PD-ABS-815

TECHNOSERVE

Business Solutions to Rural Poverty

November 28, 2000

Ms. Susan C. Saragi
Technical Officer
Development Education Program
USAID (BHR/PVC)
1300 Pennsylvania Avenue, N.W., 7th Floor
Washington, D.C. 20523

USAID (PPC/CDIE)
Attn: Ms. Gloria White
1300 Pennsylvania Avenue, N.W.
Room 6.07-121
Washington, D.C. 20523

Subject: USAID Award No. FAO-A-99-00051-00, **TechnoServe's Making Connections through Gardening** Development Education Program

Dear Ms. Saragi and Ms. White:

On behalf of TechnoServe and the National Gardening Association, I am pleased to submit our annual report, describing Year One of our **Making Connections through Gardening** Development Education program. Through this innovative program, we are helping Americans of all ages to learn about the connections they have with people in the developing world through the common activities of gardening and agriculture.

I would be pleased to answer any questions that you might have, and look forward to a second, successful year of our program in Ghana. Thank you for you attention in this matter.

Sincerely,

Mara Neville

Mara Neville
TNS Communications Officer, and
Development Education Grant Manager

Attachment

C: Joan White, Education Program Director, National Gardening Association

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RE: USAID Award No. FAO-A-99-00051-00
TechnoServe's and The National Gardening Association's
Making Connections through Gardening
Development Education Program – Annual Report

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1. PROGRAM NARRATIVE

Project Objective 1:
Increase American grade school students' knowledge and attitude about the developing world, the global interconnectedness between people and the common needs and solutions for the environment, by a) incorporating information on a Latin American and African country in the existing GrowLab curriculum and b) a direct communication link via the mail and the Internet between U.S. students and children in these countries.

Progress Made:

Year One of our **Making Connections through Gardening** program focused on connecting American school children with school children in Nicaragua. Since 1993, TechnoServe (TNS) has been working in northern Nicaragua, one of the poorest areas of the country, helping former combatants in the civil war to learn to grow food to feed their families and produce cash crops such as coffee, horticulture and tropical fruits. TechnoServe staff based in the Jinotega region of Nicaragua contacted seven elementary schools around the city, developed relationships with the teachers, parents and students, and conducted in-depth interviews with a number of these students.

The resulting stories and photos were posted on the National Gardening Association's (NGA) web site: www.kidsgardening.com. This enabled students directly involved in the program, through the Ambassador Clubs discussed below, as well as all visitors to the NGA web site to learn about a "typical" day in the life of the Nicaraguan children. The Nicaraguan children described what their schools were like, what they were learning in class, the daily chores they performed and the kinds of games they played. U.S. students also learned about the vegetables and tropical fruits most commonly grown in Nicaraguan *huertas* (home gardens) and about typical gardening techniques, including vermicomposting, terracing and the use of fumigants and herbicides. As part of the web site, a colorful map of Nicaragua identifies the country's major cities and regions including Jinotega, which is the focus of our DevEd program. **(See Attachment A.)**

The photos and stories of the Nicaraguan children also provided U.S. students and educators with a vivid and powerful description of the poverty that exists in Nicaragua. Many of the children pictured live in homes with dirt floors. Some describe working long hours in their families' gardens and farms at a very early age, or eating a limited or meatless diet because that is what their families can afford.

The **Ambassador Clubs** are a key element of our **Making Connections Through Gardening** program. For our Year One program in Nicaragua, 53 Ambassador Clubs representing 46 teachers and 1,203 students signed up to participate, in order to study and exchange information with the students and schools in Nicaragua **(Attachment B).**

The NGA sent each Ambassador Club an introductory package of materials that included a map and flag of Nicaragua, a program overview, learning activities, instructions on how to incorporate the materials into the NGA's GrowLab™ curriculum, and pre- and post-assessment surveys for each student to answer **(Attachment C).** The Ambassador Clubs had access to all of the curriculum materials developed by NGA staff, the photos and stories collected in the field by TechnoServe staff, discussion forums, favorite web sites, and the e-mail pal's feature on www.kidsgardening.com. Links from the National Gardening Association's web site to the TechnoServe and USAID web sites were also provided, so that teachers and students could access more information on development issues **(Attachment D).**

All of the curriculum activities developed by NGA for both the first and second years of our **Making Connections through Gardening** program use the same framework as the NGA's GrowLab™ curriculum, ensuring that teachers are familiar with the format and can more easily incorporate it into their teaching and classroom activities. GrowLab™ is the NGA's hands-on, inquiry-based curriculum, which was developed over several years in the late 1980s and copyrighted in 1990. It is currently in use in 10,000 of the nation's 67,000 kindergarten-through-8th grade schools. Approximately 500,000 children and 25,000 educators in the U.S. are involved in the NGA's GrowLab program.

For Year One of our program, NGA developed a series of five separate curriculum activities to enrich U.S. students' learning experience about Nicaragua. These curriculum activities provide opportunities for teachers and students to investigate pressing international topics such as agricultural practices, hunger and nutrition, and the impact of environmental problems (like deforestation) and natural disasters (Hurricane Mitch). For example, as part of the Theme 1 curriculum activity, "Launching into the Millennium," students located Central America and then Nicaragua on a map and in relation to the United States, and discussed how they thought Hurricane Mitch affected people's lives, agricultural production and the environment in Nicaragua. The students also researched key traditional crops in Nicaragua (like coffee and bananas) and how crop diversification, which is one of TechnoServe's major objectives, can benefit the environment, increase rural incomes, and provide a greater measure of food and economic security in the event of natural disasters. **(Attachment E.)**

During the planning phase of **Making Connections Through Gardening**, the NGA was also doing a strategic planning exercise, which was completed in October of 1999 and at the same

time as our DevEd program kicked off. Their new strategic plan refocused NGA on supporting gardeners of all ages, with an emphasis on youth. Given the previous decade's surge in Internet connectivity and use, this included discontinuing publication of NGA's *National Gardening* magazine, and instead publishing all general gardening audience content, including magazine content, exclusively on the NGA web site, at www.nationalgardening.com. This web site receives more than 151,000 hits monthly and increases NGA's reach to a broader community. Additionally, on March 15, 2000, NGA launched its new KidsGardening web site, www.kidsgardening.com. This web site provides the most comprehensive gardening information for educators, parents, and community leaders gardening with children, and it receives more than 20,000 hits monthly. NGA also initiated distribution of two online newsletters: *GardenWire* (sent to 20,000 general gardening audience recipients) and *KidsGarden* (sent to 15,000 educator recipients). Staff demands to accomplish this work meant that NGA reduced its publications of its hard copy newsletter, *Growing Ideas*, for the 1999/2000 school year. All editorial content from the **Making Connections Through Gardening** program directed toward the adult gardening audience was and will be published on www.nationalgardening.com. All materials related to teachers and students was and will be published on www.kidsgardening.com.

Project Objective 2:
Build an appreciation among educators in the United States of developing countries and their need for U.S. knowledge and training, by providing information educators can use in an existing curriculum.

Progress Made:

To promote our **Making Connections through Gardening** program and encourage teachers to participate in the Ambassador Clubs, the NGA placed an announcement in the November/December 1999 issue of *National Gardening* magazine, which was sent to 250,000 subscribers. Announcements were also sent out via two online NGA newsletters: *KidsGarden,* in November of 1999 (15,000 educator recipients), and *GardenWire* in January of 2000 (20,000 general gardening audience recipients). These announcement were also picked up by other online newsletters, including the nationwide *Schoolyard* list serve that is distributed by the Cooperative Extension at the University of Arizona, and by *Schoolgarden*, which is distributed nationwide by the American Community Gardener Association (ACGA). **(Attachment F.)**

TechnoServe also published a story about our **Making Connections through Gardening** program in the Winter 1999 issue of its *World* newsletter, which is sent to 18,000-plus individuals nationwide **(Attachment G).**

Fifteen American classrooms representing 540 students also participated in both pre- and post-program surveys **(Attachment H).** (An additional 345 students took the pre-program survey but

did not complete the post-program survey.) Pre- and post-test results and teacher evaluations revealed a significant increase in both students' and teachers' knowledge of home gardens, agricultural practices, environmental issues, and the importance of development programs in Nicaragua.

Teacher-participant surveys from the Nicaraguan component of the program revealed that the curriculum and other web-published materials were extremely successful in meeting state standards, and expanding student awareness of environmental global effects. The majority of teachers responded that the **Making Connections through Gardening** program's curriculum were extremely effective in building problem-solving skills and fostering an understanding of some important issues facing developing countries. Teachers also shared activities that their Ambassador Clubs conducted on the Discussion Forum **(Attachment I)**.

A few teachers also felt, however, that the project was somewhat or not at all successful in connecting the American students with their Nicaraguan partners via traditional mail. Some Ambassador Clubs attempted pen-pal correspondence, but most of the Nicaraguan children did not respond. Letter writing, or being a pen pal, is not common in Nicaragua. Cultural differences, and the lack of an adult present who was aware of this and dedicated to the process, offer some explanation, and also highlight the need to have such a person in place during the second year of the program.

An article summarizing the **Making Connections through Gardening** program and its impact on teachers and children was published on the NGA's KidsGardening web site in July of 2000 **(Attachment J).**

Project Objective 3:
Raise awareness among National Gardening Association's members of the developing world's agricultural, gardening and environmental issues and how they relate to their own gardening hobbies and lives.

Progress Made:
An article titled "Beyond Our Own Gardens"**(Attachment K)** was published in the January/February 2000 issue of *National Gardening* magazine, with a subscription base of 250,000. This same article also appeared on the National Gardening Association's web site (www.nationalgardening.com) from March through July of 2000, and received more than 34,000 "hits" **(Attachment L).**

Additionally, a survey to measure awareness of development issues and programs among the general gardening audience was also placed on the National Gardening web site for three months beginning in January of 2000, and 520 people responded **(Attachment M)**. End-of-program post-

survey results will provide NGA staff with data to compare pre- and post-program awareness for the project.

Several weeks ago, the NGA published three additional articles based on our **Making Connections through Gardening** program on the Ambassador Clubs' pages of its www.kidsgardening.com web site. Both our program and these articles -- "Nicaragua After the Storm," "Ghana at a Glance" and "Diversity in Ghana" -- are also referenced on the NGA's www.nationalgardening.com home page. **(Attachment N.)**

As was previously mentioned, TechnoServe also published a story about **Making Connections through Gardening** in the Winter 1999 issue of its *World* newsletter, which is sent to 18,000-plus individuals nationwide. TechnoServe's web site (www.technoserve.org/field/deved.htm) also contains information about our **Making Connections through Gardening** program, and provides direct links to NGA's kidsgardening.com web site, and to the Development Education section of the USAID web site **(Attachment O).**

2. PERFORMANCE INDICATORS:

Indicator 1:

- Increase awareness among 100,000 American students who are using the **Making Connections through Gardening** information. At a minimum, these students will have learned: a) Where and what Nicaragua (Panama, originally) is as well as the chosen African country (Ghana); b) How children in these countries live, and c) How children in the developing world use gardening in their everyday lives.

Progress Made:

Approximately 500,000 children and 25,000 educators in the U.S. are involved in the NGA's GrowLab program, including 10,000 of the nation's 67,000 kindergarten-through-8th grade schools. As described previously, the National Gardening Association conducted extensive outreach to inform this audience and kindergarten-through-8th-grade teachers and educators in general about Year One of our **Making Connections through Gardening** program, including:

- Publishing an announcement in the November/December 1999 issue of *National Gardening* magazine, which was sent to 250,000 subscribers;
- Publishing announcements in two online NGA newsletters that were sent to 15,000 educators and 20,000 general gardening audience recipients. These announcements were also distributed nationwide by at least two separate online newsletters that target educators;
- Publishing an article about our program ("Beyond Our Own Gardens") in the January/February 2000 *National Gardening* magazine, with a subscription base of 250,000;
- This same article ("Beyond Our Own Gardens") also appeared on the NGA's web site from March through July of 2000, and received more than 34,000 "hits";

- Publishing an article summarizing Year One of our **Making Connections through Gardening** program and its impact on teachers and children on the NGA's kidsgardening.com web site in July of 2000.

The NGA has placed all of our program materials – photos, stories, curriculum and related activities – on a dedicated section of its www.kidsgardening.com web site, for use by the Ambassador Club participants as well as any visitor to its web site. The NGA is also conducting pre- and post-program student and teacher evaluations for both the Nicaragua and Ghana components of the program, as well as providing electronic discussion and e-mail pals' forums.

Based on the discussion forums and direct communications between educators and NGA staff, we know that several of the participating teachers and Ambassador Clubs shared their Nicaragua learning experiences with other non-participating teachers and students. Based on NGA's many years of experience working with teachers and educators, we are confident that this peer-to-peer sharing, an example of which is described below, was widespread:

"As our school close nears, the 5 students in my third grade GT enrichment group made 10-15 minute presentations on Nicaragua to each of their 4 cluster, multi-aged classes (grades 1-3). Each child had researched a different part: Key facts About Nicaragua, The Climate, The People, The basic Needs of the People, and Plants and Animals of the Tropical Forest. They used internet sources, reviewing the stories from the El Espino students, along with search engines and encyclopedias on CD-ROM. This was the finale of the school year for these students and a great way for them to help their peers review the materials on Nicaragua in preparation for their post tests. Thank you, Ambassador Clubs, for this special learning opportunity." (By Mary Nied Phillips, Lake Waco Montessori Magnet School, see Attachment I.)

As previously described, TechnoServe also devoted a section of its web site to the program, which provides direct links to the Nicaragua and Ghana Ambassador Clubs sections of the NGA's kidsgardening.com web site and to the Development Education section of the USAID web site. TechnoServe also published a story about our program in the Winter 1999 issue of its direct mail newsletter, TechnoServe *World*, which was sent to 18,000 subscribers. TechnoServe staff also received inquiries from educators who wanted more information about our **Making Connections through Gardening** project, and we directed them to the NGA's Ambassador Clubs web site section.

Indicator 2:

- 2,000 American students will gain a more in-depth understanding about these countries because of their involvement in the Ambassador Clubs. These students will have learned points a-c above, as well as get to know the developing world through individual children in Nicaragua (Panama, originally) and the African country (Ghana) and understand how organizations like

TechnoServe are helping families through agriculture.

Progress Made:

The **Ambassador's Clubs** have proven to be extremely popular. To date, over 6,500 American students have participated or are participating in a total of 293 Ambassador Clubs, far exceeding our original goals of 2,000 American students and 100 Ambassador Clubs.

As was previously mentioned, for our Year One **Making Connections Through Gardening** program in Nicaragua, 53 Ambassador Clubs were created, representing 46 teachers and 1,203 students. For Year Two, approximately 240 Ambassador Clubs signed up for the 2000/2001 program with Ghana, under the guidance of 75 teachers who represent 5,382-plus children. NGA and TechnoServe staff also received a number of phone and e-mail inquiries after the Nicaragua and Ghana program deadlines had passed, and encouraged these educators to visit the relevant Ambassador Club sections of the www.kidsgardening.com web site to learn about the program and access the photos, stories and curricular activities posted there.

Attachment C contains the Ambassador Club introductory package for Nicaragua. For the current, 2000/2001 program, each Ambassador Club was sent an introductory package which included: a map and flag of Ghana; a poster called "How Big is Africa," to be used in the first curriculum; instructions on how to incorporate the materials into the curriculum, and a pre- and post-assessment for each student to answer.

In addition, because NGA received such a large number of inquiries from high school teachers, NGA staff designed the Year Two program with Ghana and each of the curriculum activities to include this age group -- as "Senior Geographers" -- and signed up 18 Ambassador Clubs representing 460 9th-12th grade students **(Attachment P).**

Indicator 3:

- 5,000 educators will adopt the **Making Connections through Gardening** information and, in so doing, will gain an appreciation for the developing world, including concepts such as: a) That people in the U.S. and the developing world share commonalties, such as their hopes and ambitions for their families and their feelings about work and education; b) The work of organizations like TechnoServe bring opportunity and better lives to people in the developing world.

Progress Made:

A total of 121 educators are formally participating in our **Making Connections through Gardening** program, guiding the learning and activities of 293 Ambassador Clubs nationwide.

Based on NGA's contacts with these educators, and its years of experience with teachers in general, we believe that many of these formal participants and Ambassador Clubs are sharing curriculum materials, learning and activities with other teachers and students in their schools. We also believe, based on the inquires that NGA and TechnoServe staff received from educators after the deadline to formally participate in the Nicaragua and Ghana programs had passed, that other educators are accessing the curriculum activities and related materials posted on the NGA web site.

In addition to these "formal" and "informal" educator/participants:

- In November of 1999, 15,000 educators received announcements about the program from NGA via their *KidsGarden* online newletter;
- This program announcement was also carried by at least two other online newsletters that are distributed to educators nationwide (*Schoolyard* and *Schoolgarden*).

In addition to these annoucements and as previously discussed, NGA and TechnoServe have also published a number of stories aimed at adult audiences about our **Making Connections through Gardening** program, including on each organization's web site, in the NGA's *National Gardening* Magazine (250,000 subscribers), and in TechnoServe's *World* newsletter (18,000 subscribers).

Indicator 4:

- 10% of the NGA membership will respond to surveys and questionnaires showing that they have read the information posted on the NGA web site, or in the NGA magazine, and have learned about agricultural life in the developing world and how organizations like TechnoServe are helping to improve people's lives. To do this, we will devise a questionnaire/survey and offer a premium (like a package of seeds) as an incentive to respond.

Progress Made:

The NGA developed a 10-question survey about Nicaragua as part of our effort to gauge Americans' level of awareness about the developing world, development issues and the work of organizations like TechnoServe, including the environmental impact of gardening and agricultural practices in developing countries. Those who responded to the survey and provided their e-mail addresses were automatically entered into a drawing for gardening tools and supplies, and NGA automatically notifies these survey respondents when new information about our **Making Connections through Gardening** program is posted on the NGA web site.

NGA posted this initial survey (Attachment M) on its nationalgardening.com web site for three months, beginning in January of 2000, and 520 people responded. The NGA plans to run this survey again on its web site at the end of this year. The pre-survey for our Year Two program in Ghana will be posted on the NGA web site at the beginning of December, and the Ghana post-

survey will go up on the web site in May.

3. LESSONS LEARNED AND CHANGES FOR YEAR TWO IMPLEMENTATION:

Three significant lessons stand out with regard to the Ambassador Clubs component of our **Making Connections through Gardening** program:

Lesson Learned #1:
Teacher surveys indicate that the project was somewhat, or not at all successful, in connecting the American students with their Nicaraguan partners via traditional mail. There was a great deal of interest on the part of the Ambassador Clubs. American students sent photos, stories, artwork and a variety of other materials, but most of the Nicaraguan children did not respond. Cultural and language differences, and the lack of an adult present who was aware of this and dedicated to the process, offer some explanation, and also highlight the need to have such a person in place during Year Two of the program.

Change for Year Two Implementation:
For our Year Two program in Ghana, the language-difference issue is moot since English is the official language of Ghana and is taught in most schools, and we believe that this will facilitate e-mail and traditional pen-pal correspondence between American and Ghanaian students and teachers.
Moreover, the participation of TechnoServe staff, knowledgeable about the Ghanaian culture, on the Discussion Forum means that teachers' and students' questions receive interesting answers in a timely manner **(Attachment Q).**

Lesson Learned #2:
We feel that participation by teachers and students in the Ambassador Clubs for Nicaragua may have been greater without a "perceived" language barrier. NGA staff via e-mail received many questions about Spanish knowledge. However, we also know that some teachers and Ambassador Clubs viewed this as a positive challenge, and undertook to learn or practice Spanish: "I checked out about 6 simple Spanish-English dictionaries from our school library, and the students also had to write some short sentences or a simple Spanish phrase on the back of their cutouts." (Attachment I.)

Change for Year Two Implementation:
As discussed above, for our Year Two program in Ghana the language-difference issue is moot, since English is the official language of Ghana and is taught in most Ghanaian schools, and participation has significantly increased with the Ghana component of the project. To date there are approximately 240 Ambassador Clubs signed up for 2000-2001 program with Ghana, under the guidance of 75 teachers who represent more than 5,000 children. It appears that the program

has gained momentum and popularity, and without the "perceived" language barrier, more teachers are willing to participate.

Lesson Learned #3:
Year One of our program was designed and offered to kindergarten-through-8th grade teachers and students, but many inquiries were received via e-mail from high school teachers.

Change for Year Two Implementation:
Because NGA received such a large number of inquiries from high school teachers, NGA staff designed the Year Two program and curriculum activities for Ghana to include this group as "Senior Geographers" (Attachment P). As a result, there are 18 Ambassador Clubs for Ghana representing 460 9th-12th-grade students.

4. YEAR TWO PROGRAM CALENDAR:

1) Work completed to date:

a. Announcing the program;
b. Recruiting teachers and Ambassador Clubs;
c. Designing curriculum activities for Ghana;
d. Designing the NGA web site;
e. Designing the TechnoServe web site's DevEd section (please note: due to a logo change, the entire TechnoServe will undergo a redesign beginning Dec. 1 of 2000, including the pages devoted to our **Making Connections through Gardening** DevEd program);
f. TechnoServe staff in country collecting stories and photos for posting on the NGA web site;
g. TechnoServe staff participating in Ambassador Clubs Discussion Forum;
h. Posting two stories about Ghana ("Ghana at a Glance" and "Diversity in Ghana) on the NGA web sites.

2) Future/Continuing Work:

a. Post the Ghana pre-survey on the NGA web site at the end of November/beginning of December 2000, and establish references and links on the TechnoServe web site (December 2000);
b. Post three new curriculum activities on the NGA web site, beginning December 2000/January 2001;
c. Post total of three classroom activities on the NGA web site, beginning December 2000/January 2001;
d. Redesign of TechnoServe web site, including the pages devoted to our **Making Connections through Gardening** DevEd program, beginning December 2000;
e. Post three more articles about Ghana on the NGA web sites between January-May 2001;

- **f.** Publish an article about Year Two of our **Making Connections through Gardening** program in a TechnoServe publication and/or on the TechnoServe web site (tentatively, February 2001);
- **g.** Post the Ghana post-survey on the NGA web site in May 2001, and establish references and links on the TechnoServe web site (May 2001);
- **h.** Continue to analyze survey results, student pre- and post-test and teacher evaluations for Nicaragua program;
- **i.** Analyze survey results, student pre- and post-test and teacher evaluations for Ghana program, starting in June/July 2001.

5. YEAR ONE FINANCIAL REPORT:
Please see next page.

DEVELOPMENT EDUCATION – PROGRAM RESULTS MATRIX -- Page 1 of 4

Results-Oriented Objectives	Indicators	Measurement Method, Data Source and Frequency of Data Collection	Major Planned Activities
1. Increase awareness among 100,000 American students who are using the **Making Connections through Gardening** information. At a minimum, these students will have learned: a) Where and what Nicaragua (Panama, originally) is as well as the chosen African country (Ghana); b) How children in these countries live, and c) How children in the developing world use gardening in their everyday lives.	1. 500,000 children and 25,000 educators in the U.S. are involved in the NGA's GrowLab program. All of the curriculum activities developed by the NGA for our DevEd program use the same format as the NGA's GrowLab curriculum, ensuring that teachers are familiar with the format and can easily incorporate it into their teaching and classroom activities. All of the materials related to our program are available on the specially designed Ambassador Clubs section of the NGA's www.kidsgardening.com web site. Extensive outreach targeted teachers already using the GrowLab curriculum as well as U.S. educators in general, described below.	Described below.	1. Announce program. 2. Enlist teachers and Ambassador Clubs. 3. Design curriculum and related activities. 4. Create dedicated NGA web site section. 5. Gather info from Nicaragua for posting on NGA web site. 6. Design, distribute and analyze pre- and post-program student surveys and teacher evaluations. 7. NGA and TechnoServe publish information about the program on an ongoing basis on their web site and in their publications.

Results-Oriented Objectives	Indicators	Measurement Method, Data Source and Frequency of Data Collection	Major Planned Activities
2. 2,000 American students will gain a more in-depth understanding about these countries because of their involvement in the Ambassador Clubs. These students will have learned points a-c above, as well as get to know the developing world through individual children in Nicaragua (Panama, originally) and the African country (Ghana) and understand how organizations like TechnoServe are helping families through agriculture.	1. 53 Nicaragua Ambassador Clubs were formed, representing 26 teachers and 1,203 students (Year One). 2. 240 Ghana Ambassador Clubs were formed, representing 75 teachers and 5,382-plus students (Year Two). 3. NGA developed a detailed Ambassador Club Kit (Attachment C), special web site section including children's photos and stories collected by TechnoServe staff in Nicaragua (Attachment A), and curriculum and related activities for Year One (Attachment E).	1. Completed applications to join the Nicaragua component of the program (Year One), and list of participating teachers and students (Attachment B). 2. Completed applications to join the Ghana component of the program (Year Two). 3. www.kidsgardening.com/ambassador/; Attachments A, C and E.	Described above.
3. 5,000 educators will adopt the **Making Connections through Gardening** information and, in so doing, will gain an appreciation for the developing world, including concepts such as: a) That people in the U.S. and the developing world share commonalties, such as their hopes and ambitions for their families and their feelings about work and education; b) The work of organizations like TechnoServe bring opportunity and better lives to people in the developing world.	1. 121 educators are "formal" participants, directing the learning and activities of 293 Ambassador Clubs for both the Nicaragua and Ghana components of the program (Years One and Two). 2. Based on communications with "formal" participants, and NGA's experience with educators in general, we believe that many of these "formal" participants and Ambassador Clubs are sharing curriculum materials, learning and activities with other teachers and students in their schools. 3.Based on inquiries that NGA and TechnoServe staff received from educators after the deadlines to join the Nicaragua and Ghana programs had passed,	1. Completed applications to join the Nicaragua and Ghana components of the program (Years One and Two).	Described above.

Results-Oriented Objectives	Indicators	Measurement Method, Data Source and Frequency of Data Collection	Major Planned Activities
	we believe there are additional, "informal" participants.		
	4. NGA has created a dedicated, "Ambassador Clubs" section on its web site (www.kidsgardening.com), which contains all of the curriculum materials, activities, and special features designed by NGA for the program, as well as all of the children's photos, stories and other information collected by TechnoServe staff in Nicaragua and Ghana. This NGA web, which receives 21,000 "hits" monthly on average, is targeted to educators and students, and all the information it contains can be accessed and downloaded by any visitor to the web site.	4. www.kidsgardening.com; www.kidsgardening.com/ambassador.	
	5. Extensive outreach targeted to educators to inform them about the Nicaragua program, including NGA's online newsletter (15,000 educator recipients) and at least two additional online newsletters distributed to educators nationwide (*Schoolyard* and *Schoolgarden*).	5. Attachment F	
	6. The NGA web site section and other materials created for this program (described above) contain descriptions of our program, NGA's partnership with TechnoServe, and USAID's funding. The NGA web site also contains links to TechnoServe's and USAID's web sites (Attachment D).	6. Attachments A, C, D, E, F ; www.kidsgardening.com/ambassador/	
	7. The TechnoServe web site section created for this program contains a description of our program and links to NGA's and USAID's web sites (Attachment O).	7. Attachment O	

Results-Oriented Objectives	Indicators	Measurement Method, Data Source and Frequency of Data Collection	Major Planned Activities
4. 10% of the NGA membership will respond to surveys and questionnaires showing that they have read the information posted on the NGA web site, or in the NGA magazine, and have learned about agricultural life in the developing world and how organizations like TechnoServe are helping to improve people's lives. To do this, we will devise a questionnaire/survey and offer a premium (like a package of seeds) as an incentive to respond.	1. 10-question survey developed by NGA targeting adults was posted on NGA's www.nationalgardening.com web site from January-April of 2000, and 520 people responded. Part 2 of this survey will be posted shortly. NGA will post the pre-survey for Year Two program in Ghana at the beginning of December 2000, and the Ghana post-survey in May of 2001.		1. Create pre- and post-program surveys for Nicaragua. 2. Analyze results. 3. Create pre- and post-program surveys for Ghana. 4. Analyze results. 5. Publish articles about the program in *National Gardening* Magazine, and on the NGA's nationalgardening.com web site.

Attachment A

Ambassador Clubs

- Curriculum Activities
- Discussion Group
- E-mail Pals
- Favorite Websites
- Project

Welcome to the ***Ambassador Club*** home page! You will find articles and related photos on this page about kids, classrooms, and communities in Nicaragua. Be sure to click on the curricular activity button to view this month's activities. Teachers can communicate with one another in the discussion forum, and kids can communicate via e-mail pals. You can also take advantage of information on Nicaragua at other web sites by looking at our site links.

Feature Stories:

Andrea

Anamaria

Teresa

Sheila

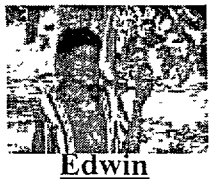
Araceli

Omar

Maryuri

Julio

Yeilin


Edwin

Map of Nicaragua

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E-mail Pals | Map of Nicaragua

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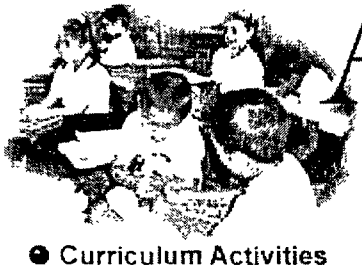


Ambassador Clubs

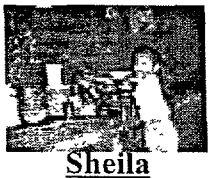
Map of Nicaragua

Stories:

Araceli

Omar

Maryuri


Sheila

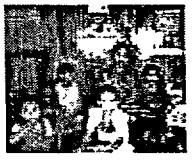
Teresa

Andrea

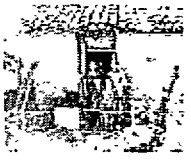
Andrea

Andrea also lives in the El Espino community. Her family a little more fortunate then Teresa's because they still have garden. They grow onions, beans, and sorghum, and this year they planted corn. Andrea helps by taking food at lunchtime to her father and his helpers. She also helps out with weeding the onion crop, but her favorite activity is winnowing the beans. She does this by beating the beans so they separate from the pods. With help from Technoserve, they have planted fruit trees for domestic consumption.

In her yard at home, there are *pabellones* (bromeliads) in the trees. This is a large green plant with red flowers. They also have a plant called *concha* that has little red flowers. Her mother taught her how to propagate this plant by cutting off small branches, planting them, and keeping the soil wet.



For breakfast, Andrea's family has fried beans, fried eggs, coffee, and sometimes butter. Lunch consists of fried rice, beans, soup, and sorghum tortillas. Supper is fried beans with butter, tortillas, and coffee. Her favorite foods, which she rarely has, are curd, avocado, and squash. Andrea's mother, who works as a community teacher, says that sometimes children in her class come to school without breakfast, and that lunch for these children is only tortillas with salt. They have only one set of clothes, and most of the children go barefoot.



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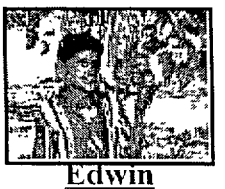
Anamaria


Edwin

Julio

Yeilin

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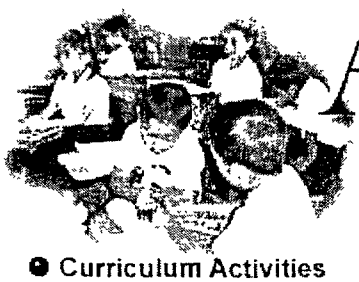

Ambassador Clubs

Map of Nicaragua

Stories:

Araceli

Omar

Maryuri

Sheila

Teresa

Andrea

Ana Maria

Ana Maria lives in Namanji. Her family has a garden about 150 meters from their house. They grow sorghum, beans, and corn. Her father, uncle, brothers, and grandfather work there. At home they have a very small home garden becaus the cow and the horses once ate it, breaking the pots. Now they have replanted directly in the ground. They have one cow, two horses, two oxen, two dogs, and 22 chickens.

For breakfast, lunch, and dinner, they eat beans, rice, tortillas, and coffee or a fruit drink.

Ana Maria loves chicken and soda, but she only has this when she visits her relatives in Jinotega or Esteli, who are economically better off.

This family has its own well, which supplies them and the next door neighbor with water. For consumption, they chlorinate it. For washing clothes, the majority of the people in the community go to the river. There is also a communal well that has been working for a year.

Click on photos to enlarge view

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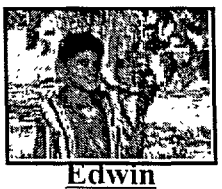
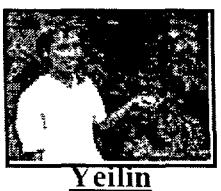
Anamaria


Edwin

Julio


Yeilin

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Ambassador Clubs

Map of Nicaragua

Stories:

Araceli

Omar

Maryuri

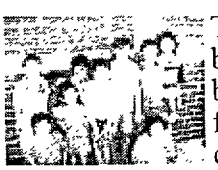
Sheila

Teresa

Andrea

Teresa

Hurricane Mitch destroyed all of the crops anc land in the El Espino community, where Teres de Jesus lives. Since the storm hit in 1998, the have made very little progress toward restorin their land and crops, and have suffered further damage from tropical storms in 1999. The family had a vegetable garden located about 5 meters from their house before this disaster, bu presently they have no crops, "not even sorghum," says Teresa. "When Mitch came." Teresa's mother and grandmother say, "We were shut in, starving, and we suffered a lot. The water got very dirty, and we had to boil it People suffered a lot from lack of food. Some houses fell down. No human or animal life was lost. The crops were lost, ar the soil was washed away. Since then we've survived with the help of Proje Concern International that has supplied us with basic grains."



The diet in El Espino consists almost entirely of rice and beans (grown in the community). Teresa's family eats rice, beans, tortillas, and coffee or an orange drink for breakfast; fried beans, tortillas, and coffee for lunch; and beans with curd, tortillas, and a fruit drink or coffee at dinnertime. Because of the water problem, they do not grow vegetables, and in the wint ("winter" refers to the rainy season, usually May through November), they only grow onions and beans.

People in the community feel that consumption of milk, eggs, and vegetabl is necessary in their diet. They talk about the necessity of buying one cow per family through loans. As part of the SAADEP Project (Spanish acronym for Food Assurance and Business Development for Small Producers of the Municipalities of Jinotega and San Rafael del Norte), Technoserve has helped them get poultry and pigs for domestic consumption.

This community does not have a health center. When peopl get sick, they have to go to the health centers in the neighboring communities of San Marcos – a half-hour wall – and San Rafael – a two-hour walk away. This is very difficult when people are too sick to walk, or when mother have to carry their sick children. Sometimes, once they do arrive, there is nc medicine at the health center for their illnesses.

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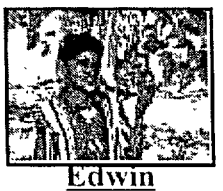
Water in El Espino is scarce and of poor quality (contaminated by the latrines). Teresa's family uses well water for washing clothes and bathing Drinking water is brought in on foot from the nearest community, Suni. In fact, this is one of Teresa's favorite activities because she also sees friends there and watches cartoons on television.

Click on photos to enlarge view

Anamaria



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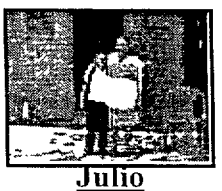

Julio

Yeilin

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Ambassador Clubs

Map of Nicaragua

Stories:

Araceli

Omar

Maryuri

Sheila

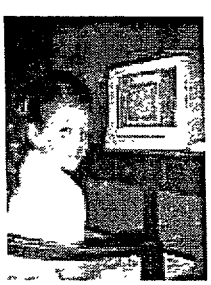
Teresa

Andrea

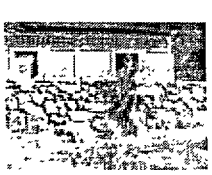
Sheila is seven years old

Her full name is Sheila Danessa Briones Blandon. Like all people in Nicaragua, she takes her first last name, Briones, from her father, and her second last name, Blandon, from her mother. She was born in Jinotega (pronounce hee-no-tay-ga) in northern Nicaragua, which has a populat of 300,000.

When Nicaragua was at war, sm units of 25 to 30 men and wome were established for fighting purposes all around Jinotega. Af the war most of these people married, built homes, and began to raise families. These units have become communities, and the government has set up a health clinic, a school, and a farming cooperative in each one. Farmers who are member of a cooperative share their costs and profits.



Sheila lives in the Suni Community. Her father is the treasurer of this cooperative and he uses a computer to maintain the cooperative's financial records. He is also farmer who raises onions, tomatoes, and beans. The children help him with planting, watering, fumigating, harvesting, and drying the onions. Her mother is a elementary school teacher in a neighboring community. Sheila has two brothers and one sister, and all of them, including Sheila, are in primary school.



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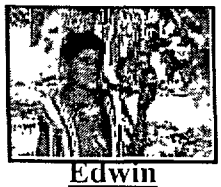
Anamaria



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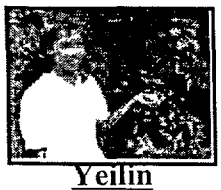
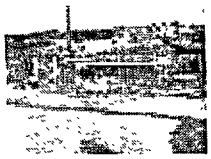
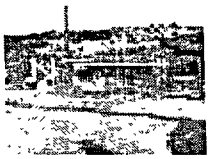
Julio

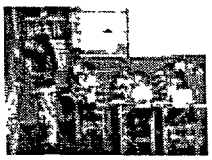


Yeilin

Sheila and her family live in a three-room adobe brick house. There is one bedroom where everyone sleeps, a living room, and a kitchen with a wood-fired stove for cooking. The kitchen has a dirt floor, but the other rooms have linoleum floors. Sheila helps with sweeping, making the beds, washing dishes, and some basic cooking. She likes to make fruit drinks, which are made by blending fresh fruit with water and sugar. At night she makes "tibio," which is made of powdered milk and sugar in hot water. All the children help their father pack their school lunches in the morning.

Sheila is in the first grade and attends school daily from 8 a.m. to 1 p.m. A typical school day for Sheila includes reading and writing (copying sentences), mathematics (addition, subtraction, and multiplication), taking tests, and receiving stars on her forehead for good behavior. The Suni school is built from red bricks and has a tin roof. Imagine how loud it is when it rains! This is the same model as all the schools in Nicaragua, all built by the national government through the Social Investment Fund for Education.



After school, Sheila does her homework and plays with the other children. Her favorite game is "La Chapa," which is very similar to "tag." In this game, the kids have to squat down in order not to be "tagged." Some days Sheila and her brother and sister go to their grandmother's house to watch cartoons on television.

Sheila likes school very much, and she is an excellent student. When she grows up, she wants to be a nun because she likes a family friend who is one.

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Ambassador Clubs

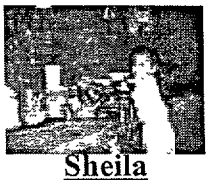
Map of Nicaragua

Stories:

Araceli

Omar

Maryuri

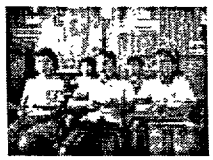
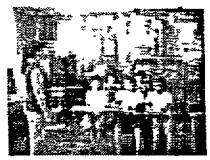

Sheila

Teresa

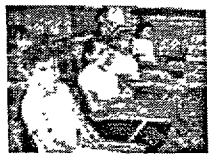
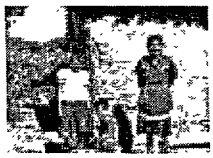
Andrea

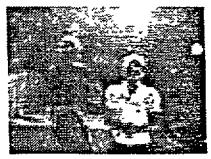
Araceli is eleven years old

Araceli is eleven years old. Sh was born in Jinotega and lives in the El Espino community. She lives with her grandparent and her uncle. They live in an adobe brick house with one bedroom where everyone sleeps, a living room (which is more like a hallway), and a kitchen with a wood-fired over She says with a smile that they don't have any electricity in their community, but she doesn't see this as a problem because it has been this way since she was born. She would like to have electricity, however, so they could have lights at night.

This community does not have potable water . They have well water, but it is o poor quality and it has a yellowing colors. They use this for everything (washir clothes and corn, bathing, watering the corn) except drinking. Drinking water i: brought in from the neighboring Suni community. This is the community's largest problem, but they are told that they will be getting water soon for drinking, washing, and bathing.



Crops that are grown in the community are coffee, beans, corn, sorghum. and onions. Araceli's grandparents and uncle are not farmers, but during the coffee

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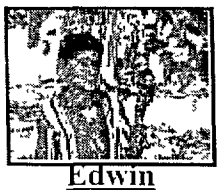
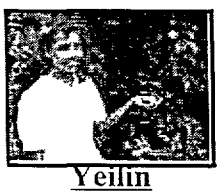
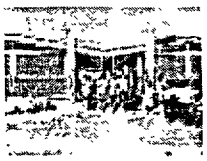
Anamaria


Edwin

Julio


Yeilin

harvest, her grandmother earns a little money harvesting. It is the only cash income they have, and this opportunity comes only once a year.



Araceli is in the fourth grade and goes to school from 8 a.m. to 1 p.m. She love school, especially Spanish, science, and geography classes. In the afternoons, she sweeps, washes dishes, and prepares and grinds corn. She is learning to make tortillas. She also does her homework, which is her favorite activity. Whe she grows up, she wants to go to Jinotega to work.

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Ambassador Clubs

Map of Nicaragua

Stories:

Araceli

Omar

Maryuri

Sheila

Teresa

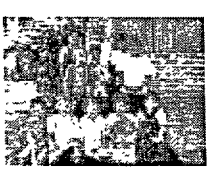
Andrea

Omar is fourteen years old

Omar is fourteen years old. He lives with his mother, father, an four brothers and sisters in the I Espino community. His father i a farmer who raises corn, beans sorghum, and onions. He is a member of the farming cooperative in El Espino. Omar loves to help his father on the farm, and he has learned a lot b doing so. He says that slugs are problem in the bean crop, and that "cuerudos" (small pests) ea the onions. Omar says they use agrochemicals for pest control but mentions no specific names. He also describes the terraces they have to buil so that the soil is not washed away by rain.

Their house is made of red brick, and it has one bedroom, a living room, and a kitchen. There is no electricity in the community, and they have no television. Ir order to watch television, they have to go to a friend's house in San Marcos, which is two kilometers way. He complains most strongly about the lack of potable (drinking) water in the community.

Omar is in the fourth grade, and the school he attends is the typical red brick school with a tin roof found throughout Nicaragua. In addition to his studies, he helps keep the school clean and works in the garden weeding, pruning, and watering.



In the afternoon, he works in the garden at home weeding and watering. He also builds fences, furrows, and mounds in the fields. When he grows up, he wants t be a coffee harvester because they earn a good living, and because he wants to know what it is like.

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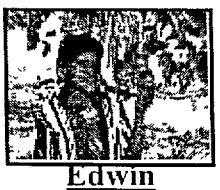
30

Anamaria



Edwin

Julio

Yeilin

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Ambassador Clubs

Map of Nicaragua

Stories:

Araceli

Omar

Maryuri

Maryuri is eleven years old

Maryuri is eleven years old. She lives in the La Ermita community with her grandparents and some cousins. She doesn't know anything about her father, but her mother works in a small eatery in another rural community and sends her clothing and food. Her grandfather works as a farmer and he raises corn, beans, and sorghum. He is a member of the farming cooperative in La Ermita. Her grandmother takes care of the housework and children. They live in a red brick house with dirt floors that has two bedrooms, a living room, and a kitchen.

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Sheila

Teresa

Andrea

Anamaria

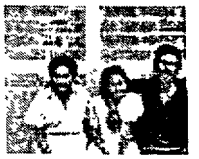
Edwin

Julio

Yeilin

Maryuri is in the third grade and attends school from 8 a.m. to 1 p.m. every day. She studies math, Spanish, social studies, natural sciences, and civics.

Math is Maryuri's favorite subject, but she doesn't like social studies because it is difficult for her. Because the school has no janitor, the students are responsible for keeping it clean by sweeping and mopping the floors and cleaning the bathroom, blackboards, and classrooms.



After school, Maryuri helps her grandmother with the housework. Although they have potable water, the supply is not constant. She uses hose to get water for the house. She also makes the beds, washes dishes, and sweeps. There is no electricity in the community, but they are able to watch television with the use of a car battery.

Maryuri says that her grandfather's crops are often infected with various diseases. She says they use a chemical called graminol (also called paraquat) to control weeds. She helps her grandfather with sowing and watering his crops, but her favorite job is harvesting the beans.

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Ambassador Clubs

Map of Nicaragua

Stories:

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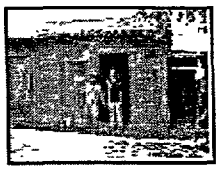
Julio Ismael

When you ask Julio Ismael about gardening, he talks mostl about fruit trees because he loves fruit so much. His family grows papaya, plantains, red guinea bananas, pineapple, and avocado. They do not grow many vegetables. They plant a small amount of bell peppers and a substantial amount of nampi (a yucca-like root), which is an important part of their diet.

When the soil is ready, Julio helps his grandfather plant the garden. He also helps with watering and harvesting, but his grandfather does not allow him to weed. He is afraid Julio will pull up the small seedlings. Water for the garden comes from a well on the property, but it has to be boiled for drinking.



The family does not have electricity, so his mother cooks on a wood stove. The family's diet consists of rice, beans, cheese, and sometimes they have chicken. Julio loves gallo pinto (fried rice and beans) and papaya drink. Soon they will b hooking up to a neighbor's electrical line which will provide them with lights, but the cost of a an electrical stove makes it out of the question.

Julio loves school and his grades are very good, but he also loves to play. He especially looks forward to Saturdays when he goes to the town of Leon. He ha a great time there riding bikes and playing soccer with his relatives and friends

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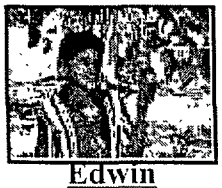
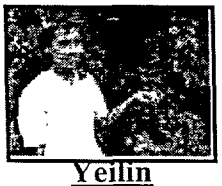
Anamaria


Edwin

Julio


Yeilin

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Ambassador Clubs

Map of Nicaragua

Stories:

Araceli

Omar

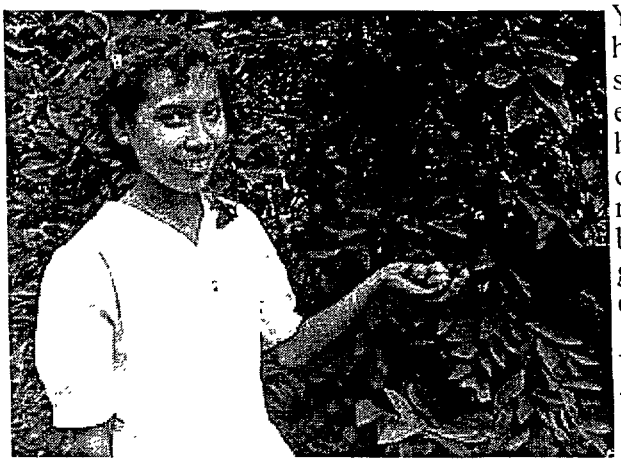
Maryuri

Sheila

Teresa

Andrea

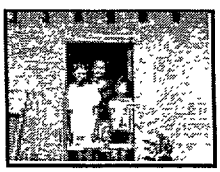
Yeilin Maria



Yeilin Maria loves to study anc her favorite subject is math. At school, she is planting neem, eucalyptus, and fruit trees with her classmates for Ecology class. After school, she helps h mother by taking care of her brother and sister. She also grinds the corn for tortillas and cooks the rice for dinner.

Yeilin's father uses oxen to plo their garden where they plant sorghum, corn, yucca, and watermelon, and some years they plant sesame. Her father's most important gardening tool is a machete, anc he also has a shovel and a hoe. In their yard they have several trees, including jocote (a yellow fruit when ripe that is eaten like an apple), lemon, cashew, tamarind, and plantain trees.

Like most Nicaraguans, Yeilin's family eats rice and beans at every meal. Theii diet also includes fruits, vegetables, cheese, meat, and chicken. On Sundays, they have nacatamales, a typical Nicaraguan dish, which is a ground corn tama cooked with rice, potatoes, pork or chicken, tomatoes, onion, pepper, and arnotto (a natural red coloring agent).



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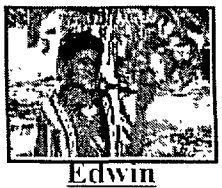
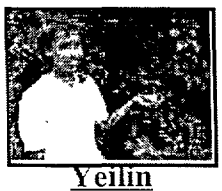
Click on photos to enlarge view

Anamaria



Edwin

Julio



Yeilin

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Ambassador Clubs

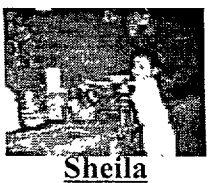
Edwin Mercado

Stories:

Araceli

Omar

Maryuri

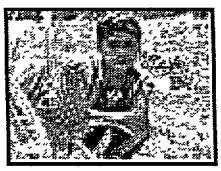
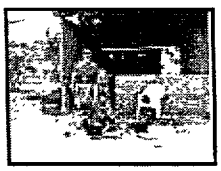

Sheila

Teresa

Andrea

Edwin Mercado enjoys school, bu he prefers helping at home in the garden. The school does not have any gardens because there is no fenced area to keep animals out. The school curriculum, however, includes horticultural basics and reforestation.

Edwin helps at home to plant bell peppers and squash. He likes to water the plants, prune trees, and pick fruit including: avocado, mango and jocote (a green tropica fruit that turns yellow when ripe and eaten like an apple). Vermicomposting is very popular in Nicaragua, and one of Edwin's favorite activities is feeding the earthworms at home. The soil here contains a lot of clay and sand, and the organic fertilizer produced by the worms i used to improve soil quality.

The machete is the most important gardening tool his family uses. They also have a hoe, a backpack sprayer used for applying pesticides, and an electric pump used for watering. For irrigation, they use river water that is drawn up through an irrigation system. Drinking water, however, comes from a well and they use wate filters to purify it.

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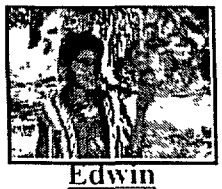
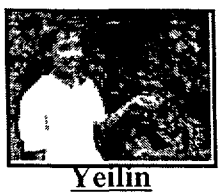
Anamaria



Edwin

Julio



Yeilin

The family's diet is made up of rice, beans, eggs, cheese, vegetables, and sometimes a small portion of meat or chicken. Refreshing fruit drinks are made by blending fruits with water (for example, papaya and water), but Edwin particularly likes a drink made from chia (lime sage).

Click on photos to enlarge view

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international programs

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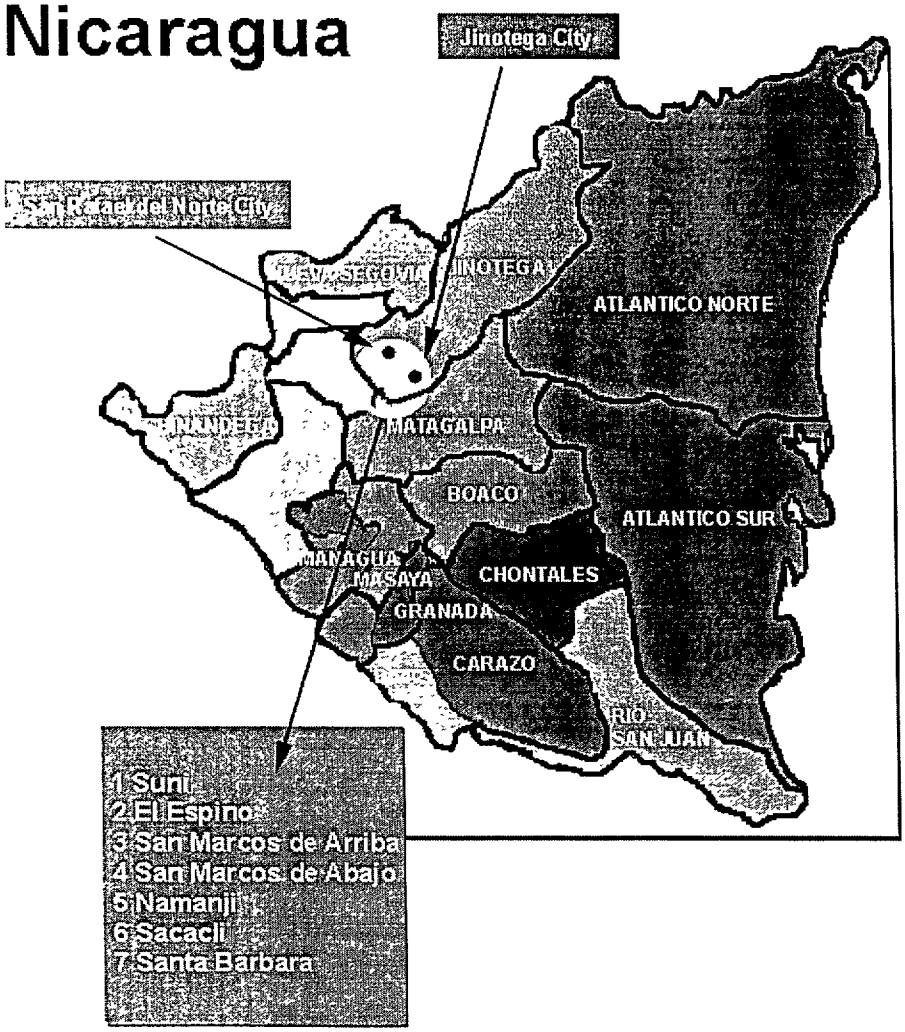
Nicaragua



Home | Parents' Primer | Classroom Stories | Activities | All About Plants | FAQs
Resource Directory | Online Courses | Our Mission | Discussions | E-mail Pals
Events Calendar | International | School Garden Registry | Millennium Green
Give Back to Grow | Request a Catalog | Youth Garden Grants | Kidsgardening Store
Educational Membership | Contact Us | Vermont Community Botanical Garden

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Attachment B

Nicaraguan Ambassador Clubs	# clubs	Students	Grade level
1 Cheric Stihler 520 5th Avenue Fairbanks, AK, USA 99701-4718 stihler@northstar.k12.ak.us	1	18	Gr. 5
2. Kathy Bajek Hunters Woods Elementary School 2401 Colts Neck Road Reston, VI 20191 kbajek7366@aol.com	1	30	Gr.5
3. Darlene Yanoff Franklin Township School PO 368 Quakertown, New Jersey 08868 dyanoff@fts.csnet.net	1	28	Gr. 5
4. Georgia Smith Sunflower Elementary School 8955 Loiret Lenexa, KS 66219 Georgiasmith@smsd.org	1	24	Gr. 5
5 . John Capozzoli 1930 Redway Houston, Texas 77062 jcapo85@hotmail.com	7	150	Gr. 8
6. Janice Tietz Wells Elementary School 300 S. Robinson Tehachapi, CA 93561 jtietz@teh.k12.ca.us	1	30	Gr. 6
7. Niki Redl Ouil Ceda Elementary 2415 74th ST NE Marysville, WA 98271-9124 Niki_Redl@msvl.wednet.edu	1	25	Gr. 5/6

8 Tony Alvite Potrero Hill Middle School 655 De Haro St. San Francisco, Ca 94107 ama54@webtv.net	1	15	Gr. 8
9. John Herzog Concord Academy Boyne 00401 Dietz Road Boyne City, MI 49712	1	36	Gr. 4/5
10. Dr. Mary Phillips Lake Waco Montessori Magnet School 3005 Edna Avenue Waco, TX 76708 mphillips@mail.waco.isd.tenet.edu	7	150	Gr. 1-6
11. Hannah Bartges 428 Buch Ave Lancaster, PA 17601 bartges@redrose.net	1	10	Gr. 7
12. Carol Larro Thomas Paine Elementary 4001 Church Road Cherry Hill, NJ 08034 carollarro@hotmail.com	1	25	Gr. 4
13. Paul Gates Madison Elementary School 2900 W. Woodlawn San Antonio, TX 78228 pwg@txdirect.net	1	20	Gr. 3
14. Betsy Conway Hayes Elementary School 30600 Louise St. Westland, MI 48185 Bconway@livonia.k12.mi.us	1	20	Gr. 5

15. Carol Calveri Palm Vista Elementary 74350 Baseline Road Twentynine Palms, CA 92277 Ccalveri@usa.net	1	17	Gr. 1 / 2
16. Debra Hickel 12024 Woodside Falls Pineville, NC 28134 DHICKELBE3@aol.com	2	46	Gr. 3-4
17.. Daniel Alires Martin Luther King School 4615 S. 22nd Street Phoenix, AZ 85040 allend@rsdlk12.az.us	1	24	Gr. 4
18. Mary Zilli Simpson School 5330 N. 23 Avenue Phoenix, AZ 85015 larkspur23@email.msn.com	1	30	Gr. 7
19. Eleanor Makruski 35749 Center Ridge Road N. Ridgeville, OH 44039 Emakru@LEECA.ORG	2	45	Gr. 8
20. Cheryl Little Shady Side Academy Jr. School 400 S. Braddock Ave. Pittsburgh, PA 15221 clittle@mail.telerama.com	1	38	Gr. ?
21. Tracy Ajello Doolittle School Chesire, CT 06410 TCAjello@aol.com	1	21	Gr. 5
22. Susan Holiday Leupp Public School 3285 E. Sparro Flagstaff, AZ 86004 Naria@aol.com	3	75	Gr. 7 &8

23. Kathleen Elam Z.L. Madden Elementary 459 W. Centennial St. Spartanburg. SC 29303 Kgelam@yahoo.com	1	17	Gr. 5
24. Christine Danley/Mrs. Montgomery Holland Elementary 7000 Red Haw Dr. Fort Wayne, IN 46825 ChrisDanley@fwcs.k12.in.us	5	112	Gr. 4
25. Maritom S. Hardy Laurens Primary MSHARDY@prtenet.com	9	197	Gr. 2-3

Attachment C

Making Connections Through Gardening

Ambassador Club Kit

Funded by U.S. Agency for International Development
Collaborative project with Technoserve and the
National Gardening Association

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180 Flynn Avenue
Burlington, VT 05401
Phone: (802) 863-1308
Fax: (802) 863-5962
Website: www.garden.org

NATIONAL GARDENING ASSOCIATION

Dear Teacher,

Congratulations! By participating in the **"Making Connections through Gardening"** program for the 1999-2000 school year, your students will learn about gardening in Nicaragua and how it affects our lives.

Each month, learning activities centered on six different themes will be provided for your students on our website. The activity framework that we provide, however, should be adapted to your teaching style and your students' learning styles. You will need additional resources from your local library to help support the learning activities. The **Teaching/Learning Cycle** will be important to follow as you implement the program.

This Ambassador Club kit is a guide to the program. You will need to refer periodically to your checklist to check your progress through the information and activities of each theme. Also enclosed you will find curricular activities for January's theme "Launching into the Millennium." This month's activities will provide you with background information so that when you receive your Nicaraguan partner's name and address in February, you can make the best of your communication with them. It is important that you know Nicaraguan schools are on vacation (it's summer there!) until the end of January.

In February, your Ambassador Club will be able to register on-line at our new web site (www.kidsgardening.com). You and your students will be able to download curricular activities, participate in a discussion forums and send messages to them via *e-mail pals*. In the meantime, you might go to our Kids and Classrooms at our current web site (www.garden.org/edu) and check out what's there.

You and your students will determine your global awareness through the assessments enclosed.. Please fill out these assessments at the beginning of the program and return them in the self-addressed stamped envelope provided. There will be a post-test in June to evaluate the effectiveness of the program.

To formalize our relationship in this program, please sign the enclosed letter of understanding and return it to me no later than January 13, 2000.

On behalf of the collaborative effort between TechnoServe and the National Gardening Association made possible by funding from the U.S. Agency for International Development (USAID), we wish you success with the program. If you have any questions, contact me at (joanw@garden.org).

Sincerely,

Joan White

Bringing gardens and people together

Printed on recycled paper

"MAKING CONNECTIONS THROUGH GARDENING" – An Overview

Making Connections offers an interdisciplinary education program for grades K-8 which helps students explore the vital roles of gardening and agriculture in other parts of the world.

Making Connections Through Gardening will offer learning strategies that will help elementary students explore human connections to gardening and agriculture as well as envision impact. The program will also provide opportunities for students from the U.S. to exchange their thoughts via mail and online discussions. The program will enrich lifelong learning through exploration activities that help students assess how their new knowledge can empower them to make a difference in their world.

Making Connections activities will be developed through inquiry based learning phases, and engage the learner with other learners in the developing world. Students will be asked to apply problem-solving skills to consider how to improve and sustain the environment, and address economics and equity issues. Students' activities will enrich their learning about another country's diet, nutrition, gardening habits and culture.

Making Connections learning activities will center on four major teaching phases that help support the inquiry learning process. These themes are integrated into the curriculum that will be supported at each individual school through direct communication via mail or Internet.

- Learning activities you develop in **"Laying the Groundwork"** will help students explore how local environmental issues are linked to bigger environmental issues. **"Exploration"** will look at the impacts of bigger issues and explore corrective measures for each phase.
- **"Making Connections"** with a developing country as students compare similarities and differences to their own country.
- **"Branching Out"** activities will help students assess social and political issues, and promote self-directed learning.

Making Connections Learning Outcomes:

1. Students will acquire a personal awareness of environmental global effects.
2. Students will have an appreciation for the global environment.
3. Students will expand their life skills to be self-directed learners.
4. Students will expand their knowledge towards effective problem solving and world solutions.

Developed and supported by TechnoServe and the National Gardening Association.
TechnoServe has been working for 30 years in rural areas of the developing world to help people grow more food, sell more crops and earn higher incomes through agricultural activities.
National Gardening Association has been working with 500,000 children and 25,000 educators who are involved in their GrowLab program.

Questioning Through a Teaching/Learning Cycle

Questions that support inquiry enable students' thoughts, ideas, and questions to emerge and open up possibilities for active investigations. Questions that support inquiry lead pupils to observe, explore, explain, and evaluate ideas.

Laying the Groundwork

- *Can you tell me about...? Describe...?*
- *What do you see?*
- *Have you ever...?*
- *What was it that...?*
- *What does it remind you of?*
- *How is it like what you've seen before?*
- *What questions do you have?*

Exploration

- *What's happening?*
- *What does it look/feel like?*
- *What did you notice?*
- *How is it the same/different?*
- *What would happen if...?*
- *How can we find out?*
- *How will you know?*
- *What will you look for?*
- *Have you tried...?*
- *Can you think of another way?*
- *What do you predict?*

Embedded Assessment

Branching Out

- *What could you do next?*
- *How can you use what you've learned?*
- *What other questions do you have?*
- *How can this help you...?*
- *Who might be interested in this information?*

Making Connections

- *What results did you get when...?*
- *What does your data show?*
- *Can you summarize?*
- *Why do you think...? What do you think happened?*
- *What did you observe that...?*
- *How is it similar to what you've seen before?*
- *How is it the same as/different from what you predicted?*
- *What reasons do you have?*
- *How would you explain...?*
- *How are observations/data/results different/similar?*
- *Why do you think so?*
- *What do you expect would happen if...?*
- *What new questions do you have?*

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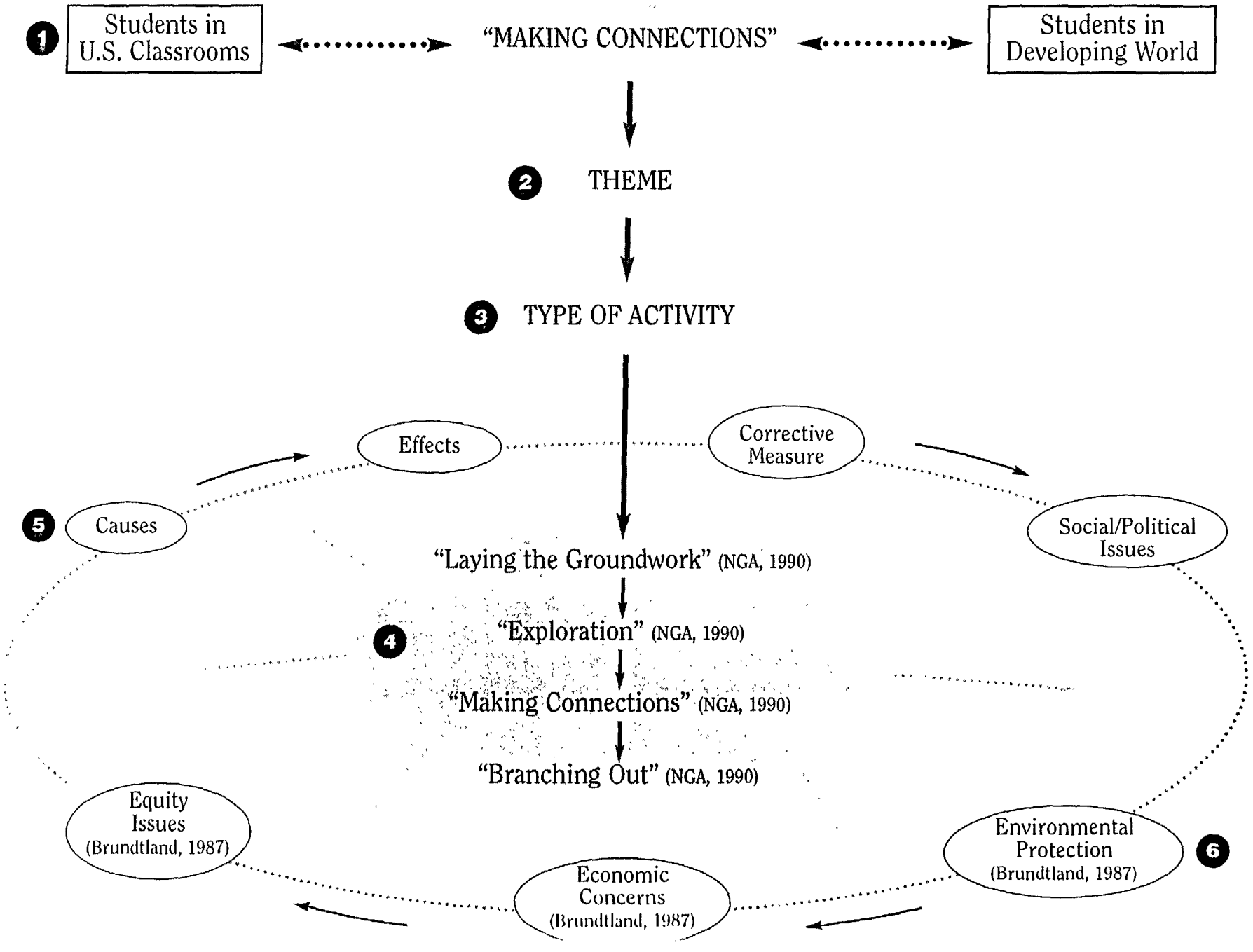
OVERVIEW


1
Students in U.S. Classrooms
"MAKING CONNECTIONS"
Students in Developing World
2
THEME
3
TYPE OF ACTIVITY
Effects
Corrective Measure
5
Causes
Social/Political Issues
"Laying the Groundwork" (NGA, 1990)
4
"Exploration" (NGA, 1990)
"Making Connections" (NGA, 1990)
"Branching Out" (NGA, 1990)
Equity Issues (Brundtland, 1987)
Environmental Protection (Brundtland, 1987)
6
Economic Concerns (Brundtland, 1987)

PROGRAM FRAMEWORK

THEME	NATIONAL SCIENCE STANDARDS	LEARNING TEXT	LEARNING IMPACT	ONGOING DEVELOPMENT
Launching into the Millennium	1. "Plan for inquiry based"	Use of maps. Cultural adaptations Global awareness	Places in the world Differences Uses of agriculture Gardening in world	Environmentally conscious scientist
Saving the Earth	1. "Guide and facilitate student learning"	Power of dialogue Exploring research Drawing hypotheses	Learning differences Interviewing Uses of internet	Self-direction
Corrective Measures	1. "Guide and facilitate student learning"	Problem solving Define sustainability	Critical thinking around causes and effects	Uses of sustainability
Becoming Involved in Environmental Stewardship	1. "Community of science learners"	Connect with another cultural Ambassador Club	Define Ambassador Concept of Ambassador	Stewardship
Looking Back...Forward...	1. "Plant and develop the school science program"	Link to goal and political factors	Draw findings and conclusions	Interdisciplinary Interconnected
Future Steps...	1. "Plan and develop the school science program"	Global planning	Uses of scientific concepts	Global partners

1. Source: for National Science Standard (http://www.nap.edu/readingroom/books/nses/html/overview.html)

MAKING CONNECTIONS THROUGH GARDENING PROGRAM OBJECTIVES:

1. **Students will learn about vital roles of gardening and agriculture in Nicaragua and how these compare with the roles of gardening in the United States.**

2. **Students will learn about the environment and how problems and solutions cross boundaries.**

3. **Opportunities will be created to link with other Ambassador Clubs in the United States and Nicaragua.**

4. **"The Making Connections Through Gardening Program" builds knowledge about Nicaragua, the global connections between people, and common issues and solutions.**

5. **Opportunities for surveys and questions will help students plan and evaluate corrective measures for agricultural and environmental problems..**

6. **The Inquiry Learning Model will frame students' investigations as they compare Nicaragua nutrition, diet, gardening habits and environment with their own.**

7. **Students will have opportunities to explore the bigger picture of how environmental issues are closely linked with social and political factors.**

AN EFFECTIVE AMBASSADOR CLUB.....

- Appreciates individual and cultural differences.
- Engages in a partnership with students in the developing world.
- Empowers learners to engage in lifelong learning experiences.
- Creates awareness and increases knowledge of the developing world and our interdependence.
- Becomes "networked" with other Ambassador clubs who are involved in the "Making Connections Through Gardening Program".
- Finds meaning through interdisciplinary activities that address different learning styles.
- Incorporates the use of the inquiry process in communication, training and uses of new knowledge.

TIME LINE: "MAKING CONNECTIONS THROUGH GARDENING"

January 2000

THEME: *"Launching into the new millennium by Making Connections Through Gardening"*

- Sign up as an Ambassador Club (Letter of Understanding)
- Review Ambassador club packet and ask questions of National Gardening staff.
- Administer the pre-test on global awareness to your students.

February 2000

THEME: *"Saving the Earth in the new millennium"*

- Sign the letter of understanding and return to the National Gardening Association.
- Log on to National Gardening Association Web site, and click on Kids & Classrooms.
- Create dialogue and look at new issues to discuss environmental responsibility.
- Raise awareness with your students about the global effects on the environment.
- Research and chart information on environmental issues that affect our country.
- Draw a hypothesis from your research.
- Develop journal writing activities for students. List group reflections about being environmentally responsible.
- Start a journal on your own teaching reflections.
- Encourage students to start a journal on their own learning reflections.

March 2000

THEME: *"Exploring environmental corrective measures for the next millennium"*

- Discuss the implications of these issues for each of the three categories; environmental protection, economics issues, and equity concerns (Brundtland, 1987).
- Describe and compare various environmental protection issues.
- Explore corrective measures for issues affecting our environment.
- Implement learning strategies for all students.

March 2000 (continued)

THEME: *"Becoming involved in environmental stewardship"*

- Connect with other Ambassador Clubs through an online forum. Identify similar interests. (Observe, list and evaluate your similarities and differences.)
- Formulate new questions with your students that empower others towards change.
- Discuss how to become involved in environmental stewardship.
- Discuss ways your school members can become environmental stewards.

April 2000

THEME: *"Looking back, Looking forward".....*

- Research social and political factors related to each activity.
- Participate in a problem-solving activity and chart how you would solve the problem.

May 2000

THEME: *"Evaluate for Sustainability"*

- Explore environmental problems over time.
- Find alternative ways to solve issues.
- Compare how your students ideas about the developing world changed and determine how they will use and share this information.

June 2000

THEME: *"Future Steps for the new millennium"*

- Provide classroom experiences that demonstrate to students opportunities for lifelong learning.
- Prepare an action plan for your school that implements "Making Connections through Gardening" and demonstrates your efforts as an environmental steward.

CHECKLIST FOR AMBASSADOR CLUBS USING THE INQUIRY LEARNING MODEL

I. "Laying the Groundwork" (NGA, 1990)

____ a) Formalize your partnerships by signing the letter of understanding.
____ b) Review the Ambassador club kit and ask questions of the NGA staff if needed.
____ c) Discuss the meaning of becoming an Ambassador.
____ d) Begin researching about the country of Nicaragua.
____ e) Seek additional resources through your school library, local town or city library or community members.
____ f) Find someone in your school or community that is familiar with speaking Spanish.
____ g) Obtain school administration and community interest for this project by keeping them updated on your progress.
____ h) Place a map of Nicaragua in your classroom.(Enclosed in your kit)
____ i) Discuss environmental issues that are presently known to students about their own country.
____ j) Align relationships or impacts from student responses into three categories: environmental protection, economic development and equity concerns (Brundtland,1987)
____ k) Chart the relationships and impacts that your students find throughout the program.
____ l) Encourage student reflections through journals.
____ m) Administer the pre tests to your students and return to National Gardening Association.

II. "Exploration" (NGA, 1990)

____ a) Log on to www.garden.org and register.
____ b) Prepare small focus groups for informal class discussions.
____ c) Learn about student lives in Nicaragua. (Look at NGA web site for more information)
____ d) Discuss bigger environmental issues that are presently known to students about the developing countries.
____ e) Compare how bigger global environmental issues affect our country.
____ f) Describe and compare various environmental protection issues.
____ g) Explore various corrective measures for bigger issues. (Look at bigger issues such as Green Revolution, Greenhouse Effect, Deforestation)

III. "Making Connections" (NGA, 1990)

____ a) Develop a plan of action to download information. (NGA's web site)
____ b) Formulate questions for students to use as they gather data through their personal dialogue with e-mail pals.
____ c) Collect students ideas as they compare their information with other Ambassador Clubs across the country during an on-line discussion forum.

IV. "Branching Out" (NGA,1990)

____ a) Research current events as they relate to the social and political issues.
____ b) List all social and political issues that are related to learning activity.
____ c) Link social and political issues around sustainability factors.
____ d) Establish critical thinking activities through open forums.
____ e) Explore ways for students to take on issues as a lifelong learning process.
____ f) Seek alternative ways to use knowledge gained in the activity.

"Making Connections Through Gardening"
Letter of Understanding

Participating Teacher,

This letter confirms my participation in the "Making Connections Through Gardening" program for the 1999-2000 school year.

I understand that my principal responsibility as a participating teacher include the following:

- Application of the Ambassador Club Kit for use in my classroom as the "Making Connections Through Gardening" program.
- Keep records of student learning reflections on how their ideas about the developing world changed and how they will use the information.
- Complete and submit my students responses to a pre- and post test of the program.
- Classroom participation with e-mail pals.
- Record one classroom experience that incorporates "Making Connections through Gardening" and submit to National Gardening Association for the program evaluation.
- Class participation in an Ambassador Club discussion forum.
- Complete a questionnaire for the end of the project's evaluation.
- Complete an evaluation questionnaire at the end of the program.

Print Name _____

Name of School _____ # students _____ grade level _____

Date _____

FOR STUDENTS: PRE-TEST YOUR GLOBAL SENSE

Instructions:

Circle yes or no to the following statements.

1. Nicaragua can be found on the continent of South America.
   A) Yes B) No

2. The primary language in Nicaragua is Spanish.
   A) Yes B) No

3. Serious environmental concerns for people in Nicaragua are deforestation and erosion.
   A) Yes B) No

4. Global warming is a change you see in your own environment.
   A) Yes B) No

5. Raining awareness helps people see bad effects that developing countries face.
   A) Yes B) No

6. The way people use the land can be useful in learning about gardening in a developing world.
   A) Yes B) No

7. Gardening can empower people to improve their local environments and communities.
   A) Yes B) No

8. Most farmers in developing world countries do not have high tech agricultural and farming skills.
   A) Yes B) No

9. Nicaragua has the largest rain forest in Central America.
   A) Yes B) No

10. Economic issues have effects on the environment.
    A) Yes B) No

FOR TEACHER: A SURVEY OF YOUR GLOBAL SENSE

1. The development of industrialized countries has caused resource depletion in developing countries.

a) Strongly agree b) Somewhat agree c) Agree d) Not sure

2. The primary cause of the greenhouse effect occurs through the emission of carbon dioxide from fossils fuels.

a) Strongly agree b) Somewhat agree c) Agree d) Not sure

3) More than 23 percent of the pesticides in the U.S. diet are found in dairy products.

a) Strongly agree b) Somewhat agree c) Agree d) Not sure

4) 70% of anti-cancer properties come from tropical forests.

a) Strongly agree b) Somewhat agree c) Agree d) Not sure

Instructor Reflection Guide

"Making Connections Through Gardening"- A guide for Ambassador Club reflections

- What are your reactions to a discussion with another Ambassador Club? Did you learn what you had hoped about being an Ambassador club? Why or Why not?

- Do you think your teaching will change in any way as a result of learning about the developing world? How?

- Over the period of this program, how did your ideas change about the developing world? How will you use the information?

- In what ways did you find your students becoming self-directed learners in this program?

- How did your school support global environmental awareness?

- What future ideas/directions do you have for your classroom/school for sustaining environmental awareness?

1998, Adapted from GrowLab Consultants' Toolkit, National Gardening Association: Burlington. Vt.

NICARAGUA

A few country specifics:

- Located in Central America.
- Borders the countries of Honduras on the north and Costa Rica in the south.
- Two bodies of water surround the country including the Pacific Ocean and the Caribbean Sea.
- Little smaller than New York state.
- Population is about 4.5 million. 65% of the population is younger than 25.
- Population 69% are mestizos (mixed Spanish and Native American descent), 17% white, 9% black, and 5% Amerindian.
- Spanish is primary language spoken.
- Education is free and mandatory for all children.
- Capital is Managua.
- Civil law system.
- 50.3% of the population is below poverty line (1993 est).
- Climate is dry near Pacific coast, tropical in lowland, highlands are cooler, wet near the Atlantic coast.
- Rainy season occurs from May to October.
- Agriculture products: coffee, bananas, sugarcane, cotton, rice, corn cassava (tapioca), citrus, beans, beef, veal, poultry, dairy products.
- Natural resources are gold, silver, copper, tungsten, lead, zinc, timber, fish.
- Contains the largest rain forests in Central America.
- Valuable trees include: pine, cedar, balsam, guanacaste, mahogany and rosewood.

(Source: http://www.odci.gov/cia/publications.factbbook/nu.html and http://library.advanced.org/17749/maingeneral.html)

RESOURCES

Books For Inquiry Learning:

Blosser, P.E. (1991). How to Ask the Right Questions. Washington, DC: National Science Teacher Association.

Cothron, J.H., Giese, R.N., and Rezba, R.J. (1993). Students and Research: Practical Strategies for Science Classrooms and Competitions. Dubuque, Iowa: Kendall/Hunt Publishing Company.

Doris, E. (1991). Doing What Scientists Do: Children Learn to Investigate Their World. Portsmouth, NH: Northeast Foundation for Children Heinemann Educational.

Fosnot, C.T. (1989). Enquiring Teachers, Enquiring Learners: A Constructivist Approach for Teaching. New York, NY: Teachers College, Columbia University.

Kramer, S.P. (1987). How to Think Like a Scientist. New York, NY: Crowell.

Pranis, E. & Cohen, J. (1990). GrowLab: Activities for Growing Minds. Burlington, VT: The National Gardening Association.

Books For Learning about the Environment:

Miller, C. G. (1986). Acid Rain: A Sourcebook for Young People. New York, NY: Julian Messner.

Earthworks Group. (1991). The Next Step: 50 More Things You Can Do to Save the Earth. New York: NY: Andrews and McMeel.

Web Sites for Learning about Nicaragua:

http://library.advanced.org/17749/maingeneral.html
http://library.advanced.org17749/education.html
http://library.advanced.org/17749/mainhistory.html
http://library.advanced.org/17749/maineconomy.html
http://library.advanced.org/17749/resources.html
http://library.advanced.org/17749/agricultural.html

Web Site for Learning about TechnoServe:
www.technoserve.org

Other Web Site Sources:
http://www.enviroliteracy.org/resources.html
Resources for teachers and kids. List of U.S. Government agencies, departments and laboratories. other National Government sites, United Nations sites, General Environmental Science sites, and State Departments of Natural Resources.

http://gcrio.gcrio.org/edu/pcsd/chap1.html

LEARNING ACTIVITY FOR JANUARY 2000

1. "Making Connections"

2. THEME: *Launching into the Millennium*

Objective: Students will understand how to be an effective Ambassador as they expand their knowledge and perceptions about Nicaragua's environment and agricultural practices.

Materials needed: World maps
Computer access
Library resources

Learning Impact:

- Students will develop a general understanding of Nicaragua.
- Students will draw hypotheses from their research on the impacts of natural disasters on agriculture and the environment in Nicaragua.

National Science Standards:

Content Standards (5-8)

- *"Abilities Necessary to do Scientific Inquiry" (Content Standard A: Science as Inquiry)* http://www.nap.edu/readingroom/books.nses.html/6d.html
- *"Populations and Ecosystems" (Content Standard C: Life Science)* http://www.nap.edu/readingroom/books.nes.html/6d.html
- *"Structure of the Earth System" (Content Standard D)* http://www.nap.edu/readingroom/books.nses.html/6d.html
- *"Natural hazards" (Content Standard F: Science in Personal and Social Perspectives)* http://www.nap.edu/readingroom/books.nses.html/6d.html

3. Type of Activity: Breaking down boundaries: expand your perceptions

4. Teaching/Learning cycle:

"Laying the Groundwork"

In this Teaching/Learning cycle phase students will:

- Search the Web and collect information on Nicaragua.
- Review Nicaragua's country specifics found in your Ambassador Club kit.
- Did you find anything else you could add to this list?

"Exploration"

In this Teaching/Learning cycle students will:

- Locate Central America on a world map.
- Locate Central America in relation to other countries.
- Locate the United States in relation to other countries, in particular, Nicaragua.
- Locate the United States in the world.

"Making Connections"

In this Teaching/Learning cycle students will answer the following questions:

- How do you think hurricane Mitch affected people's lives in Nicaragua?
- How do you think hurricane Mitch affected agriculture and the environment?
- Find pictures on the web and in printed literature. Draw a picture of what Nicaragua looked like after hurricane Mitch. Keep a copy of your picture and compare your picture with other Ambassador clubs.
- List all the environmental and agricultural impacts that you found.

"Branching Out"

In this Teaching/Learning cycle the students will list other questions they have and draw hypotheses. Research more about the following statements listed below and develop their own conclusions and additional hypotheses.

- It is more difficult for Nicaragua to recover from natural disasters than the United States.
- More crop variety is found in the U.S. than in Nicaragua.
- There is a significant difference between basic needs for people in Nicaragua and the United States.

5. Causes, Effects, Corrective Measures and Social/Political Issues

Students will research related issues. For example:

- Cause: natural disaster
- Effect: affects key crop (coffee, banana) production
- Corrective Measure: diversify crop production
- Think about how this relates to environmental protection, economic concerns, and equity Issues. For example,
  Environmental Protection: diversify crop production
  Economic Concerns: competing on the world market
  Equity Issues: fair trade

Nicaragua

HONDURAS
0
80km
RÍO WAWA
PUERTO CABEZAS
OCOTAL
LAGO DE APANÁS
GUASAULE
SOMOTILLO
MATAGALPA
CARIBBEAN SEA
LAGO DE MANAGUA
Nicaragua
CORINTO
BOACO
ISLAS DEL MAÍZ
JULGALPA
RÍO ESCONDIDO
MANAGUA
MASAYA
GRANADA
LAGO DE NICARAGUA
BLUEFIELDS
ISLA ZAPATERA
ARCHIPIÉLAGO DE SOLENTINAME
RIVAS
SAN CARLOS
PACIFIC OCEAN
ISLA DE OMETEPE
RÍO SAN JUAN
SAN JUAN DEL NORTE
COSTA RICA

Attachment D

gardening.com

international programs

home | families | teachers | store | digging deeper search

Nicaragua

In the 1999-2000 school year, our international project, Making connections Through Gardening, in partnership with TechnoServe and funded by US AID, connected K-8 students in the US with students in Nicaragua. These Ambassador Clubs communicated and shared activities with one another and schools in Nicaragua.

Each club had access to curriculum materials developed by NGA staff, photos and stories collected in the field by TechnoServe staff. Click here to see stories and curriculum.

Come with us on our global gardening journey to Ghana. In our second international project, U.S. students are forming Ambassador Clubs with students in this African country to further the connection between people, places, and produce. In the next few months, we will let you in on what kids are doing and how much we are all learning. Visit our Ghana page.

Nicaragua

Ghana

Discussion Forum

Email pals

LINKS to USAID and Technoserve web sites

Home | Parents' Primer | Classroom Stories | Activities | All About Plants | FAQs
Resource Directory | Online Courses | Our Mission | Discussions | E-mail Pals
Events Calendar | International | School Garden Registry | Millennium Green
Give Back to Grow | Request a Catalog | Youth Garden Grants | Kidsgardening Store
Educational Membership | Contact Us | Vermont Community Botanical Garden

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Attachment E

Curriculum Activities

Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5

THEME 1: Launching into the Millennium

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Materials needed:
World maps
Computer access
Library resources

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- Students will draw hypotheses from their research on the impacts of natural disasters on agriculture and the environment in Nicaragua.

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Content Standards (5-8)

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http://www.nap.edu/readingroom/books.nses.html/6d.html

- *"Populations and Ecosystems" (Content Standard C: Life Science)*
http://www.nap.edu/readingroom/books.nes.html/6d.html

- *"Structure of the Earth System" (Content Standard D)*
http://www.nap.edu/readingroom/books.nses.html/6d.html

- *"Natural hazards" (Content Standard F: Science in Personal and Social Perspectives)*
http://www.nap.edu/readingroom/books.nses.html/6d.html

3. Type of Activity: Breaking down boundaries: expand your perceptions

4. Teaching/Learning cycle:

"Laying the Groundwork"

In this Teaching/Learning cycle phase students will:

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- Review Nicaragua's country specifics found in your Ambassador Club kit.
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- Locate Central America on a world map.
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In this Teaching/Learning cycle students will answer the following questions:

- How do you think hurricane Mitch affected people's lives in Nicaragua?
- How do you think hurricane Mitch affected agriculture and the environment?
- Find pictures on the web and in printed literature. Draw a picture of what Nicaragua looked like after hurricane Mitch. Keep a copy of your picture and compare your picture with other Ambassador clubs.
- List all the environmental and agricultural impacts that you found.

"Branching Out"

In this Teaching/Learning cycle the students will list other questions they have and draw hypotheses. Research more about the following statements listed below and develop their own conclusions and additional hypotheses.

- It is more difficult for Nicaragua to recover from natural disasters than the United States.
- More crop variety is found in the U.S. than in Nicaragua.
- There is a significant difference between basic needs for people in Nicaragua and the United States.

5. Causes, Effects, Corrective Measures and Social/Political Issues

Students will research related issues. For example:

- Cause: natural disaster
- Effect: affects key crop (coffee, banana) production
- Corrective Measure: diversify crop production to include non-traditional (e.g. medicinal plants, tropical fruits, ornamental plants)
- Think about how this relates to environmental protection, economic concerns, and equity Issues. For example,

Environmental Protection: growing alternative crops

Economic Concerns: competing on the world market

Equity Issues: fair trade

Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5

Home | Parents' Primer | Classroom Stories | Activities | All About Plants | FAQs
Resource Directory | Online Courses | Our Mission | Discussions | E-mail Pals
Events Calendar | International | School Garden Registry | Millennium Green
Give Back to Grow | Request a Catalog | Youth Garden Grants | Kidsgardening Store
Educational Membership | Contact Us | Vermont Community Botanical Garden

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Curriculum Activities

Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5

THEME 2: "SAVING THE EARTH"

OBJECTIVE:
Students will expand their power of dialogue, explore research, draw hypotheses, and examine living differences.

TOPIC: Deforestation

MATERIALS NEEDED:
Computer access - Use of the Internet (please see list of Web sites)

LEARNING IMPACT:

- Students will explore land areas in our country and learn how forests are being depleted.
- Students will explore forests in different parts of the world that are being depleted.
- Students will draw hypotheses from their own views of deforestation and what the effects might be in the future.
- Students will draw conclusions from a debate about good resource management practices for a sustainable future.
- Students will examine Nicaragua's forest and list the challenges that they observe.

BACKGROUND:
Climate Change:
Beginner's Guide to Climate Change-For Kids: http://www.cop3de/fccc/kids/kids.html

Global Facts: Deforestation

- "Reforested areas are not coming back as quickly."
- "Half of the forests that once covered the earth are now gone due to deforestation."
- "Deforestation has accelerated for the last 30 years." (http://library.thinkquest.org/17749/agricultural.htm)

Nicaraguan Facts:

- "Most diversified forests are found Central America."
- "Sixty-five commercially valuable species are found in Nicaragua's forests, including pine, cedar, guanacaste, mahogany, and rosewood."

- "1992 Forest Action was passed by Nicaraguan government to increase forest production supply for consumption and energy." (http://library.thinkquest.org/17749/agricultural.htm)

Web site: http://library.thinkquest.org/17749/agricultural.htm

Nicaragua's Challenges:

- Decreased watershed
- Decreased crop production
- Increased soil erosion

ACTIVITIES:

Activity #1: List the countries in the world that are affected by deforestation.

Web sites:
http://www.angelfire.com/ok2/savetheearth/wdft23512.html
http://www.over.to/savetheearth
http://www.wcmc.org.uk/forest/data/cdrm2/index.htm

Activity #2: Look at the United States' and Nicaragua's forests and determine how they impact people's daily lives.

Web site:
http://www.panda.org/forests4life/forestmaps/index.htm

Activity #3: "Half of the forests that once covered the earth are now gone due to deforestation." (Draw your hypothesis based on this statement. Please note: Deforestation has accelerated within the last 30 years.

Activity #4: Form two debate teams. The topic is about economic concerns for forest management.

Scenario:

Your state is setting up a Forest Council. This council will pass a law supporting sustainable managed forests, and will support companies that adopt better management practices. Define what their criteria are for a sustainable managed forest. How will they reward companies that adopt better management practices?

You own a company that produces paper. You are asked to attend a state meeting on the new Forest Council act. You have concerns about how the act will affect your company.

Team A: Forest Council Board of Directors

Make a list of questions, issues, and concerns you have about deforestation. Example: Why should we preserve our forests?

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Team B: Paper Company

Make a list of questions, issues, and concerns that you have about sustainable forest management. Example: How does this type of forest management effect us economically?

Activity #5: A suggested growing activity: (Approximate grade: Primary to 5)

- Plant or purchase a tree for your school yard or community.
- Dedicate a tree to your class.
- Collect different kinds of seeds that grow into a tree. (Example: apple seed)

Available Resources:

Free Trees for Schools

Through its Community Tree Planting (CTP) grant, the National Tree Trust provides free tree seedlings to schools and community groups for planting on public property (e.g., public schoolyards, roadsides, community gardens, and parks). CTP grants consist of a minimum of 100 regionally appropriate tree seedlings, 2-gallon plastic containers, and a cash subsidy to underwrite the cost of potting mix. Applications are available from January through May, for trees that will be delivered in the spring of 2001. To request an application, contact the National Tree Trust. Also, ask about their Growing Together program, which offers planting and curriculum materials for growing trees from local seed. Phone: (800) 846-8733; E-mail: (Web site ((Growing Ideas: A Journal of Garden-Based Learning, Volume 11, Number, 1, January 2000, National Gardening Association)

Think Spring: Seeds for School Projects

The America the Beautiful Fund is again offering large quantities of 1998/99 seeds for school gardening projects. To request up to 1,000 seed packets, send a letter with your name, school/project name, address, phone number, and a short description of your project. Enclose a check for $12 to cover postage and handling for the first 100 seed packets and $5 for each additional set. Specify the number of vegetable and flower packets you would prefer. Mail your request to America the Beautiful Fund, 1730 K St., NW, Suite 1002, Washington, DC 20006. Questions? Call (202) 638-1649.

Web sites:

"Nine Things You Should Know About Trees"
http://www.arborday.org/planting/planting.asp?event=#container
"The Simple Act of Planting a Tree" - http://www.treelink.com
"Growing Together Program Facts" - http://www.nationaltreetrust.org/GTfacts.htm
"Tree Calendar of Color" - http://home.integrityonline.com/rodsgarden/trespring.htm
"Plant Trees now with Global Releaf 2000" - http://www.americanforests.org

Activity #6: Have your students reflect on gardening activities at home.

- Describe a favorite flower, tree, or vegetable you have found in your backyard or garden.
- Do you have a favorite space when you are outside? Describe how you feel in this space.

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- List all gardens that you have visited.
- Imagine a garden you would like to visit. Describe your imaginary garden in detail.
- Do you have a favorite story that is about gardening? Share your story with another student.

Resource: Jackie Torrence, Stories From Around the World Video Series. Olga Loya-Latino Stories Series, English and Spanish Ed.
(http://www.curriculumassociates.com/publications/jtorrence.html).
Children's Environments Research Group, Children's Environments, New York: NY.

Supplemental Activities: Using your calendar to plan your curriculum
(To be implemented in Theme: Environmental Stewardship)

Month of April -	Arbor Day	different for each state
	Earth Day	April 22, 2000
	National Gardening Week	April 9 - April 15.

Web sites:
"Seeds of Change" - http://store.yahoo.com/seedsofchange/
"Sharing our Differences- Learning from each other" -
http://horizon.nmsu.edu/garden/diversity/we/come.html

TEACHING/LEARNING CYCLE:

Laying the Groundwork:

- Can you tell me what you know about the depletion of forests?
- What do you see when you look at forests in your area?
- Have you ever seen an area where forests were cut down?
- What did you feel like when you saw the area without a forest?

Exploration:

In this Teaching/Learning cycle, students will:

- Locate different areas around the world that are affected by deforestation.
- Examine how Nicaragua is impacted by the production, distribution, and consumption of wood.
- Find alternatives to wood for the consumer, such as non-wood products.

Making Connections:

- How is most of the wood used by the typical household in the U.S. ?
- How much will wood household products deplete U.S. forests in the near future?
- What will be some future impacts if deforestation rates continues to grow for other countries as well?

Activity #1: Look at different woods used in your own homes.
Critical Questions:

- What do you notice about the production, distribution, and consumption of wood for

our country? Nicaragua?
- How are economics experiences different for the two countries?
- What are key economic concepts expressed by U.S. and Nicaragua?

Branching Out:

- What might you consider next?
- How can you use what you've learned?

When helping students become self-directed learners, we can help encourage the learning towards new opportunities for becoming engaged. Students can use concept maps that will help them brainstorm ideas for the next steps. As we approach the theme, **"Becoming Involved in Environmental Stewardship"**, students will find out how they can connect with their community.

NGA is a partner with TechnoServe - See how this program has helped Nicaraguans plant trees at their Web site: http://www.technoserve.org

NGA is a partner in the USDA initiative 2000 Millennium Green, which promotes stewardship action for the new Millennium. You can find more information about this program on their web site: http://www.MillenniumGreen.usda.gov

IMPLEMENTATION:
Causes:

- Lack of forest due to clear cutting will increase the effects of global warming.
- Depleting forest will create an increase in water problems that also bring about diseases.
- Land usage will be affected.

What other causes do you see?

Effects:

- Climate regulation
- Erosion and flood control
- Habitat and watershed protection

What other effects do you see?

Corrective Measures:

Supplying non-wood forest products

- Recycle (40% of paper is now recovered and recycled worldwide).
- Support companies that adopt better management practices using alternative wood products.
- Stop building roads in forests.
- Maintain forest health.

- Invest more resources in forest management.

What other corrective measures do you see?

Other measures:
Empowerment
Sustainable practices (See TechnoServe project: Enhance Local Environments: Carbon Sequestration - http://www.technoserve.org)

Activity #1: Find out how much carbon is out there by using a Carbon Debt Calculator - http://www.americanforests.org/climate/amforcalc.html.
Appropriate grade level: 6-8

Social and Political Issues:

- What types of laws impact land use?
- How do these laws impact international trade?
- Compare the impacts on forests resources in the developing world and wood consumption in the industrial world.

Web site: http://www.americaforests.org/corp/carbon.html

EVALUATION:

1. How have your students' perceptions changed regarding deforestation?
2. How do your students feel about the economic experiences between the two countries?
3. What do your students find as the key economic concepts expressed by U.S. and Nicaragua?
4. How has raising students' awareness helped them see negative effects on our world?
5. How do you think your students will engage future global issues?

Supplemental Activities:

Growing Ideas Newsletter- National Gardening Association
Vol 8, #2, April 1997, p.10 "Rainforest Revealed"

References:

Book: "Taking a Stand: Cultivating New Relationships with the World Forests" by Janet Abram Ovitz
http://www.americanforests.org
http://www.over.to/savetheearth
http://www.treesforlife.org/sttfla/sttfla.htm

Source: 1998, Environmental News Network

Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5

gardening.com

international programs

home | families | teachers | store | digging deeper sea

Curriculum Activities

Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5

***** We provide web sites as suggestions only. It is up to the individual teacher to screen what is appropriate for your students. *****

THEME 3: Corrective Measures

OBJECTIVE: Students will expand their understanding of how sustainability efforts can lead to corrective measures for their own nation and world.

TOPIC: Hunger Awareness and Agricultural Systems

SUBJECTS: Science, Social Studies, Geography, Health, Technology, Reading

MATERIALS NEEDED: Computer access; use of Internet (See list of Web sites)

LEARNING IMPACT:

- Students will gain knowledge about natural resources and agricultural systems in the United States.
- Students will gain knowledge about natural resources and agricultural systems in Nicaragua.
- Students will learn about the issues of hunger in our world.
- Students will compare and contrast their own diet and nutrition with that of Nicaraguan children.
- Students will learn about nutrition and how it is connected to economic, environmental, and equity issues.
- Students will examine corrective measures as they make correlations between hunger, nutrition, and home gardens.
- Students will examine corrective measure using the concept of sustainability.

BACKGROUND:

After learning more about deforestation in Theme 2, **"Saving the Earth"**, applying corrective measures for forests may help increase food security. One example of a corrective measure for the depletion of forests is the concept of agroforestry.

ACTIVITIES:

Activity # 1: To begin, review your last theme and terms. Ask yourself how corrective

measures correlate to saving the earth.

Review the term **Agroforestry.**
Look at corrective measures through the web site on 7 Steps For Kids To Take .
http://www.ran.org/ran/kids_action/index.html

Activity #2: Explore some important facts.

Hunger facts: http://www.thehungersite.

Nutrition facts: http://www.kids.maine.org.

What we eat? See web sites:
http://aggie-horticulture.tamu.edu/
Click on Just for Kids

What should we eat?
See same Web site listed above.

Global food and agricultural development: http://www.fao.org
Food and Agriculture Organization of the United Nations: The state of food insecurity in the world.

Activity #3: Become familiar with a point of reference by viewing pictures.
To preview photographs, go to: http://www.fao.org
Click on Photo File.

Activity # 4: See how kids are involved in a Food Cyber Club.
Kids Food Cyber Club: http://www.kidsfood.org.
http://kidshealth.org

TEACHING/LEARNING CYCLE:

Laying the Groundwork: Awareness of Global Changes, Hunger, and Agricultural Recovery

- Can you tell me what you know about how global changes affects hunger in our world?
- What do you see when you look at the facts about hunger in our world?
- What did you feel like when you saw the number of people in our world affected by hunger?
- How do you see agricultural systems becoming sustainable for our future?

Exploration: Developing Education for Sustainability

- Look at the core themes of education for sustainability, such as Lifelong Learning, Interdisciplinary Approaches, Systems Thinking, Partnerships, Multi-Cultural Perspectives, and Empowerment (http://gcrio.gcrio.org/edu/educ.html) and explore how hunger can become incorporated into these themes. Click on Education for Sustainability.
- Incorporate these Sustainability Themes:

  Lifelong Learning http://gcrio.org.edu.pcsd.toc.html

Look at careers that help support disease prevention, nutrition, agricultural recovery, and governance.
Activity #1: Invite someone to come to speak to your class about one or more of these areas.

Interdisciplinary approaches http://gcrio.org/edu/pcsd/toc.html
Connect health and technology in your curriculum.
Activity #2: Develop a field trip experience by asking your students to plan a field trip to the grocery store. Select a nutritional menu or low cost meal that is nutritional. You can prepare a nutritional meal for a community shelter. Your students may learn more about plants by helping to design a garden to feed many community people. Research how you can plan for your garden using a technology system referred to as a Computer Assisted Design (CAD). Visit a nursery that develops landscape plans with the use of a computer.

Systems thinking http://gcrio.org/edu/pcsd/toc.html
Plan your thinking using a system approach.
Activity #3: Check out a Web site about using a Global Issues Analysis Model: http://www.globaled.org/curriculum/HowDOA.html.
Activity # 4: Reflect on Theme 3, Corrective Measures, and look at various topics associated with hunger such as nutrition and uses of sustainability.

Partnerships http://gcrio.org/edu/pcsd/toc.html
Contact organizations that look toward supporting hunger awareness with fund raising activities.
Activity #5: Collect cans at your school and donate the refund to a food shelf. Your class can work in a garden for the elderly over the summer as a field work assignment.
In your own community, you may learn more about community shelters that need donated food. Take stock and compare healthy foods and unhealthy foods. Students can find ways to look at the lack of food as well as the consumption of food. How do they react to their own nutritional values as they weigh others lifestyles?

Multi Cultural Perspectives http://gcrio.org/edu/pcsd/toc.html
Examine how Nicaragua is impacted by hunger and nutrition.
Activity # 6: A hunger banquet could become an excellent way to demonstrate differences between a developing world and the developed world. If two or more classes in your school are participating in this project, you can coordinate the hunger banquet among yourselves. Experience being in a third world country.
For more information, contact Oxfam America's annual "Fast for a World Harvest."
Develop two groups of students to explore food disaster in a third world country. After the hunger banquet experience, students can develop a comparative analysis between small farmers in third world countries and large cooperatives that want to supply food.

Empowerment http://gcrio.org/edu/pcsd/toc.html
Activity # 7: Write a letter to your legislator on hunger awareness. Celebrate hunger awareness at your school and invite a legislator or community

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organization to the day's event.
Activity # 8: Examine how students are taking in information about another country by having them share their reflections in a personal journal. Cultural awareness will be diagnosed for each student as time evolves. The student should be aware of being culturally sensitive and keep aware of their role as an Ambassador. At this point in the program, an assessment on how students are relating to the program can be a good indicator of the learning process.
Place pictures or students' individual nutritional portfolios into a scrap book .

Additional Web sites:

Find web site: Secret Agent Fast Food Assignment
http://www.fscn.che.umn.edu/nutrexp/studentff.htm
For more information ask an expert from the following Web site:
http://www.askanexpert.com/health.htm
For more information ask an expert about environment from the following Web site:
http://www.sciam.com/askexpert/environmet21/environment 21./html

Making Connections: Home gardens and Agroecology

- Define the term Agroecology
- How are home gardens in Nicaragua developing using the concept of Agroecology?

Activity # 1: The first analysis can start when your students learn to look locally and then act globally. After completing your research on Nicaraguan and United States home gardens, what similarities and differences can you find?

Activity # 2: Students can also develop a home garden design plan and share with other students or send their ideas and plans to students in Nicaragua.

- Look at examples of community gardens in Yalaguina, Nicaragua. (see web site):
  http://www.idex.org/latin_america/nicaragua/yalaguina.html

Click on Latin America, then click on IDEX Projects in Nicaragua, community gardens.

Activity # 3: After reading this Web site, determine the following:
a) causes b) effects c) corrective measures d) social and political factors

Activity #4: See a web site that looks at tropical agroforestry home gardens in Nicaragua:
http://www.agroecology.org/cases/homegardens.htm.

Activity # 5: Suggestions for planting your garden:
http://www.arnprior.com/kidsgarden/index.htm.

- Becoming an Environmental Steward.
  Check out the following Web sites that list resources, support improvements, and provide donations or information.
  Other donations, see donations on web site:

  http://www.thehungersite.com
  Other resources for world hunger:

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http://www.thehungersite.com/hungerresources.html http://www.info.usaid.go USAID http://www.technoserve.org Techno serve (See how this program has helped to support improvements in Nicaragua through loans.

Branching Out:

- Kids can make a Difference. See web site: http://www.kids.maine.org http://www.lightspan.com Click on Global Schoolhouse and read stories of how kids made a difference in the world.

Activity #1: Collect cans at you school and donate the refund to a food shelf. Your class can work in a garden for the elderly over the summer as a field work assignment. Your class or school can find new ways to be environmentally conscious at your school.

- Ecological sustainability - Teach the Children Well, Resources for Development Education: http://www.interaction.org/pub/connect Click on Global Education, click on Teach the Children Well.
- Education for Sustainability - Looking at core themes, Lifelong learning, Interdisciplinary Approach, Systems Thinking, Partnerships, Multi-cultural Perspectives, Empowerment: http://gcrio.gcrio.org/pcsd/toc.html
- Socio-economic - Visit a company that has made positive changes towards their future through their alternative and corrective measures.
- Compare how job opportunities for each country are different when you look at everyday life in Nicaragua and everyday life in America.
- Compare the activities of women gardening in Nicaragua and women gardening in the United States.

IMPLEMENTATION: (Possible suggestions are limited, but is a working list) Possible Causes: Hunger

United States

- Unemployment
- housing costs
- high medical costs
- education
- poor budgeting
- Inappropriate uses of food or money

Nicaragua

Same as United States and additionally,
Lack of agricultural tools and training
Devastation of land
Poor soil and water
Other social conditions including, sanitary services, and nutrition.

Possible Effects: Hunger

United States

- infant mortality
- low birth weight
- physical illnesses
- problems growing and learning

Nicaragua

Same

Possible Corrective Measures: Hunger

United States

- federal programs
- Food shelves/pantries
  soup kitchens

Nicaragua

federal programs
Home gardens

Possible Social and Political Issues: Hunger
United States and Nicaragua

- Federal programs and spending
- Trade agreements

Activity # 1: Check out a web site: Your Actions Can Change the World:
http://www.ran.org/ran/kids_action/actions.html

Activity # 2: Students can write a letter to their representative in legislature or a business official who represents a change in the social and political issues of the food system.

ONGOING DEVELOPMENT:
Environmental Protection: Look at limited resources. Check out the Web site in Backyard Composting: http://www.ci.austin.tx.us/sws/compost.htm.
Compare backyard and urban composting and discuss the differences of environmental protection. Check out the web site on Urban Home Composting:
http://www.cityfarmer.org/home_compost4.html

Activity #1: Look at local companies and see how they are conserving, recycling, and using energy.

Activity # 2: How can you contribute to a healthier environment. Check Web site:
http://www.tufts.edu/~eco/tfap.html#How.

Economic Concerns: Examine how food prices and supply affect hunger issues in our world. Consider who is making the changes towards economic stability and sustainability. Check out the web site: http://www.tufts.edu/~eco/tfap/tfap.html#How

Activity #1: Look at local companies and see how they are reducing their food prices and supply. What ways can you contribute to the economic concerns for food consumption?

Equity Issues: How are eating disorders affecting health? How do adolescents look at body image rather than nutrition values? What does this say for our culture regarding hunger issues? How are the cultural differences effecting how we see equity as it relates to hunger awareness?

Look at more facts on eating disorders when you check the Web site: http://www.edap.org
Tips on Becoming a Critical Viewer of the Media, check the Web site: http://www.edap.org
Education and Prevention Materials available on this Web site: http://www.edap.org

EVALUATION:
1. How have your students' perception changed regarding hunger and agricultural systems?
2. How do your students feel about how economic, environmental, and equity issues change the agricultural and food supply between the United States and Nicaragua?
3. How has your students' awareness on hunger helped them see their own personal

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corrective measures for a healthy living?
4. How do your students see how knowledge, support, and donations can help sustain a country's agricultural system?
5. Have your students expanded their critical thinking skills around causes and effects?

Resources:

Rubin, L. (1984). Food First Curriculum. San Francisco, CA : Institute for Food and Development Policy.
Wiles, J. and Bondi, J. (1989). Curriculum Development: A Guide to Practice. Columbus, OH: Merrill Publishing Company.
Additional Resources and Free guides:
Find on web site: http://www.interaction.org/pub conect conn9495/Vo.18.html. Click on: Teach the Children Well.

Research:
Nutrition and School Gardens:
http://aggie-horticulture.tamu.edu/haumanissues current.html
Click on: The effect of School Gardens on Children's Attitudes and Related Behaviors Regarding Fruits and Vegetables http://aggie-horticulture.tamu.edu/haumanissues/current.html.

http://aggie-horticulture.tamu.edu/ Human Issues in Horticulture
Click on: Previous Research
Click on: Project Green, Psychological Characteristics

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Give Back to Grow | Request a Catalog | Youth Garden Grants | Kidsgardening Store
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THEME 4: BECOMING INVOLVED IN ENVIRONMENTAL

STEWARDSHIP

OBJECTIVE: Students will expand their understanding of environmental stewardship as they find how they can actively make a difference and become more consciously aware of protecting their own environment with effective waste management strategies.

TOPIC: Waste Reduction- Consumption

Waste Management

SUBJECTS: Science, Social Studies

MATERIALS NEEDED: Computer access- Use of the Internet (please see list of Web sites)

LEARNING IMPACT:

- Students will gain knowledge of waste consumption and reduction.
- Students will gain knowledge about different waste management systems.
- Students will learn to be more conscious about how to be environmentally safe.
- Students will learn the impacts of how environment effects their human health.
- Students will learn about stewardship gardening.
- Students will learn problem solving and decision making skills.
- Students will learn how individuals can make a difference.
- Students will learn the importance of how to be an environmental steward.

BACKGROUND:

Environmental Stewardship

See suggestions from web site: http://www.uaf.edu/coop-ext/pr/stewardship.html

See suggested environmental stewardship teaching activities for grade levels at the following

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web site: http:/www.uaf.edu/coop-ext/pr/stewardship.html

Solid Waste Management

Learn more about solid waste management strategies such as reduction, recycling, composting, incineration, and landfills through the web site:

http://www.ela-iet.com/el00013.htm

http://www.acs.org/government/publications/eip_recycling.html

Click on: http://cfe.cornell.edu/wmi/TrashGoesToSchool/TrashIntro.html#anchor898432

http://cfe.cornell.edu/wmi/TrashGoesToSchool/TrashIntro.html#anchor928757

Trash Goes to School

Reduce, Reuse, Recycle, a waste management strategy has suggestions for children on the following
Web site: http://cfe.cornell.edu/wmi/TrashGoesToSchool/TrashIntro.html#anchor928757

Skills:

- Problem Solving Techniques
- Team Building and consensus
- Making Informed Decisions

Terms:

- Environmental Safe
- Ergonomics
- Environmental Stresses
- Microorganisms
- Soil Invertebrates
- Vermicomposting

TEACHING/LEARNING CYCLE:

Laying the Groundwork:

- Can you tell me what you know about how waste consumption affects our world?
- What do you see when people are more consciously aware of waste reduction?
- What do you feel like when people do not appreciate their own environment by keeping it clean and safe?
- What waste management techniques can help sustained our environment?

Exploration:

When students are looking towards exploration, they are active learners who make

predictions through their own observations. Finding ways to help children become active learners can be found on the following Web site: http://www.ecdgroup.com/guestdoc/hspc.html

This site has several professional development suggestions.

Making Connections:

Waste Management Checklist

Web site: http://www.epa.gov/iaq/schools/tfs/wastemgt.html

Teacher Checklist Check Web site: http://www.epa.gov/iaq/schools/tfs/teacher.html

Food Service Checklist

Web site: http://www.epa.gov/iaq/schools/tfs/foodserv.html

Becoming involved in active citizenship

See Web site: http://www.activecitizenship.org/

Asking questions and several activities

http://www.americanpromise.com/ap3300.html

Branching Out:

Active Citizenship

Students can look at active citizenship through an array of different service learning projects.

Examples of active citizenship through service learning projects, see Web site: http://www.activecitizenship.org/service.html

See more about Kids: Renew America through the following web site:

http://solstice.crest.org/environment/renew_america/

Other additional service learning projects:

- How to be a part of celebrations such as Earth Day - http://www.earthday.net
- Find how to use Recycling Activities for Children- (teachers and students)
- Join a National club
- Participate with Kids on line

Developing cross curricular activities using active citizenship. See web site: http://www.americanpromise.com/ap3300.html

Helping students work as inventors- See the following Web site,

http://www.nagc.org/Publications/Parenting/westberg.htm

IMPLEMENTATION:

Possible Causes: For Solid Waste Management

- Limited waste disposal options and capacity
- Limited uses of land
- Expensive to operate

See web site: http://www.iit.edu/~smile/bi9109.html

Effects:

Find more about the effects of trash and garbage on the environment through the web site: http://www.iit.edu/~smile/bi9109.html

Corrective Measures: For Solid Waste Management

Types of Corrective Measures that can support solid waste management:

- Vermicomposting- a worm culture of gardening see web site: http://www.ctvalley.com

See more about worms on our web site: http://www.kidsgardening.com/Dig/Dig.taf

- Soil Invertebrates

- Microorganisms

Finding out why composting is an effective measure?

Find ways to use composting in your schools, see web site: http://cfe.cornell.edu/Compost/schools.html

and the click on: http://cfe.cornell.edu/Compost/why.html

Checklist for schools: http://www.envirovillage.com/tools/T00124.htm

Activity #1: Find out more about composting by taking a Compost Quiz:

Web site: http://cfe.cornell.edu/Compost/schools.html

and then click on http://cfe.cornell.edu/Compost/quiz1.html

Activity # 2: 12 Steps Toward a Healthier School

http://www.ehh.org/12steps

Activity #3: Some suggestions for recycling classroom activities can be found on Web site http://cfe.cornell.edu/wmi/TrashGoesToSchool/TrashIntro.html and click on Activities.

Activity #4: Follow up with Hunger Awareness as you find out how much food your school uses using a Food Waste Data activity. See Web site: http://cfe.cornell.edu/wmi/TrashGoes to School.html#anchor14604067

Activity # 5: Find out more about conservation in the classroom through the activity: Classroom Conservation

See Web site: http://cfe.cornell.edu/wmi/TrashGoestoSchool.html

Activity # 6: You can get involved in America Recycles Day- November 15th

There are suggested activities on the Web site: http://www.earthdays.org/

Activity # 7: See how you can get involved in a school recycling program by checking out web site: http://www.environbag.com.

Looking at how stewardship gardening can be effective.

See Web site: http://134.121.86.147/stewardship/organic/organic.htm

- Tips on developing a school garden

See Web site http://aggie-horticulture.tamu.edu/kinder/consid.html

See also our Web site http://www.kidsgardening.com

- Steps to developing a school garden

See Web site: http://aggie-horticulture.tamu.edu/kinder/consid.html

See also our Web site http://www.kidsgardening.com

- Developing children's gardens see web site:

http://home.okstate.edu/Okstate/dasnr/hort/hortlahome.nsf/toc/Children'sGardens

More information can be found at the following Web site:

http://www.sisna.com/usee/theweb/mar-apr-99/theme.html

Social and Political Issues: For Solid Waste Management

1) Some possible issues that are affected are health risks, quality and quantity of water, air, population growth, urban life, diseases, economy, water pricing, natural and animal habitats

2) Find more about civic values through the following web site at http://www.activecitizenship.org/civic.html

3) Certain issues can face increased public opposition. Public is concerned with how environmental and health risk facilities have control.

ONGOING DEVELOPMENT:

Environmental Protection:

Examine how environmental and health risk can be controlled through other measures.

Look at how you can become involved in natural gardening at the following web site:
http://www.metro.dst.or.us/metro/rem/garden/natgar.htm

Find how to do recycling on the following web site

http://www acs.org/government/publications/eip recycling.html

Economic Concerns:

Examine how waste disposal capacity can save on your overall economic expenses.

Examples of waste reduction for schools can be found on the following Web site:

site: http://www.metro-region.org/rem/wred/wred.html

Equity Issues:

How does hazardous waste effect the average household? Are these issues a total family responsibility? Who takes the trash out in your family?

See hazardous waste on the following web site:
http://www.metro.dst.or.us/metro/rem/hazw/hazwas.html

See more about composting at home through the following web site:
http://www.metro-region.org/rem/garden/comphome.html

EVALUATION:

1. How have your students perceptions changed regarding waste consumption and waste reduction?

2. How do your students feel about the waste management systems between the two countries?

3. What do your students find as the key economic or environmental problem facing the waste management systems?

4. How has raising students' awareness helped them to see the impact of waste consumption in our world?

5. How do you think your students will engage in future global issues related to waste reduction? In their own community? School?

Supplemental Activities:

See Growing Ideas: A Journal of Garden-Based Learning for the following articles;

"Getting Hooked on Worms" April 1992, pp.1

"Worms Eat Our Lunch", April 1993, p.7

"Update on Wigglers", Sept. 1995, p. 5

Resources:

Books:

Appelhof, M. (1997). Worms Eat My Garbage. (2n ed.). Kalamazoo, MI: Flower Press.

Appelhof, M., Fenton, Frances, M. and Harris Loss, B. (1993). Worms Eat Our Garbage: Classroom Activities for a Better Environment. Kalamazoo, MI: Flower Press.

Kiefer, J. and Kemple, M. (1998). Digging Deeper: Integrating Youth Gardens Into Schools and

Communities. Montpelier, VT: Food Works.

Web Sites:

Students can look at active citizenship through an array of different service learning projects.

Examples of active citizenship through service learning projects, see Web site:
http://www.activecitizenship.org/service.html

Resources for Teachers

http://net.indra.com/~topsoil/Teacher_Resources.html

Research:

* Teaching Thinking Skills

http://www.nwrel.org/scpd/sirs/6/cu11.html

* Kids: Renew America

http://solstice.crest.org/environment/renew_america/

* Active Learning: The Way Children Construct Knowledge

http://www.ecagroup.com/guestdoc/nspc.html

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THEME 5: Looking Back ....Looking Forward

OBJECTIVE: Students will gain knowledge about the origins of agricultural and horticulture. Students will discover the newest agricultural technology and innovations.

TOPIC:
Horticulture
Agriculture

SUBJECTS: Science, World History, Social Studies, Technology, Reading

MATERIALS NEEDED: Computer access; use of the Internet

BACKGROUND:
Origins of Agriculture

- History of Agriculture. For more information see Web site: http://www.britannica.com.
  Medieval technology Time line. For more information see Web site:
  http://scholar.chem.nyu.edu/~tekpages/Timeline.html#500
- Humans working towards agriculture.
  For more information see Web Site:
  http://www.gardendigest.com/timegl.htm

Agricultural Tools for our country

- Future of Family Farming. For more information see Web site:
  http://www.kenyon.edu/projects/farmschool/future/homems.htm
- Technology and Agriculture. For more information see Web site:
  http://www.kenyon.edu/projects/farmschool/future/techms.htm

History of Horticulture

- For more information see Web site: http://www.encyclozine.com/Horticulture/History
- Oldest Garden Plan. For more information see Web site:
  http://darkwing.uoregon.edu/~helphand/egyptpgsone/egyptpg2.html

Chronology of Horticulture

- Hunters to Gathers-Near Eastern Origins. For more information see Web site:
  http://www.hcs.ohio-state.edu/hcs/TMI/HCS210/HortOrigins/OutlineHistory.html

- Egyptian Civilization
  http: www.hcs.ohio-state.edu/hcs/TMI/HCS210/HortOrigins/OutlineHistory.html

TEACHING/LEARNING CYCLE:
Laying the Groundwork
After reviewing Techno Serve's Web site, tell me what you have learned in relation to the modernization process that has made a difference in the following countries: El Salvador, Ghana, Kenya, Mozambique, Nicaragua, Panama, Peru, Poland, Tanzania, and Uganda.

- What did you learn about the history of agriculture and the innovations made?
- What do you feel like when people do not practice the best use of current technology to increase development for agriculture?
- What new techniques in agriculture can you see that can help sustain our environment?

Exploration:
You can be active learners by funding a school garden. As you look through this web site, ask yourself how your school can become involved.
For more information about Funding a School Garden, check out the following Web site: http://hort.ifas.ufl.edu/ggk/funding.htm

Making Connections:
School-to-School Partnerships can become one way to discuss your uses of horticulture. For more information on developing school-to-school partnerships, the following Web site may be helpful: http://www.info.usaid.gov/regions/afr/leland/s2s-info.htm

Branching Out:
Cultural Innovations. For more information see Web site:
http://www.kenyon.edu/projects/farmschool/types

IMPLEMENTATION:
Possible Causes:
Labor Intensive - Early Agricultural tools
Forced Population
Systemic Development

Corrective Measures:
Innovations for our country

- Precision farming
- A story on Satellite Technology. For more information see Web site:
  http: www.kenyon.edu/projects/farmschool/future/piar1ms.htm
- Challenges that came about through technological advances.
  For more information see the following Web site:
  http: www.encyclozine.com/Horticulture/History/

Newest Technology for our country

- Precision farming. For more information see Web site:
  http: www.kenyon.edu/projects/farmschool/future/techtvms.htm
- How can the computer be used? For more information see Web site:

http://www.kenyon.edu/projects/farmschool/future/techcpms.htm

- Chemicals Uses. For more information see Web site: http://www.kenyon.edu/projects/farmschool/nature/chem.htm

Social and Political Issues:
Touring a Third World Country. For more information see Web site:
http://echonet.org/schooltours.htm#top
After reading this article, look back at the last three units and answer these questions: Why is there a food problem? How are corrective measures making a differences? In what ways can stewards assist with solutions?

ONGOING DEVELOPMENT:
Environmental Protection:
Click on a story that talks about environmental trends:
http://www.growitcom.com/CGMPages/trends.htm

Economic Concerns:
Technology in schools. For more information see Web site:
http://www.edweek.org/sreports/tc/tchome.htm

Equity Issues:
Science Programs that bring about Program Development can be found by clicking on: http://www.tenet.edu/teks/science/stacks/progdev/progmain.html

EVALUATION:
1. How have your students perceptions changed regarding horticultural, agricultural, and technological changes?
2. How do your students feel about the differences in the ways agriculture is used in the two countries?
3. What do your students find as the key economic problem facing agricultural technology for the third world countries?
4. How has raising students' awareness helped them to see the impact of agricultural technology?
5. How do you think your students will engage in future issues that relate to technology, development and sustainability?

RESOURCES:
Technology uses for schools can be found on:
http://www.concord.org/projects/

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Attachment F

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member services

- For help with your *National Gardening* magazine subscription, call (800) 727-9097 or write National Gardening Subscriber Assistance, P.O. Box 52874, Boulder, CO 80322-2874
- For information about National Gardening Association education programs, products, and member benefits, call (800) 538-7476
- For help with your Burpee Home Lifestyles membership, call (888) 747-7030

International School Project

Teachers! connect your kids through gardening...

NGA has teamed with USAID and Techno-Serve for a project that connects American students with students from Panama. We are looking for interested teachers and their students to participate. Contact Valerie Kelsey at (800) 538-7476 or Valeriek@garden.org.

Get [garden]wired!

Craving some timely news and tips from NGA? Sign up for *Gardenwire*, our biweekly online newsletter. It's FREE! Find out why gardeners are saying, "You do a great job dispensing the seasonal information people are looking for." Sign up at www.garden.org.

THE NATIONAL GARDENING ASSOCIATION

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To sustain and renew the fundamental links between people, plants, and the earth

National Gardening Association

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GROWING INTERNATIONAL CONNECTIONS:
PARTICIPANTS WANTED
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Enhance your science, social studies or gardening project curricula with learning activities that help students consider the vital roles of gardening and agriculture throughout the world.

Making Connections through Gardening, an interdisciplinary eduction program for students in grades 5-8, will connect 25 schools from Nicaragua with 50 schools across the U.S. Students will learn about the Nicaraguan students' cultural, gardening, and nutritional habits. They will also gain an awareness of the environmental issues faced by people living in Nicaragua. Participants will have access to curriculum activities on the National Gardening Association's Web site.

Your class can become one of the 50 Ambassador clubs that communicate with students in a Nicaraguan school. What you need to participate: Internet access, an e-mail address, an interest in global environmental issues, knowledge of basic Spanish (or contact with community member that knows the language). Interested? Please send the following information to Joan at joanw@garden.org with name, address, e-mail address, school name, class size, grade level.

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FREE CONSERVATION RESOURCE
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In a cooperative project, the Natural Resources Conservation Service, the National Association of Conservation Districts and the Wildlife Habitat Council have published a 28-page resource called Backyard Conservation. It features practices for conserving natural resources and creating habitats that support wildlife. You can obtain the free booklet by calling 1-888-landcare.

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UNUSUAL GREENS FOR AN INDOOR GARDEN
==========

It is easy and fun to grow an indoor windowsill garden. You and your youngsters may have planted a sweet potato in a glass of water, but have you tried pineapples, carrots, onions, or ... pomegranates? This unusual fruit is in season in the Fall, so it's a great choice for an indoor investigation.

What you will need:
1 pomegranate, old newspaper, protective cover for clothing (this fruit is messy!), 5 to 10 small jars, bagged potting soil, water, clear plastic bag

What to do:
Cut the pomegranate in half. Take out 10 seeds. Place them on the newspaper. Scrub the seeds with the newspaper to remove any fruit remains. Fill the

X-Sender: bradleyl@ag.arizona.edu
X-Mailer: QUALCOMM Windows Eudora Pro Version 4.2.0.58
Date: Wed, 05 Jan 2000 09:55:34 -0700
To: school_garden@mallorn.com
From: Barbara Richardson <barbarar@garden.org> (by way of Lucy Bradley
<BradleyL@ag.arizona.edu>)
X-md5sum: 040462420be736d8cf8e0d167adb9c1f
X-md5sum-Origin: lorien.mallorn.com
X-MIME-Autoconverted: from quoted-printable to 8bit by lorien.mallorn.com id LAA01317
Subject: [sg] GARDENWIRE: News from the National Gardening Association
Sender: school_garden-admin@mallorn.com
X-Mailman-Version: 1.1
List-Id: Discussion of school garden issues and opportunities <school_garden.mallorn.com>
X-BeenThere: school_garden@mallorn.com
X-RCPT-TO: <joanw@garden.org>

THE GLOBAL CLASSROOM GARDEN--Growing Understanding
==========

Making Connections Through Gardening is a project connecting students in the United States with students in Central America and Africa. In this program, the children and their teachers share their knowledge and experience of home gardening and agriculture. The goal of the project is to increase American students' understanding of the environmental impact of gardening and agricultural practices in developing countries.

In collaboration with TechnoServe, NGA is collecting information about Americans' current level of awareness on these topics. Over the next two years, we will share information about the project in the National Gardening magazine and on our Web site. Please help us identify the current level of understanding by taking a simple quiz, located on our Web site at http://www.garden.org. For participating, we'll enter your name in a raffle for an assortment of gardening equipment.

School_garden maillist - School_garden@mallorn.com
https://secure.mallorn.com/mailman/listinfo/school_garden

Monday, December 06, 1999 6:20:31 PM
Message

From: Marilyn Wyzga <mwyzga@wil,BradleyL@ag.arizona.edu,External
Subject: [sg] SYH: STUDENT AMBASSADORS NEEDED
To: Eve Pranis
school_garden@mallorn.com,External

Schoolyard Listerserv folks:
Check it out - a memo from the National Gardening Association. I see some connections here.

Marilyn Wyzga, Project HOME

==========
STUDENT AMBASSADORS NEEDED
Students, teachers, and parents: Are you looking for a way to enhance the science, social studies or gardening project curricula in your school? NGA's new project, Making Connections Through Gardening, provides learning activities that help students consider the vital roles of gardening and agriculture throughout the world. This interdisciplinary education program for students in grades 5-8 connects 25 schools from Nicaragua with 50 schools across the U.S. Students learn about their Nicaraguan friends' culture, gardening practices, and nutritional habits, and gain an awareness of the environmental issues faced by people living in Nicaragua. All participants have access to curriculum activities on the National Gardening Association's Web site.

To participate, you need Internet access, an e-mail address, an interest in global environmental issues, and knowledge of basic Spanish (or contact with community member that knows the language). To become a Making Connections Through Gardening ambassador club, please send your name, e-mail address, school name, class size, and grade level to project coordinator Joan White at joanw@garden.org.

Start the new year off right by referring a list to Topica.
You'll earn $300 and your list owner friends will thank you.
http://www.topica.com/t/9

To: schoolgarden@mallorn.com
From: Joan White <joanw@garden.org>
Subject: International Project
Cc:
Bcc:
Attached:

Enhance your science, social studies or gardening project curricula with learning activities that help students consider the vital roles of gardening and agriculture throughout the world.

Making Connections Through Gardening, an interdisciplinary education program for students in grades 5-8, will connect 25 schools from Nicaragua with 50 schools across the U.S. Students will learn about the Nicaraguan students' cultural, gardening, and nutritional habits. They will also gain an awareness of the environmental issues faced by people living in Nicaragua. Participants will have access to curriculum activities on the National Gardening Association's Web site.

Your class can become one of the 50 Ambassador clubs that comminicate with students in a Nicaraguan school. What you need to participate: Internet access, an e-mail address, an interest in global environmental issues, knowledge of basic Spanish (or contact with community/school emember that knows the language). Interested? Please send the following information to Joan White, Program Director at joanw@garden.org with name, address, e-mail address, school name, class size, grade level.

Attachment G

TechnoServe WORLD

A Newsletter for Friends of TechnoServe Winter 1999

Hope Springs Up from the Mud of the Hurricane

It was a little more than a year ago that Hurricane Mitch roared through Central America, shattering lives, homes and livelihoods. The Posoltega region of Nicaragua was one of the hardest hit when a volcano overflowed with water, creating a deadly mudslide. In response to the devastation, TechnoServe is helping people regain a livelihood in Posoltega by building a viable business.

"There is extreme poverty here, especially after the hurricane," says Ivania. "But people here in town are working arm-in-arm to make the nursery work."

In the town of Chiquimulapa, TechnoServe has been working with the Antonio Moreno Cooperative to establish a tree nursery business. The business is growing hardwood trees for both private and public reforestation programs – popular following Hurricane Mitch – and fruit trees for private buyers.

The people of Chiquimulapa own their own land, but cultivate only a fraction of it to grow food for their families. Ninety percent is rented out for a small fixed fee to grow sugar cane. To make extra money, people work the cane fields from time to time. There is a dire need for a long-term way for the people of Chiquimulapa to make a living.

TechnoServe is helping members of the cooperative to establish a tree nursery business on four acres of land owned by its members. With donated funds, the business invested $25,000 for irrigation, certified seeds, fertilizer, tools and fencing.

ALISON JONES

Ivania Rojas, Vice President of the Antonio Moreno Cooperative, Ramon Gonzales, Manager, and TechnoServe advisor Mauricio Samcam inspect bags just planted with seeds at the tree nursery.

Production began in June with 388,000 seedlings planted.

While 100,000 seedlings were lost because of unusually heavy rains this fall, a number of buyers have expressed an interest in purchasing the remainder. Each seedling will sell at an average price of $0.13, generating gross sales of $32,500 – enough to cover the costs of production and recover 100 percent of the investment capital.

Ivania Rojas is the Vice President of the nursery. She has six children who she raises alone. Her husband works on a banana plantation in Costa Rica because he can't make enough money at home to support the family. The family sees him only for a month each year. "There is extreme poverty here, especially after the hurricane," says Ivania. "But people here in town are more together now. Everyone is working arm-in-arm to make the nursery work because it will bring jobs and a way to earn a decent living."

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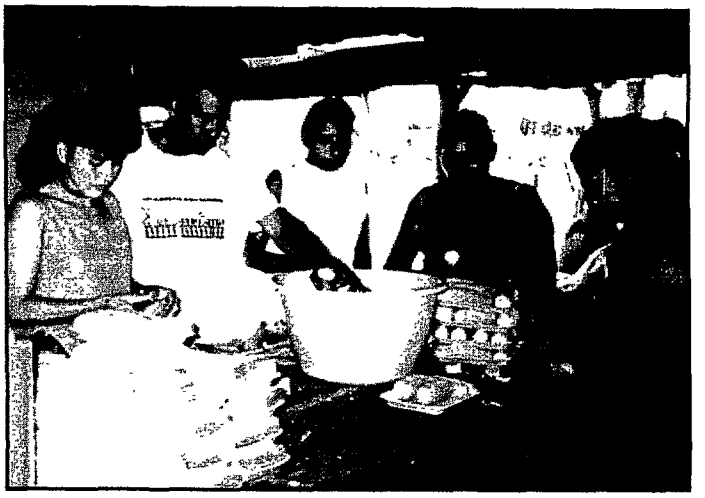
The Corn is Truly Sweet for José Varela

José Varela of El Salvador wants his six children to break out of the cycle of subsistence living that has run through generations of his family. "I want them to go to college and study to become whatever they want, doctors, lawyers, business managers – something that will prepare them for a life that is better than what their parents had," says José.

José's father was a day laborer, moving from farm to farm, working whenever there was an opportunity. José has been luckier. He has been able to farm his own land – 14 acres – in the community of Las Pavas. Yet, for years, José was stuck in a rut, cultivating three basic traditional crops, corn, sorghum and beans. These crops are widely grown in the country, and therefore sell for very low prices. Also, because he was dependent on rainfall to water his fields, he was limited to one harvest a year.

"It was very difficult to get by on what I earned," recalls José. "I felt like I was always working, yet never getting ahead. I earned only $1,500 a year."



José Varela oversees the process of selecting, packaging, and labeling his sweet corn. This adds value to his raw produce and generates employment within his community.

José's hard work is paying off. He earns more than $18,000 a year and is able to employ eight people on his farm.

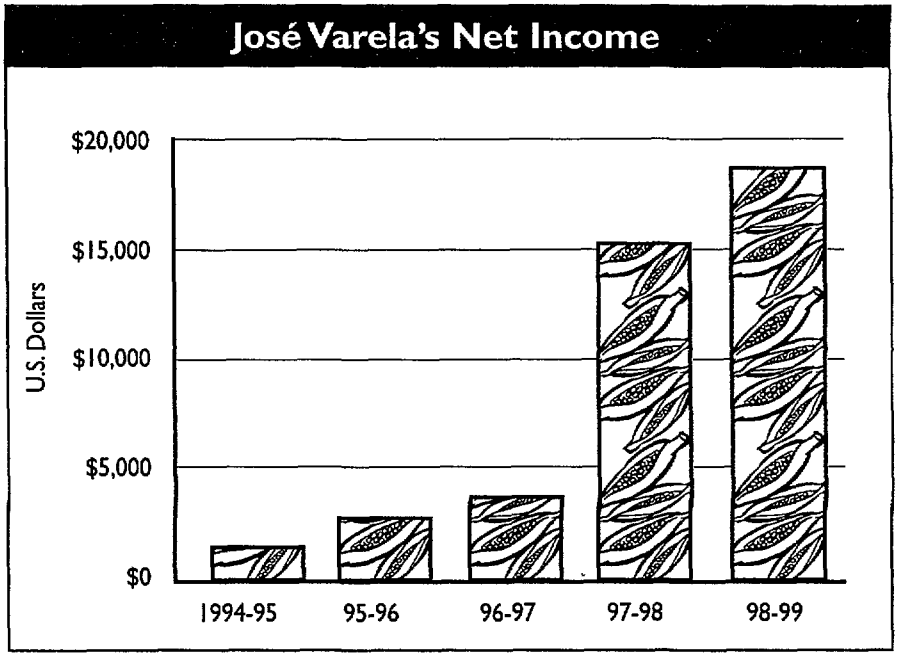
Yet, José was sitting on untapped potential. His land bordered a government irrigation system that was in disrepair and unused. In 1995, TechnoServe began working to transfer the irrigation system's management to a private association of local farmers. At the same time, TechnoServe assisted the 440 farmers, men and women like José, to optimize their use of the irrigated water so they could plant and sell multiple harvests each year. In addition, TechnoServe urged the farmers to diversify into crops with strong market demand, such as sweet corn, peppers and melons. These products are popular in the growing number of supermarkets in El Salvador's towns and cities. These changes would allow them to earn more money for their families and to pay for irrigation services.

José was reluctant to change at first, setting aside only a small parcel of his land to grow sweet corn. During that year, he earned more from the sweet corn than from all his other crops combined. "Nothing convinces like success," says José. "After that year, I was sure it made good economic sense to switch to sweet corn."

The next year, José dedicated all of his land to growing sweet corn and his income soared. In addition, he has been able to harvest three times a year by carefully managing the water he draws from the nearby irrigation canal.

It is quite clear now to José that his hard work is paying off. He earns more than $18,000 a year and is able to employ eight people on his farm to clean, sort, pack and label the corn for sale in the local supermarket. His wishes for his family are also coming true. Two of his teenage children have just entered the local university to study for their bachelors' degrees.

José is now setting his sights higher. "I'm 48 years old now and I'd like to find ways I can help other people to have a better life. So, I'm going to get more involved in the community by becoming a member of the local municipal council," says José. If his past success is any indication, José will bring foresight and determination to his role in the community.



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TechnoServe Honored by Nicaraguan City

Earlier this year, TechnoServe President Peter Reiling was given the key to the city of Jinotega, Nicaragua in recognition for the organization's positive impact in the area. TechnoServe has been involved in rehabilitation of the region since the end of the civil war, rebuilding lives through business.

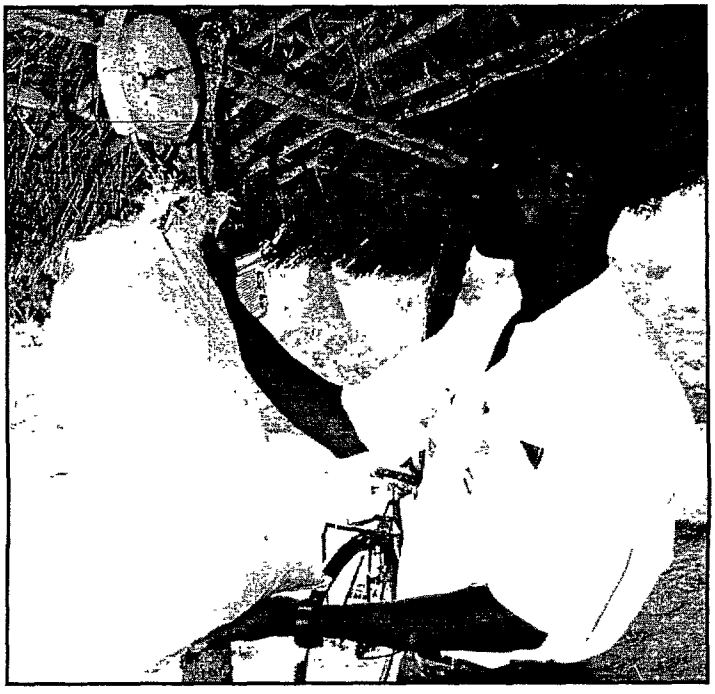
During the ceremony, Jinotega's Mayor, Humberto Vasquez Centeno, thanked Americans for their generosity after the war. "The friendship between the people of the United States and Nicaragua, as manifested through the assistance of TechnoServe, has significantly boosted economic growth and employment in the town and helped to improve our natural habitats through agro-forestry programs," said Mayor Vasquez.

In the Jinotega region alone, TechnoServe's assistance has benefited thousands of people, pulling them out of a subsistence living by improving their production techniques, increasing yields and opening up markets for their products. Today, TechnoServe continues to work with area businesses, helping them access working capital and new markets. When TechnoServe first began working there, the average family income was $215 – today it is $2,600. By 2003, TechnoServe estimates that family incomes will rise to $6,700.

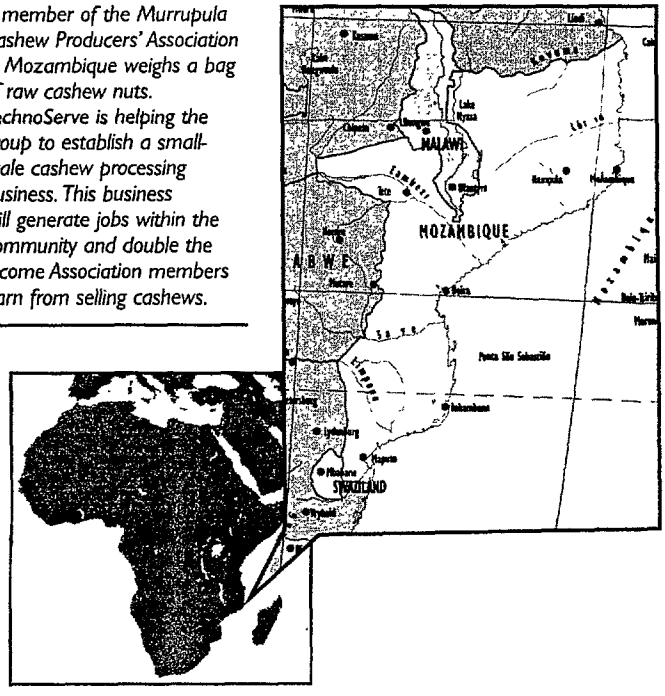
ALISON JONES

Jinotega Mayor Humberto Vasquez Centeno presents TechnoServe President Peter Reiling with the key to the city of Jinotega.

Raising Incomes in Mozambique



A member of the Murrupula Cashew Producers' Association in Mozambique weighs a bag of raw cashew nuts. TechnoServe is helping the group to establish a small-scale cashew processing business. This business will generate jobs within the community and double the income Association members earn from selling cashews.



TechnoSer e Joins Forces with the National Gardening A ociation to Teach Americans about he Developing World

The distance between Minneapolis and Managua, or Austin and Accra will get "shorter" for some Americans in the next two years, thanks to a new program from TechnoServe and the National Gardening Association. The two organizations are teaming up to cate American choolchildren and dults about the developing world, highlighting the vital roles gardening and agriculture play in other countries nd how that is ferent or similar n the role of ga ing in American ho holds.

Kindergarten through ei h grade students wr use the National G ening Association's G Lab curriculum in th science classes will re ve information about sc olchildren in rural La America and Africa – th lives, culture and the ro f gardening, both in their family lives and in school. The GrowLab program is a life science curriculum which provides an innovative, hands on means for children to learn about plants and the natural world around them.

National Gardening Association members will regularly get news about the agricultural, gardening and environmental issues faced by those in the developing world, what TechnoServe and others are doing to help, and how those issues relate to their own gardening hobby and lives. They will get this information via the National Gardening Magazine, and the two organizations' web sites – www.garden.org and www.technoserve.org.

Founded in 1972, the National Gardening Association's mission is to help people through gardening with research, gardening information and exchange, and a school curriculum. National Gardening Association is the largest nonprofit gardening organization in the country. The organization helps its 250,000 members to use gardening for enjoyment, and teaches people about the environment by providing educators with innovative materials and programs for some 500,000 children each year.

WAY YOU CAN SUPPORT TECHNOSERVE

Direct Contribution

Your gifts of cash, real estate, or persona operty will support our work in Latin America and Africa.

Appreciated Stock Contributior

Giving gifts of stock or other investmen which have recently grown in value can be an even more advantage gift than cash as they can leverage your tax benefits.

Memorial and Honorary Gifts

Contributions can be made in memory or honor of a relative, friend or colleague. Your gift will be acknowledged to the honored person or family.

Bequest Contribution

By including a gift to TechnoServe in your will, you can provide a meaningful contribution to either current operations or TechnoServe's endowment.

Pooled Income Fund Contributions

Contributing to TechnoServe's Pooled Income Fund results in income for you proportionate to your contribution and a tax deduction based on the estimated principle that will be left to TechnoServe.

For more information on making a contribution to TechnoServe, please write or call Ms. Darlene Brown, 1-800-99-WORKS.

TechnoServe is a non-profit organization as defined by IRS code section 501(c)3. Contributions to TechnoServe are tax deductible to the extent permitted by law.

TechnoServe Paul E. Tierney, Jr., Chairman
Peter A. Reiling, President & CEO

For more information, contact us at: 49 Day Street, Norwalk, CT 06854
(203) 852-0377 or (800) 999-6757
email: technoserve@tns.org Web: http://www.technoserve.org

TechnoServe is a private, nonsectarian, nonprofit organization, tax-exempt under Section 501(c)(3) of the Internal Revenue Code, meeting the standards of the National Charities Information Bureau. TechnoServe is a member of the American Council for Voluntary International Action (InterAction) and International Service Agencies.

Since 1968, TechnoServe has helped more than 3 million men, women and children in 21 countries throughout Africa, Latin America and Central Europe to help themselves in their efforts to bring jobs and incomes to their rural communities.

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Attachment H

"MAKING CONNECTIONS THROUGH GARDENING"
AMBASSADOR CLUBS Nicaragua Pre - Post Test

Class #	Grade Level	Student #	Pre- Mean Score	Post-Mean Score
1 Carol Larro	4	24	47	71.6
2 Debra Hickel	3- 4	46	62	
3 Paul Gates	3	18	65	
4 Eleanor Makruski	8	44	72	
5 Georgia Smith	5	23	68	82.9
6 Niki Redl	5-6	18	57	
7 Darlene Yanoff	5	25	65	63
8 Mary Zilli	7	23	55	
9 Betsy Conway	5	19	56	76.6
10 Carol Calveri	1-2	17	68	
11 Christine Danley	4	23	75	75.3
12 Eikenberry	4	26	71	
13 Cheryl Little	1	33	68	78.3
14 John Herzog	4-5	18	68	
15 Tony Alvite	8	15	77	
16 Cherie Stikler	5	17	59	
17 Kathleen Elam	5	17	57.1	
18 Janice Tietz	6	27	55	
19 Kathy Bajek	5	24	92	83.3 (27)
20 Susan Holiday	3	22	53	

21 Seely	1-3	22	58.6	100
22 Kraemer	1-3	14	57.1	62.6 (19)
23 Walsleben	1-3	22	60.5	70.5
24 Green	4-6	20	68	69.5 (19)
25 Noel	1-3	21	63.3	96 (19)
26 Kent	4-6	20	69.5	79
27 Riggs	4-6	19	60	80.5
28 Hardy	2-3	207	51	66
29 Ajello	4-6	21		77.7

FOR STUDENTS: PRE-TEST YOUR GLOBAL SENSE

Instructions:

Circle yes or no to the following statements.

1. Nicaragua can be found on the continent of South America.
   A) Yes B) No

2. The primary language in Nicaragua is Spanish.
   A) Yes B) No

3. Serious environmental concerns for people in Nicaragua are deforestation and erosion.
   A) Yes B) No

4. Global warming is a change you see in your own environment.
   A) Yes B) No

5. Raining awareness helps people see bad effects that developing countries face.
   A) Yes B) No

6. The way people use the land can be useful in learning about gardening in a developing world.
   A) Yes B) No

7. Gardening can empower people to improve their local environments and communities.
   A) Yes B) No

8. Most farmers in developing world countries do not have high tech agricultural and farming skills.
   A) Yes B) No

9. Nicaragua has the largest rain forest in Central America.
   A) Yes B) No

10. Economic issues have effects on the environment.
    A) Yes B) No

"MAKING CONNECTIONS THROUGH GARDENING": *A FINAL EVALUATION*

1) The program met the objective in "Making Connections through Gardening"

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

2) The program materials was designed across the curriculum.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

3) The curriculum was appropriate for middle level grades.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

4) The teaching/learning cycle was helpful in providing the inquiry process.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

5) The program provided standards that allowed us to work within our school's curriculum.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

6) The program expanded students awareness of environmental global effects.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

7) The program's curriculum provided students to use effective problem solving skills for world problems.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

8) The curriculum provided enough structure and direction.

Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

9) Students were able to connect with their Ambassador Club School Partner.
Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

10)The program provided life skills for students to be self-directed learners.
Extremely _____ Somewhat _____ Not at all _____ Not Sure _____

COMMENTS:

Attachment I

Pre-Tests
by Maritom S. Hardy

Was really enlightening to see how many students are so uninformed about countries outside of their own. However, working with 2nd and 3rd graders do tend to be just exploring the globe at this stage of the game... My Montessori students had a better idea as to where the location and possible problems that the Nicaraguans than my "traditional" students. The web sites are very informative and are leading to a lot of discussions. The Title 1 school that I teach at is in a rural district in the Upper Piedmont of South Carolina... about an hours drive from a Temperate Rain Forest that borders both South and North Carolina. So as you can see, we are just getting into reading and comparing our two cultures. Can hardly wait to hear about other responses about the Pre-Tests.
Our School email address is:
MHardy@Laurens55.k12.sc.us

Name:

Email Address:

Message Title: RE: Pre-Tests

Message:

Post Now

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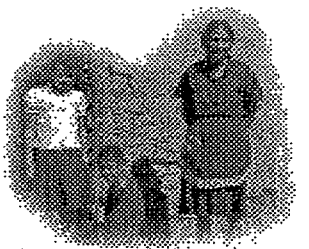
Ambassador Clubs



Using art to communicate with El Espino pals

by Marjorie Phillips, Lake Waco Montessori Magnet Sc

We are still in the process of completing our biographical cutouts to send to our pals. We discussed the use of art as a universal language, had the students in Gr. 1-6 design and color what are essentially "paper dolls" of themselves, using clothing and symbols to tell our new friends about ourselves. One 6th grader drew herself with Indian braids and a feather in her hair to indicate her Native American heritage, wore a butterfly necklace, had a frog motif on her jeans, and is carrying a guitar to show her love of music.

I checked out about 6 simple Spanish-Enblish dictionaries from our school library, and the students also had to write some short sentences or a simple Spanish phrase on the back of their cutouts. We will be sending them by the end of next week along with some art supplies for the school, and perhaps they will draw themselves for us to see.

I also took digital photos of the students in small groups holding their cutouts, and we will send those as well.

The students really enjoyed this project.

Name:

Email Address:

Message Title: RE: Using art to communicate with El Esp

Message:

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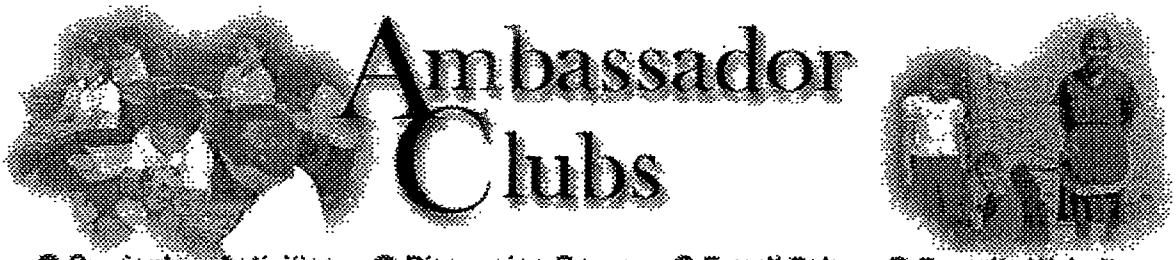

Research presentation on Nicaragua by Gr. 3
by Mary Nied Phillips, Lake Waco Montessori Magnet Sc

One of my responsibilities as not only the Environmental Educator but also the Lead GT teacher on our campus is to provide enrichment opportunities for our gifted and talented students. The Ambassadors Club program has been a wonderful way to do this and involve the students in learning research and presentation skills.

As our school close nears, the 5 students in my third grade GT enrichment group made 10-15 minute presentations on Nicaragua to each of their 4 cluster, multi-aged classes (grades 1-3). Each child had researched a different part: Key Facts about Nicaragua, The Climate, The People, The Basic Needs of the People, and Plants and Animals of the Tropical Forest. They used internet sources, reviewing the stories from the El Espino students, along with search engines and encyclopedias on CD-ROM.

Since I had visited Costa Rica last spring, we dug into my box of Central American materials and found more helpful information as well as items to display during the presentation, such as postcards, miniature wooden fruits, a metate and rolling pin, and even volcanic soil from the Arenal volcano.

We all wore our Lake Waco Montessori Exlorers tee-shirts along with jewelry I had also brought back (the boy had a Mexican hat and bandanna around his neck) and began each presentation with a musical entry, parading around the classroom. We even paraded through the office, and at the end of four presentations, the students wanted to continue parading through the school and do their presentations to the rest of the classes.

This was the finale of the school year for these students and a great way for them to help their peers review the materials on Nicaragua in preparation for their post tests. Thank you, Ambassadors Club, for this special learning opportunity.

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Discussion Forum

Back

School Gardens
by Janice Tietz

I teach a sixth grade class in Lachapi, California. We are located about 120 miles NE of L.A. in the mountains. Since we are at 4,200 ft. we do get snow and late frosts. We went off track for three weeks starting in late March and just before we left we prepared our garden and sent home seeds to be "baby-sat" for three weeks. We discussed why we liked garderns and the purpose of them in the U.S. and the importance of gardens as a food supply source in Nicaragua. It never occurred to some students that a garden might make the difference between eating and not eating.
I am not a gardener, so everything is trial and error and error and error, but we are getting there. Someday I might even try composting!
Best tip of the day: get at least one parent volunteer to help. As we do not have enough tools for even 1/4 of our class, it really helped to have the parent supervising the garden team while the rest of us were in the classroom.

Name:

Email Address:

Message Title: RE: School Gardens

Message:

Post Reply

Home | Curriculum Activities | Discussion Group | Favorite Websites | Project E-mail Pals | Map of Nicaragua

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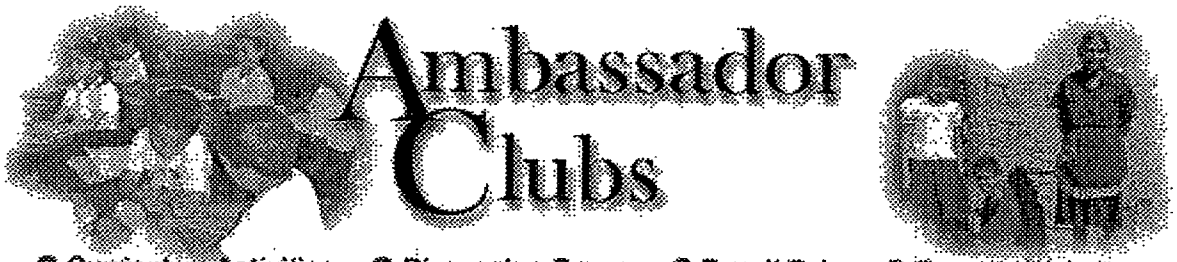

RE: Using art to communicate with El Espino pals

by Christine Danley

I think any of the arts are a wonderful way to communicate with other cultures. Holland School recently sent a hand painted red,white,and blue introduction box to Santa Barbara School. We paired the students to work independently on projects. The box contained the following items:
- an illustrated map of the U.S. showing where Ft. Wayne, IN was
- an illustration of our American flag
- a tape recording of our national anthem (we hope they have access to a tape player)
- a digital picture of our school, principal, Mrs. Montgomery (fourth grade teacher), and myself (science teacher)
- digital pictures of our school animals
- a pressed peony (state flower) and tulip leaf (state tree) in clear contact paper
- a tape recording of some our favorite classroom songs

All of the above items had
Spanish dialog attached for explanation. We also sent them pencils made from recycled Japanese newspaper (save trees) and small boxes of crayons donated from a local store.Finally, we included some posters of animals and plants of Indiana to decorate their classroom. We are anxiously awaiting their reply.

Name:

Email Address:

Message Title: RE: Using art to communicate with El Esp

Message:

Post Now

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RE: Pre-Tests

by Debra Hickel

I teach Title One in a rural school in Lancaster Co. SC. I found what you said to be what I found with my third and fourth grade students. My fourth grade students are in a garden club at our school. We used the gardens to teach all subjects last year. So this is their second years with the garden and with knowing about the regions of SC. After taking the pretest. We started with our research and did a Venn diagram to compare Nicaragua to SC. We found Nicaragua to be very similar to SC in many ways. I hope I do not sound dumb but not being from SC and living in NC just a few years. I was not aware of what you call Temperate Rain Forests bordering NC. Where is this and I would like to know more about what you call Temperate Rain Forests. Please e-mail me. My students love studying the Rain Forests in Nicaragua. I would like to share the Temperate Rain Forest of SC with my third and fourth graders.

Name:

Email Address:

Message Title: RE: Pre-Tests

Message:

Post Now

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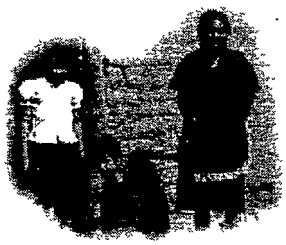
Attachment J

kidsgardening

making connections through gardenir

home | families | teachers | sto

In the 1999-2000 school ye ur international project, Making Connections Through Gard , funded by the U.S. Agency for International Developme SAID), connected K-8 students in the United State th students in Nicaragua. More than 50 Ambassador Clubs municated and shared activities with one another a chools in Nicaragua.



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In the 1999-2000 school year, our international project, *Making Connections Through Gardening*, funded by the U.S. Agency for International Development (USAID), connected K-8 students in the United States with students in Nicaragua. More than 50 "Ambassador Clubs," including more than 2000 students, communicated and shared activities with one another and schools in Nicaragua.

Each club had access to curriculum materials developed by NGA staff, photos and stories collected in the field by TechnoServe staff, discussion forums, and *email pals* on our Web site, www.kidsgardening.com/Ambassadors. An introductory package sent to all Clubs included the country's map and flag, and provided teachers with information on how to incorporate the materials across the curriculum. The goal of the project was to increase American students' understanding of the environmental impact of gardening and agricultural practices in developing countries and the importance of U.S. development programs.

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More than 5,000 children from U.S. schools will be involved in this program for the school year 2000-2001. These children will connect with students in Ghana via traditional and electronic mail; benefit from online curriculum materials, photos and stories; and share activities with one another via electronic mail.
For more information contact: Joan White, NGA Program Director at joanw@kidsgardenin.com

Attachment K

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January/February 2000
Volume 23, Number 1

Cover: 'Evelyn' rose, a 1991 "designer rose" created by David Austin. Photo by John Glover

editor's note

Y2 Garden

If you're reading this issue in the comfort of a heated and electrically lit home, Y2K wasn't, apparently, as serious as some had feared. As we've all heard, various people predicted that these times would mark the end of technology's reign, if not life as we know it. I suspect that more than a few of these prophets have been secretly wishing it were so, that our computer-driven world would prove to be as flimsy as they say it is. More likely, computers and their offspring are here to stay, big time.

Of course such talk gives me reason to replay one of my favorite mantras: *Plants and gardens are real.* There's nothing virtual about them. They are creatures of the earth and the sun and the seasons, and what they are and how they grow haven't really changed all that much for thousands of years. And plants' software—their DNA—has been pretty thoroughly bug tested for the last 100 million years or so.

But whatever happens at midnight on January 1, 2000, it is a pretty safe bet that computers aren't going away, and furthermore, that their integration into society is only beginning. The next 100 years—even just the next 20 years—will bring innovations and revelations that are difficult to imagine today. Are you ready for machines that think? But don't big changes like that give us all the more reason to keep one foot planted firmly in the natural world?

So th[illegible] own little prediction for the millennium: [illegible] you remember those old movies about a[illegible] invading the earth and all the people uniting [illegible]vercome them? It will be somewhat like that. W[illegible]unite all right, but to save nature. We'll be sa[illegible]partly from unforeseen impacts of our techn[illegible]but mostly because it is precious and bea[illegible]erhaps we'll even remember that nature inc[illegible] too.

[illegible]in the effort to save the earth. Grow some pl[illegible] this year.—*M.M.* (mikem@garden.org)

RICK WETHERBEE

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Gardening Matters...

by David E. Els

Beyond our own gardens

Helping children increase their global awareness through gardening

By now I'm sure you've heard one too many prognostications about the new millennium—from estimates of unparalleled electronic wizardry to dramatic increases in life expectancy. My contribution to the collective wisdom comes from something much more basic—the act of gardening.

For the past five years, a statement on the front of the National Gardening Association's brochure says, "Gardening is more than just a (great) hobby." And each day we attempt to prove that claim by creating and supporting programs that demonstrate how gardening is so fundamental to life itself that it becomes a rejuvenating and sustaining experience. If gardening nurtures the environment, ourselves, and each other, then it certainly qualifies as an important contribution to the new millennium.

For many home gardeners, gardening is an activity that puts fresh vegetables on the dinner table and provides escape from daily stresses. It's a time to feel in touch with the earth. But for millions of people around the globe, the family garden plot is much more than a hobby that enriches their lives. It represents and sustains life itself.

As we begin the next century (I like to take my millennia 100 years at a time), we at NGA feel it is important to expand our perspective from North American soil to parts of the world where gardens are essential for survival. If we can then share this vision with the 25,000 teachers and 500,000 students who use the NGA GrowLab program in about 10,000 schools nationwide, we will have begun to create a worldwide network of gardeners who better understand our global interconnectedness.

One vehicle for this awareness is our new partnership with TechnoServe, a nonprofit international economic development organization. With funds from the U.S. Agency for International Development, we will create a link between grade-school students in the United States and the Third World. The goal of the *Making Connections Through Gardening* project is to get students to share and thereby increase their knowledge of the role that home gardening and agriculture play in the developing world.

In the project, students in the United States, one Central American country, and one African country will learn about the environmental impact of gardening and agricultural practices in developing countries. The project will create *ambassador clubs* in 100 schools in the United States that will share activities and communicate with partner schools in the other two countries. Each club will receive curriculum materials developed by the National Gardening Association. Teachers will be given information on how to incorporate the materials into their social studies programs, and the entire program will be made available to parents and children on our Web site (*www.garden.org*). Students themselves will exchange information on our Web site as *e-mail pals*.

NGA has long waited for an opportunity to expand its mission beyond the borders of its own gardens, and it is particularly satisfying to do this first with children in the Third World.

If you would like to help us with the *Connections* project, please visit our Web site and take our survey, which will gauge your awareness of gardening and agricultural practices in developing countries. If you are a teacher interested in this program, please contact Joan White, NGA's Program Director, by e-mail at *joanw@garden.org*.

David E. Els is president and publisher of the National Gardening Association.

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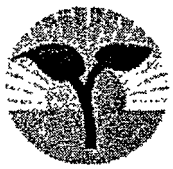
Attachment L



National Gardening Association

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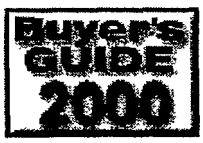

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NGA HOME

Beyond Our Own Gardens

Helping children increase their global awareness through gardening

by David E. Els

Original Publication Date: Feb00

By now I'm sure you have heard one too many prognostications about the new millennium -- from estimates of unparalleled electronic wizardry to dramatic increases in life expectancy. My contribution to the collective wisdom comes from something much more basic -- the act of gardening.

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Questions? Comments? Contact the Webmaster.

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Global awareness win QUIZ! gardening products

Making Connections Through Gardening

Making Connections Through Gardening connects students in the United States with students in Central America and Africa so that the children and their teachers can share their knowledge and experiences in home gardening and agriculture. The goal of the project is to increase Americans' understanding of the environmental impact of gardening and agricultural practices in developing countries.

In collaboration with TechnoServe, NGA is collecting information about Americans' current level of awareness. Over the next two years, we will share more information about the project in the *National Gardening* magazine and on our web site. You can help us identify current levels of understanding by answering the 10 questions below. We will run the survey again at the end of the year to assess how successfully we have met our education goals.

Simply click on the scale from 1 (low) to 10 (high) below each question to rate your current awareness and understanding of each of the following issues about environment, agriculture, and gardening in Nicaragua.

- Lumber harvesting in Nicaragua 1
- Impact of clearing land for agricultural use in Nicaragua 1
- Nicaragua's membership and role in the Central American Common Market 1
- Agroecological products and socioeconomic benefits of "huertos caseros" (home gardens) 1
- Use of naturally occurring, renewable resources in "huertos caseros" (home gardens) in Nicaragua 1
- Soil erosion in "huertos caseros" (home gardens) in Nicaragua 1
- Impact of natural disasters on the Nicaraguan agricultural sector 1
- Impact of farming practices on the environment in Nicaragua 1
- Impact of agricultural pesticides on health in Nicaragua 1
- Impact of water resources on agriculture in Nicaragua 1

Please enter your email address to enter your name in the

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drawing for gardening tools and supplies.

We will also email you when new information about the *Connections* project is posted on the web. Click submit survey when you finish. Thank you!

Submit Survey | Reset

Contact NGA for more information

Making Connections Through Gardening funded by
The U.S. Agency of International Development

Attachment N

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Welcome to our Nicaragua home page! You will find articles and related photos on this page about kids, classrooms, and communities in Nicaragua. Be sure to read our Curriculum Activities to view and download any useful activities for your classroom needs.

Feature Stories:

Andrea

Anamaria

Sheila

Teresa

Araceli

Omar

Maryuri

Julio

Yeilin

Edwin

Map of Nicaragua

Curriculum

Map of Nicaragua

Email pals

Nicaragua at a Glance

LINK TO "NICARAGUA AFTER THE STORM"

Home | Parents' Primer | Classroom Stories | Activities | All About Plants | FAQs
Resource Directory | Online Courses | Our Mission | Discussions | E-mail Pals
Events Calendar | International | School Garden Registry | Millennium Green
Give Back to Grow | Request a Catalog | Youth Garden Grants | Kidsgardening Store
Educational Membership | Contact Us | Vermont Community Botanical Garden

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Nicaragua After the Storm

Nicaragua's home gardens have been struggling in the aftermath of Hurricane Mitch. Imagine a carefully planned garden that provides your family with essential crops for food, fuel, and medicine. Imagine relying on this home garden to sustain your family until the next cycle of planting and harvesting. Now imagine all that erased in just a few hours. That is exactly what happened to the people of Nicaragua on October 27, 1998, when Hurricane Mitch released his force on the Central American isthmus. Nicaraguans have had to literally rebuild the land where they used to grow a wide array of plant species necessary for their survival.

In 1999, through an international project, the National Gardening Association helped educate American students, teachers, and parents about Nicaragua's culture -- before and after Hurricane Mitch.

Making Connections Through Gardening
NGA's "Making Connections Through Gardening" project -- in cooperation with TechnoServe, set up 46 school-based Ambassador Clubs throughout the U.S. and Nicaragua. The goal of the project was to increase American students' understanding of the environmental impact of gardening and agricultural practices in developing countries, as well as the effect Mitch had on the people of rural Nicaragua. Assessing the effects of a natural disaster on people who work and live on the land is key to building relief efforts that get to the core of the crisis. www.kidsgardening.com/ambassador/nicaragua99

Nicaraguan home gardens are typically characterized by the following:

- complex planting systems
- crops planted have multiple uses
- nutrient cycling
- indigenous crop rotation

These agricultural systems were dramatically altered when Hurricane Mitch
raged through Nicaragua, dumping four inches of rain per hour at the height
of the storm.

Huertos Caseros' History
To understand how vital home gardens (huertos caseros) are for sustaining families, and to understand what Hurricane Mitch destroyed, one needs to look at the socioeconomic role of agriculture and the ecological characteristics of the country. Home gardens, which are located in primarily tropical, humid parts of the country, have either clay loams (volcanic residue) or mountain soils. Gardens are carved out of hillsides, mountain tops, and rolling valleys. Gardens minimize soil erosion by rotating crops, growing a diversity of plant types, and using terraces.

A typical home garden provides three fundamental economic

functions:
agricultural practices and crops planted are adapted to the local growing conditions and don't rely on heavy uses of fertilizer, machinery, or pesticides; a wide variety of crops mean stable yields and nutritional diversity over a longer period of time than monocultures provide; crop rotation and other systems yield larger harvests with minimal technology and help prevent soil erosion.

Principle crops include the following:

- passion fruit
- fruit trees
- bananas and plantains
- local corn and bean varieties
- multi-purpose trees
- ornamental plants

The areas affected most by Mitch were located in the north and northwest regions of the country--home to some of Nicaragua's poorest residents who rely heavily on home gardens to provide food and medicine for their families. Mitch's floods wiped out entire agricultural areas (including plants, trees, seeds, and soil), leaving mud and debris behind.

Because home gardening is so tightly woven with Nicaragua's economic system, Mitch's havoc affected the entire socioeconomic health of Nicaragua. Hurricane Mitch erased all basic necessities for people living close to the land. Without food, fuel, or medicine, people are unable to pursue external work opportunities. A shortage of labor affects the tourist trades, large-scale agriculture and forestry businesses, manufacturing industries, and the U.S. economy. As the extent of Mitch's fury became apparent, many Nicaraguans reached out to family members working in the United States for immigration assistance or relied on other networks for immigration to the U.S.

Using Our Connections
Two years after Hurricane Mitch, Nicaragua's ecological, agricultural, and economic balances remain seriously askew. Restoring landscapes, agricultural systems, plus entire villages is a Herculean task. Mitch destroyed forests, agricultural infrastructures, wells, irrigation systems, and fertile lowlands bordering rivers and streams. Local knowledge and land management strategies were not destroyed in the hurricane, but most of the tools necessary for maintaining this culture were badly damaged.

Helping to rebuild Nicaragua's home gardens through people to people connections is a vital piece of the "Making Connections Through Gardening" project. Curriculum activities, in both Nicaragua and the U.S., provided opportunities for students to investigate such topics as agricultural practices, hunger and nutrition, environmental disasters such as Hurricane Mitch, deforestation, and other environmental problems. To learn more about the students' discoveries, visit our Web site: www.kidsgardening.com/ambassador/nicaragua99
To learn more about Nicaragua or to help with rebuilding efforts, visit these Web sites:

http://hurricane.info.usaid.gov/economic.html

http://members.tripod.com/~NicaSocial/geography.html

http://www.idex.org/latin_america/nicaragua/yalaguina.html

http://www.thehungersite.com

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international programs

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Our ability to instantly connect with someone on the other side of the world leads to the need for global knowledge; learning about other customs, cultures, and people keeps us connected. It is in that spirit that National Gardening Association and TechnoServe have joined forces, with funding from US/AID to bring students from the U.S. and Ghana together. The "Making Connections Through Gardening" project aims to further our understanding of the role gardening plays in sustaining cultures and countries.

Students in the U.S. will exchange information, personal histories and gardening knowledge with students in Ghana. K-12 grade classes have joined our "Ambassador Clubs" which provide thematic curriculum activities, email pen pal services, and up-to-date reports from Ghana.

Curriculum
- Theme 1
- Theme 2

Discussion Forum

Email pals
Feature Stories
Schools
Ghana at a Glance
Diversity in Ghana

Anastasi

Selina

Ezra

Gloria

Eric

We're the Same, Just Different

A Muslim in Ghana

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Ghana at a Glance

Ghana is located on the west coast of Africa, bordering the Gulf of Guinea, Cote d'Ivoire, and Togo. You'll find Ghana on this map. It occupies about 95,373 square miles, including Lake Volta--the largest man-made lake in the world. The Volta River basin dominates the country's waterways. Ghana's coast consists of plains and lagoons; the northern part of the country has primarily savannah and shrub vegetation, while the southern region is home to an extensive rain forest.

Curriculum
- Theme 1
- Theme 2

Discussion Forum

Email pals
Feature Stories
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Ghana at a Glance
Diversity in Ghana

A Country Rich in Resources

Ghana's natural resources have been harvested as early as the 1400s by Portuguese explorers and up to the present day by newly independent Ghanaians. (The British ceded control of Ghana in 1957 and left a coastline littered with castles.) Ghana's natural resources include:

- Aluminum
- Bauxite
- Diamonds
- Gold
- Timber

These resources provide a strong export industry for Ghana. Agriculture, forestry, and fishing make up another part of the economy; employing more than one-half of Ghana's population. The agricultural crops grown include:

- Bananas
- Cocoa (Cacao)
- Coffee
- Oil Palm trees

More than 50 percent of Ghana's arable land is used to grow cocoa--which provides between 60 and 75 percent of Ghana's export revenues.

Keeping It in the Country

The importance of using sustainable agricultural practices to grow a diversity of crops is often outweighed by the demand for production of exports. The difficulty in maintaining an agricultural balance lies in the demand for export products vs. the preservation of arable land to grow native crops for local consumption. As long as Ghana's economy depends on exporting goods, which includes large-scale agriculture and harvesting natural resources, less land will be available for local crop production, and the environmental stresses on the rainforest and savannahs will continue. For more about Ghana's crops and resources, visit this Web site.

In the Garden

Ghanaians rely on food grown in their homes gardens, and many schools have

gardens that the teachers and students tend throughout the school year. Staples grown in these gardens include:

In the North	In the South
Cassava	Corn (maize)
Taro	Millet
Yams	Rice
	Sorghum

Students and teachers work to prepare the soil, plant seeds, and harvest the crops. Extra produce is sold to local markets or taken home to the families. Gardening is as much a part of the curriculum as math or English.

Families work together to separate the palm tree fruits from the leaves.

Coming next: "Who is Who and What is What?" We'll take you to meet different ethnic groups in Ghana, explore rural life, and take a look at a typical day at school. For now, Akyiroo (until we meet again).

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international programs

Ghana: A Genuinely Diverse Culture

Curriculum
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Diversity in Ghana

Ghana is known as the "Land of Gold" because of its gold and mineral resources. Another rich resource in Ghana is the diversity of religious and cultural groups that make up its population. Within Ghana's 95,373 square miles, there are four major religions, five major ethnic groups, and at least nine languages, plus a myriad of regional languages and religions.

The people of Ghana belong to both the larger African family and to smaller ethnic groups. It is estimated, based on language, that there are at least 75 different ethnic groups in Ghana. The largest groups are: Akan, Dagomba, Ga, Gurma, and Ewe. (For more on the ethnic groups of Ghana, visit: ghanaweb.com.) Many of these groups migrated into Ghana within the last 700 to 1,000 years. Black Africans compose 99.8 percent of the population (18.9 million) in Ghana.

English is the official language of Ghana and is taught in most Ghanaian schools. In 1962 the government selected nine Ghanaian languages—Akuapem-Twi, Asante-Twi, Dagbani, Ewe, Fanti, Hausa, Ga, Kasem, and Nizima—in addition to English and French, for use in its educational institutions. Ghanaian languages often employ sayings and symbolism to convey meaning.

In English, adages such as *"Character is easier kept than recovered"* or *"A puff of wind and popular praise weigh the same"* convey meaning by using familiar phrases. Ghanaian languages also use proverbs to express familiar sentiments, ideas, or actions. A few Akan examples include: *"When a king has good counselors, his reign is peaceful." "By the time a fool has learned the game, the players have dispersed."* and *"The poor man and the rich man do not play together."*

Ghanaians also use pictographic symbols to express their cultural traditions. Adinkra is the highly regarded craft of hand-painting and hand-embroidering symbols on cloth to express Ghanaian aesthetics, ethics, human relationships, and religious concepts. The cloths are used to make clothing for such special occasions as festivals, church going, weddings, naming ceremonies, and initiation rites. A few examples of symbols and their meaning are:

AKOMA - The Heart. Symbolic of goodwill, patience, faithfulness, fondness, and

consistency.

ADINKRAHENE - One of the most powerful of the Adinkra designs. Symbol of greatness, prudence, firmness, and magnanimity. For more Adinkra symbols go to: adinkra_symbols.

People throughout Ghana still practice various traditional religions, but almost two-thirds of the population is Christian and one-sixth is Muslim. Many indigenous Ghanaian religions honor a higher power, which include natural phenomena and the deceased. Dead ancestors are considered omnipresent beings who are capable of influencing real-life events and acting as intermediaries between the living and the gods. Follow this link to learn more about indigenous religions in Ghana.

Coming next: Visit a rural Ghanaian village, learn some traditional recipes, and explore what students are studying in Ghana's schools.
Click here to read the first article, Ghana at a Glance.

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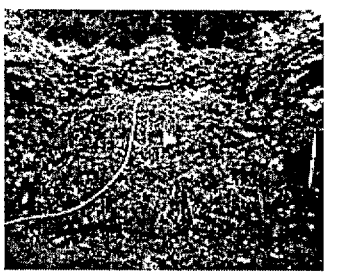
Last Updated: 11/22/00

Feature Article: What's Your Composting Personality?

by Charlie Nardozzi



When it comes to gardening style, there really isn't any right or wrong, just what works for you. From avant-garde to traditional, bold (orange and red annual borders) to subdued (textured shades of green around a pond), anything goes.
(click for full story)

Features	FAQ's
Natural Fuels	Putting Compost to Bed for Winter
Garden Science: Organic Matters	A Low-cost Composting Pen
Compost Happens	Amending Soil with Coffee Grounds
The Invisible Life of Soil	Bugs in Compost
	Cold Compost

Bi-Weekly Regional Reports
Click here for the current reports for your region

Select a Region
Go!

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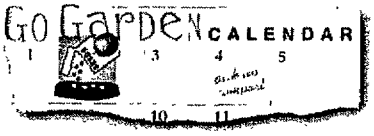
NGA's GoGarden! - Garden Events Calendar



IT'S FREE! Search hundreds of events by date, state, or keyword. News of your event will reach thousands who live in or who are traveling to your area.

Buyer's Guide

Seeds, tools, supplies and plants at your fingertips The new Buyer's Guide gives you easy-to-use hyperlinks to garden company Websites and fast e-mail forms so you can request a catalog or more information.

Making Connections Through Gardening

What is the impact of a natural disaster on food production in a country such as Nicaragua? How many ethnic groups are there in Ghana, and what kinds of food do they eat? Find out the answers to these questions and more through NGA's international program -- "Making Connections Through Gardening." Learn more about Nicaragua after the Storm or visit Ghana at a Glance.

Provided by NationalGardening.com, the online publisher of the National Gardening Association.

Attachment O

TechnoServe

- International Map
- Businesses That Last
- Investing in People
- ✓Educating Americans

In The Field

TechnoServe at a Glance
In The Field
Results
You Can Help
News Center
Resources

Home Page

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By "Making Connections Through Gardening," TechnoServe is helping students and teachers in the "developed" and the "developing" worlds connect with and learn from each other.

While many Americans care about the developing world in the abstract, they rarely think about it and may not feel that what happens "overseas" touches their own lives.

To help raise awareness and increase understanding about the developing world, TechnoServe and its partner, the National Gardening Association (NGA), are "Making Connections Through Gardening" between grade school students and teachers in the U.S., Nicaragua and Ghana. This two-year initiative is funded by a grant from the U.S. Agency for International Development through its Development Education program.

Agriculture and gardening are important activities the world over, and "Making Connections Through Gardening" uses them as the starting point for children from different countries to learn about each other's daily lives, diets, nutrition, gardening habits and culture.

During the 1999-2000 school year, kindergarten through 8th grade students in the U.S. and Nicaragua communicated with each other through the NGA's GrowLab curriculum, which included materials developed by NGA staff and photos and stories collected in the field by TechnoServe staff in Nicaragua. American students also formed Ambassador Clubs to communicate and share activities with one another and schools in Nicaragua. Participating teachers were encouraged to incorporate the curriculum materials into their social studies,

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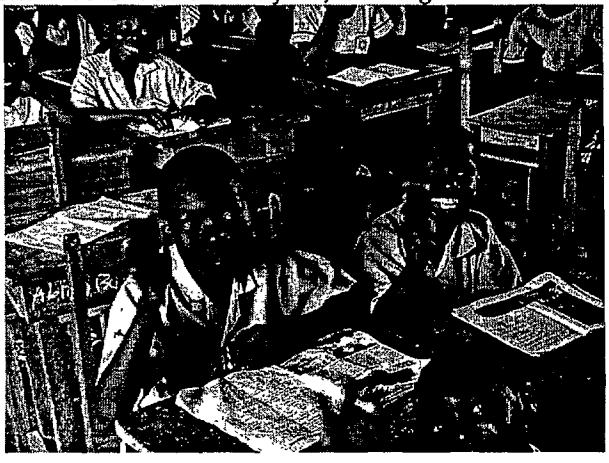
science and other relevant programs.

Click here to see photos and stories about children in Nicaragua, and learn about how important gardening and agriculture are in the developing world.

For the current 2000-20001 school year, "Making Connections Through Gardening" is focusing on Ghana, using photos, stories, "Web Quests" and curricular activities. Click here to learn more.



Through "Making Connections Through Gardening," TechnoServe and the National Gardening Association are also linking adults in the U.S. to people and issues in the developing world. In the next few weeks, an article about gardening, agriculture and related issues in Nicaragua will appear on the NGA web site.

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Attachment P

Curriculum Activities

THEME 1: "SENSE OF PLACE"

Freshman Geographer (K-4)
Junior Geographer (5-8)
Senior Geographer (9-12)

We all need a sense of place, something to remind us of our own community and our connection to the world. As global geographers, students will gain a clearer understanding of their place -- at home and around the world. By comparing Africa to other continents, to the US, and to individual states, students will develop a sense of place about Ghana and Africa. They will collect essential facts about the country, and continent, which will serve as a foundation for future world studies.

Laying the Groundwork

Ask students:

- What images come to mind when you hear the word Africa?
- Where did those images come from? (e.g., movies, magazines)
- How could we find out if these are accurate?
- Let's talk about how large Africa is compared to the US. Our home state.
- What would you like to know about Africa?

Construct a KWL Chart

On the board:

- Make four columns. Title the first column "What We Know/Have Heard;" second column, "What We Want to Know;" third column "What We've Learned;" fourth column, "Questions We Still Have."
- Fill out the first two columns with the class and leave the others to fill out at the end of the unit.

FRESHMAN GEOGRAPHER (Grades K-4)

Exploration

Materials needed: How Big is Africa? poster

- The places pictured inside the map of Africa include a continent, two countries and two states. Can you name them all?
- Make comparison statements about them. (Africa is bigger than...)
- How would you figure out how many times the U.S. can fit inside of Africa?

How many?

- Do the same with your home state and Ghana www.lonelyplanet.com.

Look at the map of Africa at: www.lib.utexas.edu/Libs/PCL/Map_collection/africa/Africa_ref802641_1999.jpg

- How many countries are there in Africa?
- How many states are there in US?
- Find where Ghana is located in Africa

Create a profile chart for Ghana:

- Brainstorm kinds of information (such as number of people, climate, agriculture crops) that would help you learn more about Ghana and write them on the board.
- Brainstorm categories for these items and put them into groups.
- Form classroom groups and assign categories for each group to research.
- Report each group's findings by creating a combined profile chart on the board.

Helpful sites:

www.lonelyplanet.com

www.ghana.gov.gh/

www.sas.upenn.edu/African_Studies/Country_Specific/Ghana.html

Making Connections

- Complete the information in your KWL chart.

Branching Out

How will you explain or show to your Ghanian school partners what you've learned about how their country compares with yours? What kinds of materials or examples will you send them to share this?

  - Reproduce a map of Ghana and your home state (same scale!) and paste in your state as many times as it will fit. Decorate it with state flower, bird, and other things. Send this to your school partner.

JUNIOR GEOGRAPHER (Grades 5-8)

Exploration

Materials needed: How Big is Africa? poster

- How would you figure out how many times the US can "fit" inside of Africa?

Calculate this.

- Do the same with Ghana www.lonelyplanet.com and your home state.
- How big is 11,668,545 square miles? What are other ways you could describe this size? (For example, Africa is over 11 billion football fields!)

Point to Point:

- Using a globe or atlas and the appropriate scale – either string (for the globe) or ruler (for the atlas) – determine the distance for:
  - Africa - Cairo to Capetown
  - Asia - Jerusalem to Tokyo
  - Europe - Lisbon to Uralsk

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  - North America - Churchill to Veracruz
  - South America - Caracas to Puerto Williams
- What do these measurements say about how the size of Africa compares to other places?

Africa's diversity:

- Africa is the second largest continent in the world, 15% of it is considered desert, 10% tropical rainforest, 35% savanna/grasslands. The rest of Africa includes Mediterranean climate, mountain climate, tropical wet and dry, rainy and mild, and wet and mild.
- Brainstorm other types of information (such as ethnic groups, agricultural crops) that would help you better understand the diversity of Africa.

Look at the map of Africa at:

www.lib.utexas.edu/Libs/PCL/Map_collection/africa/Africa_ref802641_1999.jpg

- Locate Ghana on the map of Africa and brainstorm ideas about how its location might affect such things as livelihood, agriculture, industry.
- Look at the map of Ghana in your classroom and discuss how the geography and climate of the country changes from north to south, and where major bodies of water are located.
- Brainstorm questions such as why the capital is located where it is; how is life different in different parts of the country; which areas are agriculturally rich or poor; and other questions that will help you learn more about Ghana.
- Brainstorm types of information (such as population, ethnic groups, climate) that would help you better understand and answer the above (population, average temperature and rainfall).
- Categorize this information into groups (people, government, environment)
- Form groups and assign categories for each group to research.
- Report each group's findings by constructing a profile sheet on the board.

Helpful sites:

www.lonelyplanet.com

www.ghana.gov.gh/

www.ontheline.org.uk/explore/journey/ghana/ghandex.htm

www.sas.upenn.edu/African_Studies/Country_Specific/Ghana.html

Making Connections

- Complete the information in your KWL chart.
- Choose another country in Africa and compare it to Ghana.
- How would you explain to someone why we can't make generalizations about Africa?
- How will you explain or show to your Ghanian school partners what you've learned about how their country compares with yours? What kinds of materials or examples will you send them to share this?

Branching Out

Map projections and perceptions:

Divide the class into three groups and assign each group a Goode, Mercator, or Peter's world map. Using their map, each group should answer these questions:

  - How many continents are there?

- What appears to be the largest continent?
- List the continents in order of size – largest to smallest.

Helpful sites:

www.webcom.com/~bright/petermap.html

www.diversophy.com/petersmap.htm

www.3datlas.com/download/maps/map_mercator.html

www.mapsinminutes.com/section_2/world_a/wgeopol.html

www.cosc.brocku.ca/Offerings/3P99/info/quake/DesignSpecs/MercatorWorldMap.html

- Discuss findings. Are there differences in the size and scale of the continents depending on whose map projection you are looking at?
- Research and find the size of each continent, in square miles, and list them in order of size from largest to smallest.
- Compare this list to the list you made from looking at your maps. Is there a difference?

SENIOR GEOGRAPHER (Grades 9-12)

Exploration

Materials needed: How Big is Africa? poster

- How would you determine how many times the U.S. can "fit" inside of Africa?

Calculate this.

- How big is 11,668,545 square miles? What are other ways you could describe this size? (For example, Africa is over 11 billion football fields!)
- Do the same with Ghana www.lonelyplanet.com and your home state.

Point to Point:

- Using a globe or atlas, and the appropriate scale -- string (for the globe) or ruler (for the atlas) – determine the distance for:
  - Africa - Cairo to Capetown
  - Asia - Jerusalem to Tokyo
  - Europe - Lisbon to Uralsk
  - North America - Churchill to Veracruz
  - South America - Caracas to Puerto Williams
- What do these measurements say about how the size of Africa compares to other places?

Africa's diversity:

- Africa is the second largest continent in the world, 15% of it is considered desert, 10% tropical rainforest, 35% savanna/grasslands. The rest of Africa includes Mediterranean climate, mountain climate, tropical wet and dry, rainy and mild, and wet and mild.
- Brainstorm other types of information (such as ethnic groups, agricultural crops) that would help you better understand the diversity of Africa.

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Look at the map of Africa at:

www.lib.utexas.edu/Libs/PCL/Map_collection/africa/Africa_ref802641_1999.jpg

- Locate Ghana on the map of Africa and brainstorm ideas about how its location might affect such things as livelihood, agriculture, industry.
- Look at the map of Ghana in your classroom and discuss how the geography and climate of the country might vary from north to south, and where major bodies of water are located.
- Brainstorm questions such as why the capital is located where it is; how is life different in different parts of the country; which areas are agriculturally rich or poor; and other questions that will help you learn more about Ghana.
- Brainstorm types of information (such as population, ethnic groups, climate) that would help you better understand and answer the above (population, average temperature and rainfall) questions.
- Categorize this information into groups (people, government, environment)
- Form groups and assign categories for each group to research.
- Report each group's findings by constructing a profile sheet on the board.

Helpful sites:

www.lonelyplanet.com

www.ghana.gov.gh/

www.ontheline.org.uk/explore/journey/ghana/ghandex.htm

www.sas.upenn.edu/African_Studies/Country_Specific/Ghana.html

Making Connections

- Complete the information in your KWL chart.
- How would you explain to someone why we can't make generalizations about Africa?
- How will you explain or demonstrate to your Ghanian school partners what you've learned about how their country compares with yours? What kinds of materials or examples will you send them to share this?

Branching Out

Empire visions:

- Calculate the relative size of various empires at similar times. For example, the Mali empire in the 1300's was the size of western Europe alone. Compare this to the Inca empire, and the Mongol empire that existed around the same time.

Helpful sites:

www.worldbook.com/fun/aajourny/html/bh015.html

www.school.discovery.com/students/homeworkhelp/worldbook/atozhistory/m/340230.html

www.sscf.ucsb.edu/~ogburn/inca/inca.htm

www.acs.ucalgary.ca/HIST/tutor/eurvoya/inca.html

www.geocities.com/Athens/Forum/2532/page9.html

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Mapmaker's dilemma:

Divide the class into three groups and assign each group a Goode, Mercator, or Peter's world map. Using their map, each group should answer these questions:

- How many continents are there?
- What appears to be the largest continent?
- List the continents in order of size – largest to smallest.

Helpful sites:

www.webcom.com/~bright/petermap.html

www.diversophy.com/petersmap.htm

www.3datlas.com/download/maps/map_mercator.html

www.mapsinminutes.com/section_2/world_a/wgeopol.html

www.cosc.brocku.ca/Offerings/3P99/info/quake/DesignSpecs/MercatorWorldMap.html

- Discuss findings. Are there differences in the size and scale of the continents depending on whose map projection you are looking at?
- Research and find the size of each continent, in square miles, and list them in order of size from largest to smallest.
- Compare this list to the list you made from looking at your maps. Is there a difference?
- Which map is most commonly used? Why? What are the reasons for using each?
- Which map do you think gives the fairest representation of each continent?
- Go to www.diversophy.com/petersmap.htm to learn more about the map controversy and the Peter's world map.

- All maps are distorted, explore the map maker's dilemma at www.nationalgeographic.com/maps/index.html, just click on "Round Earth/Flat Maps".

Stereotypes:

- Stereotypes often substitute for knowledge and cross-cultural understanding. Go to www.catalog.socialstudies.com/c/@ebMxQmNM_6K0g/Pages/article.html?article@SC1

04A for a lesson that examines African stereotypes of Americans.

- How would you go about examining your own stereotypes of Africans?

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Curriculum Activities

THEME 2: DIGGING INTO GHANA'S CULTURAL DIVERSITY

Freshman Geographer (K-4)
Junior Geographer (5-8)
Senior Geographer (9-12)

As the world — and our own classrooms — become more diverse, it's important to gain an appreciation for different cultures and ethnic groups. Students will gain a clearer understanding of ethnic groups in Ghana and use this experience to explore diversity in their own community. They will also investigate women's roles in Ghana, and the issue of world population growth, making connections to population issues in their own state and the U.S.

Laying the Groundwork

- Ask students: What do you know about the people who live in Ghana?
- How might lifestyles differ for different groups of people? (e.g. language, foods)?
- What would you like to know about different groups of people in Africa and Ghana?

Construct a KWL Chart on the board and fill out the first two columns with the class and leave the others to fill out at the end of the unit.

FRESHMAN GEOGRAPHER (Grades K-4)

Exploration

Materials needed: Map of Africa

Learning activities:

- Fill in the names of all the countries in Africa.
- Locate the homelands of the Asante people, and shade them with colored pencil.
- Find the homelands of other groups of people, such as the Banti, Fulanu, and Ewe, and shade them with different colored pencils.
- Make a list of the different groups of people living in Ghana today and find out where else in Africa they live.
- What is the official language of Ghana? Are other languages spoken there? What are they?
- What is the most commonly used non-English language in Ghana?

Helpful sites:
Discovery Theater
Ghana People Page
Ghana Language Page
Ethnic Groups page
Fanti People Page
Oxfam People & Society Page

Making Connections

- Are the homelands of the different groups of people in Africa and the boundaries of the countries the same?Why do you think they are different?
- Do some Web research to determine why.
- Look at the map that you made. If country boundaries were determined by where ethnic groups live, what are some other possible boundary choices for African countries. For Ghana?

- Brainstorm a list of everyday words and expressions that you use in English (How are you?, mother, father, and so on).Find out how to say them in Twi.
- Complete your KWL chart.

Helpful sites:
Africa in the Early 20th Century
Ohio State Black Studies Library
Ghana Language Page
Akan Names
Communicate with Ghanaians

Branching Out
Check out these Web sites to learn more about Ghanaian schools online:
School Gates
Africa Online
Africast.com
Epals.com

- Go to Kids' Africa to learn how to make your own Adinkra Cloth.
- What cloth or clothing is part of ceremonies or special occasions in your life? How can a piece of cloth be a symbol? What are some symbols of the United States (e.g., eagle)?
- Compose a message using Adinkra symbols and send it to your Ghanian school partners.
- Are there non-English languages spoken in your community? What are they?
- Look at the list of everyday words and expressions you brainstormed earlier. Can you say these in another language? Do you have a friend, classmate, or relative from another country who can help you learn how to say these in their language?

JUNIOR GEOGRAPHER (Grades 5-8)

Exploration

Materials needed: Map of Africa

Learning activities:

- Fill in the names of all the countries in Africa.
- Locate the homelands of the Asante people and shade them with colored pencil.
- Find the homelands of other groups of people, such as the Banti, Fulanu, and Ewe and shade them with different colored pencils.
- Make a list of the different groups of people living in Ghana today and find out where else in Africa they live.

Helpful sites:
Discovery Theater
Ghana People Page
Ghana Language Page
Ethnic Groups page
Fanti People Page
Oxfam People & Society Page

- Brainstorm kinds of information (language, religion, food, and so on) that would help you learn more about the different groups that live in Ghana and write them on the board.
- Select a group to research with two or three other students.
- Present your findings to the class by creating a profile of the people you chose.

Helpful sites:
About The Human Internet
Britannica.com
Art and Life in Africa

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Ashante History
Ghana Language Page
Ashanti Region-Ghana.com

Making Connections

- Are the homelands of the different groups of people living in Africa and the boundaries of the countries the same?
- Why do you think they are different?
- Do some Web research to determine why.
- Identify the European countries involved in colonial rule in Africa.
- Look at the map that you made. How would you determine what Ghana's boundaries were before colonial rule?
- Using different colored pencils, outline some possible pre-colonial boundaries for Ghana and discuss them with your classmates.
- Which ethnic group in Ghana is the largest? Most politically powerful? Economically wealthy?
- Based on your research of different ethnic groups, how do you think these groups interact with one another culturally, politically, and economically?
- Complete the information in your KWL chart.

Helpful sites:
Ohio State Black Studies Library
Africa in the Early 20th Century
Africa Community Watch

Branching Out

- Check out these Web sites to learn about Ghanaian schools online:
  SchoolGates
  Africa Online
  Africast.com
  Epals.com
- Brainstorm a list of the different ethnic groups that live in your community. Generate a list of questions that would help you learn more about them (e.g. What languages are spoken?).
- Select an ethnic group in your community to research with two or three other students. Use the questions you developed to interview members of a chosen group and report your findings to the class.
- Go to Kids' Africa to learn how to make your own Adinkra Cloth.
- What cloth or clothing is part of ceremonies or special occasions in your life? How can a piece of cloth be a symbol? What are some symbols of the United States (e.g. eagle)?
- Compose a message using Adinkra symbols and send it to your Ghanian school partners.

SENIOR GEOGRAPHER (Grades 9-12)

Exploration

Learning Activities:

- Make a list of the different ethnic groups living in Ghana today.
- Brainstorm kinds of information (language, religion, women's roles, and so on) that would help you learn more about Ghanaian ethnic groups and write them on the board.
- Select an ethnic group to investigate with two or three other students.
- Present your findings to the class by creating a profile of your ethnic group.
- Do some Web research on colonial rule of Ghana.

Helpful sites:
Ohio State Black Studies Library
Africa in the 20th Century
Africa Community Watch
ThinkQuest

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About The Human Internet
Britannica.com
Art and Life in Africa
Ashante History
Ghana Language Page
Ashante Region-Ghana.com
Adinkra Symbols
About Ghana Women
Africana.com

Making Connections

- Which ethnic group in Ghana is the largest? Most politically powerful? Economically wealthy?
- Based on your research of different ethnic groups in Ghana, how do you think they interact with one another culturally, economically, and politically?
- How were the different Ghanaian ethnic groups used in the colonial power's strategy?
- What was the impact of colonial rule on these ethnic groups?
- How did colonialism impact Ghana's agriculture? What persisting environmental issues resulted?

Branching Out

- Check out these Web sites to learn about Ghanaian schools online:
  SchoolGates
  Africa Online
  Africast.com
  Epals.com
- Ghanaian women suffer from health problems caused by the heavy loads carried for great distances on their heads. One proposed solution is bicycle use. Read more about this issue and go to Pedals for Progress to learn how your class or school can help. This could be a possible collaboration between you and your Ghanaian school partner.

Helpful sites:
Bicycles in Ghana
International Bicycle Fund

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Attachment Q

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Discussion Forum

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- Incorrect Email addresses -- Joan, 10/12/00
- Languages taught in school -- Tina Nilsen-Hodges, 10/3/00
  - RE: Languages taught in school -- payson bullard, 10/4/00
- slavery -- Heidi Rhea , 9/28/00
  - RE: slavery -- payson bullard, 10/3/00
  - RE: slavery -- Pamela Okyere, TechnoServe/Ghana, 10/5/00
- fruit trees -- Janet Wallace, 9/28/00
  - RE: fruit trees -- payson bullard, 10/3/00
- Soil and Water -- Cyndal Smith, 9/26/00
  - RE: Soil, water, birds, and bug juice -- Payson Bullard, 9/26/00
    - RE: Soil, water, birds, and bug juice -- Kristen Russell, 10/5/00
      - RE: Soil, water, birds, and bug juice -- Payson Bullard, 10/7/00
- Soil and Water -- Cyndal Smith, 9/26/00
  - Birds -- Cyndal Smith, 9/26/00
- fertilizers & pests -- tamara north, 9/21/00
  - RE: fertilizers & pests -- Payson Bullard, 9/21/00
- Area -- Mrs. Nelson - T., 9/21/00
  - RE: Area -- Payson Bullard, 9/21/00
- marigolds -- donna cycz, 9/20/00
  - RE: marigolds -- Payson Bullard, 9/21/00
- Tools for garden -- Janet Wallace, 9/20/00
  - RE: Tools for garden -- Payson Bullard, 9/21/00
    - RE: watering -- Payson Bullard, 9/21/00
- school day -- Cyndal Smith, 9/19/00
  - RE: school day -- Payson Bullard, 9/21/00
- Where I am in Ghana -- Payson Bullard, 9/19/00
  - RE: Where I am in Ghana -- Kristen Russell, 10/5/00
    - RE: Where I am in Ghana -- Payson Bullard, 10/7/00
- garden -- donna cycz, 9/16/00
  - RE: garden -- Payson Bullard, 9/17/00
  - RE: garden -- Payson Bullard, 9/18/00
- Welcome! -- Joan, 9/13/00
  - RE: Welcome! -- Kristen Russell, 10/5/00

Name:

Email Address:

Message Title:

Message:

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Map of Nicaragua

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