and act upon their ideas.

Children’s Literature with Environmental Themes

Children’s literature is a powerful medium for transmitting knowledge, information, ideas, and values and it plays a significant role in the lives of children (Short, 1990 and Pomerantz, 1986). It can provide clear explanations of important concepts (O’Brien, 1987). When used well, children’s literature can foster and promote intellectual and conceptual growth, critical thinking skills, and a lifelong enjoyment of reading (Cullinan, 1987). In general, children tend to respond better to literature than expository texts, (O’Brien, 1987). Therefore, the use of tradebooks in the classroom is becoming more and more popular to enrich set curricula or to replace textbooks and basal readers all together. They are also being used as a springboard to create thematic units and inquiry projects that reinforce and expand upon the content and concepts of the text.
A major source in which children get their information about environmental topics is from books (Pomerantz, 1986) and literature is one of the best ways to incorporate EE into the classroom curriculum (O'Brien, 1987). Research also shows that books can give learners a positive attitude towards the environment (Volk, 1993). With these encouraging statements, children's literature appears to be a valuable tool in which to integrate environmental concepts into the curriculum. Due to the interactive nature of EE, along with the powerful use of language in children's literature, interweaving of the two holds great potential. There are many published children's tradebooks on the market that are related to environmental topics. Choosing quality literature that is accurate, informational, well written and meet the needs of children and the curriculum can be challenging (Krueger, 1988). When literature is chosen well it can stimulate interest and enthusiasm in environmental topics (O'Brien, 1987).

There is no absolute definition of children's literature (Sutherland, 1991). A few definitions include: “written material appropriate for children, limited by their experiences, understanding and emotional and psychological development” (Krueger, 1988), “books that are not only read and enjoyed, but also that are written for children and that meet high literary and artistic standards” (Sutherland, 1991), and “a significant truth expressed in appropriate elements and memorable language” and “will give the reader pleasure and the opportunity to understand themselves and others” (Lukens, 1990).

The value of children's literature is extraordinary. Quality literature models quality language used for writing and speaking (Cullinan, 1987). It is a vehicle for transmitting current values to children. It lets children know what “adults consider appropriate ways of behaving, believing, and valuing as well as who and what we consider important” (Cullinan, 1987). Children's literature can take children
anywhere and experience anything. They can vicariously go to the tropical rainforests or swim in the coral reefs with tropical fish. It makes children more knowledgeable and develops their imagination. It encourages independent thinking and enhances vocabulary. Children’s literature “explores the nature of human beings and conditions of humankind” (Lukens, 1990). It shows us the past so we can affect the future, which is critical in studying environmental issues. Quality literature changes us (Short, 1991).

Two goals for any reading program are to “teach children to read” and to “make children want to read” (Cullinan, 1987). Meeting these two goals is dependent on the quality of literature available to children.

Literature is composed of several literary elements including: plot - sequence of events showing characters in action, character - defined by social, emotional and mental qualities, setting - time and/or place, mood, style - the way author says something and tone/mood - the author’s attitude towards subject and reader (Lukens, 1990). Each of these elements are used to evaluate fiction literature.

Because there is such a wide range of literature from which to choose, there are some literary topics to be aware of. In choosing literature with environmental themes, look for plots that include tension and action. Make sure the characters are believable and involved with the plot. The setting affects and influences the character and the plot and must be integrated within the story. Choose literature whose language is not overly simplified and condescending (Lukens, 1990). Both fiction and nonfiction environmental literature must be accurate and current with its information (Sutherland, 1991). To be valid and authentic, authors must provide diverse perspectives when taking on an environmental problem (Freeman, 1992). Jean Craighead George’s book Owl in the Shower balances both the logger’s and the environmentalist’s perspective on the cutting of old growth forests in the
northwest. Literature that forces moralistic viewpoints on the reader can be threatening and must be avoided (Lukens, 1990). *Just a Dream* by Chris VanAllsburg is one such book in which a young boy is haunted by a series of nightmares that reveal various forms of environmental degradation. At the end of the story he makes amends with his thoughtless behavior, throwing a piece of paper on the ground, by planting a tree on his birthday. This type of didactic message does not give the reader an opportunity to form his own opinion rather the opinion and values of the author are forced upon the reader (Raglon, 1993).

There continues to be debate amongst researchers about the value and place of anthropomorphism, a literary device that attributes human qualities to animals, in literature (Lukens, 1990 and Krueger, 1988). It can be useful and enjoyable when studying fantasy and folk tales but can be problematic when used to study environmental topics. Although there are a few books that use anthropomorphism to teach environmental content and problems (example: *Tucker's Countryside* by George Seldon), children need to learn about animals and their habits by reading accurate fiction and nonfiction materials or by observing them in their habitats.

It is the opinion of the researcher that literature whose themes focus on environmental problems must be balanced with literature that tells about environmental successes. Over exposure to environmental crisis' may be overwhelming and leave the reader feeling hopeless and not wanting to participate in any type of environmental action. Books like *Come Back Salmon* by Molly Cone and *She's Wearing a Dead Bird on Her Head* by Kathryn Lasky are two success stories that convey the positive results of collaborative work for the environment.

Children need to be taught to be critical readers, to look for bias and propaganda and distinguish between facts and opinions. They need to be encouraged to check sources and ask questions (Sutherland, 1991). All of which are
vital skills in an environmental issues investigation. Through studying literature, children can become strong problem solvers and critical thinkers. Literature studies allow for cooperative discussions to understand social and environmental issues as well as literary elements.

There are numerous bibliographies and journals that list and review children’s books with environmental themes. These sources are beneficial in reducing the number of books that are available to ones that would be appropriate to use in an environmental and/or literature study. *E for Environment* (Sinclair, 1992) is a bibliography of books for children ages preschool to 14. This collection is divided into five broad environmental themes under which fiction and nonfiction books are categorized and reviewed. *Nature’s Course* is a quarterly journal published by the Center for Children’s Environmental Literature. Each issue reviews five to eight books based on a general theme such as birds, water, forests or development. Along with the reviews are accounts of what individuals and classes are doing around the country. *Book Links* is a bimonthly professional journal of children’s literature published by the American Library Association. Each article includes reviews of children’s books based on a particular theme. There is a general overview of the theme and brief suggestions of activities that can be done in the classroom with a piece of literature. The *Horn Book Guide* is a twice a year publication critiquing all hard cover books published in the previous six months. Next to each review is a rating from 1-6. Outstanding equals 1 and 6 equals unacceptable. Both fiction and nonfiction are reviewed and categorized by theme. The Cooperative Children’s Book Center of Wisconsin in Madison publishes an annual review of children’s tradebooks called CCBC Choices. Literature that is selected for this publication reflect nonsexist and multicultural values, potential appeal to children and present social issues and concerns (CCBC Choices, 1992).
Environmental Education Curriculum Sources

There are many EE curriculum sources made available from advocacy groups, industries, concerned citizens, institutions and governmental agencies (Haury, et. al., 1993). Each one of these groups has its own perspective and focus in creating curriculum and activities thus choosing and evaluating amongst them can be time consuming and complicated. To assist educators in creating and choosing curriculum materials, the North American Association for Environmental Educators (NAAEE) has created a document called Environmental Education Materials: Guidelines for Excellence (Simmons, et. al., 1996). This set of recommendations is divided into six key characteristics that would define high quality EE materials. Each characteristic includes a list of guidelines that are further defined by indicators or what to look for specifically in choosing EE curriculum (Appendix B). These guidelines are a strong foundation in which to evaluate the quality of EE materials available to educators as well as be a standard in developing curriculum.

Some of the most easily accessible resource and curriculum guides include those that are nationally known and sponsored. These curriculum activity guides include Project Wild, Project Learning Tree, Aquatic Wild, Wonders of Wetlands and Project Wet. Each of these guides contains a variety of activities that are divided into EE topics that represent both the goals for EE (Hungerford, et. al., 1980) and the Minnesota State Goals for EE. Activities are a balance of active and passive and indoor and outdoor. These guides are easy to use because of their organization, cross referencing and the hands-on, interactive training one receives at sponsored workshops (Krueger, 1988). The workshops are opportunities to learn how to use the guide successfully through discovery and participating in chosen activities and are only available to those who attend a workshop. Further reviews of these
materials can be found in *The Environmental Education Collection: A Review of Resources for Educators, Volume I* published by the NAAEE. Other activity sources include *Sharing Nature with Children, Sharing the Joy of Nature* (Cornell, 1979 and 1989) and *Environmental Education in the Schools* (Braus, 1993). These sources have a variety of activities for children of all ages and they are available on the market. *Environmental Education in the Schools* is also evaluated in the above review guide and *Sharing the Joy of Nature* is reviewed in Volume II under the same title.

It is important in choosing EE curriculum materials that they meet high standards and that they are grounded in a common understanding of environmental education (Simmons, et. al., 1996). It is through quality curriculum materials that the ultimate goal of developing environmentally literate and active citizens working towards a sustainable planet can be met.

**Promoting Teacher Use of Environmental Education Curriculum**

"Because education is the vehicle through which society prepares its citizens to carry out their responsibilities, education must be environmental" (Ramsey, et al. 1992). The responsibility of educating children about the environment then relies heavily upon classroom teachers. Teachers are the primary decision makers when it comes to determining course content, selecting textbooks, developing teaching strategies and deciding their own style of teaching (Stone, 1989). "[T]eachers are the determiners of the curriculum" (Stone, 1989). Therefore, it appears that the success of EE is dependent on individual teacher’s abilities, confidence, time commitment, resources and interest. One crucial goal then, is to effectively teach educators the goals and objectives of EE and that responsibility falls on those who are currently aware, knowledgeable and value this important topic.
Based on previous research, it had been found that responses to the importance of EE had been discrepant with the amount of EE that had been accomplished (Volk, 1984). Environmental education appeared to be highly valued yet not enough was being done to support this value. This discrepancy led researchers to call for a greater need of curriculum development that meets the goals for EE as well as teacher training in using EE curricula (Volk, 1984).

However, there continues to be a variety of barriers that prevent consistent and quality EE from occurring in the classroom. One misconception that many educators have is that EE is a science subject and to teach science, one must be a specialist. This educational barrier, teachers feeling incompetent to teach EE, is one of many barriers including lack of materials and resources, lack of leadership and training, lack of teacher prep time, an overcrowded curriculum, lack of funding and lack of commitment to EE all prevent teacher participation in EE (Samuel, 1993, Stone, 1989, Ham and Sewing 1987-88). Therefore an important goal of integrating EE into the curriculum is to reduce as many of these barriers as possible.

It appears through several studies that the primary barrier is related to effective teacher training in EE (Lane, 1995, Lane, 1994, Samuel 1993, Stone, 1989, Volk, 1984). If there is to be an effective change, greater efforts must be put forth to educate teachers about the goals and objectives of EE through workshops, inservices, conferences and classes. These workshops need to focus on increasing teacher’s environmental awareness, creating a sense of enthusiasm for EE and giving them ideas in which they can use as a starting point (Ritz 1977). In addition other researchers include cognitive, affective and behavioral components as being critical areas of teacher education in EE (Lane, et. al., 1994).

The influence that teachers have on student’s environmental attitudes is based on what teachers know and value (Stone, 1989). “What we teach is important.
But it is how we teach that stimulates students' appreciation and understanding for science and ecology” (Cherif, 1992). Proper training of teachers can be highly motivational. “Environmental education teacher education programs that work must be designed and implemented if the goal of infusing EE into all school curricula is to be realized” (Stone, 1989). Fortunately, recent research by Lane (1995), found that teachers who received training in EE believed that their training was effective and that the more inservice training educators received in EE, the amount of classroom time devoted to EE increased. These findings are encouraging and hold great promise in the continuing education of teachers in the field of EE because “Faculty members are the key to successfully infusing EE into the curriculum” (Volk, 1993).
CHAPTER III

METHODOLOGY

Steps taken in this study included reviewing children's literature with environmental themes, developing literature response activities, reviewing EE activities, creating a resource guide to include these topics, developing a workshop to disseminate the resource guide and creating a survey to determine the potential effectiveness of the resource guide.

The *Natural World and the Natural Word: A Resource Guide of Children's Literature and Environmental Education Activities* was organized according to five main topic headings based on a combination of the seven goals for environmental education created by the State of Minnesota's Office of Environmental Education and the five subgoals of Environmental Education (Hungerford, Peyton and Wilke, 1980). The Minnesota Goals for Environmental Education was developed for and intended to help focus environmental education curriculum development and to ensure that environmental education occur in the classroom. Based on that State curriculum desire, this guide focuses on these topic headings:

- Understanding Ecosystems: Prairie, Forest, Wetlands
- Appreciation and Sensitivity of the Environment: Poetry, Prose
- Human Cause and Effect Relationships with the Environment
- Environmental Issues
- Taking Action to Improve the Environment.

Under each chapter heading are five categories that introduce literature and activities that are appropriate to the topic. The categories are: 1) Recommended Children’s Literature, 2) Related Literature, 3) Literature Response Activities, and 5) Environmental Extension Activities from selected EE curriculum sources. These category headings were chosen based on reviews of resource guides, environmental education curricula and whole language literature.
Recommended and Related Children’s Literature

Given that there is such a prevalence of children’s literature with environmental themes on the market, it is important to choose books that are accurate, of literary merit, interesting and contribute meaningful information that meet the goals and objectives of environmental education. Several sources were used to gather titles of books with environmental themes; e for Environment, Horn Book, Book Links, Nature’s Course and library catalogs from Hennepin, Dakota and Rice County Library Systems.

From a comprehensive list of titles, books were selected based on the following criteria: 1) literary quality judged by a particular source, 2) its suitability to match one of the Minnesota Goals for Environmental Education, 3) its ability to be integrated with an activity from one or more of the EE curriculum sources and 4) its ability to provoke discussion and inquiry related to literature and/or environmental studies.

By definition, literary quality is determined by the elements that characterize a piece of literature, including tone or mood, setting, character development, plot, and style. In journals such as Horn Book, Book Links, Nature’s Course, Cooperative Children’s Book Center (CCBC) Choices and the bibliography e for Environment, these elements are judged by credible critics including teachers, librarians, professional editors and authors (p 39-43, Krueger, 1988). Other elements used in choosing literature included age appropriateness for children 8-11, accuracy of information, quality of illustrations, tone of the environmental theme and a balance of fiction with nonfiction and chapter books with picture books.

Books were read, reviewed and annotated (Appendix C). They were then sorted according to the five major category headings based on the Minnesota State Goals for EE. These category headings became chapter headings for the Resource
Guide. Four or five books that addressed the concept in greater detail and better represented the category received a literary review. Additional books that met the above criteria were then placed under Recommended Literature in those same categories. Those books that did not meet the above criteria were eliminated.

Literature Response Activities

A balanced reading program includes opportunities for readers to respond critically and thoughtfully to literature (Routman, 1991). This was an important piece of criteria used to choose and evaluate books for this resource guide. Literature was chosen that invites readers to make personal connections and responses. These responses may include asking questions, initiating projects, provoking thoughts and ideas and taking environmental action. Based on educational experience and study of literature response, books were read and a list of questions was generated that would model questioning techniques and initiate responses. The list was compiled into seven to ten general literature response questions and possible activities.

Environmental Extension Activities

The curriculum sources that were used to choose activities from included Project Wild, Project Wet, Project Learning Tree, Aquatic Wild, Wonders of Wetlands, Environmental Education in the Schools, Sharing Nature with Children and Sharing the Joy of Nature. These sources were chosen based on their availability to educators and the long lasting effectiveness of the activities over time. Each of these sources contain many different activities that are divided into general categories based on an environmental theme or concept (Appendix D). In all but the last three sources, the chapter headings are similar to the Minnesota Goals for
Environmental Education, thus assisting in matching activities with literature. Activities were chosen that would compliment the content and concepts of a selected piece of literature as well as the EE goal for which the book was intended.

**Workshop**

The primary goal of the workshop was to give participants a copy of the resource guide and an introduction to using the resource guide as a part of their classroom curriculum. Specific pieces of literature were introduced under each heading. A brief description of books was given and discussions of appropriate complementary activities that could be used with it. Samples of children’s work were shown to give ideas of the variety of responses children have to literature (Appendix E). The workshop ended with a question and answer session. Each participant was asked to complete a survey (Appendix F).

**Survey**

In order for environmental education to be a viable and valuable subject of study in an already overloaded curriculum, it is vital that educators have access to resources that will assist them in integrating EE throughout their day. The primary goal of the survey was to determine the potential effectiveness of integrating the resource guide into an existing curriculum. To determine its effectiveness, it was important to find out if participants had some experience teaching EE and whether or not they had EE curriculum resources available to them. If both of these criteria were found to be true, then it would be assumed that the resource guide would allow for the integration of EE into an existing curriculum more feasible.
CHAPTER IV
RESULTS

The Natural World and the Natural Word: A Resource Guide of Children's Literature and Environmental Education Activities is a compilation of literature with environmental themes, literature response activities and environmental education activities. It is organized in five general topics based on the Minnesota Goals for Environmental Education. All of the children’s literature is listed in the bibliography in alphabetical order by title and by author. A bibliography of professional resources related to whole language and environmental education are listed by author. The completed Resource Guide can be found in Appendix G.

Three workshops were presented to share the Resource Guide. The first was at a Natural Science Enrichment for Teachers (NSET) workshop at St. Olaf College in Northfield, Minnesota on April 1, 1998. Sixteen teachers and resource people from various public and private schools attended. A second workshop was presented at Lincoln Elementary School in Minneapolis, Minnesota on October 20, 1998. Thirty faculty members attended representing grades K-6. A third workshop was presented at Zumbrota-Mazeppa Elementary School in Zumbrota, Minnesota on April 29, 1999. Twelve faculty members attended representing grades K-4.

The purpose of the workshops was to introduce participants to children’s literature, environmental education, strategies to integrate the two together and disseminate the Resource Guide. After introductions, a brief synopsis of both environmental education and children’s literature in the curriculum was presented. Upon handing out The Natural World and the Natural Word: A Resource Guide of Children’s Literature and Environmental Education Activities, individual chapters and subsections within each chapter were introduced. Books within each chapter
were presented with examples of activities and samples of children's work. Two or three specific readings and activities were scheduled to represent the various possibilities included in the Resource Guide. One was the reading of *Wolf Island* by Celia Godkin and the activity used to illustrate the story was Oh, Deer! (*Project Wild*, 1992). A second reading was *SQUISH! A Wetland Walk* by Nancy Luenn followed by the activity *Aqua Words* (*Aquatic Wild*, 1987) which involved the writing of poetry. A third reading was *It's Mine* by Leo Lionni which was used with the Commons Dilemma activity (*Environmental Education in the Schools*, Braus, 1993). The workshop closed with a question and answer period, opportunities to look at books and complete the survey. An outline of the workshop can be found in Appendix G.

Each participant was given a survey to complete at the end of the workshop. Thirteen surveys were returned from the NSET workshop, zero surveys were returned from Lincoln Elementary School, and eleven surveys were returned from Zumbrota-Mazeppa Elementary School. The thirty surveys from Lincoln Elementary School were handed out after the workshop to the curriculum director who distributed the surveys to participants to complete and return through the mail. Several phone calls were made to request the surveys be completed and returned but there was no response. It is not understood why the surveys were not returned.

Educators who attended the workshops were interested and enthusiastic about teaching EE. Due to teacher time constraints and an apparent lack of available reference materials, the workshop and the Resource Guide were a welcomed opportunity to assist in meeting the State of Minnesota's EE outcomes and graduation standards. Educators seemed to be seeking specific materials to use in their classroom that would alleviate those concerns. Individual questions and
responses during the workshops showed sincere appreciation of literature and the possibilities of applying it in the curriculum. A question that was often asked during the workshop was, "How do you fit it in?" It appears the answer to that question is a matter of priority of individual educators and schools.

The goal of the survey was to determine the potential effectiveness of the Resource Guide. In reviewing submitted surveys from workshops, 65% of the participants who returned the survey stated they taught EE in their classrooms and 100% thought the Resource Guide would assist them in increasing that amount of time. One hundred percent expressed that the Recommended Literature and 91% expressed that the Related Children's Literature sections in the Resource Guide would be the most useful. The Literature Response and Environmental Extension Activities responses were the most varied ranging from 70% saying the response activities would be very useful to 83% saying that the extension activities would be very useful. Comments at the end of the survey were in response to the helpfulness of the Resource Guide in teaching EE in the classroom. Responses included:

"I would like to know how you fit this into a daily schedule and grad standards."
"The literature response questions are excellent-but the organizational structure of your handout is outstanding-for a hands-on model-it is unique and wonderful."
"I am using some of what was presented. It will help me make it more exciting. Great resources and ideas."
"I too like to use books as catalysts for lessons. The power of story is strong and meaningful."
"Seeing how to connect these books to great activities!"
"I enjoyed the writing activities/ideas."
"Many great ideas. A great resource of all related literature."
"More ideas for writing springboards and lots of books I haven't seen before."
"This class has planted a seed to help my quest for more information to take off."
"Organization according to topics was helpful."
According to the responses of the survey, the Resource Guide was successful at introducing literature and activities that could be done in the classroom to integrate EE into an existing curriculum. A summary of the survey results are in Appendix I.
CHAPTER V
SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

The purpose of this study was to create a resource guide that would use children's literature with environmental themes to integrate EE goals and concepts into an existing curriculum. Steps were taken to identify appropriate children's literature, identify EE activities that would compliment literature, compile them into a resource guide, design and facilitate a workshop for educators and to administer a survey that would determine the effectiveness of the resource guide. The primary result was *The Natural World and the Natural Word: A Resource Guide of Children's Literature and Environmental Education Activities*. This Resource Guide was disseminated at three workshops. Teachers who attended the workshop and received the guide appreciated the work that was done and considered it a valuable resource. Based on survey results of this study, educators are including EE in their classroom curriculum and they want to increase the number of hours they are teaching it. They are looking for strategies and techniques that will allow for the integration of EE into their curriculum, making it more manageable. They see the utilization of literature with environmental themes within the existing curriculum as a useful option for achieving this goal.

Children's literature is a viable tool for teaching children about the environment. Throughout this study, the researcher has created many opportunities to use children's literature with environmental themes to teach concepts about the environment. For example, a thematic unit study about the tropical rainforests using children's literature as reference materials such as *A Walk in the Rainforest* (Pratt, 1992), *Here is the Tropical Rain Forest* (Dunphy, 1994) and *The Great Kapok Tree* (Cherry, 1990) encouraged children to write poetry, write and
produce a play, involve themselves in various forms of artistic expression and take action by designing and selling a calendar from which the proceeds went to the Monteverde Children’s Rainforest in Costa Rica. *Come Back Salmon* (Cone, 1992) inspired a class to take environmental action on a local stream. Although a similar action project that was described in the book was not feasible, their enthusiasm motivated them to write a grant to develop a habitat for amphibians and reptiles on the school grounds. *The Year of the Panda* (Schlein, 1990) inspired a child with learning disabilities to do further research on pandas which included writing and publishing a book for young children and making a “Panda Box” that she sent to various classrooms for children to use to learn about pandas. Inside the box were articles, stories, artifacts and information about pandas that she had collected. Books such as *SQUISH! A Wetland Walk* (Luenn, 1994) and *Night in the Country* (Rylant, 1986) invited children to listen to the sounds of nature through beautifully written language. *Owl Moon* (Yolen, 1987) and *North Country Night* (San Souci, 1990) inspired children to write poetry and prose about winter. Literature study groups based on the theme of environmental issues included the books *There’s an Owl in the Shower* (George, 1995), *The Turtle Watchers* (Powell, 1992), *The Year of the Panda* (Schlein, 1990) and *Tucker’s Countryside* (Seldon, 1969). These discussion groups allowed children to gain a better understanding about the various perspectives individuals and groups bring to an environmental problem. Choosing quality literature that inspires children to learn about and appreciate the environment is vital.

There are many children’s books with environmental themes on the market and throughout this research many new books with environmental themes were published. Keeping current of continually published books and being knowledgeable of the quality of literature that is on the shelves can be a challenge.
Using standard literary elements for evaluating books is helpful in deciding which books to use in an EE curriculum. These elements include plot, mood, character, and setting development as well as accuracy, bias, didacticism and anthropomorphism. It was found that journals such as *Book Links*, *The Horn Book*, *Nature's Course* and the *Cooperative Children's Book Center* annual choices list (CCBC Choices) were beneficial resources to assist in choosing quality literature. These periodicals critically review children's literature. Other important resources used in locating environmental literature included *e for Environment* (Sinclair, 1992), librarians, colleagues and professors of children's literature.

All of the best literature in the world would be worthless unless there are educators who will use it well in their classroom curriculum. Reading a good book isn't enough. Environmental activities such as *Oh Deer!* (*Project Wild*, 1991) combined with a book such as *Wolf Island* (Godkin, 1990) allow for conversations about predator prey relationships and create an opportunity for an abstract concept to become more concrete. Responding to literature is a natural and valuable component of reading. Verbal, written and artistic responses to literature are meaningful ways for children to express their understanding of literature and they need opportunities to practice responding to in these ways. Aesthetic responses to environmental literature are the types of responses that will encourage children to become more aware, sensitive and appreciative of the natural world. It is these types of responses that will lead children to future actions.

Throughout this study many similarities were found between the philosophies and teaching strategies of whole language and environmental education. Together they share the importance of involving children in their learning which have roots in progressive education. Both are experiential, interdisciplinary and they value the whole child. Both encourage higher order
thinking skills which are critical in problem solving. There is enormous potential for using environmental literature to practice research and critical thinking skills and to do indepth studies of environmental issues. Future research in this area holds great promise.

Previous research has shown that teachers who attend workshops and inservices are more likely to use the resources that are distributed. Therefore it is crucial that teachers attend workshops that disseminate materials and provide opportunities to participate in activities to become knowledgeable about environmental literature and the types of lessons and activities that are possible. Educators have a great deal of influence on curriculum. Previous researchers have stated that teachers are the determiners of curriculum. Integrating EE into the curriculum is a matter of interest and priority and it is important that teachers are educated in the field of environmental education. If we are going to see changes in future attitudes and actions towards a sustainable planet we must make EE a priority in our classrooms so that those who will be making decisions, will be making informed and responsible decisions.
LITERATURE CITED


Stone, Jody M. “Preparing Teachers to Become Involved as Environmental Educators.” *Contemporary Education*. 1989, 60(3):159-162.


APPENDIX A

Goals for Curriculum Development in

Environmental Education
Goals for Curriculum Development in Environmental Education

Level I. Ecological Foundations Level

This level seeks to provide the receiver with sufficient ecological foundations knowledge to permit him/her to eventually make ecological sound decisions with respect to environmental issues.

The Ecological Foundations Level would minimally include the following conceptual components:

A. Individuals and populations.
B. Interactions and interdependence.
C. Environmental influences and limiting factors.
D. Energy flow and materials cycling (biogeochemical cycling).
E. The community and ecosystem concepts.
F. Homeostasis.
G. Succession.
H. Man as an ecosystem component.
I. The ecological implications of man's activities and his communities.

Level II. Conceptual Awareness Level

This level seeks to guide the development of a conceptual awareness of how individual and collective actions may influence the relationship between quality of life and the quality of the environment and, also, how these actions result in environmental issues which must be resolved through investigation, evaluation, values clarification, decision making, and finally, citizenship action.

Goals at this level are formulated to provide opportunities for receivers to conceptualize:

A. how man's cultural activities (e.g., religious, economic, political, social, etc.) influence the environment from an ecological perspective.
B. how individual behaviors impact on the environment from an ecological perspective.
C. a wide variety of environmental issues and the ecological and cultural implications of these issues.
D. the viable alternative solutions available for remediating discrete environmental issues and the ecological and cultural implications of these alternative solutions.
E. the need for environmental issue investigation and evaluation as a prerequisite to sound decision making.
F. the roles played by differing human values in environmental issues and the need for personal values clarification as an integral part of environmental decision making.
G. the need for responsible citizenship action (e.g., persuasion, consumerism, legal action, political action, ecomanagement) in the remediation of environmental issues.

Level III. Investigation and Evaluation Level
This level provides for the development of the knowledge and skills necessary to permit receivers to investigate environmental issues and evaluate alternative solutions for remediating these issues. Similarly, values are clarified with respect to these issues and alternative solutions. Goals at this level are presented in two components.

Component A: goals for Component A are to develop in receivers:
A. the knowledge and skills needed to identify and investigate issues (using both primary and secondary sources of information) and to synthesize the data gathered.
B. the ability to analyze environmental issues and the associated value perspectives with respect to their ecological and cultural implications.
C. the ability to identify alternative solutions for discrete issues and the value perspectives associated with these solutions.
D. the ability to autonomously evaluate alternative solutions and associated value perspectives for discrete environmental issues with respect to their cultural and ecological implications.
E. the ability to identify and clarify their own value positions related to discrete environmental issues and their associated solutions.
F. the ability to evaluate, clarify, and change their own values positions in light of new information.
Component B: Goals for Component B are to provide receivers with opportunities to:

G. participate in environmental issue investigation and evaluation.
H. participate in the valuing process in a manner as to permit the receiver to evaluate the extent to which his/her values are consistent with the superordinate goal of achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment.

Level IV. Environmental Action Skills Level-Training and Application

This level seeks to guide the development of those skills necessary for receivers to take positive environmental action for the purpose of achieving and/or maintaining a dynamic equilibrium between quality of life and the quality of the environment. Goals at this level are presented in two components.

Component A: The goal for Component A is to develop in receivers:

A. those skills which will permit them to effectively work toward ends which are consistent with their values and take either individual or group action when appropriate, i.e., persuasion, consumerism, political action, legal action, or ecomanagement.

Component B: The goals for Component B are to provide receivers with opportunities to:

B. make decisions concerning environmental action strategies to be used with respect to particular environmental issues.
C. apply environmental action skills to specific issues, i.e., to take citizen action strategies to be used with respect to particular environmental issues.
D. evaluate the actions taken with respect to their influence on achieving and/or maintaining a dynamic equilibrium between quality of life and the quality of the environment.

APPENDIX B

Environmental Education Materials:

Guidelines for Excellence Summary
Environmental Education Materials: Guidelines for Excellence Summary

#1 Fairness and accuracy: EE materials should be fair and accurate in describing environmental problems, issues, and conditions, and in reflecting the diversity of perspectives on them.

1.1 Factual accuracy
1.2 Balanced presentation of differing viewpoints and theories
1.3 Openness to inquiry
1.4 Reflection of diversity

#2 Depth: EE materials should foster awareness of the natural and build environment, an understanding of environmental concepts, conditions, and issues, and an awareness of the feelings, values, attitudes, and perceptions at the heart of environmental issues, as appropriate for different developmental levels.

2.1 Awareness
2.2 Focus on concepts
2.3 Concepts in context
2.4 Attention to different scales

#3 Emphasis on skills building: EE materials should build lifelong skills that enable learners to prevent and address environmental issues.

3.1 Critical and creative thinking
3.2 Applying skills to issues
3.3 Action skills

#4 Action orientation: EE materials should provide civic responsibility, encouraging learners to use their knowledge, personal skills, and assessments of environmental issues as a basis for environmental problem solving and action.

4.1 Sense of personal stake and responsibility
4.2 Self-efficacy

#5 Instructional soundness: EE materials should rely on instructional techniques that create an effective learning environment.

5.1 Learner-centered instruction
5.2 Different ways of learning
5.3 Connection to learners' everyday lives
5.4 Expanded learning environment
5.5 Interdisciplinary
5.6 Goals and objectives
5.7 Appropriateness for specific learning settings
5.8 Assessment

#6 Usability: EE materials should be well designed and easy to use.

6.1 Clarity and logic
6.2 Easy to use
6.3 Long-lived
6.4 Adaptable
6.5 Accompanied by instruction and support
6.6 Make substantiated claims
6.7 Fit with national, state or local requirements

APPENDIX C

Children's Literature with Environmental Themes

Annotation
Children's Literature with Environmental Themes

Annotation

Author: 
Title: 
Publisher: 
Year: 
Review: 

Response Activities: 

Environmental Education Activities: 

Books with similar themes: 

Environmental Education Goals: 
APPENDIX D

Chapter Headings for Activity Sources
Chapter Headings for Activity Sources

**Project Wild**
- Awareness and Appreciation
- Diversity of Wildlife Values
- Ecological Principles
- Management and Conservation
- People, Culture and Wildlife
- Trends, Issues and Consequences
- Responsible Human Actions

**Project Learning Tree**
- Diversity
- Interrelationships
- Systems
- Structure and Scale
- Patterns of Change

**Wonders of Wetlands!**
- Wetland and People: Through Time and Across Borders
- Defining Wetlands
- Wetland Functions
- How People Manage Wetlands
- Action for Wetlands

**Project Wet**
- Water has unique physical and chemical characteristics
- Water is essential for all life to exist
- Water connects all Earth Systems
- Water is a Natural Resource
- Water resources are managed
- Water resources exist within social constructs
- Water resources exist within cultural constructs

**Aquatic Wild**
- Awareness and Appreciation
- Diversity of Values
- Ecological Principles
- Management and Conservation
- Culture and Wildlife
- Trends, Issues and Consequences
- Responsible Human Action
APPENDIX E

Written Samples from Children’s Work

-Response Journal Questions and Thoughts

-Poetry and Prose
Written Samples from Literature Response Journals


General questions asked by children while reading:
- How many kinds of sea turtles are there?
- Are there lots of predators for (sea) turtles?
- Do sea turtles come back to the same place every year to lay their eggs?
- Why can’t people build the turtles a shelter so the populations can come back?
- Is it true that it takes so many sunny days for turtle eggs to hatch?
- What time of year do turtles lay their eggs?
- Do the beaches turtles lay their eggs on have to be a special temperature for their eggs to hatch?
- How small are turtle eggs?
- How many eggs can a turtle lay at once?
- Why is the turtle called a leather back turtle?
- Where do leather back turtles live?

Interesting topics to discuss generated by children while reading:
- Why do people want to eat (sea) turtle eggs?
- How many kinds of turtles of this kind are left?
- Why do these girls (the main characters) want to protect these eggs?
- Should there be a law on no eating leatherback baby turtle eggs?

Environmental problems/issues:
- People want to eat the turtle and this kind of turtle is endangered.
- The chance of a turtle living and coming back to lay eggs as an adult is very slim.
- They (sea turtles) have too many predators for people to eat their eggs.
- People want to eat (an) endangered species eggs.
- There’s not enough turtles left.

Ideas for solving the problems/issues:
- Stop eating the eggs and let them reproduce for a few years and then eat some.
- Eat something else so you don’t endanger any animals, like chicken eggs.
- Make a hatchery for the turtle eggs so they can hatch without having predators.
- People stop eating turtles and their eggs. The poachers will stop killing them because they won’t be able to make any money.
- I think fruit or other edible things should be cheaper so others can eat something other than turtle eggs.
- People should time to the turtles to multiply. Then maybe they can have some eggs.
- Just leave them alone.

General questions asked by children while reading:
  Why did they take the baby panda?
  Will they plant a different type of bamboo?
  Will the pandas die?
  Why do bamboo forest die every 63 years?
  Why do people want to kill pandas?
  How hard is it to take care of a baby panda or any kind of panda?
  How is a panda research center like bird banding?
  Why are pandas called bear cats?

Interesting topics to discuss generated by children while reading:
  Why is there a shortage of bamboo?
  Panda research scientists.

Environmental problems/issues:
  The bamboo is dying and pandas need it for food.
  Pandas are starving.
  People are killing pandas.
  There are not too many pandas left.
  The panda might keep eating the honey.
  The bamboo dies every 60 years and the pandas don't know what to eat.

Ideas for solving the problems/issues:
  Grow more bamboo.
  Give the pandas different food.
  Put the pandas in care centers until the bamboo grows back.
  More people can learn about pandas so that they don't want to kill them. I think people want to kill pandas because they don't understand them.
  Somehow grow bamboo somewhere else so every 60 years it does not die.
  Maybe keep planting bamboo so some does not die at the same time.
General questions asked by children while reading:
How do you tell the difference between a spotted owl and a barred owl?
Why do people hunt spotted owls?

Interesting topics to discuss generated by children while reading:
That not just loggers are losing their jobs.
Will he (main character) ever learn that you probably would lose your job if the owls get extinct. [habitat loss = extinction and loss of jobs]
Why do they like barred owls and not spotted owls?
If my dad was a logger and he lost his job, I'd be mad but I probably wouldn't shoot them (owls).

Environmental problems/issues:
The spotted owl is almost extinct.
Loggers are losing their jobs.
Loggers are cutting down big trees and owls need them to mate and make nests for owlets. (new word)

Ideas for solving the problems/issues:
Try not to kill owls.
Try to get new jobs.
I think they should move to a different town with different forests because the owls can't do anything about it.
General questions asked by children while reading:
- What will happen if all the houses take over the meadow?
- Will picketing (protesting development) work?
- What is going to happen to the meadow and everyone in it?

Interesting topics to discuss generated by children while reading:
- Water is cleaner in the meadow than in New York. Everything seems more clean and fresh in the meadow than in New York.
- Why do grownups feel the need for their town or city to grow bigger?
- Why do some people want to destroy wildlife habitats?
- Why do towns grow bigger?

Environmental problems/issues:
- People are building so many homes so the animals are scared that they won't have a place to live.
- People are taking land away little by little.
- In the meadow they are building too many houses so there is not enough space for the animals and the population is going to go down.
- They might build apartments and maybe even a factory.
- There are too many houses being built and it's destroying the meadow.
- The meadow is getting smaller and smaller and soon the animals will have to escape and will probably die.
- It will also take away the fun the kids have playing in the meadow.

Ideas for solving the problems/issues:
- If they built houses in the meadow, the animals would still have a place to live and they could live in the bushes people plant.
- They could turn the meadow into a natural park.
- They could have a fund raiser and buy the land.
- Maybe all the animals could march up and down the street blocking up the traffic for a day to teach the people a lesson. Maybe they could do something where they make the humans put it off again and again so finally they give up.
- A town hall meeting.
- Someone buy the land and save it for nature.
- Protesters outside of the city hall.
- Raise money for it (development) to stop.
Poetry and Writing Samples in Response to Literature

I hear the birds singing. The grass is getting green again. The creek has thawed and has risen and the current is fast. Green shrubs are waking up from the moist dirt. I see pairs of birds flying from one tree to another. I see robins searching for worms and food.

Kittle Evenson, age 9

It's an early Sunday morning. The air is fresh as dawn. I decided to take a walk. I walked past a long round tree and heard a little voice chant, "Spring is here! Spring is here! Spring is here!" I stopped and listened. Silence. I walked up a hill. I passed a pool of water. Ducks are flying overhead. Then I heard a whisper chanting, "Spring is here! Spring is here! Spring is here!" I looked around. The wind rushed past my face. The leaves scattered across the grass. I ran down the hill and skipped into the house.

Jen Colwell, age 10

The birds are finally swooping down and crying out. I hear the drip, drip, drip on the water spout. A nice cool breeze is running across the field. The grass is green and yellow. Not white. The smell of morning dew. A soft mist in the air. Tulips are popping up in every direction of the garden. The world is finally green. An open field is wanting me to run in it, calling my name. But someone else would call my name. If I did sit down and look more closely to the grass, each blade has a perfect circle of crystal dew. Each kid is crouched down in their own place or is leaning against a tree. It looks so peaceful. It is so peaceful.

Nell Holden, age 11

On warm summer evenings I go outside and eat dinner under our weeping willow tree. I lean against the knotted bark as the last bits of sunlight sifts through the umbrella of branches. Leaves blow in the refreshing breeze. It smells of dry soil that would crumble in my hand. I rest my bare feet on a small patch of grass. Now that's the perfect place for a nap.

Katherine Huber, age 11
Writings in response to
*Owl Moon* by Jane Yolen and
*North Country Night* by Daniel San Souci

_Cold Winter Night_
A silent moon watches over a dark forest, deep in slumber.
An owl glides by overhead.
The snow is soft but cold.
There is a freezing silence,
That is only broken by the soft cooing of a night owl, looking for prey.
The trees seem to come alive and talk to each other.
I go home.
When morning comes,
The trees and forest are asleep.
So are my owl friends.

    Anders Loven-Holt, age 10

A white world on graceful wings.
Quietly floating.
Quietly.

    Shane Robins, age 10

The night is silent
as the snow sparkles like diamonds
in the moonlight.

    Paul Ostebee, age 8
Winter Day
Crispy white snowy trees.
Sparkle like diamonds in the early morning.
The pines are swaying under their heavy blanket.
The wind’s blowing slowly.
But just enough for the birch trees to dance.
The wind sails rapidly.
Sending the ancient brown October leaves whirling, twirling, swirling,
Down until they hit the crust cover flakes.
I stand by the dancing Birch.
The swaying Pines.
And in the middle of the whirling, twirling, swirling leaves,
I reach up and snatch a crunchy leaf.
The wind stops blowing
The Birch stops dancing.
The leaves stop twirling.
The Pines stop swaying.
It is quiet now.
I lay the leaf down and it all starts up again.

Jen Colwell, age 10
Sloth
As slow as I move this pen,
To think of something to write,
Up goes a sloth to the top of a tree.
To spy on everything in sight.
He looks up and down every little
Thing without moving a muscle.
Without being seen.

Libby Rasmussen, age 10

Here in the rainforest where it pours and pours fresh cool rain.
Here in the rainforest where the fresh cool rain makes a gentle flowing river.
Here in the rainforest where the river monkey glides through the gentle river.
Here in the rainforest where the river monkey takes a motionless jump to get the juicy leaf bug sitting on a delicate leaf.
Here in the rainforest where the juicy leaf bug blends into the delicate leaf.
Here in the rainforest here the delicate leaf calls all of his friends to help get rid of all the water on the tree.
Here in the rainforest where the foul smelling monkeys fly from limb to limb in the ancient kapok tree.
Here in the rainforest where the foul smelling monkeys gobble up flies.
Here in the rainforest where the flies flitter through the fresh clear blue sky.
Here in the rainforest where the fresh clear blue sky holds the puffy clouds.
Here in the rainforest where the mist floats up to the puffy clouds and rains fresh cool rain.

Alex Lum, age 10

I am a jaguar sneaking up on my prey.
I am a scarlet macaw spreading out my colors.
I am a sloth camouflaging into the tree tops.
I am a toucan plucking a berry off a branch.
I am an iguana tanning in the sun.
I am a hummingbird picking a bug off a flower and carrying it to another.
I am a howler monkey calling off my territory.
I am a poison dart frog facing my colors at a coral snake.

Brennen Bendel, age 10
The Needs of Man and Animal
Written and directed by Nathan Ostroot, age 10 and Alex Lum, age 10
Based on the Great Kapok Tree by Lynne Cherry

Narrator: This play is called the needs of man and animal. It is about different points of view. The animal’s point of view and the man’s point of view. We hope you enjoy our play.

Narr: There once was a man named Pablo. And Pablo didn’t have enough money to feed his wife and child. so he needed a job real bad. Pablo thought and thought and after a lot of thinking he said,

Pablo: I know! I’ll work at a lumber company in the rainforest.

Narr: So the next morning Pablo took a bus from San Jose to the rainforest. When he got there he was put to work right away deep in the rainforest. He started chopping at the trunk of a tree when a howler monkey jumped out of it and said,

Howler Monkey: Quit cutting down my home! I have a wife and child living in this tree and if you cut it down they will surely both die!

Narr: And then the howler monkey jumped back into the tree. Then a tiny leaf cutter ant came marching down the tree and said,

Leaf cutter ant: If you cut down this tree, my colony and I will have no food.

Narr: And then the leaf cutter ant marched back up the tree. Then an anteater came wobbling down the tree and said,

Anteater: If you cut down this tree all the ants will die and I will have no food to eat.

Narr: Then the anteater wobbled back up the tree. And then a jaguar and her cub came pouncing down and said,

Jaguar: If you cut down this tree I will have no animals to prey on.

Narr: And then the jaguar and her cub pounced back up the tree and then the howler monkey jumped back out of the tree and said,

Howler monkey: You see, if you cut down this tree it affects everything and everyone in the world.
Pablo: But this is the only way I know how to make money so I can feed my family!

Howler monkey: Looks like you need some help deciding what you should do. Cut down trees in the rainforest or find a different job.
Pablo: I would find a new job if you help me.

Narr: So then the howler monkey called all the animals to the tree to help Pablo find a new job. And after a long time they narrowed it down to two jobs; cutting down trees in the rainforest or working at a protection agency in the rainforest.

Pablo: I have seen how cutting down trees affects everything in the world and I am sure I would rather work at a protection agency in the rainforest.

Narr: And from that day on, Pablo worked at the protection agency in the rainforest.
Writings In Response to Prairie Literature

It's early in the morning and the sun is just a golden sliver reaching above the horizon. A gentle breeze ripples through the rough grasses and through my hair. There! A plump little prairie dog is sticking its furry head out of its burrow. It does a flip and makes a shrill bark. A hawk is approaching. The soft little animal quickly disappears into its burrow. The hawk flies away unsuccessful.

Peter Cherney, age 9

I am a prairie, my grasses are being blown.
I am the prairie's wildflowers giving sweet smells.
I am a prairie dog making my den.
I am the whistling grasses of the prairie being blown.
I am the prairie, long forgotten are my needs.
I am the prairie, missing my buffalo.

Alyssa Kane, age 9

One day when I looked out my window, the sun greeted me as I woke up.
The sharp but lovely sounds of the birds filled my mind with joy. When I saw those little prairie dogs barking and scurrying around from place to place, it made me want to run outside and play. I turned around and saw the darkness of the soddy. Quietly I snuck through the house. When I opened the door, the sun spilled in filling the little soddy with warmth and light. As I stepped outside, the heat from the sun soaked in and I felt in harmony with the prairie.

Laura Holzer, age 10

It's where the sunlight takes over as far as you can see.
Along the steep hills.
The giants of the prairie
Come thundering through the tall grass.

Chris Irwin, age 10
APPENDIX F

Survey
The Natural World and the Natural Word
A Resource Guide of Children's Literature
and Environmental Education Activities

1. What grade level(s) do you teach? ________________________________

2. What subject(s) do you teach? ________________________________

3. How many hours per week do you spend teaching environmental education?
   0 hours   1 hour   2 hours   3 hours   4 hours   5 hours +

4. Do you see this guide as an opportunity to:
   a. increase time spent teaching environmental education.
   b. decrease time spent teaching environmental education.
   c. keep amount of time spent teaching environmental education the same.

5. Please rate the usefulness of each section of the guide:
   
   Very Useful  Somewhat Useful  Not Useful
   
   a. Recommended Children's Literature  |--------------------------------------------------------|
   
   b. Related Literature  |--------------------------------------------------------|
   
   c. Literature Response Activities  |--------------------------------------------------------|
   
   d. Environmental Extension Activities  |--------------------------------------------------------|

6. Please circle the Activity Guides you own or have access to:

   Project Learning Tree   Aquatic Wild
   Project Wet            Wonders of Wetlands (WOW!)
   Sharing Nature with Children   Sharing the Joy of Nature
   Environmental Education in the Schools   Project Wild

7. In what ways was the information presented helpful to you in teaching environmental education in your classroom?

Please use the back for any other comments, questions or suggestions.

Thank you so much for your time.
APPENDIX G

The Natural World and the Natural Word:

Using Children's Literature in

Environmental Education

Workshop Outline
The Natural World and the Natural Word: Using Children's Literature in Environmental Education

Workshop Outline

I. Introductions
   A. Personal information: name, grade level, school
   B. Group members: name, grade level, favorite children's book
   C. Resource Guide- In completing my masters degree, my project was to develop a resource guide that integrates children's literature with environmental education activities. It is called The Natural World and the Natural Word: A Resource Guide of Children's Literature and Environmental Education Activities.

II. Children's Literature
   A. Power of literature
      1. Children's literature is a powerful tool for transmitting knowledge, information, ideas, and values. It can provide clear explanations of important concepts. It can foster and promote intellectual and conceptual growth, critical thinking skills, and a lifelong enjoyment of reading.

         Children's literature can take children anywhere and experience anything. They can vicariously go to the tropical rainforests or swim in coral reefs with tropical fish. It encourages independent thinking and enhances vocabulary.

         Quality literature models quality language used for reading and writing. It is a vehicle to transmit current values. It shows us the past so we can affect the future. Quality literature changes us as readers and as people.

      2. Sadako and 1,000 Paper Cranes story: Personal anecdote of how a child changed his perspective on war after reading this book.

   B. Using literature in the curriculum
      1. Literature Groups-One strategy used to develop literacy in a classroom is literature groups or circles. Children choose or are assigned books to read together that have the same title, theme, genre or author. They gather together throughout their reading of the book for discussions based on personal or assigned questions, observations, literary elements, thoughts and opinions. Often times independent projects and inquiries are inspired by the readings and/or discussions.

         Literature circles are forums for learning how to think and respond critically and thoughtfully along with analyzing the content and author's craft of writing. Children can teach and learn from each other which involves a multitude of social skills including collaboration, creative thinking, problem solving, stating personal
opinions respectfully and listening carefully. All of these skills are critical in the process of solving environmental issues.

2. Literature Response-Responding to literature is a natural consequence of reading. As a reader reads, he/she creates her own images and meaning from the text and then responds to it by forming personal thoughts and opinions. Children’s literature with environmental themes invite children to respond. Literature that is well written can portray cause and effect relationships, give vivid descriptions and pictures, and can provide vicarious experiences.

There are two types of response to literature. Efferent responses which involve giving back facts and details and aesthetic responses which involve reflecting connections between the reader and the text through imagination, prediction, interpretation and evaluation. It is this type of response that we want children to have to literature with environmental themes. They tend to be more thoughtful and reflective and show more emotional connections to the story. It involves the reader in picturing and imagining the content of the story, identifying with characters and situations and then applying it to personal values. The aesthetic responses may encourage children to take some type of environmental action.

Responding to literature can take many forms form journaling to creating skits, to studying independent projects to writing personal stories. In learning about the environment through literature we want children to connect with the natural world, learn about it, ask questions and act upon their ideas.

III. Environmental Education

A. Tbilisi Goals/Objectives for EE-Environmental education means a lot of things to a lot of people. It has progressed throughout the years from being a scattered lesson here and there to a mandated component of the curriculum in some states. Specific goals for environmental education were created in 1980 by Hungerford, Peyton and Wilke. These goals are awareness, knowledge, attitudes, skills, and participation.

B. Minnesota Goals for EE-The state of Minnesota also created a set of goals in 1993 in a document called A Green Print for Minnesota. These goals were written primarily to target prek-12 students. These goals are:

- To understand ecological systems.
- To understand the cause and effect relationship between human attitudes and behavior and the environment.
- To be able to analyze, develop, and use problem-solving skills to understand the decision-making process of individuals, institutions, and nations regarding environmental issues.
To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.
- To understand the potential complementary nature of multiple uses of the environment.
- To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.
- To provide information citizens need to make informed decisions about actions to take on environmental issues.

It is these goals that are used to in this resource guide.

C. Integrating EE into the curriculum using literature-
The classroom curriculum is already overcrowded with many special interest topics including drug education, multicultural education, conflict resolution, health issues education, not to mention environmental education. Because EE isn’t considered a traditional subject, finding a niche for it in the curriculum has been a challenge. It is believed by many researchers that the best way in get EE in to the curriculum is to integrate it into other content areas.

EE incorporates the holistic focus of progressive education in which education is more responsive to the needs of the child and that children learn by doing. EE can be experiential and interactive. EE provides opportunities from children to study real life environmental problems that rely on developing and using higher order thinking skills which include reasoning, analyzing, predicting, estimating and problem solving. All of these are important skills blend well with the skills of literature study groups and inquiry thus making the integration of EE into a language arts curriculum possible and promising.

If EE is going to flourish and be successful, it is up to the educators to integrate it into other curricular areas.

IV. Resource Guide

A. Divided into five categories based on Minnesota EE goals
   1. Understanding Ecosystems: Prairie, Forests, Wetlands
   2. Appreciation and Sensitivity of the Environment: Poetry, Prose
   3. Human Cause and Effect Relationships with the Environment
   4. Environmental Issues
   5. Taking Action to Improve the Environment

B. Each category is divided into four subsections
   1. Recommended Children’s Literature-Under this heading is 3-5 specific literature suggestions with a review that relates to the primary EE goal.
   2. Related Literature-Under this heading is additional literature listed to compliment the recommended literature.
3. Literature Response Activities-This is a list of questions and suggestions of activities that relate directly to literature. They are meant to be a springboard to model and encourage independent responses.

4. Environmental Extension Activities-These are a listing of EE sources such as Project Wild, Project Learning Tree, Aquatic Wild, Wonders of Wetlands, etc. and activities that best compliment the literature listed above.

C. Indices-In the back of the resource guide are two indices which lists children's literature and environmental education activities by each of the Minnesota goals for EE.

D. Bibliographies-Children’s literature is listed in two bibliographies in the back; by title and by author.

V. Introduce individual books and activities
   1. Read Wolf Island by Celia Godkin and play Oh, Deer! (Project Wild, p. 146)
   2. Share examples of children's writings with literature
   3. Read poetry with water themes, SQUISH! A Wetland Walk by Nancy Luenn and do Aqua Words (Aquatic Wild, p. 1)
   4. Read It's Mine! by Leo Lionni and do Commons Dilemma (EE in the Schools, p. 135.)

VI. Closing
   A. Read Miss Rumphius by Barbara Cooney and share personal example of independent action by students.
   B. Hand out survey and collect them.
   C. Thanks for attending. Questions or comments.
APPENDIX H

The Natural World and the Natural Word:

A Resource Guide of

Children's Literature and

Environmental Education Activities
The Natural World

and the

Natural Word

A Resource Guide

of

Children's Literature

and

Environmental Education Activities

Andrea E. Swanson
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Introduction

“If we feel wisdom itself is lost, we need only enter a library. We will find there the records of hundreds of men and women who believed in a world larger than the one defined in each generation by human failing. We will find literature which teaches us again and again how to imagine.”


The need for environmental education in today’s school curriculum is greater than ever. With the continual rise of environmental issues related to deforestation, groundwater contamination, global warming, and solid waste disposal, it is an opportune and vital time to lay the framework for educating children to become knowledgeable, responsible and active decision makers to ensure a high quality of life on a healthy planet.

The need is apparent, but the means of getting environmental education into the curriculum can be difficult. With currently overloaded curriculum expectations, there appears to be no room for any other additions. Therefore, integrating environmental education concepts into existing curricula is promising and desirable.

Environmental education by its nature, is easily integrated. It is interactive, experiential and incorporates all traditional academic areas. It allows for opportunities to meet a variety of learning styles and abilities of children. Children’s literature with environmental themes is one of the best venues to combine the environmental education goals of awareness, attitudes, knowledge, skills, and participation with the skills and concepts of a reading and writing curriculum.

Literature is a powerful medium for transmitting knowledge, information, ideas, and values and it plays a significant role in the lives of children. When used well, children’s literature can foster and promote intellectual and conceptual growth, critical thinking skills, and a lifelong enjoyment of reading. It makes us more knowledgeable and imaginative. It can take us to places and allow us to have experiences beyond ourselves. We can visit the tropical rainforests of Brazil or watch green sea turtles come to shore to nest. We can empathize and attempt to
understand the varying perspectives of environmental issues such as logging in the northwest or fishing in the oceans. Literature has the power to change the reader as a person, as well as a reader.

This resource guide identifies children’s books and activities to integrate environmental education concepts into the curriculum. The Minnesota Goals for Environmental Education were used as a reference for developing topic headings and are listed at the beginning of this guide. This guide is divided into five topics based on these goals: Understanding Ecosystems, Appreciation and Sensitivity of the Environment through Poetry and Prose, Human Cause and Effect Relationships with the Environment, Environmental Issues, and Taking Action to Improve the Environment. Each topic has a list of Recommended Literature, Related Literature, Response Activities, Environmental Education Activities and a listing of the Minnesota Environmental Education Goals the chapter meets.

The Recommended Literature reviews selected books related to each topic. Related Literature continues the list of books, related to the topic without reviews. There are a variety of picture books and chapter books in both listings as well as fiction and non fiction.

The Literature Response Activities are a list of open ended statements and questions that can be used as initial writing starters in a response journal. Personal thoughts and questions as well as inquiry projects, stories, poetry and other writings will emerge from the students as they read and discuss these books.

The Environmental Education Activities are from a variety of sources including Project Learning Tree, Project Wild, Project Wet and others. These activities are chosen to enrich and support the concepts presented in the literature.

This resource is meant to be a guide. By reading these books and participating in these activities, it is my hope that many things will emerge from you, a creative educator, and from the children who are innately imaginative learners. There is a profound simile between the power and beauty of the natural world and the written word. Use both well and with respect.
Minnesota's Goals for Environmental Education

• To understand ecological systems.

• To understand the cause and effect relationship between human attitudes and behaviors and the environment.

• To be able to analyze, develop, and use problem solving skills to understand the decision making process of individuals, institutions, and nations regarding environmental issues.

• To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.

• To understand the potential complementary nature of multiple uses of the environment.

• To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.

• To provide the information citizens need to make informed decisions about actions to take on environmental issues.
Recommended Children’s Literature


Prairies are rich with color and life and this book portrays them well. The beautiful color photographs give a true feeling of what a prairie is like. There is a striking contrast between close up photographs of plants and animals and panoramic vistas of the prairie as it is shown through the seasons. The photographs along with the concise text, give the richness and beauty of life on a tallgrass prairie.


Henry Rush is out on the southwestern prairie in Oklahoma attempting to photograph a prairie dog for a national magazine. During his time on the prairie, he is witness to a variety of plants and animals in which author, Jean Craighead George, describes in detail. The reader learns much about predator prey relationships, weather and biology of plants and animals of the prairie.


One of the most striking characteristics of this book is the pen and ink drawings of prairie grasses and forbs (flowering plants). This highly informational book describes the adaptations of a wide variety of plants that make up the prairie in each season. Lerner explains the value of fire to the prairie to keep trees and shrubs from being established.


The Native Americans and early pioneers experienced the original prairies in a way that will never happen again. Their records of what it was like to cross the prairie and homestead on the prairie, as well as a few small pieces of virgin prairie, are what we have to remember it. The settlers saw the value of the rich soils that made for productive farming, which, along with over grazing, has now become a threat to remaining prairie remnants. The information and color photographs in this book focus on the plants and animals of the prairie and their interrelationships. It also compares a variety of grasslands and prairies in North America as well as on other continents.
Related Literature

Literature Response Activities
*Record your thoughts, ideas and wonderings.
*What is amazing, interesting or curious to you?
*What questions do you have? What do you want to know more about?
*Compare and contrast a prairie with a forest and wetland ecosystem.
*List plants and animals that live on the prairie.
*List words that describe a prairie. Think about sounds, smells, and sights.
*Draw a prairie scene and describe it with detail.
*Describe what it might have been like to cross the prairie as an early settler.
*Tell ways the Native Americans and early settlers used and changed the prairies.

Environmental Extension Activities
Adapt these activities using plants and animals that live on the prairie.

• Animal Charades (p. 4)
• Interview a Spider (p. 14)
• Graphananimal (p. 100)

• Animal Clue Game (p. 52)

• Pyramid of Life (p. 52)
• Recipe for a Prairie (Adapt Recipe for a Forest) (p. 54)
• Webbing (p. 56).
Forest

Recommended Children’s Literature


Rebecca is out exploring the woods searching for an oven bird that her uncle challenged her to find. Throughout her wanderings in the woods, Rebecca meets up with many animals and plants whose natural history and relationships are described in detail. Jean Craighead George has made the woods come alive for readers through the travels of this young girl.


Interdependence, balance and food webs are the main themes throughout this book. Wolf Island is a small island in the middle of a lake in which predator/prey relationships are shown to be critical for keeping an ecosystem healthy. The top predators are a family of wolves that leave the island. In the following year, the deer population increases dramatically, affecting the food supply for all of the other animals on the island. The affect of the imbalance is clearly shown. The return of the wolves the following winter shows their value in keeping an ecosystem in balance.


This book uses a repeating theme of plants and animals building upon each other to show relationships and interdependence in an old growth forest. Each page introduces a new animal that uses the tree in some way and ends with the phrase, “That grows in the ancient forest.” The animals are described with rich language, such as a “saucy, chattering squirrel. There is additional information about the biology of each animal in the back of the book and their value to an old growth forest. A strong preservation message is given in the preface though it is not threatening nor didactic.


A maple seed lands in a decaying tree lying on the forest floor. The seed sprouts and grows from a seedling to a mature maple tree enduring drought, fire, tapping for sap, a lightening strike and a multitude of animals living in it. After 200 years of life, the tree finally falls and begins to decay, becoming new soil for a new young maple seed. The colorful, detailed illustrations invite the reader to look for more than is written in the text.
An old, dead tree falls over and begins to decay only to find that it is really full of life. The tree is home to many insects and small mammals. It is also food for bacteria and fungus which turn the rotting tree into soil to be used for new plants and trees. The watercolor illustrations are brown and muted, giving a soft impression of a decaying tree.

Related Literature


Literature Response Activities

*Record your thoughts, ideas and wonderings about forests.

*What is amazing, interesting or curious to you?

*What questions do you have? What do you want to know more about?

*Compare and contrast a forest with a prairie and wetland ecosystem.

*List plants and animals that live in a forest.

*Draw a forest scene. Describe it with detail. Include smells, sounds and sights.

*List words that describe a forest.

*Tell about the relationships of plants with animals, plants with plants, and animals with animals.

*Illustrate the circles or cycles of events that happen in the forest.

*Compare temperate forests with tropical rain forests.
Environmental Extension Activities

  • Get in Touch with Trees! (p. 5)
  • Charting Diversity (p. 27)
  • Adopt a Tree (p. 65)
  • Trees as Habitats (p. 70)
  • The Fallen Log (p. 72)
  • Nature's Recyclers (p. 75)
  • Rain Forests (p. 88)
  • Web of Life (148)
  • Field, Forest and Stream (p. 156)

Boulder, CO.
  • Interview a Spider (p. 4)
  • Graph-animal (p. 14)
  • Quick Frozen Critters (p. 122)
  • How Many Bears Can Live in This Forest? (p. 134)
  • Oh Deer! (p. 146)

Nevada City, CA.
  • Animal Clue Game (p. 52)
  • Build a Tree (p. 62)

Nevada City, CA.
  • Meet a Tree (p. 26)
  • Recipe for a Forest (p. 54)
  • Pyramid of Life (p. 52)
  • Webbing (p. 56)
  • Bat and Moth (p. 94)
Recommended Children’s Literature


This book is a detailed introduction to the many and varied creatures that live in a pond. There are many interesting facts about the lifestyles of the insects, amphibians, and other animals that live there. Dewey also slips in pieces of information about the properties of water and the process of photosynthesis. Her use of language to describe life in a pond makes this book great to read aloud.


This beautifully illustrated book is an effective introduction to marsh ecology. Using strong poetic language, Luenn brings a marsh to life by introducing the reader to a variety of plants and animals that live there. The language evokes strong images and allows one to use all of their senses as they read the book. The watercolor paintings are wet and watery and they portray a wetland as it is.


The value and importance of wetlands for wildlife, flood prevention, and purifying groundwater is a strong message throughout this book. Using color photographs and text, Staub describes the differences between wetlands, swamps, and estuaries and the plants and animals that live in them. Scientific terminology is highlighted and defined throughout the text.


This book is a sensory journey into a wetland. The text and the illustrations of this book compliment each other and they can be used independent of each other to tell the wonders of a wetland. Williams poetic description of a marsh invites the reader to look, feel, and listen to all of the activity going on. Peter Parnall’s illustrations of pen and ink with brilliant splashes of color give the reader a variety of perspectives from above the water, at the surface, and below.
Related Literature
    New York, NY. Watts.

Literature Response Activities
*Record your thoughts, ideas and wonderings.
*What is amazing, interesting or curious to you?
*What questions do you have? What do you want to know more about?
*Compare and contrast wetlands with a forest and prairie ecosystem.
*List plants and animals that live in water environments.
*Draw a wetland scene and describe it with detail.
*List words that describe wetlands.

Environmental Extension Activities
Boulder, CO.
    •How Wet is Our Planet? (p. 7)
    •Water Plant Art (p.11)
    •Water Canaries (p. 35)
    •Marsh Munchers (p.53)
    •Migration Headache (p. 87)

Environmental Education in the Schools; Creating a Program That Works!, (1993). Braus, Judy and David Wood. North American Association for
Environmental Education.
    •Watery World (p. 222)
    •Go with the Flow (p. 362)

Wildlife Federation, Washington, D.C.

    •Watch on Wetlands (p. 258)
- Water Match (p. 50)
- Life in the Fast Lane (p. 79)
- Thirsty Plants (p. 116)
- Capture, Store, and Release (p. 133)
- Imagine! (p. 157)
- The Incredible Journey (p. 161)
- The Thunderstorm (p. 196)
- Water Models (p. 201)
- Macro Invertebrate Mayhem (p. 322)

(Adapt these activities using plants and animals that live in a wetland.)
- Pyramid of Life (p. 52)
- Recipe for a Wetland (Adapted from Recipe for a Forest) (p. 54)
- Webbing (p. 56)

(Most of the activities in this resource are applicable.)
- Introducing Wetlands (p. 71)
- Let the Cattail Out of the Bag (p. 78)
- Wetlands in the Classroom (p. 80)
- Wetland Habitats (p. 87)
- Wetland Weirdos (p. 94)
- Wet 'N Wild (p. 99)
- Marsh Market (p. 109)

Complementary Minnesota Environmental Education Goals:
- To understand the cause and effect relationships between human attitudes and behaviors and the environment
- To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment
Appreciation and Sensitivity of the Environment

Primary Minnesota Environmental Education Goal:
To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.

Poetry

Recommended Children’s Literature


As the title says, this is a collection of poems by a variety of authors about the earth, seasons, plants, animals, and more. They are easy to read and great models for starting personal poems.


These poems about different birds are meant to be read aloud by two or more people. Fleischman includes mythological birds and extinct birds, as well as birds with which we are most familiar. Use this with his other poetry book for two voices, Joyful Noise, which contains musical poems about insects.


These thoughtful poems about different animals are beautifully written. Each one describes an animal and something unique about it. The illustrations by Jennifer Dewey compliment each poem as well.


A poem about the Monkey Puzzle tree begins this book of poems about trees around the world. The Monkey Puzzle is a species of thorny tree named by Englishmen and grows in warm climates. The strong words used to describe trees may inspire young poets to write about the trees they know so well.


This is an anthology of thought provoking poems from various writers including C.S. Lewis, Carl Sandburg, Gary Snyder, and the collector, Jane Yolen. The collection is divided into three sections; Celebrate the Earth, Sacrifice the Earth and Save the Earth. The illustrations are gray and white scratch board prints of things from nature which are the background for each poem.
Related Literature


Literature Response Activities

*What are you thinking or wondering about?*

*Keep a list of strong/powerful/meaningful words.*

*Choose a favorite line and write from that line.*

*Illustrate a poem.*

*Put a poem to music.*

Environmental Extension Activities

  •Aqua Words (p. 1)

  •Poetry (p. 185)
  •Picture Poetry (p. 190)
  •Shades of Meaning (p. 192)
  •Poetry Trail (193)

  •Poet Tree (p. 13)
  •People of the Forest (p. 54)
  •The Native Way (p. 343)

  •Poetic Precipitation (p. 182)
  •Water Write (p. 457)

  •Wild Words: A Journal Making Activity (p. 66)
  •Animal Poetry (p. 70)
Recommended Children's Literature


Matthew is a young boy who enjoys going to a meadow to lay in the sun, daydream, watch the clouds, and not think. A red tailed hawk flies over and speaks to him and offers him lessons each year as he grows up. As Matthew grows up, he returns to the meadow at blackberry season to meet up with the hawk. The hawk invites him to focus on each of his senses and use each one as he has never used them before, thus becoming very aware and sensitive to the natural world. This is a serene circle story, as Matthew returns as an adult with his child to pass on the meadow that was given to him by his grandmother. The watercolor paintings by Ted Lewin are peaceful and thought provoking.


A wise woman, rich with life experiences, tells her story to her nieces and nephews leaving them with a very important piece of wisdom. Leave the earth more beautiful than when you came. This very simple message is strongly portrayed through the text and the rich, colorful illustrations.


Brian finds a salamander in the woods and brings it home to live with him. His mother asks him important questions about how he is going to care for it. His responses turn his room into the very forest from which the salamander came. This is a sensitive and caring story about how wild animals should really be cared for out in the wild.


This is a fine tuned story of night sounds which you can actually hear as the book is read aloud. It is a good story to use as a preface to becoming aware of sounds. The illustrations are dark, like the night, but end in glorious color with the sunrise.
Related Literature


Literature Response Activities

*What are you wondering or thinking about?*
*Describe a place that is special.*
*Mark a descriptive passage. Write why you like it.*
*Illustrate a scene that is important to you.*

Environmental Extension Activities

- Rare Bird Eggs For Sale (p. 341)
- What Would You Do? (p. 344)

- The Native Way (p. 343)
- People of the Forest (p. 54)

- Stream Sense (p. 191)
- Raining Cats and Dogs (p. 435)

- Microtrek Treasure Hunt (p. 22)
- Learning to Look, Learning to See (p. 62)
- Playing Lightly on the Earth (p. 292)
- Sounds (p. 38)
- Colors (p. 39)
- Unnature Trail (p. 40)
- Duplication (p. 44)

- Sound Map (p. 74)
- Camera (p. 105)

- Wetland Metaphors (p. 85)
- Let the Cattail Out of the Bag (p. 78)

Complementary Minnesota Environmental Education Goal:
*To understand the cause and effect relationship between human attitudes and behaviors and the environment.*
Human Cause and Effect Relationships with the Environment

Recommended Children’s Literature


A young fisherman, named Jack, is unable to fill his nets any longer and he does not understand why. He rescues a seal who in turn leads him to a good fishing spot in the ocean. While sleeping later on, a storm comes up and Jack “hears” the ocean speak to him. The message is clear about the reasons for his small catches. Jack returns home to educate everyone about caring for the ocean.


This picture book of mixed collage is a series of views out a child’s window as he grows up. The changes are quite subtle at first but become quite obvious by the end of the book. A careful eye can observe many changes.


This is a true story about the history of the Nashua River in New Hampshire from pre-European settlers to present day. Cherry tells how the river has been used over time to a point of serious degradation. Local people gathered together and worked to clean up the river and imploded industries to do the same. It is an environmental success story. The illustrations and borders are very attractive and add to the beauty of the book.


This short story of three frogs living in a small pond. Each frog claims private ownership of different pieces of the pond until a disaster strikes. They soon discover the importance of relying on one another for survival.


This is the classic story of an ecological crisis. Without much future thought, the Onceler cuts Truffula Trees to make things (which everyone needs!). The consequences are drastic and affect all living in the area.
Related Literature

Stewart, Tabori & Chang.

 Literature Response Activities

*What are you thinking or wondering about?

*List the changes you see in your area. What do you think about it?

*List the things you do that affect something or someone else.

*Compare several books and the changes that occur.

Environmental Extension Activities

- Hooks and Ladders (p. 69)
- The Glass Menagerie (p. 121)
- Deadly Skies (p. 133)
- Deadly Waters (p. 137)
- Alice in Waterland (p. 175)

- The Commons Dilemma (p. 135)
- Key Mangrove: A System in Conflict (p. 139)
- A Heated Controversy (p. 167)
- Rivers Through Time (p. 302)
- Sizing Up Reserves (p. 402)

- Trees for Many Reasons (p. 340)
- Loving it Too Much (p. 108)
- A-Maze-Ing (p. 219)
- Common Water (p. 232)
- Irrigation Interpretation (p. 254)
- Sum of the Parts (p. 267)
- Water Works (p. 274)
- Dilemma Derby (p. 377)
- Easy Street (p. 382)

- Checks and Balances (p. 186)
- Deadly Links (p. 270)
- Keeping Score (p. 276)
- Ethic Thinking (p. 290)

- Marsh Mystery (p. 116)
- Recipe for Trouble (p. 199)
- Hydropoly (p. 260)

Complementary Minnesota Environmental Education Goals:
*To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.
Environmental Issues

Primary Minnesota Environmental Education Goals:
• To provide the information citizens need to make informed decisions about actions to take on environmental issues.
• To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.

Recommended Children’s Literature


A small family in northern California is confronted with the loss of work because of the depletion of habitat for the northern spotted owl. The father of the family has vowed to kill any spotted owl he sees. His son happens to find an abandoned baby owl in the forest and brings it home to raise. He is fairly sure it is a spotted owl but convinces his family it is a barred owl so it will not be killed. Jean Craighead George addresses both sides of this environmental issue, but focuses on the preservationists perspective. Her descriptions and biology of the old growth forests in the northwest are accurate and detailed.


Three sisters, living on an island in the Caribbean, watch a leatherback turtle come to shore to nest. They later find out that a local man wants to know where the nest is so he can dig up the eggs to sell at the market. The need for money versus the need to preserve endangered species is evident in this story. This issue is very real in developing countries.


A young boy and his father find a baby panda (daxiong mao) near it’s dead mother. They take the baby home to care for it and learn the government has begun a protection program to feed starving pandas and will reward anyone who has helped save a panda. Questions arise from the farmers: Why feed pandas when people are hungry? This story, based on fact, is a good introduction to the issue of endangered species protection.


Tucker Mouse lives in a subway tunnel in New York City with his best friend, Harry Cat. They learn that their friend, Chester Cricket, needs them to come to Connecticut to help solve a serious problem. The issue is the Meadow that is inhabited by a great number of creatures is in danger of being bulldozed and built upon. Though highly anthropomorphized, the loss of habitat through development is central to this story.
Related Literature


Literature Response Activities

*Record your thoughts, ideas and wonderings.
*What is amazing, interesting or curious to you?
*What questions do you have? What do you want to know more about?
*Compare and contrast the issues in each book. What is similar with each one? What is different? Who are the players? What are their beliefs? What positions do they take? What are possible solutions?

Environmental Extension Activities

- Dragonfly Pond (p. 143)
- Turtle Hurdles (p. 153)

- Key Mangrove: A Conflict of Interests (p. 146)
- A Heated Controversy (p. 161)
- Hard Choices (p. 268)
- Glass and Metal Waste Questionnaire (p. 299)
- What Do People Think? (p. 304)
- Agricultural Practices (p. 350)
- The Great Swamp Debate (p. 358)
- Go With the Flow (p. 362)
- We Can All Be Experts (p. 379)

- Forest Consequences (p. 101)
- There Ought to be a Law (p. 201)
- Life on the Edge (p. 335)
- Where Are the Frogs? (p. 279)
- Choices and Preferences, Water Index (p. 367)

- Here Today, Gone Tomorrow (p. 170)
- Riparian Zone (p. 206)
- Wildlife Issues: Community Attitude Survey (p. 244)
- Shrinking Habitat (p. 258)
- To Zone or Not to Zone (p. 266)
- Planning for People and Wildlife (p. 284)

- Hydropoly (p. 260)

Complementary Minnesota Environmental Education Goals:
- To understand the cause and effect relationships between human attitudes and behaviors and the environment.
- To be able to analyze, develop, and use problem solving skills to understand the decision making process of individuals, institutions, and nations regarding environmental issues.
- To understand the potential complementary nature of multiple uses of the environment.
Taking Action to Improve the Environment

**Primary Minnesota Environmental Education Goals:**
- To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.
- To provide the information citizens need to make informed decisions about actions to take on environmental issues.

**Recommended Children’s Literature**


This book is a moving testimony of how children can take action for the environment. After noticing the local Pigeon Creek had no fish, a class of 5th graders decided to do something about it. They cleaned the creek, wrote letters, educated the community and raised and released coho salmon, which hopefully would return after their years spent in the ocean. And they did. This is an inspiring story with color photographs that record the actions taken along the way.


An empowering book for children to read when they want ideas of what to do for making the earth a more environmentally safe place. There is information about a variety of issues that kids can think about and then do something about. This book is very encouraging, optimistic and empowering.


Based on a true story in Massachusetts, two society women are disgusted when they notice their friends wearing hats that not only have feathers on their hats, but wings and entire birds on them. At the time, women did not have a voice in government but these two women organized and made some major changes, including the creation of the Audubon Society in Massachusetts. This is a great story of how individuals can work and act together. The illustrations are a mix of beautiful, detailed birds on hats and humorous caricatures of people wearing them.
Related Literature

Literature Response Activities
* Record your thoughts, ideas and wonderings.
* What is amazing, interesting or curious to you?
* What questions do you have? What do you want to know more about?
* List the possible issues in your community. Discuss possible actions.

Environmental Extension Activities:

• Hooks and Ladders (p. 69)

• The Flying Foxes of Samoa (p. 263)
• Harry Carter’s Grain Company (p. 264)
• Tough Choices (p. 292)
• Four Urban Activities (p. 318)
• What Would You Do? (p. 344)
• Taking Action For the Planet (p. 419)

- Energy Sleuths (p. 126)
- Water Watch (p. 122)
- Talking Trash! Not! (p. 119)
- Democracy in Action (p. 197)
- Waste Watchers (p. 274)
- Reduce, Reuse, Recycle (p. 320)
- A Peek at Packaging (p. 322)
- A Look at Lifestyles (p. 353)


- Every Drop Counts (p. 307)
- Money Down the Drain (p. 328)
- What’s Happening? (p. 425)


- Ethical Reasoning (p. 310)
- Can Do! (322)


- Helping Wetland Habitats (p. 288)
- Get Involved (p. 310)

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**Complementary Minnesota Environmental Education Goals:**

- To understand the cause and effect relationships between human attitudes and behaviors and the environment.
- To be able to analyze, develop, and use problem solving skills to understand the decision making process of individuals, institutions, and nations regarding environmental issues.
- To understand the potential complementary nature of multiple uses of the environment.
Children's Literature by Minnesota's Goals for Environmental Education

-To understand ecological systems.


**To understand the cause and effect relationship between human attitudes and behaviors and the environment.**


• To be able to analyze, develop, and use problem solving skills to understand the decision making process of individuals, institutions, and nations regarding environmental issues.


• To be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action.

To understand the potential complementary nature of multiple uses of the environment.


To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.


•To provide the information citizens need to make informed decisions about actions to take on environmental issues.

Environmental Education Activities by Minnesota’s Goals for Environmental Education

• To understand ecological systems.
  • How Wet is Our Planet? (p. 7)
  • Water Plant Art (p. 11)
  • Water Canaries (p. 35)
  • Marsh Munchers (p. 53)
  • Migration Headache (p. 87)

  • Watery World (p. 222)
  • Go with the Flow (p. 362)


  • Get in Touch with Trees! (p. 5)
  • Charting Diversity (p. 27)
  • Adopt a Tree (p. 65)
  • Trees as Habitats (p. 70)
  • The Fallen Log (p. 72)
  • Nature’s Recyclers (p. 75)
  • Rain Forests (p. 88)
  • Web of Life (148)
  • Field, Forest and Stream (p. 156)
  • Watch on Wetlands (p. 258)

  • Water Match (p. 50)
  • Life in the Fast Lane (p. 79)
  • Thirsty Plants (p. 116)
  • Capture, Store, and Release (p. 133)
  • Imagine! (p. 157)
  • The Incredible Journey (p. 161)
  • The Thunderstorm (p. 196)
  • Water Models (p. 201)
  • Macro Invertebrate Mayhem (p. 322)

- Animal Charades (p. 4)
- Interview a Spider (p. 14)
- Graphananimal (p. 100)
- Interview a Spider (p. 4)
- Graphananimal (p. 14)
- Quick Frozen Critters (p. 122)
- How Many Bears Can Live in This Forest? (p. 134)
- Oh Deer! (p. 146)


(Adapt these activities using plants and animals that live in a wetland.)
- Pyramid of Life (p. 52)
- Recipe for a Wetland (Adapted from Recipe for a Forest) (p. 54)
- Webbing (p. 56)


(Most of the activities in this resource are applicable.)
- Introducing Wetlands (p. 71)
- Let the Cattail Out of the Bag (p. 78)
- Wetlands in the Classroom (p. 80)
- Wetland Habitats (p. 87)
- Wetland Weirdos (p. 94)
- Wet 'N Wild (p. 99)
- Marsh Market (p. 109)
•To understand the cause and effect relationship between human attitudes and behaviors and the environment.

- Hooks and Ladders (p. 69)
- The Glass Menagerie (p. 121)
- Deadly Skies (p. 133)
- Deadly Waters (p. 137)
- Alice in Waterland (p. 175)

- The Commons Dilemma (p. 135)
- Key Mangrove: A System in Conflict (p. 139)
- A Heated Controversy (p. 167)
- Rivers Through Time (p. 302)
- Sizing Up Reserves (p. 402)

- Forest Consequences (p. 101)
- Loving it Too Much (p. 108)
- There Ought to be a Law (p. 201)
- Life on the Edge (p. 335)
- Trees for Many Reasons (p. 340)

- A-Maze-Ing (p. 219)
- Common Water (p. 232)
- Irrigation Interpretation (p. 254)
- Water Works (p. 274)
- Dilemma Derby (p. 377)
- Easy Street (p. 382)

- Checks and Balances (p. 186)
- Deadly Links (p. 270)
- Keeping Score (p. 276)
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- Marsh Mystery (p. 116)
- Recipe for Trouble (p. 199)
To be able to analyze, develop, and use problem solving skills to understand the decision making process of individuals, institutions, and nations regarding environmental issues.

- Deadly Skies (p. 133)
- Deadly Waters (p. 137)
- Dragonfly Pond (p. 143)

- The Commons Dilemma (p. 135)
- Key Mangrove: A System in Conflict (p. 139)
- A Heated Controversy (p. 167)
- Hard Choices (p. 268)
- Glass and Metal Waste Questionnaire (p. 299)
- Rivers Through Time (p. 302)
- What Do People Think? (p. 304)
- Agricultural Practices (p. 350)
- The Great Swamp Debate (p. 358)
- We Can All Be Experts (p. 379)
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- Trees for Many Reasons (p. 340)
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- Riparian Zone (p. 206)
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- Shrinking Habitat (p. 258)
- To Zone or Not to Zone (p. 266)
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To understand the potential complementary nature of multiple uses of the environment.

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- Hard Choices (p. 268)
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- Water Works (p. 274)
- Choices and Preferences, Water Index (p. 367)

- Wildlife Issues: Community Attitude Survey (p.244)
- To Zone or Not to Zone (p. 266)
- Planning for People and Wildlife (p. 284)
To provide experiences to assist citizens to increase their sensitivity and stewardship for the environment.

- Aqua Words (p. 1)

- Poetry (p. 185)
- Picture Poetry (p. 190)
- Shades of Meaning (p. 192)
- Poetry Trail (193)
- Rare Bird Eggs For Sale (p. 341)
- What Would You Do? (p. 344)

- Poet Tree (p. 13)
- People of the Forest (p. 54)
- The Native Way (p. 343)

- Poetic Precipitation (p. 182)
- Water Write (p. 457)
- Stream Sense (p. 191)
- Raining Cats and Dogs (p. 435)

- Wild Words: A Journal Making Activity (p. 66)
- Animal Poetry (p. 70)
- Microtrek Treasure Hunt (p. 22)
- Learning to Look, Learning to See (p. 62)
- Playing Lightly on the Earth (p. 292)

- Sounds (p. 38)
- Colors (p. 39)
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  • Ethic Reasoning (p. 310)
  • Can Do! (322)

  • Helping Wetland Habitats (p. 288)
  • Get Involved (p. 310)
Children's Literature by Author

Aaseng, Nathan. (1994). Jobs vs. the Environment: Can We Save Both? Hillside, NJ. Enslow Publisher, Inc.


Children’s Literature by Title


Environmental Education


Literature in the Curriculum


APPENDIX I

Summary of Survey Results
The Natural World and the Natural Word
A Resource Guide of Children’s Literature
and Environmental Education Activities

1. What grade level(s) do you teach? K(3), 1(7), 2(4), 3(2), 4(1), 5(1), 6(0), K-6(2), K-5(1), K-4(1), college(1)

2. What subject(s) do you teach? All (18), science specialist (3), speech pathologist (1), environmental education/ecology(1)

3. How many hours per week do you spend teaching environmental education?
   0 hours (4) 1 hour (10) 2 hours (2) 3 hours (0) 4 hours (0) 5 hours + (3)
   It varies depending on the time of year (4).

4. Do you see this guide as an opportunity to:
   a. increase time spent teaching environmental education. (23)
   b. decrease time spent teaching environmental education.
   c. keep amount of time spent teaching environmental education the same.

5. Please rate the usefulness of each section of the guide:
   Very Useful Somewhat Useful Not Useful
   a. Recommended Children’s Literature l-(21)--------(2)-----------------------------l
   b. Related Literature l-(20)--------(1)--------(2)-----------------------------l
   c. Literature Response Activities l-(15)--------(1)--------(7)-----------------------------l
   d. Environmental Extension Activities l-(13)--------(6)--------(4)-----------------------------l

6. Please circle the Activity Guides you own or have access to:
   Project Learning Tree (6) Aquatic Wild (6)
   Project Wet (5) Wonders of Wetlands (WOW!) (3)
   Sharing Nature with Children (4) Sharing the Joy of Nature (2)
   Environmental Education in the Schools (8) Project Wild (8)

7. In what ways was the information presented helpful to you in teaching environmental education in your classroom?
   Sounds wonderful. I would like to know how you fit this into a daily schedule and graduation standards.
Organization according to topics was helpful.
The literature response questions are excellent—but the organizational structure of your handout is outstanding—for a hands-on model—it is unique and wonderful.
Enjoyed it very much. I am using some of what was presented. It will help me make it more exciting. Great resources and ideas.
Inspiring, enthusiasm renewed. I too like to use books as catalysts for lessons. The power of story is strong and meaningful. I appreciate all the work you've done putting all this together and am awed by what you have accomplished with your students.
Seeing how to connect these books to great activities.
I enjoyed the writing activities/ideas! Thanks.
Many great ideas! A great resource of all related literature.
Related books to add to our units. You have a passion to teach!
More ideas for writing springboards and lots of books I haven't seen before! Thanks for the resource guide!!!
This class has planted a seed to help my quest for more information to take off. Thanks.
Inspiring. I love literature and I love encouraging teachers to use it effectively. This is the tool I needed to make that happen.
I loved it—What a simple, wonderful way to include EE in the classroom.
Just simply becoming more aware of books that are out there and ways to use them.
If you don't do anything else at least read and get kids talking.
It expands my resources—one less step in implementing.
More ideas are always welcome!
It gave me good ideas and got me fired up more.
It will help my knowledge base as I work with children within the regular classroom.
Connections in other subjects gained as well-reading, social studies.
I can tie in environmental education to the subject areas I teach.
I got ideas of how I can incidentally use the literature and language activities in environmental education in my class.