



TECHNOSERVE
Business Solutions to Rural Poverty

PD-ARW-074
113817

BOARD OF DIRECTORS

Miguel Bachrach
General Partner
Pareto Latin American Partners, L.P.

Gerald Baldwin
Chairman
Peet's Coffee & Tea

Jennifer Bullard Brogini
Director
FTI-Banque Fiduciary Trust, Geneva

Beth A. Brooke
Vice Chair
Strategic and Corporate Development
Ernst & Young, LLP

Michael J. Bush
President and CEO
Bully USA, Inc.

John B. Caron
President
Caron International

James W. Donley
Chairman
Donley Communications Corporation

Peter A. Flaherty
Director
McKinsey & Company, Inc.

Harold Howe, Jr.
Former Chairman
Hovee Furniture Corporation

Suzanne Nora Johnson
Managing Director
Goldman, Sachs & Co.

Thomas S. Kaplan
President
Tigris Financial Group Ltd.

Stace D. Lindsay
Managing Director
Explorador Capital Group

Robert L. Lumpkins
Vice Chairman
Cargill, Inc.

Scott D. MacLeod
Vice President
takira.com

William E. Mayer
Partner
Park Avenue Equity Partners, LP

James C. Orr
Managing Partner
James Orr Associates

Peter A. Reiling
President and CEO
TechnoServe, Inc.

Jerry A. Riessen
President
O.L.S. Energy

Paul Soros
Paul Soros Investments

Linda Srere
President
Young & Rubicam Advertising

Paul E. Tierney, Jr.
Managing Partner
Darwin Capital Partners, L.P.
Chairman, TechnoServe, Inc.

Hendrik A. Verfaillie
President and CEO
Monsanto Company

Raymond G. Vialt
Vice Chairman
General Mills, Inc.

Caroline Williams
Chief Financial Officer
The Nathan Cummings Foundation

March 29, 2002

Ms. Susan Saragi
Technical Officer
Development Education Program
USAID (BHR/PVC)
1300 Pennsylvania Ave., NW, 7th Floor
Washington, DC 20523

Dear Susan,

On behalf of TechnoServe and the National Gardening Association (NGA), I am pleased to send to you the Final Report on our 1999 Development Education Grant (FAO-A-00-99-00051-00), "Making Connections through Gardening."

Both of our organizations found this work to be rewarding for the participants and for our staff. As we mention in the sustainability section, teachers who contact the NGA for teaching materials are given the curriculum and the stories that were developed for this program. They continue to find them useful and eye opening for their classrooms.

If we need to provide you additional information, please let me know. Thanks again for this rewarding partnership.

Sincerely,

Laura J. Johnson
Director of Marketing

Cc: Gloria White (USAID), Joan White (NGA), Mara Neville (TechnoServe's Manager of Communication and program officer for this grant)

Enclosures

A



TECHNO SERVE
Business Solutions to Rural Poverty

Making Connections through Gardening FINAL REPORT TO USAID March 29, 2002

Project Narrative

The Making Connections through Gardening program aimed to accomplish the following three objectives:

Project Objectives:

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 how 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.

Year Two of our Making Connections through Gardening program focused on connecting American school children with school children in Ghana. TechnoServe has been working in Ghana since we began our very first international project there in 1969. Today TechnoServe is assisting local farmers and entrepreneurs to build sustainable businesses in the Pineapple, Cashew, Palm Oil, Grains, Legumes and Shea Butter industries. TechnoServe staff based in the Ashanti region of Ghana contacted 35 primary and junior secondary schools in and around the city of Kumasi. Our local professionals developed relationships, conducted in-depth interviews, and took hundreds of photographs with students, teachers, parents, and community leaders from these schools.

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 and Ghanaian children. Information made available on the web site covered many topics including but not limited to: what the schools were like, what students overseas 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 Ghanaian school gardens and Nicaraguan *huertas* (home gardens) and about typical gardening techniques, including composting, terracing and the use of fumigants and herbicides. As part of the web site, colorful maps of Nicaragua and Ghana identified the countries' major cities and regions including areas that were the focus of our DevEd program. (See Attachment A. for Nicaragua and Attachment B. for Ghana)

The photos and stories of the Nicaraguan and Ghanaian children also provided U.S. students and educators with a vivid and powerful description of the poverty that exists in the developing world. 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 in the U.S. signed up to participate, in order to study and exchange information with the students and schools in Nicaragua. In our Year Two program those numbers increased more than fourfold as 240 Ambassador Clubs representing 75 teachers and 5,382 students in the U.S. signed up to participate, in order to study and to exchange information with students and schools in Ghana (**Attachment C**).

The NGA sent each of the Ambassador Clubs participating in both years of the program an introductory package of materials that included a map and flag of the country being studied, 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 D**). 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 E**).

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 could 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 provided 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 F**)

For Year Two of our program, the NGA again developed a series of five separate curriculum activities to enrich U.S. students' learning experience about Ghana. These curriculum activities provided U.S. students with opportunities to gain a clearer understanding of:

- Their sense of place at home and in relation to the world
 - Ethnic groups in Ghana and diversity in their own community
 - Women's roles in Ghana, the issue of world population growth and making connections to population issues in their own state and in the U.S.
 - Ghanaian agriculture from four perspectives: home gardener, farmer, environmentalist, and nutritionist.
- (**Attachment G**)

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 bi-weekly to 20,000

general gardening audience recipients) and *KidsGarden* (sent monthly 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 published on www.nationalgardening.com. All materials--except for some pages of the introductory package distributed to all "formal" participants of the Ambassador Clubs program by the NGA related to teachers and students--were 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 the existing GrowLab 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 listserve newsletters: *KidsGarden*, in November of 1999 (15,000 educator recipients), and *GardenWire* in January of 2000 (20,000 general gardening audience recipients). Announcements for the second year of the program were also sent out via these newsletters: *KidsGarden* in October, 2000 (15,000 recipients), and *GardenWire* in October, 2000 (20,000 recipients). A bulletin was also posted in the January 2001 issue of the NGA's education newsletter *Growing Ideas* (60,000 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). *The Global TeachNet* newsletter, (a bimonthly teacher resource from the global education networks of the National Peace Corps Association (NPCA) and the Association for Supervision and Curriculum Development (ASCD), also picked up the announcement.

(Attachment H.)

TechnoServe also published stories about our **Making Connections through Gardening** program in the Winter 1999 issue of its *World* newsletter (19,000-plus individuals nationwide), the November 2000 issue of *Boafo* (550 readers in Ghana), and the Fall 2001 issue of *World* newsletter (22,000 recipients). TechnoServe's old web site also contained an article about the program (1,000 visits). TechnoServe's new web site has an entire section with articles about the program and with links to USAID and to the NGA. (Attachment I).

In Year One of the program fifteen American classrooms representing 540 students participated in both pre- and post-program surveys (Attachment J). (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 the stated objectives, 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 K).

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 if the program were to be repeated.

Year Two pre- and post-test results and teacher evaluations revealed a significant increase in students' knowledge of Ghanaian agriculture, environmental issues, and the importance of development programs in Ghana. Twenty-seven

teachers submitted both pre-test and post-test mean scores and there was a significant increase in students' knowledge of Ghana agriculture, agricultural practices, environmental problems, and cultural awareness. (Attachment L)

Teacher-participant surveys from the Ghana component of the program revealed that the curriculum and other Web-published materials were extremely successful in meeting the stated objectives, and expanding student awareness of agriculture in the developing world and environmental global effects.

The majority of teachers responded that the program's curriculum was extremely effective in building problem solving skills and an understanding of important issues facing developing countries such as Ghana. They felt, however, that the project was a somewhat or not at all successful in connection the American students with their Ghanaian partners via traditional mail. Some Ambassador Clubs attempted Pen pal correspondence, but in most cases a response was never received. The few classrooms that did receive response notified NGA staff that they were told by their Ghanaian partner had difficulty financing the mailing they received. Additionally, a series of letters received by one school in the U.S. from Ghanaian students was posted on the web site and received more than 3,200 visitors. (Attachment M)

Also in the Year Two program teachers answered a survey designed to test their agreement with U.S. foreign assistance at the beginning and end of the program to measure their change in attitude.

- In response to the first statement: *The environmental impacts of agricultural and garden practices in Ghana impact our lives here in the U.S.*, the majority agreed or strongly agreed, while 20 respondents answered that they didn't know. In the post-survey, no respondent answered that they didn't know.
- In response to question 2: *U.S. foreign assistance efforts benefit people living in the U.S.*, the majority agreed in the pre-survey, and the three who disagreed changed to agree in the post-survey.
- In response to question 3: *What percentage of the federal budget do you believe goes toward foreign aid?*, the majority of respondents answered 1-5% in the pre-survey and in the post-survey.
- In response to question 4: *What percentage of the federal budget do you believe should go toward foreign aid?*, the majority answered 1-10% in the pre-survey and the post-survey.
- And in response to last question: *On the whole do you favor or oppose our giving economic aid to other nations?*, in the pre-survey the majority was in favor, and again in the post-survey, the majority was in favor. (Attachment N)

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 O).

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 P) 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". Since September, 2000 five articles have been published on this same site: *Nicaragua After the Storm*, *Ghana: A Genuinely Diverse Culture*, *Far Away Country*, *Schools in Ghana*, and *Ghana at a Glance*. Links to these articles were posted on the homepage of NationalGardening.com and on each page of the Ambassador Club section of the KidsGardening web site and these articles have received 2,590 visits. (Attachment Q). An article about the program was also published in the *Gardens for All* newsletter (3,000 recipients). The program was also mentioned in the NPO Spotlight Foundation Center Web site. (Attachment R).

A premium of gardening tools was offered on the NGA web site, and announcement in *GardenWire* (20,000 recipients) in January, 2000 to draw the NGA audience to participate in a survey measuring awareness of development issues in Nicaragua and 478 people participated. Participants rated their knowledge of agricultural and environmental issues particular to Nicaragua. On a scale of 1 (low) to 10 (high), the mean response was 2.4. The same participants were asked to take the same survey in follow-up and 42 responded. A mean answer of 5.2 indicated an increase in participant knowledge of these issues.

A premium of a library of gardening books was offered on the NGA web site and *GardenWire* (20,000 recipients) in January, 2001 to draw the NGA audience to participate in a survey measuring agreement with U.S. foreign assistance efforts in developing countries. Given the small response, another announcement was sent out in February on *GardenWire* (20,000 recipients). In total the response was very low with only 35 people responding, none of whom returned to take the follow-up survey after articles were posted. This may have been due in large part to the fact that the web site was undergoing redesign and construction at that time, making it difficult for people to connect. (Attachment S)

As was previously mentioned, TechnoServe also published a story about **Making Connections through Gardening** program in the Winter 1999 issue of its *World* newsletter (19,000-plus individuals nationwide), the November 2000 issue of *Boafo* (550 readers in Ghana), and the Fall 2001 issue of *World* newsletter (22,000 recipients). TechnoServe's web site (www.technoserve.org) 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 I).

Results for the three objectives based on Performance Indicators:

Performance 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 and Ghana are; b) How children in these countries live; c) How children in the developing world use gardening in their everyday lives.

Results:

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 both years one and two 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 for each of the two years of the program 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.
- Publishing an article in the *Growing Ideas* newsletter (60,000) in January of 2001 to stimulate interest in the www.kidsgardening.com web site.
- Publishing an article in the *Gardens For All* newsletter (3,000) to update the status of the program by summarizing the Nicaragua phase and promoting the upcoming Ghana stage.

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 has 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 **Making Connections through Gardening** 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, examples of which are 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, (Attachment K.)

"The Ambassador Club is an incredible resource for us. The Web materials, the curriculum, and the themes provide great potential for educating students and teachers about the cultures, needs, and development issues of other countries. We learn through a better understanding of these issues," (by Tina Nilsen-Hodges, an Upper Elementary Lead teacher at The Susquehanna School in Binghamton, New York. (Attachment T)

"We have noticed a dramatic improvement in the program this year, the Ghana Ambassador Club curriculum has helped raise our level of awareness and knowledge about other countries and helped the students zero in on different subjects." (Dr. Mary Phillips, an environmental studies teacher at the Lake Waco K-12 Montessori School in Waco, Texas. (Attachment T)

As previously described, TechnoServe also devoted a section of its web site to the program (it received over 1,000 visitors from September 2000 to December 2001), 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 stories about the program in the Winter 1999 issue of its *World* newsletter (19,000-plus individuals nationwide), the November 2000 issue of *Boafo* (550 readers in Ghana), and the Fall 2001 issue of *World* newsletter (22,000 recipients). 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 from Indicator 1, 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 D contains the Ambassador Club introductory packages for Nicaragua and Ghana. Each Ambassador Club was sent an introductory package which for the 2000/2001 Ghana program also included: a map and flag of the country; 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 G**).

As previously mentioned Year Two pre- and post-test results and teacher evaluations revealed a significant increase in students' knowledge of Ghanaian agriculture, environmental issues, and the importance of development programs in Ghana. Twenty-seven teachers submitted both pre-test and post-test mean scores and there was an increase in the total mean from 47.7% on the pre-test to a score of 83.3% on the post test. This represents a significant increase in students' knowledge of Ghanaian agriculture, agricultural practices, environmental problems, and cultural awareness. (**Another attachment L**)

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 commonalities, 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 have formally participated 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 shared curriculum materials, learning and activities with other teachers and students in their schools. We also believe, based on the inquiries 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 accessed 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 newsletter;
- In October of 2000 another 15,000 educators received announcements about the program in the *KidsGarden* newsletter;
- These program announcements were also carried by at least two other online newsletters that are distributed to educators nationwide (*Schoolyard* and *Schoolgarden*).

In addition to these announcements 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 to 22,000 subscribers).

Three feature stories on Ambassador Clubs were published on the KidsGardening Web site and received 6,300 visitors. These articles were also published on the *KidsGarden* listserv newsletter (15,000 recipients) and the *GardenWire* listserv newsletter (20,000 recipients). Additionally, the Discussion Forum was especially popular with teachers, who used it most when TechnoServe staff was visiting the schools in Ghana. The participation of TechnoServe staff, knowledge about the Ghanaian culture, on the Discussion Forum meant that teacher and student questions received valuable responses in a timely manner. (**Attachment U**)

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.

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.

As previously mentioned the NGA placed a survey on their web site and *GardenWire* (20,000 recipients) newsletter in January, 2000 to measure the awareness of development issues in Nicaragua. 478 participants rated their knowledge of agricultural and environmental issues particular to Nicaragua. On a scale of 1 (low) to 10 (high), the mean response was 2.4. The same participants were asked to take the same survey in follow-up and 42 responded. A mean answer of 5.2 indicated an increase in participant knowledge of these issues. (Attachment S)

Again in January, 2001 a premium of a library of gardening books was offered on the NGA web site and *GardenWire* (20,000 recipients) newsletter in January, 2001 to draw the NGA audience to participate in a survey measuring agreement with U.S. foreign assistance efforts in developing countries. Given the small response, another announcement was sent out in February on *GardenWire* (20,000 recipients). In total the response was very low with only 35 people responding, none of whom returned to take the follow-up survey after articles were posted. This may have been due in large part to the fact that the web site was undergoing redesign and construction at that time, making it difficult for people to connect.

Project Sustainability

The curriculum and stories will remain indefinitely on the National Gardening Association's website, which receives 50,000 visitors monthly. In addition, teachers around the country contact the NGA daily looking for materials to use in their classrooms. The NGA continues to refer all inquiries from teachers to the site and they hear back from a few who use the information and provide feedback.

Lessons Learned:

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 U).

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 K.)

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 G). As a result, there are 18 Ambassador Clubs for Ghana representing 460 9th-12th-grade students.

Lesson Learned #4:

Teacher surveys indicate that the project was somewhat, or not at all successful, in connecting the American students with their Ghanaian partners via traditional mail. Some Ambassador Clubs attempted pen pal correspondence, but most of the Ghanaian children did not respond. Cultural differences and the lack of an adult present that was aware of this and dedicated to the process, offers some explanation. In the future, it may be wise to involve children in foreign countries that have access to the Internet and email.

Lesson Learned #5:

Response to surveys for the adult NGA audience and visits to articles published on the Web side could be increased by creating a special listserv newsletter that goes out to survey participants monthly. This email newsletter would notify them of articles at time of publication on the Web site, and include hot links to Web sites posting information that would increase their awareness of U.S. foreign assistance to developing nations.

Lesson Learned #6:

Response to students' letters could be increased by covering postage for the developing country partner in the budget, or asking U.S. classrooms to donate the postage to their partner.

Recommendations

The only recommendation we would make is to lengthen the grant period beyond two years because participation by U.S. citizens would be much greater if we had information on previous years to use to market to them.

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

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project](#)
[E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua

Andrea

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



Andrea also lives in the El Espino community. Her family is a little more fortunate than 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.

Click on photos to enlarge view





Ambassador Clubs



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

Map of Nicaragua

Ana Maria

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



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 because 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



Anamaria



Edwin



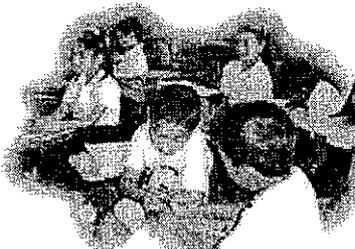
Julio



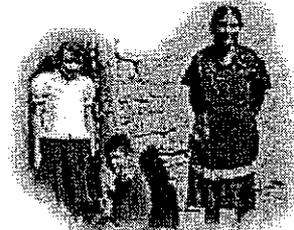
Yellin

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua

Teresa

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



Hurricane Mitch destroyed all of the crops and land in the El Espino community, where Teresa de Jesus lives. Since the storm hit in 1998, they have made very little progress toward restoring their land and crops, and have suffered further damage from tropical storms in 1999. The family had a vegetable garden located about 50 meters from their house before this disaster, but 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, and 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 winter ("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 vegetable 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 people get sick, they have to go to the health centers in the neighboring communities of San Marcos – a half-hour walk – and San Rafael – a two-hour walk away. This is very difficult when people are too sick to walk, or when mothers have to carry their sick children. Sometimes, once they do arrive, there is no medicine at the health center for their illnesses.

Anamaria



Edwin



Julio



Yerlin

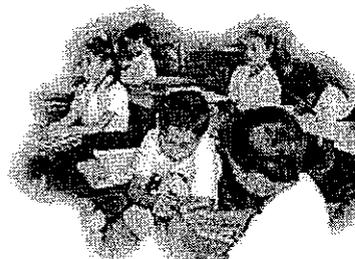
Water in El Espino is scarce and of poor quality (contaminated by the latrines). Teresa's family uses well water for washing clothes and bathing. Drinking water is brought in on foot from the nearest community, Suni. In fact, this is one of Teresa's favorite activities because she also sees friends there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



Click on photos to enlarge view

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua *Sheila is seven years old*

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa

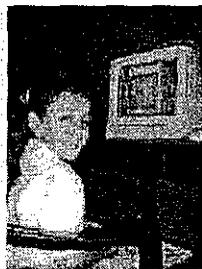


Andrea



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 (pronounced hee-no-tay-ga) in northern Nicaragua, which has a population of 300,000.

When Nicaragua was at war, small units of 25 to 30 men and women were established for fighting purposes all around Jinotega. After 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 members 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 a farmer who raises onions, tomatoes, and beans. The children help him with planting, watering, fumigating, harvesting, and drying the onions. Her mother is an elementary school teacher in a neighboring community. Sheila has two brothers and one sister, and all of them, including Sheila, are in primary school.



Anamaria



Edwin

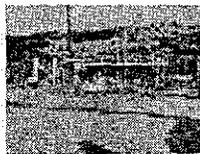
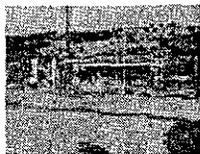


Julio



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.



Click on photos to enlarge view

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved

17



Ambassador Clubs



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

Map of Nicaragua

Araceli is eleven years old

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



Araceli is eleven years old. She 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 oven. 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 of poor quality and it has a yellowing color. They use this for everything (washing clothes and corn, bathing, watering the corn) except drinking. Drinking water is 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



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. When she grows up, she wants to go to Jinotega to work.

Click on photos to enlarge view

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua

Omar is fourteen years old

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



Omar is fourteen years old. He lives with his mother, father, and four brothers and sisters in the I Espino community. His father is 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 by doing so. He says that slugs are a problem in the bean crop, and that "cuerudos" (small pests) eat the onions. Omar says they use agrochemicals for pest control

but mentions no specific names. He also describes the terraces they have to build 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. In order to watch television, they have to go to a friend's house in San Marcos, which is two kilometers away. 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 to be a coffee harvester because they earn a good living, and because he wants to know what it is like.

Click on photos to enlarge view

Anamaria



Edwin



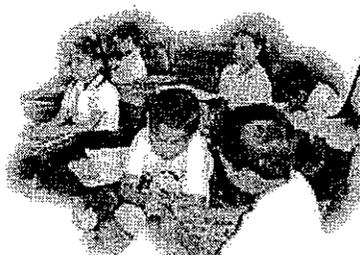
Julio



Yeilin

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua

Maryuri is eleven years old

Stories:



Araceli



Omar



Maryuri



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.



Sheila



Teresa



Andrea



Anamaria



Edwin



Julio



Yellin

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

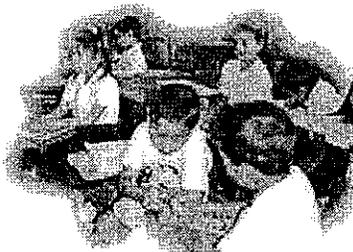


they have potable water, the supply is not constant. She uses a hose to get water for the house. She also makes the beds, washes dishes, and sweeps. There is no electricity in the community, but they are able to watch television with the use of a car battery.

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.



Click on photos to enlarge view



Ambassador Clubs



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

Map of Nicaragua

Julio Ismael

Stories:



Araceli



Omar



Marvuri



Sheila



Teresa



Andrea



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 t 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.

Click on photos to enlarge view



Anamaria



Edwin



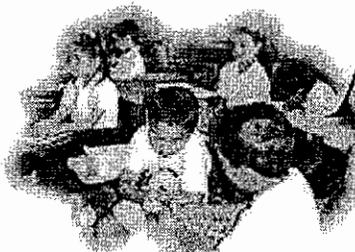
Julio



Yeilin

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua

Yeilin Maria

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



Yeilin Maria loves to study and 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 her 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 plow 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, and 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. Their 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).



Click on photos to enlarge view

Anamaria



Edwin



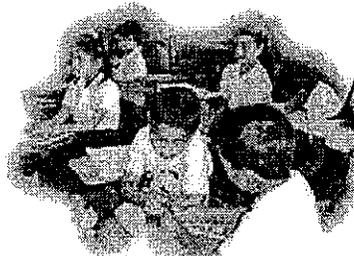
Julio



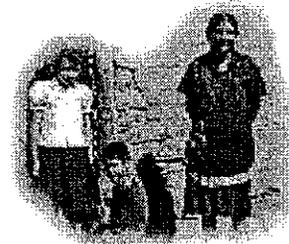
Yeilin

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved



Ambassador Clubs



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

Map of Nicaragua *Edwin Mercado*

Stories:



Araceli



Omar



Maryuri



Sheila



Teresa



Andrea



Edwin Mercado enjoys school, but 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 tropical 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 is 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 water filters to purify it.



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).

Anamaria



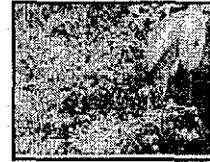
Edwin



Julio



Yellin



Click on photos to enlarge view

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

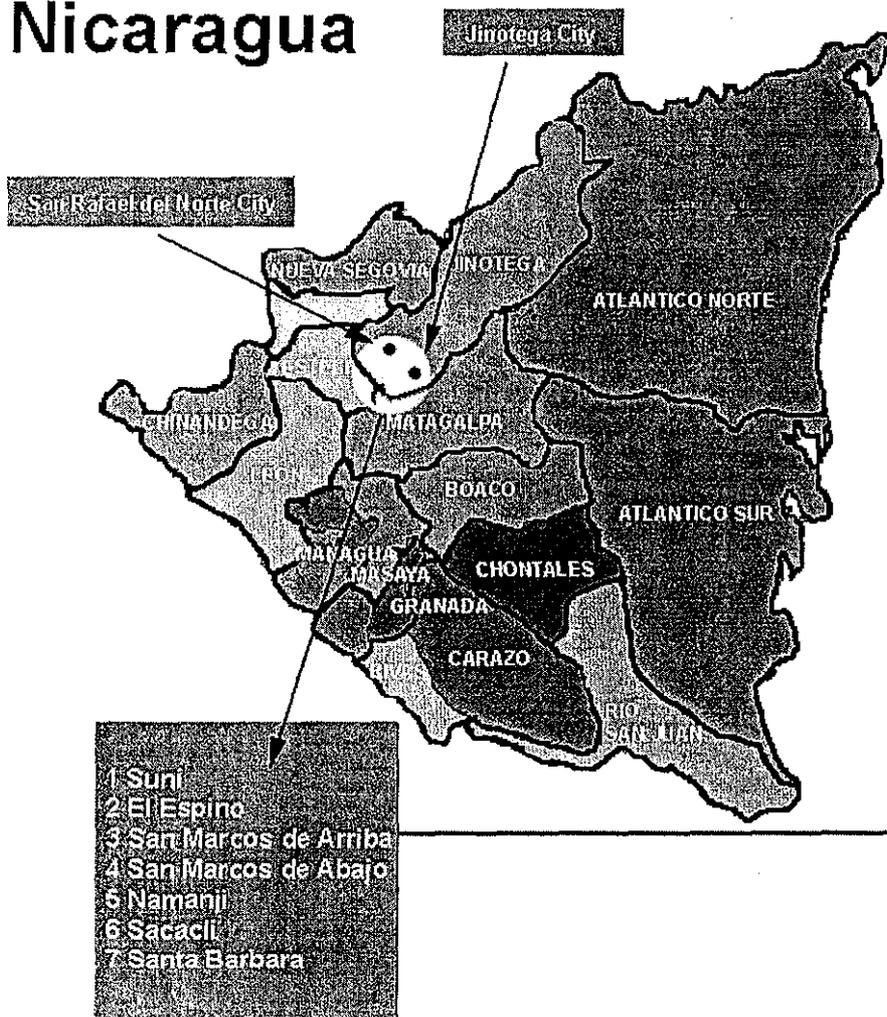
© 2000 Kidsgardening.com All rights reserved

kidsgardening.com

international programs

home families teachers store digging deeper search

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](#)

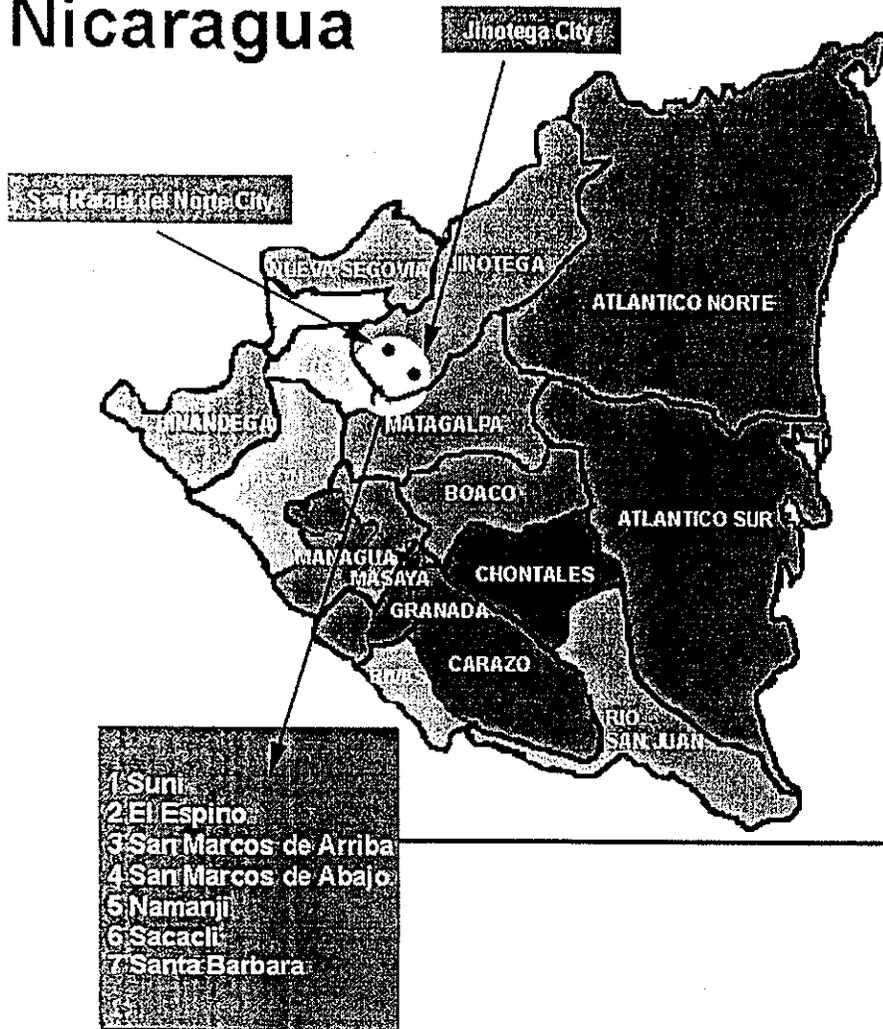
© 2000 Kidsgardening.com All rights reserved

gardening.com

international programs

home families teachers store digging deeper search

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](#)

© 2000 Kidsgardening.com All rights reserved

Attachment B

kidsgardening.com

international programs

[home](#)

[families](#)

[teachers](#)

[store](#)

[digging deeper search](#)

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.

- [Curriculum](#)
- [Discussion Forum](#)
- [Email pals](#)
- [Feature Stories](#)
- [Schools](#)
- [Ghana at a Glance](#)

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.



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same. Just Different



A Muslim in Ghana

[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](#)

© 2000 Kidsgardening.com All rights reserved

Attachment B

kidsgardening.com

international programs

[home](#) ● [families](#) ● [teachers](#) ● [store](#) ● [digging deeper sea](#)

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.

- [Curriculum](#)
- [Discussion Forum](#)
- [Email pals](#)
- [Feature Stories](#)
- [Schools](#)
- [Ghana at a Glance](#)

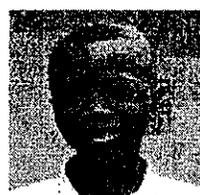
Students in the U.S. will exchange information, personal histories and gardening knowledge with students in Ghana. K-12 grade classes have joined our "Ambassador Clubs" which provide thematic curriculum activities, email pen pal services, and up-to-date reports from Ghana.



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same, Just Different



A Muslim in Ghana

[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](#)

© 2000 Kidsgardening.com All rights reserved

kidsgardening.com

international programs

home families teachers store digging deeper sea

Feature Stories **A Muslim in Ghana**



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same. Just Different

Islam is seen as one of the youngest of the world's religions. Followers of Islam are called Muslims. "Muslim" is an Arabic word that refers to a person who submits themselves to the "Will of God." There are approximately 2 million people in Ghana who are Muslims (there are about 6 million Muslims in North America). Usman Musah is a young Muslim, who is 15 years old and attends 6th grade at Ayigya Metropolitan Assembly school.

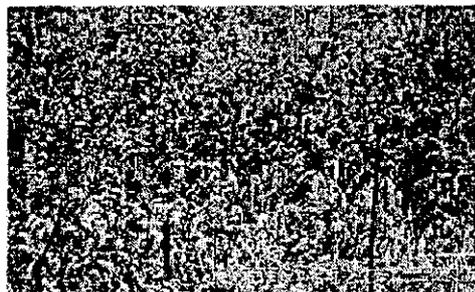


Everyday, Usman goes to the *makatranta* (mosque) to learn how to read and write the Koran which is Arabic. (Muslims believe that the Koran is the book of Allah sent for the guidance of humanity through the last Prophet Muhammad.) As a Muslim, Usman must go to *makatranta* once a day and say his prayers five times a day at 5 a.m., 1:30 p.m., 3:30 p.m., 6:30 p.m., and 7:30 p.m. His school has a morning session and an afternoon session. Some students go to school in the morning and some go to school in the afternoon, then they switch after two weeks. If Usman goes to school in the afternoon, he has to go to the mosque in the evening. He prefers the morning session of school so that he can go to the *makatranta* in the afternoon.



Usman lives in Kumasi, in a section called the "zongo," a name given to any Muslim community within the Ashanti region of Ghana. He speaks some Twi and English, but his native language is Hausa.

Ayigya Metropolitan Assembly school's garden is fairly large and contains alternating rows of maize and cassava planted by the students and teachers. Usman has learned that the cassava's leaves and seeds return nutrients to the soil, which the maize uses to grow big stalks with juicy ears of corn. Usman likes to plant and weed the garden, and he enjoys harvesting the crops to sell at market.





A Muslim in Ghana

Corn growing in the school's garden is ready for harvesting.

For more information on the different religions of Ghana, visit
www.wsu.edu:8080/~dee/CIVAFRCA/GHANA.HTM.

[Curriculum](#)

[Discussion Forum](#)

[Email pals](#)

[Feature Stories](#)

[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](#)

© 2000 Kidsgardening.com All rights reserved

kidsgardening.com
international programs
 home families teachers store digging deeper search

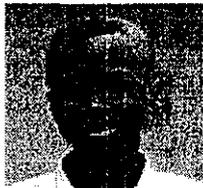
Feature Stories Primary Schools in the Ashanti Region of Ghana



Anastasi



Selina



Ezra



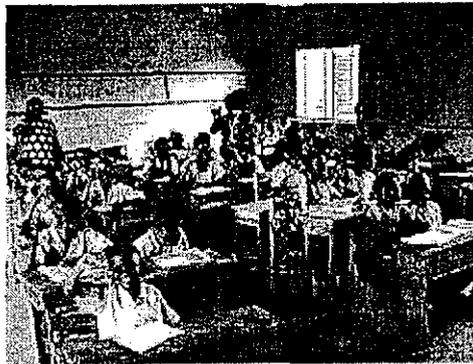
Gloria



Eric



We're the Same. Just Different



National Gardening Association's reporter in Ghana, Payson Bullard, is now in Ejisu, Ashanti Bin the south central region of Ghana. Take out your maps and travel along with Payson as he visits different schools and meet the students in L/A "Primary School" Class 1 and Fumesua Anglican "Primary School."

Anastasi Asamoah has 56 students in her sixth grade class at L/A "Primary" school. The school is about a mile away from Anastasi's house; she and her brother walk to school and back home every day. Anastasi is eleven years old. Her favorite subject is environmental science, and she is also very interested in math and English. When she grows up, Anastasi wants to be a doctor--like her sister who is studying medicine in Toase.



She also likes gym class because the girls play a game called "AMPE" which is a combination of hopscotch, jump rope, and tag.

School begins at 7:30 a.m. with a school-wide assembly. After assembly the students walk to their classrooms singing songs. The songs are in "Twi" (the native language of the Ashanti region) and are spiritual marching songs with phrases like "we are moving forward to attain a goal." For more on Ghana languages, visit this Web site:

<http://cwr.utoronto.ca/cultural/english/ghana/commun.html>.

School is over at 2 p.m. After school, Anastasi goes home to help with the household chores. One of her jobs is to go to the "bore hole" (the local well) to fill buckets with water for use at home. She also helps in the family's garden. The family rents a field to grow cassava (the roots may be used to make tapioca pudding), plantain (small bananas), maize (corn), and yams (sweet potatoes). Some of the food grown is sold for extra income, but most is eaten by Anastasi's family.

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Feature Stories

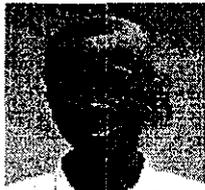
Primary Schools in the Ashanti Region of Ghana



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same. Just Different



National Gardening Association's reporter in Ghana, Payson Bullard, is now in Ejisu, Ashanti Bin the south central region of Ghana. Take out your maps and travel along with Payson as he visits different schools and meet the students in L/A "Primary School" Class 1 and Fumesua Anglican "Primary School."

Selina Owusu is an 11-year-old student in the L/A "Primary" school's sixth grade. She has 46 students in her class and 320 students in her school. Selina's favorite subjects are English and environmental science. She and her friends spend hours playing "LIDU" which is like the familiar American game "Snakes and Ladders." Selina enjoys doing her homework because, if she has a problem with something, she can get help from her family or neighbors in the apartment building where she lives.



Selina helps her mom cook dinner--rice and bean stew--on a coal pot.

Selina lives on the second floor of an apartment building with a grocery store and whole-sale store on the first floor. Her family lives in a two-room apartment with a living room, and a bedroom. There is a communal kitchen that everyone in the building uses to prepare meals. Imagine sharing your kitchen with people in your neighborhood. How would dinner time change for your family?

A coal pot is a funnel shaped piece of iron that holds a cooking pot on top of a bed of hot coals. For a look at some Ghanaian recipes, visit this [Web site](#).

Selina loves working in the gardens at home and at school. The family's home garden grows vegetables and fruits, such as plantain (small bananas), peppers, maize (corn), and yams (sweet potatoes). The garden at Selina's school has many different types of

flowers and plants.

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Feature Stories Primary Schools in the Ashanti Region of Ghana



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same. Just Different



National Gardening Association's reporter in Ghana, Payson Bullard, is now in Ejisu, AshantiBin the south central region of Ghana. Take out your maps and travel along with Payson as he visits different schools and meet the students in L/A "Primary School" Class 1 and Fumesua Anglican "Primary School."

Ezra Adu-Appiah is an 11-year-old student at the Fumesua Anglican "Primary" school. Ezra is in the fourth grade and wants to grow up to be a math teacher. Math and soccer are his favorite subjects in school. Ghana has a famous soccer player, Abedi Pele, who is Ezra's sport hero.

When Ezra plays soccer, he pretends he *is* Pele because he has seen Pele play on television (he is only allowed to watch TV during the weekend and on Mondays and Wednesdays). For more information on soccer in Ghana, visit [this Web site](#).

Before going to school Ezra has to do chores, such as fetching water and cleaning up from breakfast. When he gets to school, he must help sweep the school grounds and tend the garden. The students--fourth grade and higher--learn how to plant crops, take care of the plants, harvest the fruits and vegetables, and sell them at the market.



Ezra plays soccer every chance he gets.

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Feature Stories

Junior Secondary Schools in the Ashanti Region of Ghana



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same. Just Different



Welcome to National Gardening Association's continuing report from Ghana. Payson Bullard, our intrepid reporter from TechnoServe, is now in Besease, Ashanti—in the south central region of Ghana. Take out your maps and travel along as meet a student in Holy Spirit Preparatory JSS, a private "Junior Secondary" school.

Gloria Ampomaa is 14 years old and in "form three," similar to America's 7th grade. She attends a private "Junior Secondary" school with her sister Diana. Gloria's favorite subjects are science, Twi, and French. To learn a few Twi phrases, [visit this web site](#). Her school has a foreign language teacher (most public schools have language teachers who teach English and Twi), so Gloria can learn many different languages. It takes Gloria about 15 minutes to walk to school each morning. She lives in the town of Kwahu, where her family has a big farm. They have goats, sheep, and chickens. They raise the chickens to sell the eggs and newly-hatched chicks to other farmers.



The playground is used by both the Primary and Secondary school students.

The family's farm grows many crops: cassava, maize, plantains, cocoyam (like potatoes or taro—a root crop), and cocoa. If Gloria could meet anyone in the world, it would be Kofi Annan, the Secretary General of the United Nations, and a Ghana native. She would ask his advice on how she, and others, could make their country better and how he got his job. Click here for [more about Annan or the United Nations](#).

kidsgardening.com

international programs

[home](#)

[families](#)

[teachers](#)

[store](#)

[digging deeper search](#)

Feature Stories

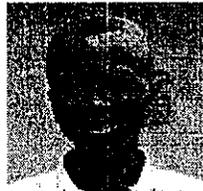
Junior Secondary Schools in the Ashanti Region of Ghana



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same, Just Different



Welcome to National Gardening Association's continuing report from Ghana. Payson Bullard, our intrepid reporter from TechnoServe, is now in Juaben, Ashanti—in the south central region of Ghana. Take out your maps and travel along as we meet a student in Juaben Methodist "Junior Secondary" school.

Eric Opoku-Serebour is 13 years old and attends "Junior Secondary" school, which is similar to America's junior high school. Eric has 300 students in his school and 13 teachers for 6 classrooms. Eric's favorite teacher is Mr. Kwadwo Owusu, his math teacher.

Besides math, Eric studies history (click here for [the history of Ghana](#)), English (he writes most of the school newsletters), and Vocational Skills, where he learns restaurant management, food preparation, and service. He likes to make a dish called "Ampesi," which consists of sliced and boiled yams or plantains served with *komtomire* (spinach). His studies also include music, religion, and technical drawing.



Every Friday, his class spends a few hours taking care of the school gardens. The students rake, water, and weed—using machetes—both the garden beds and the surrounding school grounds. The plants for the gardens are transplants from teachers' and students' home gardens. Before planting, the students add fertilizer and compost to the beds. Eric likes to weed and water.



In the town next to his home, Eric's father has a large grove of orange trees. The oranges are harvested from September through November. Eric works at the grove on weekends during harvest time.

The school supplies hand rakes and spades, but students are encouraged to bring their own gardening tools.

kidsgardening.com

international programs

home families teachers store digging deeper sea

Feature Stories We're the Same, Just Different



Anastasi



Selina



Ezra



Gloria



Eric



We're the Same. Just Different



Mrs. Victoria Sewaa-Aboagye teaches the thirty-two students in class five at Presby Primary school. Most of the students are 13 to 14 years old and have a lot of impressions about America. All of the students have seen a white person (*obruni*), but only one has met and spoken to an *obruni*. The students explained that there were not many white people in Ghana because white people are not native to their country. Most of the students

knew there were both white and black people in America.

The Ghanaian students thought that most kids in the U.S. went to school but some did not because they couldn't pay the fees for school. (Ghana's schools are free, but fees are required for uniforms, books, and supplies.) The Ghana students were very interested in discussing the fact that not all Americans are wealthy.

Computers were of special interest to the Ghanaian students; they wished that they all had computers in their classrooms, like they imagined classrooms in the U.S. They were very surprised to learn that not all Americans own, or have access to, computers.



Animals seem to be the common thread that most closely ties the Ghanaian students to Americans. Ghanaians love animals, and the students thought that in the U.S., pets were held in high esteem, as well. Cats, dogs, monkeys, and Tonoos (a large beetle) were listed as common household pets. One student had a monkey named "*Nyame Akwan*" (God's way in Twi). Many of the names the students give their pets have religious significance. Monkeys are captured from the forest and raised as domestic pets, but often they are returned to the forest when they become too big and unruly. The students knew that birds and fish are common pets in the U.S., but in Ghana no one would keep them as pets because they are considered wild and untamable.



The Ghanaian kids didn't know the stripes on the U.S. flag represented the thirteen original colonies, but quickly understood that the fifty stars symbolized the fifty states. The class explained the meaning of the Ghana flag. The three stripes represent: green for lush forests and vegetation; gold because Ghana is

41



A Muslim in Ghana

united spirit of the people of Africa.

Ambassador Club students in Ghana and the U.S. are learning that there are many similarities between kids from different cultures, and the differences in everyday lives are to be celebrated.

the 'Land of Gold'; red for the blood shed in the fight for independence. The black star in the center is for the

[Curriculum](#)

[Discussion Forum](#)

[Email pals](#)

[Feature Stories](#)

[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](#)

© 2000 Kidsgardening.com All rights reserved

Attachment C

Nicaraguan Ambassador Clubs	# clubs	Students	Grade level
1. Cherie Stihler 520 5 th 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 Ouill Ceda Elementary 2415 74 th 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. 22 nd 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 Cheshire, CT 06410 <u>TCAjello@aol.com</u>	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 |

Ghana Ambassador Clubs

NAME/ADDRESS	EMAIL	GRADE LEVEL	NUMBER OF CLUBS AND STUDENTS
Aiken, Martha 2811 Regenwood Murfreesboro, TN 37129	MrsAmcs@aol.com	Sixth	100 (4 classrooms)
Ajello, Tracy Doolittle School 735 Cornwall Cheshire, CT 06410	<u>tajello@cheshire.k12.ct.us</u> TCAjello@aol.com	Fifth	23
Allred, Cindy 230 Monmouth St. Hightstown, NJ 08520	allredgr6@rps1.org TenneyV@aol.com	sixth	9
Alvite, Tony 3620 Taraval St. Apt.2 San Francisco, CA 94116	<u>ama54@webtv.net</u> aalvite@muse.sfusd.edu	eighth	20
Bush, Sara P. 21 Coolidge Road Ayer, MA 01432	spricker@yahoo.com	fourth	20
Baur, Elaine 12252 Carpenter Rd. Flushing, MI 48433	<u>ebaur@aol.com</u> strobert@tir.com	seventh eighth	36 (two classes) 32
Brelsford, Addie P.O. Box 182 210 North Trenton St. Rutherford, TN 38369	jamebrel@iswt.com	kindergarten	20

Bowen, Carol Hampton Elementary 10 Central Avenue Hampton, GA 30228	wmbcpb@aol.com	fifth	50 (2 classes)
Capozzoli, John Queens Intermediate 1112 Queens Rd. Pasadena, TX 77502	jcapo85@hotmail.com	eighth	180 (6 classes)
Clark, Lorraine Arco Elementary School PO Box 675 250 Sunset Arco, ID 83213	lorrclar@hotmail.com	second	20
Conway, Betsy 9024 Oxbow Livonia, MI 48150	bconway@livonia.k12.mi.us	Fifth	25
Crane, Sue John J. Pershing IS 220 4812 9 th Ave. Brooklyn, NY 11220	<u>sscrauel@juno.com</u> crane8@rocketmail.com	eighth	60 (2 classes)
Crocker, Nancy PO Box 873801 Tempe, AZ 85287-3801	Nancy.Crocker@asu.edu	fifth	30
Cycz, Donna Green River Elementary 60 Meridian Street Greenfield, MA 01301	dcycz@massed.net	fourth	25

End, Jim 5366 Dutch St. Dundee, NY 14837	jend@hport.wnyric.org	sixth	25
Goldstein, Ethel 26 Orchard Lane Westford, VT 05494	etthejet@juno.com	3/4 multiage	22
Hamilton, Dorothy 116 th Street School 11610 Stanford Street. Los Angeles, CA 90815	DHamil2276@aol.com	fifth	28
Hardy, Maritom 107 Eden Street Laurens, S. Carolina 29360	MHardy@laurens55.k12.sc.us	fourth	50
Harnick, Mary Mechanicstown Elementary 435 East Main St. Middletown, NY 10940	marhar@warwick.net	third	24
Larro, Carol 318 Ninth Ave. Haddon Heights, NJ 08035	carrollarro@hotmail.com larropc@erols.com	fourth	24
Luck, Jill 18701 W. Thomas Road Litchfield Park, AZ 85340	luck@lesd.k12.az.us	Fifth	30
Luca, Les 508 Grand Ave. Newburgh, NY 12550	Smile4Les@aol.com	eighth (special ed)	

Machulak, Ramona 32737 6 th Avenue SW Federal Way, WA 98023	rmachula@osd.wednet.edu	2-5	60 -4
Martinec, Jo Ann Carder School State Street Corning, NY 13830	MOM1MARTaol.com	first	22
Matthews, Leslie Forrest Elementary 7300 Cottage St. Philadelphia, PA 19136	lesliemattthews@juno.com	fourth	33
McGinnis, Patty 350 Old Schuylkill Road Pottstown, PA 19465	Mcgfamily5@aol.com	seventh	125 (5 classes)
Nelson, Emily Darby Elementary 12051 London Road Derby, Ohio 43117	ENeely2@yahoo.com	fifth	50
O'Dwyer, Delia	OEYE4GOT@aol.com		
Okwesa, Gerrie Stuart Hobson Museum Middle School 410 E Street, N.E. Washington, D.C. 20002	gokwesa@hotmail.com	seventh	50 (2 classes)

Park, Norm Dine College P.O. Box 727 Faculty Hogan C-4 Tsaile, AZ 86556-0727	nwpark@yahoo.com	five seven college freshman	15 15 30 (2 classes)
Patrick, Aimee 3100 Ewing Ave. Altadena, CA 91001	ap_dakinihaven@yahoo.com aplaia@mindspring.com	six seven eight	25 25 25
Phillips, Mary Lake Waco Montessori Magnet School 3005 Edna Ave. Waco, TX 76708	mphillips@mail.waco.isd.tenet.edu	one-seven (multiage)	180
Redl, Niki 11401 3 rd Ave. SE Apt. 04 Everett, WA 98208	Niki_Redl@msvl.wednet.edu	five six	30 30
Rhea, Heidi SLU Lab School SLU 10832 Hammond, LA 70402	hrhea@selu.edu	six seven eight	27 27 27
Rhoads, Carol West Elementary School 450 West Buchanan St. Carlinville, IL 62626	2kerhoads@accunet.net	third	17
Smith, Cheree' 2808 Bilglade Rd. Ft. Worth, TX 76133-161	csmittysmit@yahoo.com	homeschool -eighth	1

Smith, Georgia Sunflower Elementary 8955 Loiret Lenexa, KS 66219	georgiasmith@smsd.org	fifth	100 (4 classes)
Stihler, Cherie P.O. Box 84988 Fairbanks, AK 99708-4988	stihler@northstar.k12.ak.us	Fifth	
Thompson, Ginny Anderson Middle School 200 W. Woodford St. Lawrenceburg, KY 40342	gthomps@Anderson.k12.ky.us	Eighth	150 (5 classes)
Wallace, Janet North Waco Elementary 2015 Alexander Ave. Waco, TX 76708	janwall@swbell.net	three-five (gifted)	24
Weisenberger, Mike 1365 South Grade Road Hutchinson, MN 55350	mikew@hutch.k12.mn.us	Seventh	130
Wright, Katie 7802 Kingbee St. Downey, CA 90242	katiewri@yahoo.com	sixth	60
Wuebben, John 522 Northridge Lane Appleton, WI 54914	<u>wuebbenj@aol.com</u> <u>wuebbenjohn@asds.k12.wi.us</u>	seventh	25
Burnett, Cynthia 2800 Cold Springs Trail Marietta, GA 30064	CBurnett@aischool.org	Kinder	45

Briggs, Brenda	bbriggs@laurens55.k12.sc.us	Fourth	25
Tourzan, David Pinehurst School 395 Granite St. Ashland, OR 97520	dtour@jeffnet.org	6-8 3-5	15 10
Whitfield, Catherine 2213 Pembroke Dr. Albany, GA 31707	cwhit@surfsouth.com	K-5	100 (5 classes)
Farrell, Shirley Leeds Elementary 201 Ashville Rd. Leeds, AL 35094	sfarrell@jefcoed.com	fifth	26

Morgan, John Crockett Elementary 704 Burnett Crockett, TX 75835	jmorgan@esc6.net	5-6	300
Ney, Cathy 801 Crestwood Dr. Blacksburg, VA 24060	cney@vt.edu	3-5	500(20 classes)
Rosenthal, Miriam 10061 Riverside Dr. #253 Toluca Lake, CA 91602	miriamrose@earthlink.net	Ada, Ghana contact.	
Boone, Wanda 18701 W. Thomas Road Litchfield Park, AZ 85340	boone.w@lesd.k12.az.us	second & third	44

Yeoman, Lynda Bloomfield School of Global Studies 1125 16 th St. Suite 201 Arcata, CA 95521	lyeoman@nohum.k12.ca.us	First	40 (2 classes)
Stovall, Vickie Whitesville Elementary 9656 Highway 54 Whitesville, KY 42303	Stovalls@dellnet.com	K-5	6
Dohner, Nikki Milton Hershey School 6425 Chruchill Road Harrisburg, PA 17111	Dohnern@mhs-pa.org	sixth	80 (5 classes)
Kelloway, Julie 1818 Comanche Court Junction City, KS 66441	jak@oz-online.net	seventh	100 (4 classes)
Abernathy, Janice East Elementary 71 Columbia Ave. Greenville, PA 16125	abernethy@pathway.net	fifth	22
Bauer, Joanne 705 Grantham Court Southampton, PA 18966	jbauer@neshaminy.k12.pa.us	Third	28
Pfeffer, Donna P.O. Box 5189 Lake Montezuma, AZ 86342	rudi@kachina.net	K-3 garden club	40

Harbushka, Carol 721 E. Via Elena Goodyear, AZ 85338	charbushka@earthlink.net	2-5	140
North, Tamara Highlands School 190 Hobart St. Danvers, MA 01923	tamarao@mediaone.net	fourth	51 (three classes)
Doucette, Judy Ferry Pass Elementary 8310 N. Davis Highway Pensacola, FL 32514	doucette_j@popmail.firm.edu	fourth/fifth multi	17
Vogel, Robyn 4080 Falls Ridge Drive Alpharetta, GA 30022	robynliz@aol.com	parent interested - send intro package so she can talk to teacher in Sept.	
Michet, Joanne 720 4 th St. SW Rochester, MN 55902	jmichet@home.com	seventh	150
Frantz, Debra Halifax Elementary School 3940 Peters Mountain Road Halifax, PA 17032	rfrantz@pa.net	fifth	25
Cooney, Debra Lido Elementary 237 Lido Boulevard Long Beach, NY 11561	Tchlongbch@aol.com	fifth	40 (2 classes)

55

McCurdy, Bonita Albion Grade School 361 W. Main St. Albion, IL 62806	mac4@midwest.net	seventh	75 (3 classes)
Keith, Michelle Antioch School P.O. Box 79488 N. Dartmouth, MA 02747	AntiochSchool@skybiz.com	K-8	62 (8 classes)
Milford, Robert F. P.O. Box 1952 Crystal River, FL 34423	robertmilford@hitter.net	K-5	600 (24 classes)
Bailey, Donna Ivymount School 11614 Seven Locks Road Rockville, MD 20854	bonbeers@yahoo.com	multi	13
Gardner, Luanne 2717 Greenwood Road Rock Hill, SC 29730	dgardner@rjsonline.net	multi	15
Rody, Carla Cross Creek School 1010 NW 31 st Ave. Pompano Beach, FL 33069	carrogues@yahoo.com	1-12	180 (15 classes)
Spinnato, Gail 217 Shelley Dr. McComb, MS 39648	spinnato@telapex.com	k-2	

Desmond, Kathryn Highland Christian Academy 1301 North Highland Ave. Clearwater, FL 33755	ddesmond@tampabay.rr.com HCASharks@aol.com	second	10
Bush, Sara Jane 21 Coolidge Road Ayer, MA 01432	spricker@yahoo.com sarbush@ayer.mec.edu	fourth	20
Square, Tikera 12358 Plymouth Dr. Baton Rouge, Louisiana 760807	Mshuhbra@aol.com	first	24
Rosenberger, Bonnie 721 Cottonwood Dr. Lincoln, NE 68510	brosen@lps.org	fifth	
Goss, Doug Hazel Dell Elementary 850 W. Lake Shore Dr. Springfield, Il 62707	dgoss@springfield.k12.il.us	Fourth Fifth	25 25
Dowling, Dianne 454 North Shore Road RR4 Gananoque, Ontario K7G2V6	dowling@simpatico	four/five	21
Hampton, Tracy Boys & Girls Club P.O. Box 8896 Naples, FL 34101	(941)430-1562 (941)430-1573 (fax)	K-12	250

Slournoy, Melvin Prairie View Elementary 1700 SE 35 th Ave. Gainesville, FL 32641	flournma@sbac.edu	K-4	40
Nilsen-Hodges, Tina susquehanna School 75 Pennsylvania Ave. Binghamton, NY 13903	nishodg@pronetisp.net	fifth/sixth seventh/eighth fourth second/third Kinder	13 14 12 13 10
Hall, Catherine Milton Hershey School P.O. Box 830 Hershey, PA 17033-0830	associated with Nikki Dohner somehow		
		240	5,382

AS

Making Connections Through Gardening

Ambassador Club Kit

(Nicaragua)



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

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



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,

A handwritten signature in black ink, appearing to read "Joan White", is written over a horizontal line.

Joan White

Bringing gardens and people together

“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.

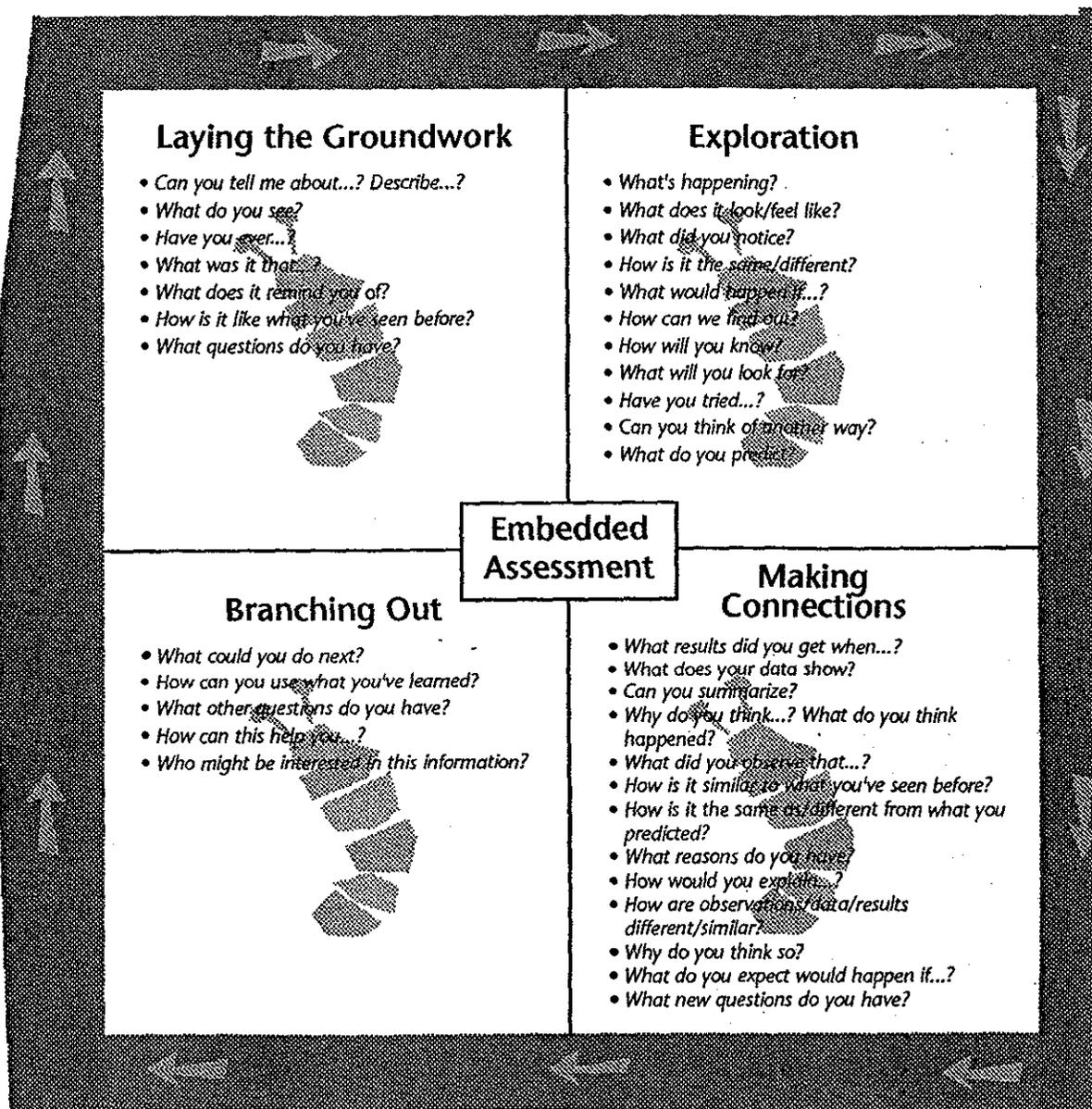
Developed and supported by TechnoServe and the National Gardening Association.

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.

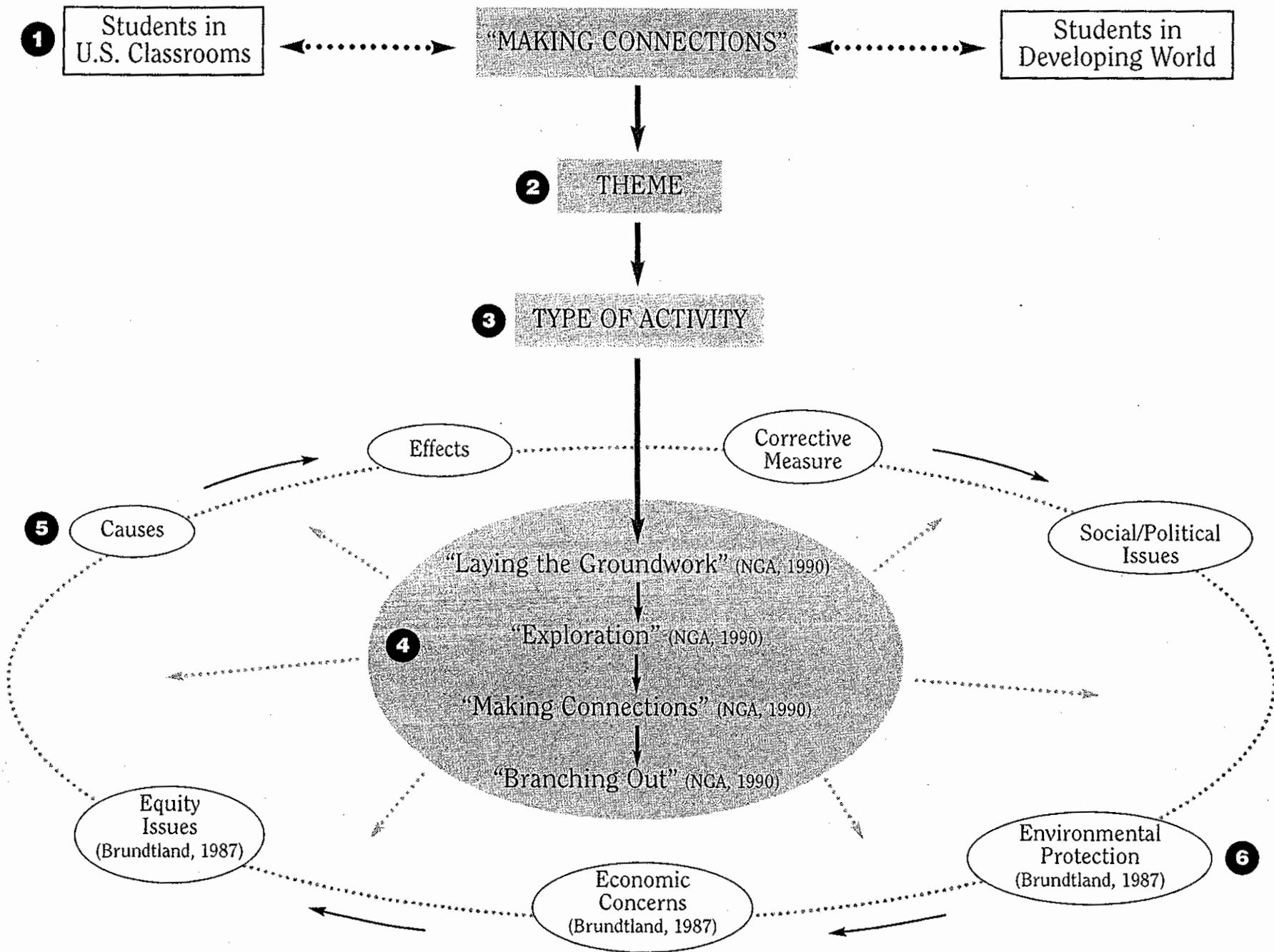
National Gardening Association has been working with 500,000 children and 25,000 educators who are involved in their GrowLab program.

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.



OVERVIEW



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. "Plan 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 2000THEME: *"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 2000THEME: *"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 2000THEME: *"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 2000THEME: *"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 2000THEME: *"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. Raising 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/factbook/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.org/17749/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

*Making Connections Through
Gardening*

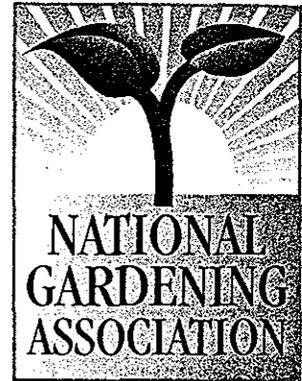
**Ambassador
Club Kit**

(Ghana)



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

1100 Dorset Street
South Burlington, VT 05403
Phone: (877) 538-7476
(802) 863-5251
Fax: (802) 864-6889
www.kidsgardening.com



August/Sept '00

Dear Teacher,

Welcome! As an Ambassador Club in the *Making Connections Through Gardening* program, your students will increase their knowledge of Ghana and learn about the vital roles of gardening and agriculture.

Every other month we will provide new photos, stories, and a thematic curricular activity on our Web site for you and your students. These themes include: *Sense of Place*, *Who's Who and What's What*, *How does your garden grow?*, *The Air We Breathe*, and *Tell Me a Story*. Remember this is supplementary curricular material and you may need to adapt it somewhat to your needs. Have fun with it. Evaluation is a very important component in this project. In addition to the pre- and post-test for students, you need to submit (email or snail mail) a KWL chart at the end of each thematic unit.

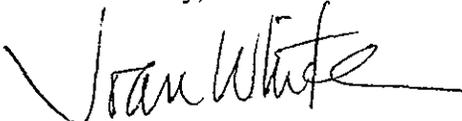
This Ambassador Club kit is your guide to the program, please review all of the materials carefully. You will find:

- Letter of Understanding – This letter outlines your obligations in participating in the program. Please read it carefully and return it signed to me by August 31st.
- Overview – Provides you with a complete overview of the program.
- Program Goal and Objectives
- Time Line – Organized by date and theme, gives you a sense of what subject matter will be covered, and serves as a reminder to send tests, and KWL chart.
- Questioning Through Teaching/Learning Cycle – Gives you an overview of the methodology used in developing the curricular activities.
- KWL chart – Please make five copies of this. Please fill it out as part of each curricular activity and submit it to me (email or snail mail).
- Pre-test/Post-test – Please administer this short test to your students, calculate the grades and determine the mean grade. Email the mean grade only to me by September 31st.
- Map and Flag of Ghana – These are for you to hang up in your classroom.
- How Big Is Africa? poster – Mailed separately, you will receive a 24" x 31" poster of Africa for use in the first curricular activity, *Sense of Place*.
- Theme 1/*Sense of Place* – The first theme is included here as hard copy.
- Suggestions for Teaching About Africa – Eric Clearinghouse for Social Studies.

Our partner, Technoserve, is presently in Ghana visiting villages and schools and signing them up. At the end of September, your Ambassador Club will receive the name of your school and the mailing address to communicate with them. At that time you will be able to register online at our Web site www.kidsgardening.com where you will find all future curricular activities.

On behalf of the collaborative effort of 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 jownw@kidsgardening.com.

Sincerely,

A handwritten signature in black ink that reads "Joan White". The signature is written in a cursive style with a long horizontal stroke at the end.

Joan White
Program Director

PROGRAM GOAL AND OBJECTIVES

GOAL: Students and educators will increase their knowledge of the developing world, global interconnections between people and the environment, and the common need for natural resources and solutions to environmental degradation.

OBJECTIVES:

Students will:

- Learn about the vital roles of gardening and agriculture in Ghana, and compare them with their own.
- Explore environmental issues and how problems and solutions cross boundaries.
- Enrich their cross-cultural awareness and appreciation for cultural differences.
- Develop a geographical, environmental, and social “sense of place.”
- Gain an understanding of interdependence.
- Assess how their new knowledge can empower them to make a difference in their world.

MAKING CONNECTIONS THROUGH GARDENING OVERVIEW

Making Connections offers an interdisciplinary education program for grades K-8 that will increase the knowledge of U.S. students and educators about the developing world, in particular the country of Ghana. Teachers and students will enrich their learning about Ghanaian agricultural and gardening practices and their environmental impact, diet and nutrition, society and culture. The program will provide opportunities for Ambassador Club students to exchange knowledge and ideas with other Ambassador Clubs and Ghanaian students via mail and online discussions.

At our Web Site, participating teachers and students will be provided with photos and stories from Ghana, curricular activities, a discussion forum, and *email pals*. Photos and stories from Ghana will highlight the everyday lives of Ghanaian students and their families. The discussion forum will foster communication between participating teachers and students, providing an opportunity to share project ideas, resources, and challenges. *Email pals* gives participants a means to connect with other U.S. classrooms and schools outside of the program who are engaged in garden-based education projects.

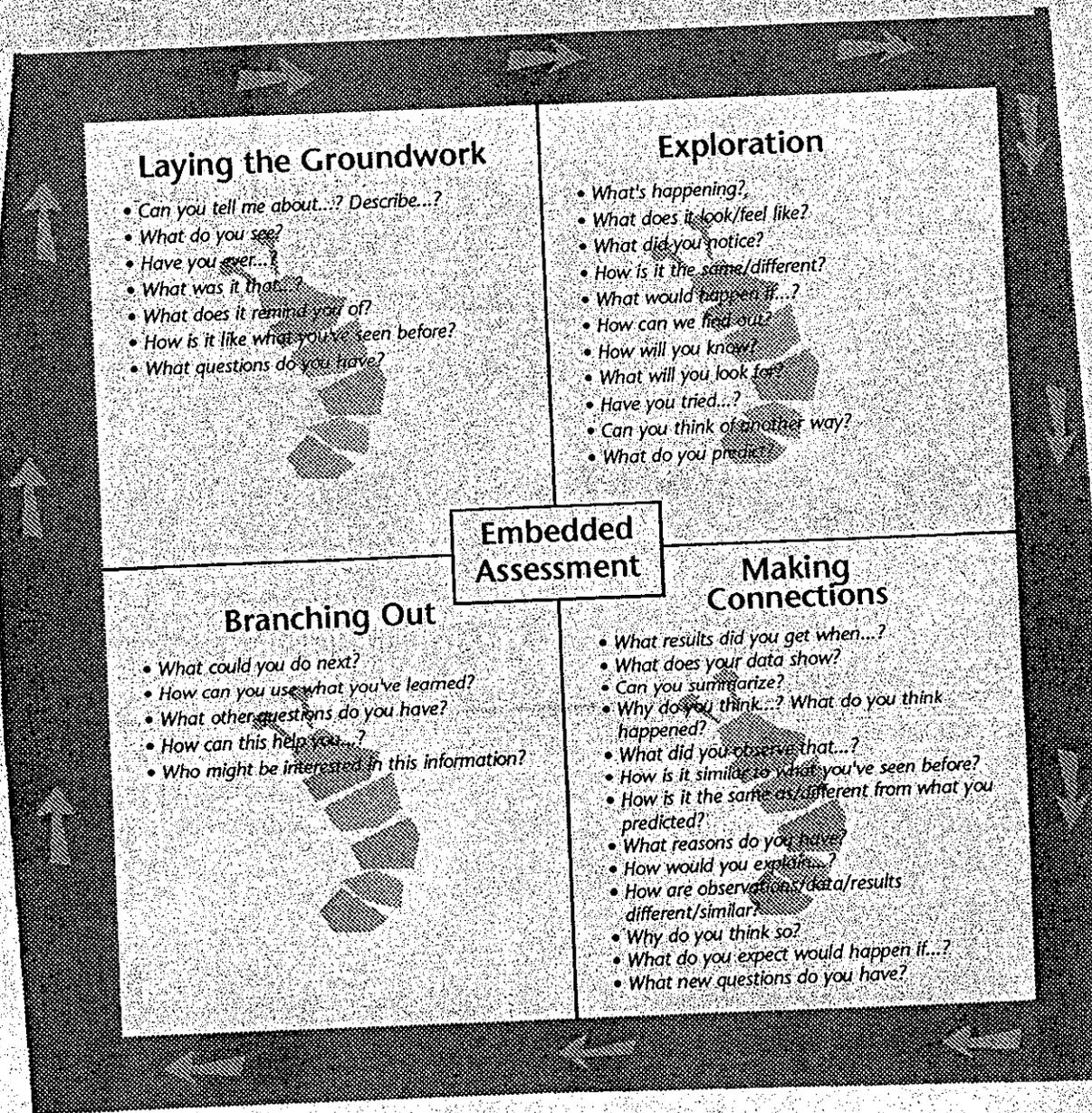
Every eight weeks, a new thematic curricular activity in the form of a web quest will be posted. These activities were developed using the GrowLab Teaching/Learning Cycle as a framework. This four-phase cycle facilitates inquiry-oriented teaching and learning and consists of Laying the Groundwork, Exploration, Making Connections, and Branching Out. Assessment opportunities are embedded in the activities. The core student activities associated with each phase are as follows:

- Laying the Groundwork : Sharing experiences and knowledge; Observing and “messaging about”; Generating ideas and questions.
- Exploration: Actively exploring materials and phenomena; Gathering information and data; Conducting investigations to explore questions.
- Making Connections: Communicating and discussing results; Making sense of data; Constructing meaning from explorations; Reviewing the process.
- Branching Out: Extending to other contexts and disciplines; Making links to “real life”; Sharing new understandings; Taking action; Developing questions for further investigation.

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 promotes and supports gardening as an education vehicle through its GrowLab program, education materials catalog, *Growing Ideas* newsletter, and its new Web site www.kidsgardening.com.

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.



TIMELINE

August-September 2000

Theme 1: *Sense of Place*

- Review Ambassador Club introductory packet.
- Sign and return Letter of Understanding.
- Administer the pre-test to students, calculate the mean grade and send to Joan White via email.
- Log onto National Gardening Association Web site and register.
- Go to discussion forum and introduce yourselves to other Ambassador Clubs.
- Is Africa a country?
- How big is Africa?
- How big is Ghana?
- Share one student project that resulted from Theme 1 with others on the discussion forum.
- Send KWL chart to Joan White at the end of Theme 1 (This can be an email attachment).
- Begin communicating with Ghana students.

October-November 2000

Theme 2: *Who's Who and What's What?*

- Who are the different ethnic groups? Who is powerful, weak, influential...?
- How do women play a role in society?
- Who's in power? North vs. South
- Health - What is traditional medicine?
- Rural life
- Education - What is a typical school day like?
- Share one student project that resulted from Theme 2 with others on discussion forum.
- Send KWL chart to Joan White at the end of Theme 2 (This can be an email attachment).
- Ongoing communication with Ghana students.

December-January 2001

Theme 3: *How Does Your Garden Grow?*

- What and how is it grown?
- How do you cook it?
- Domestic food crops and export crops
- Hunger and nutrition issues
- How can I help?
- What are some environmental impacts?
- Share one student project that resulted from Theme 3 with others on discussion forum.
- Send KWL chart to Joan White at the end of Theme 3 (This can be an email attachment).
- Ongoing communication with Ghana students.

February-March 2001

Theme 4: *The Air We Breathe*

- Tropical forests, trees, and deforestation
- How dry is the desert?

- Are the Harmattan winds good or bad?
- What is a drought?
- How big is Lake Volta?
- Rain season and dry season
- Share one student project that resulted from Theme 4 with others on discussion forum.
- Send KWL chart to Joan White at the end of Theme 4 (This can be an email attachment).
- Ongoing communication with Ghana students.

April-May 2001

Theme: *Tell Me a Story*

- Traditional storytelling and music
- Kente and Adinkra Cloth
- Language
- Festivals
- Close program with a Ghana festival
- Share one student project that resulted from Theme 5 with others on discussion forum.
- Send KWL chart to Joan White at the end of Theme 4 (This can be an email attachment).
- Administer post-test, complete evaluation, and send results to Joan White.

LETTER OF UNDERSTANDING

This letter confirms my participation in the *Making Connections Through Gardening* program for the 2000-2001 school year. I understand that my principal responsibility as a participating teacher includes the following:

- Administer pre- and post-tests and submit the mean grade to National Gardening Association.
- Use curricular activities and information posted on the Kidsgardening Web site.
- Participate in an ongoing manner in the online discussion forum.
- Share student projects in discussion forum.
- Complete program evaluation at the end of the project and submit to National Gardening Association.
- Submit each classroom's KWL Chart to National Gardening at the end of each thematic unit.

Print Name _____

Sign Name _____

School Name and Address _____

FOR STUDENTS: THIS IS NOT A TEST!!

These answers will be used to show what you learned in this program.

Circle yes or no to the following statements:

1. The capital city of Ghana is Pudra.
a) yes b) no
2. Ghana has the same geographical size as Florida.
a) yes b) no
3. The primary language in Ghana is English.
a) yes b) no
4. *Shea butter* is used by people in Ghana to protect their skin from the sun.
a) yes b) no
5. *Fufu* is a tribal language.
a) yes b) no
6. People who live in the northern region of Ghana are the poorest.
a) yes b) no
7. One reason for deforestation in Ghana is clearing the land to plant home gardens.
a) yes b) no
8. *Hightlife* is a popular and well-known type of Ghanaian music.
a) yes b) no
9. Ghana sells cocoa to the U.S.
a) yes b) no
10. Lake Volta is the largest lake in the world.
a) yes b) no

ED393790 Apr 96 Teaching about Africa. ERIC Digest.

Author: Hume, Susan E.

ERIC Clearinghouse for Social Studies/Social Science Education, Bloomington, IN.

THIS DIGEST WAS CREATED BY ERIC, THE EDUCATIONAL RESOURCES INFORMATION CENTER. FOR MORE INFORMATION ABOUT ERIC, CONTACT ACCESS ERIC 1-800-LET-ERIC

People from African countries who visit the United States often are stunned by how little Americans know about African cultures. Africa is a large continent more than three times the size of the continental United States, and it contains over 50 independent countries. One out of every three member states in the United Nations is an African country. One out of every ten people in the world lives on the African continent. Increasingly, the United States has trading and corporate ties to African countries. Now, more than ever, our students need a basic understanding of Africa.

SUGGESTIONS FOR TEACHING ABOUT AFRICA

Four key suggestions are presented.

CONFRONT MYTHS AND STEREOTYPES

It seems that no other part of the world conjures up so many myths in the minds of Americans as Africa. A good way to begin a study of the continent is to identify and dispel some of the myths and stereotypes commonly held by Americans. To aid in the discussion, it is useful to compare these American misconceptions of Africa with the myths and stereotypes people in African countries have about the United States. For instance, many Americans believe that all Africans are poor, while many Africans think that all Americans are rich. Americans commonly perceive Africa as a violent, dangerous place. People in African countries often believe the same thing about America. To assist in the discussion of this topic, *LESSONS FROM AFRICA* (Merryfield 1989) includes a lesson entitled "Stereotypes Kenyan and Liberian Youth Have about Americans."

AVOID FAULTY GENERALIZATIONS

The African continent has many different climatic zones and landscape features that vary from deserts and savannas to tropical rainforests and snow-capped mountains. It is home to people of every size, shape, and skin color with hundreds of distinctive languages and cultures. The characteristics of neighboring countries can be very different. Teachers must be careful not to take a single example and present it as the norm for all of Africa.

PRESENT A BALANCED VIEW

Most of the attention that Africa receives in the American media is negative. It is easy to dwell on the negative when teaching about Africa. Teachers should not deny the existence of problems in African countries, such as poverty, disease, famine, and war. Students should be encouraged to go beyond the headlines and explore the root causes of these problems. They also should learn about the many complex cultures that diverse African peoples have created. To focus only on Africa's problems is a disservice to its people and our students.

LIMIT THE SCOPE OF STUDY

Due to its enormous size and diversity, it is impossible to teach all of Africa in a unit or semester of study. Depending on the time available, a class might focus on a single country or choose a country from each

region for an expanded study. Nigeria is often a popular choice of study because of the extraordinary cultural and physical diversity within the country. Similarly, Cameroon has been referred to as "Africa in miniature." A teacher may select a country of focus based on available resources or because of a connection to the local community.

AFRICA'S PLACE IN THE CURRICULUM

The study of Africa can be woven into many parts of the elementary and secondary school curriculum.

SOCIAL STUDIES

The study of Africa is usually associated with world history and geography courses. Yet, Africa can be integrated into many of the other social studies as well. For instance, in an American history class, students may examine how the Cold War shaped United States foreign policy toward Africa. In their study of sociology, students can see how the roles of women are changing in many African societies or how urbanization in Africa is affecting family relationships. Economics students might consider how exchange rates and changes in world market prices affect the internal economies of African countries and influence their relationships with other nations.

LANGUAGE ARTS

Young students enjoy reading African folktales. They often discover plots and morals parallel to those found in European folktales. One activity for students is to pick out the human qualities given to certain animals such as the spider, hare, and hyena and compare these with folk characters from other parts of the world. By reading African folktales, students gain insight into the attributes most valued by African societies, such as cleverness, wisdom, and bravery. Many anthologies of African folktales are now available.

A wealth of literature by contemporary African writers can meet the interests of high school students. Teachers may choose to sample a specific genre from several countries, focus on the literature of a single country, or concentrate on the writings of one author. A novel, *THINGS FALL APART*, by Nigerian author Chinua Achebe has become a favorite in many English departments. Literature by African writers is increasingly available in bookstores and libraries.

FRENCH LANGUAGE CLASSES

More French speakers live in African countries than in France. Yet, most French language textbooks devote very little attention to these countries. Lessons on Francophone Africa give students the opportunity to see the ways in which French language and culture have influenced these countries, as well as how the countries have retained their unique characteristics. African-American students also may find new relevancy in the language. *LA DIVERSITE EN AFRIQUE FRANCOPHONE* (Dern 1991) is one of several curriculum guides that have been developed to supplement French language textbooks in this area.

ART

Textiles, jewelry, woodcarvings, metal work, pottery, and stone sculpture are some of the common types of art found in various African countries. Many art museums in the United States have at least modest collections of African art and curators willing to share information with students and teachers. Washington, DC is home to the Smithsonian Institution's National Museum of African Art. For information about tours and the loan program, teachers can contact the museum's Department of Education on weekdays at (202) 357-4860. If the objective is to create the art rather than just appreciate it,

teachers can help students to create African textile designs such as tie-dye, wax-resist, brush batik, and stencil resist. The directions for each of these are included in a curriculum guide, *DAILY LIFE IN AFRICA: VARIETY IN AFRICAN DRESS* (Leoni and Yoder 1982).

MUSIC

American students enjoy listening to music from Africa. Both traditional and popular music vary tremendously from one country to another. As all kinds of international music become more popular, African music is readily available in local music stores. Also, many public radio stations across the United States carry a weekly program entitled *AFROPOP WORLDWIDE*, which features the music of Africa and the African diaspora. Students are fascinated by the wide variety of musical instruments played in Africa. Americans usually associate percussion instruments with Africa, but stringed instruments are very common, too. Teachers can combine music and art to help their students create and play simple versions of some musical instruments. Directions are contained in a curriculum guide, *DAILY LIFE IN AFRICA: CELEBRATIONS OF AFRICAN LIFE* (Leoni and Yoder 1982).

RESOURCES FOR TEACHING ABOUT AFRICA

Five types of resources are discussed.

INTERNET RESOURCES

The amount of information about Africa on the Internet is growing rapidly. Internet resources include basic statistics, maps, photographs, travel information, recipes, and addresses for sources of further information. Searching by country name is a good way to begin.

BIBLIOGRAPHIES

To find appropriate reading materials for students, at least two very helpful bibliographies are available. *OUR FAMILY, OUR FRIENDS, OUR WORLD* (Miller-Lachmann 1992) contains a chapter of bibliographic entries devoted to Africa. *AFROPHILE: RECOMMENDED TITLES ON AFRICA FOR CHILDREN AND YOUNG PEOPLE* (Randolph 1994) lists over 450 titles by interest level. In both books, all of the titles listed have received positive reviews from African scholars and educators.

MUSEUMS

Art museums, children's museums, and natural history museums often feature permanent or special exhibits related to Africa. These institutions usually offer special tours for school groups and educational materials to accompany the exhibits. Many museums maintain lending collections of books, audio-visual materials, and artifact kits. Some also host Africa-related guest lectures, artistic performances, and film series.

PEACE CORPS

World Wise Schools was created in 1989 to help educate American children about the countries the Peace Corps serves. The organization links American students in grades 3-12 with Peace Corps volunteers serving in countries around the world. Students and volunteers can exchange letters, pictures, audio cassettes, and small artifacts. Teachers may also contact the World Wise Schools office (1990 K Street, Suite 9500, Washington, DC 20526; telephone number (800) 424-8580, ext. 2283) for the names of returned Peace Corps volunteers living in or near their community. Many returned volunteers are eager to visit classrooms and share their overseas experiences. World Wise Schools produces country-specific educational videos and study guides. The current collection on African countries includes Senegal,

Lesotho, and Cameroon.

TEACHERS' TRAVEL EXPERIENCES

Each summer, a select group of teachers go to Africa through the Fulbright-Hays Seminars Abroad Program. The participants spend five or six weeks traveling and studying in one or more African countries. Many of the curriculum units they develop upon returning home are available to all teachers.

REFERENCES AND ERIC RESOURCES

The following list includes references used to prepare this Digest. The items followed by an ED number are available in microfiche and/or paper copies from the ERIC Document Reproduction Service (EDRS). For information about prices, contact EDRS, 7420 Fullerton Road, Suite 110, Springfield, Virginia, 22153-2852; telephone numbers are (703) 440-1400 and (800) 443-3742. Entries followed by an EJ number, announced monthly in the CURRENT INDEX TO JOURNALS IN EDUCATION (CIJE), are not available through EDRS. However, they can be located in the journal section of most larger libraries by using the bibliographic information provided, requested through Interlibrary Loan, or ordered from the UMI reprint service.

Brook, Diane L., and others. "No Easy Road to Freedom: The New South Africa. Classroom Focus." SOCIAL EDUCATION 59 (February 1995): 1-8. EJ 500 344.

Davis, Bonnie M. "A Cultural Safari: Dispelling Myths and Creating Connections." ENGLISH JOURNAL 83 (February 1994): 24-26. EJ 479 160.

Dern, Mary, ed. LA DIVERSITE EN AFRIQUE FRANCOPHONE. Stanford, CA: Stanford Program on International and Cross-Cultural Education, 1991. ED 355 128.

Fulbright-Hays Summer Seminars Abroad Program. EGYPT:

TRANSITION TO THE MODERN WORLD: CURRICULUM PROJECTS.

Washington, DC: Center for International Education, 1989. ED 374 021.

Fulbright-Hays Summer Seminars Abroad Program. SOCIAL

AND ECONOMIC CHANGE IN SOUTHERN AFRICA: CURRICULUM PROJECTS

AND PAPERS. Washington, DC: Center for International

Education, 1991. ED 362 430.

Fulbright-Hays Summer Seminars Abroad Program. HISTORY

AND CULTURE IN TANZANIA AND ZAMBIA: CURRICULUM PROJECTS.

Washington, DC: Center for International Education, 1992. ED 353 205.

Hamilton, Robert E., ed. LESSON PLANS ON AFRICAN HISTORY AND GEOGRAPHY. Gainesville, FL: Center for African Studies, University of Florida, 1992. ED 370 854.

Leoni, Diana, and Rachel Fretz Yoder. DAILY LIFE IN AFRICA: CELEBRATIONS OF AFRICAN

LIFE. Los Angeles, CA: African Outreach Program, UCLA, 1982.

Leoni, Diana, and Rachel Fretz Yoder. DAILY LIFE IN AFRICA: VARIETY IN AFRICAN DRESS. Los Angeles, CA: African Outreach Program, UCLA, 1982.

Merryfield, Merry M., ed. LESSONS FROM AFRICA: A

SUPPLEMENT TO MIDDLE SCHOOL COURSES IN WORLD CULTURES,

GLOBAL STUDIES, AND WORLD GEOGRAPHY. Bloomington, IN: ERIC

Clearinghouse for Social Studies/Social Science Education,

1989. ED 304 395.

Miller-Lachmann, Lyn, ed. OUR FAMILY, OUR FRIENDS, OUR WORLD. New Providence, NJ: R.R. Bowker, 1992.

Randolph, Brenda. AFROPHILE: RECOMMENDED TITLES ON AFRICA FOR CHILDREN AND YOUNG PEOPLE. Silver Spring, MD: Africa Access, 1994.

This publication was prepared with funding from the Office of Educational Research and Improvement, U.S. Department of Education, under contract RR93002014. The opinions expressed do not necessarily reflect the positions or policies of OERI or ED. -----

Susan E. Hume has served since 1993 as the outreach coordinator for the African Studies Program at Indiana University.

THEME 1: SENSE OF PLACE

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 Ghanaian 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
 - 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 Ghanaian 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.

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 Ghanaian 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/aajourney/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

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:

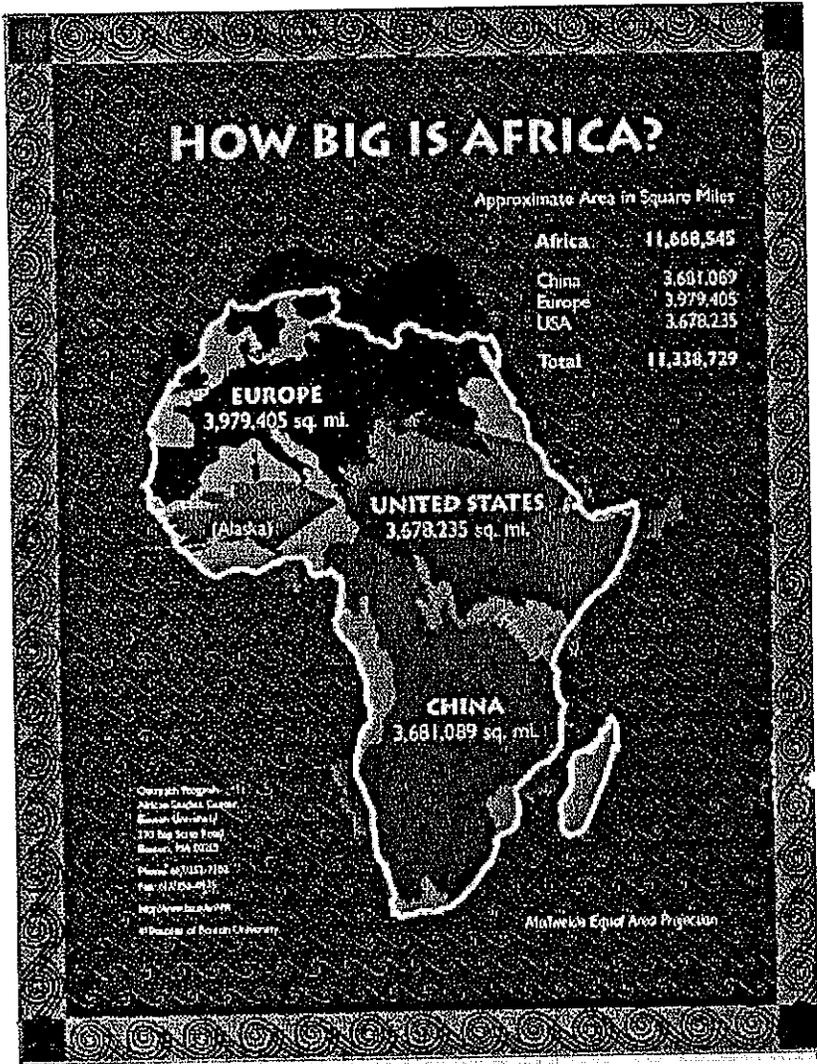
- Stereotypes often substitute for knowledge and cross-cultural understanding. Go to www.catalog.socialstudies.com/c/@ebMxQmNM_6K0g/Pages/article.html?article@SCI04A for a lesson that examines African stereotypes of Americans.
- How would you go about examining your own stereotypes of Africans?

FOR STUDENTS: THIS IS NOT A TEST!!

These answers will be used to show what you learned in this program.

Circle yes or no to the following statements:

1. The capital city of Ghana is Pudra.
a) yes b) no
2. Ghana has the same geographical size as Florida.
a) yes b) no
3. The primary language in Ghana is English.
a) yes b) no
4. *Shea butter* is used by people in Ghana to protect their skin from the sun.
a) yes b) no
5. *Fufu* is a tribal language.
a) yes b) no
6. People who live in the northern region of Ghana are the poorest.
a) yes b) no
7. One reason for deforestation in Ghana is clearing the land to plant home gardens.
a) yes b) no
8. *Hightlife* is a popular and well-known type of Ghanaian music.
a) yes b) no
9. Ghana sells cocoa to the U.S.
a) yes b) no
10. Lake Volta is the largest lake in the world.
a) yes b) no

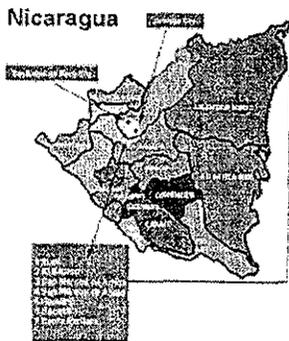


Attachment E

kidsgardening.com

international programs

[home](#) [families](#) [teachers](#) [store](#) [digging deeper search](#)



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.

[Nicaragua](#)

[Ghana](#)

[Discussion Forum](#)

[Email pals](#)

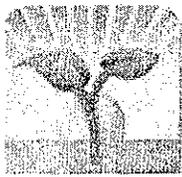
Each club had access to curriculum materials developed by NGA staff, photos and stories collected in the field by TechnoServe staff. [Click here](#) to see stories and curriculum.

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.](#)

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](#)

© 2000 Kidsgardening.com All rights reserved



national gardening

kidsgardening.co

home

teachers' room

family room

store

Search Articles

GO

international program

[Kidsgarden Store](#)

[Request a Catalog](#)

[Free E-newsletters](#)

[Education Membership](#)

[Member Log-in](#)

[nationalgardening.com](#)

[Gardening Q&A](#)
[Online Courses](#)
[Bugs Mugs](#)

[digging deeper](#)
[Online Teachers' Course](#)
[Parents' Primer](#)
[Classroom Stories](#)
[Activities](#)
[Kidsgardening FAQ's](#)
[School Greenhouse Guide](#)
[Exploring Hydroponics](#)

[community](#)
[Kidsgardening Discussion](#)
[School Garden Registry](#)
[School Garden Search](#)
[Events Calendar](#)

[grants and resources](#)
[Youth Garden Grants](#)
[Dutch Bulbs](#)
[Resource Directory](#)

[partner projects](#)
[International](#)
[Give Back To Grow](#)
[Vermont Community](#)
[Botanical Garden](#)

[about us](#)
[Our Mission](#)
[Contact Us](#)

[Back to Home](#)

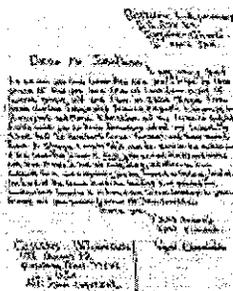


Grow with Us

[Nicaragua](#) | [Ghana](#)

Earth Science Around the Globe

Eighth grade students find similarities with Ghana pen-pals



John Capozzoli's eighth grade Earth Science class has been studying Ghana through the National Gardening Association's Ambassador Club, for more on the project, [click](#). His students are studying Ghanaian culture, agricultural practices, and conservation methods using the curriculum lessons, school stories, pen-pal correspondence with

Ghanian students, and the online forum for discussion posted on [NGA's Web site](#).

At Queens Intermediate School in Pasadena, Texas, John Capozzoli is an interactive science teacher who works with his students to pose questions and find answers about the natural world. For more on the school and science class, [click here](#). His Earth Science class used their own experiences to formulate questions and comparisons with Ghana students. The first area of study was water usage--in their own south Texas classroom and in Ghanaian home gardens. Students used the Internet, reference books, and information from their pen-pal correspondence with students in Ghana to research how Ghanians got their water, how they used their water to grow crops, and how they protected their water supply. "My students wanted to find out how kids in Ghana used water to grow their food. What they discovered was how precious potable (drinkable) water was to Ghanian people," says John.

The class decided to monitor their own water usage after realizing most people don't have seemingly endless supplies of clean water. The science sleuths removed the sink drains and discharge pipes in the science lab and set up a small pipe directed into a five gallon bucket to measure the amount of greywater used (any water that has been used, except water from toilets, is called greywater). During their class, they monitored the buckets, measured the water levels, and recorded the amount of water collected. The students charted the

The Project

In the 1999-2000 school year our international project, Me Connections Through Gardening, in partnership with TechnoServe and funded by [USAID](#), connected K-8 student the US with students in Nicaragua. These Ambassador Clubs communicated and s activities with one another a schools in Nicaragua.

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

Come with us on our global gardening journey to Ghana our second international project. U.S. students are forming Ambassador Clubs with students in this African country to further the connection between pen-pal places, and produce. In the few months, we will let you know what kids are doing and how much we are all learning. [View our Ghana page](#).

Links to
USAID
and
TechnoServe
web sites.

Donate to NGA

thanks to our sponsor



amount of water used per day over a month's time; they estimated an average of 400 gallons of water a day was used in the science lab sink alone!

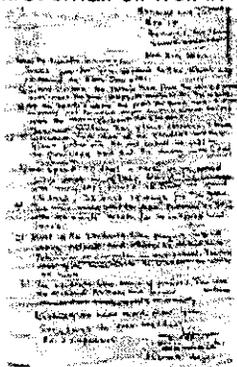
John's class discussed ways to reduce their consumption of water at school. His students designed a series of drain pipes to discharge the greywater from the lab out to their ornamental flower garden, thereby combining the use of water inside with the need for water outside and effectively eliminating the need to water this section of the garden. The earth science classes also designed a more drought-resistant garden, using succulent plants which require less water and represent some of Texas' native plant species.

"We also compared our south Texas climate with Ghana's and found some similarities. We noted our longitude-latitude and Ghana's longitude-latitude to try and answer student's questions about climate, crops, and culture," says Capozzoli. "My students were amazed at the commonalities they found with their own culture and the culture in Ghana."

Surprising Similarities

A few of Texas' major crops are sorghum, corn, rice, and soybeans. These are land-intensive crops which use a lot of resources and energy to grow. Ghana's agricultural products include cocoa, rice, sugar, and palm oil (similarly labor and resource intensive). Capozzoli's students had either seen most of the Ghanaian crops being grown or knew what they were and how they were used. "I think they expected something more tropical in terms of crops," he said. "The Ghanians rely on their crops as a source of income, just like many of my student's families."

Both Ghana and Texas have a history of riding the ups and downs of an oil-based economy. Ghana discovered oil in 1970 and exports most of its oil production in order to reduce the country's national debt. Texas drilled its first small oil well in 1921 and has ridden the boom and bust cycle ever since. "Using other locations on the planet in real-time allows the students to experience other cultures and environments," says Capozzoli. The eighth grade science students learned their world was not that different after all.



Pen-pal letters from students in Ghana to John Capozzoli's Earth Science students can be seen by clicking [here](#).

kids gardening .com

Attachment F

international programs

home

families

teachers

store

digging deeper sea

Curriculum Activities

[Theme 1](#) | [Theme 2](#) | [Theme 3](#) | [Theme 4](#) | [Theme 5](#)

THEME 1: 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.nses.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 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](#)

© 2000 Kidsgardening.com All rights reserved

342

kids gardening.com

international programs

home

● families

● teachers

● store

● digging deeper sea

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?

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/rodsqarden/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.

- 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/torrence.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/seedschange/>

"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

kids 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-hoticulture.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

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/nutexp/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/enviromet21/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:

<http://www.thehungersite.com/hungerresources.html> <http://www.info.usaid.gov> 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/efap.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/efap/efap.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

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

[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](#)

© 2000 Kidsgardening.com All rights reserved



Curriculum Activities

[Theme 1](#) | [Theme 2](#) | [Theme 3](#) | [Theme 4](#) | [Theme 5](#)

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

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/TrashGoesToSchool.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.environmentbag.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:

127

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>

[Theme 1](#) | [Theme 2](#) | [Theme 3](#) | [Theme 4](#) | [Theme 5](#)

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Curriculum Activities

[Theme 1](#) | [Theme 2](#) | [Theme 3](#) | [Theme 4](#) | [Theme 5](#)

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](http://www.britannica.com/Medieval%20technology%20Time%20line). For more information see Web site: <http://scholar.chem.nyu.edu/~tekpapes/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/>

[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](#)

© 2000 Kidsgardening.com All rights reserved

132

kidsgardening.com

Attachment G

international programs

home

families

teachers

store

digging deeper sea

Curriculum Activities

THEME 1: "SENSE OF PLACE"

Freshman Geographer (K-

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,

Junior Geographer (5-8)

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.

Senior Geographer (9-12)

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 Ghanaian 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
- 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 Ghanaian 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 information?

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 the 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 what 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.

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 Ghanaian 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

Mapmaker's dilemma:

Divide the class into three groups and assign each group a Goode, Mercator, or Peter's world map. Using the 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

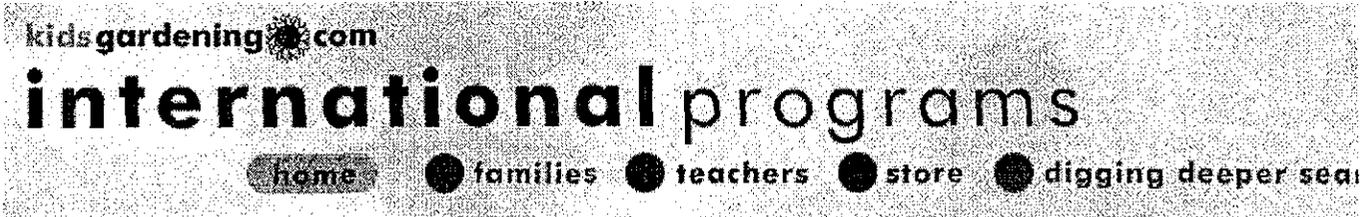
- Discuss findings. Are there differences in the size and scale of the continents depending on which map projection you are looking at?
- Research and find the size of each continent, in square miles, and list them in order of size from largest to smallest.
- Compare this list to the list you made from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



Curriculum Activities

THEME 2: DIGGING INTO GHANA'S CULTURAL DIVERSITY

Freshman Geographer (K-

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.

Junior Geographer (5-8)

Senior Geographer (9-12)

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 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? 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, a 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 Ghanaian 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](#)
[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 will 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 Ghanaian 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](#)
[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](#)

[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](#)

© 2000 Kidsgardening.com All rights reserved

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Curriculum Activities

THEME 3: "HOW DOES YOUR GARDEN GROW?"

Although Ghana is not a large country—about the size of Oregon—its climate and terrain are highly variable, ranging from warm, tropical rainforests to hot, dry plains. Since climate and terrain largely determine what will grow in a certain area, it is not surprising that variability in these factors has a large impact on agriculture in Ghana. Working in cooperative learning groups, students will explore Ghanaian agriculture from four perspectives: home gardener, farmer, environmentalist, and nutritionist. In addition to learning about this fundamental aspect of the Ghanaian economy, students will examine the preconceptions that they have—from magazine photos, adventure movies, and news stories—about Ghana and the people who live there.

Laying the Groundwork

Ask students:

- Can you tell me what the Ghanaian landscape looks like in your mind's eye?
- Describe what you think the weather is like.
- Where did you get these ideas from?
- What do you think farming and gardening are like in Ghana?
- What might be some challenges faced by Ghanaian farmers and gardeners?
- Based on your expectations about Ghanaian climate and terrain, what types of plants do you think th might grow?
- What questions do you have about farming and gardening in Ghana?

On the board:

- Compile a list of the characteristics ascribed to Ghana by your students. Keep this list in a visible sp throughout the entire theme. Students can use it to fill out the first two columns of their KWL charts

Contact with Ghanaian students:

- Invite students to ask—through letters—their Ghanaian school partners questions to determine what preconceptions they may have about farming in the United States. Students in the U.S. evaluate the accuracy of these notions based on their region of the country, state, town, and individual experience lifestyles. Ask students: Are these ideas accurate? Are any of them surprising? What might have led Ghanaian students to develop these images? What do you think is the most effective way to help you Ghanaian school partner better understand farming and gardening in the United States? Encourage students to follow through with their suggestions.

DIVIDE YOUR CLASS INTO FOUR GROUPS: HOME GARDENERS, FARMERS, ENVIRONMENTALISTS, AND NUTRITIONISTS.

K-4

[Home Gardener](#)[Farmer](#)[Environmentalist](#)[Nutritionist](#)

5-8

[Home Gardener](#)[Farmer](#)[Environmentalist](#)[Nutritionist](#)

9-12

[Home Gardener](#)[Farmer](#)[Environmentalist](#)[Nutritionist](#)

HOME GARDENER (Grades K-4)

Exploration

Students can explore some of the following questions:

- What plants do Ghanaian home gardeners grow? Do gardeners across the country grow the same plants? How do they choose which plants to grow? How are these the same as or different from the plants that Americans grow?
- What have they planted in the past? Are you familiar with these plants?
- Native Americans used plant parts in jewelry and artwork. Do Ghanaians do the same? Visit several museum Web sites to view African art pieces.
- What plants and plant parts do they use? How can you find out the significance of these plants or plant parts in Ghanaian society?

Helpful sites:

[Food and Agriculture Organization: Food and Nutrition for Africa](#)

[About.com](#)

[The University of Pennsylvania's African Studies page](#)

[The West African Vegetable Homepage](#)

Making Connections

- Have students refer to the list of characteristics compiled by the class at the beginning of this theme. How might you modify those ideas based on the new information that you have learned?
- Use the information you gathered to complete your KWL chart.

Branching Out

How can you use what you have learned?

- After seeing some genuine art samples-either in a museum or on the Web-create your own jewelry or artwork made from plants. Have your teacher get the necessary supplies and teach the rest of the class how to recreate your design. Take photos of your artwork to send to your Ghanaian school partner.

HOME GARDENER (Grades 5-8)

Exploration

Students can explore some of the following questions:

- What plants do Ghanaian home gardeners grow? Do gardeners across the country grow the same plants? How do they choose which plants to grow? How are these the same as or different from the plants that Americans grow?
- Who is typically responsible for maintaining the home gardens? Is it a full time job or a hobby?
- What tools and techniques do they use to prepare, plant, and harvest their gardens? How are these the same or different as the tools and techniques that we use in the United States?
- What problems might Ghanaians face when trying to start and maintain a home garden? How are they able to overcome these obstacles?
- How do Ghanaians prepare foods from their gardens? How does garden food preparation compare with that of U.S. gardens? Which plants are used for purposes other than food (e.g. medicinal)?

Helpful sites:

[Food and Agriculture Organization: Food and Nutrition for Africa](#)
[Food and Agriculture Organization](#)
[On the Line](#)
[The West African Vegetable Homepage](#)

Making Connections

- Based on what you have learned, develop a plan for a Ghanaian garden. In what region of the country is this garden located? Be sure to include plants in this garden plan that will do well in the climate of that region. Consult your Ghanaian school partner for advice.
- Refer to the list of characteristics you compiled at the beginning of this theme. Are any of the plants you suggested for this list found in your Ghanaian garden plan? How might you modify those ideas based on the new information that you have learned? What can you summarize about home gardens in Ghana? Why should you avoid generalizing about Ghana or Africa?
- Complete the information in your KWL chart.

Branching Out**How can you use what you have learned?**

- Locate some recipes from Africa that use foods from your Ghanaian garden plan. Use the [University of Pennsylvania African Studies site](#). Choose one recipe and prepare it for the class to try. Can you find recipes for traditional Ghanaian home garden foods in the cookbooks that you have at home?
- Share the recipes you find with other Ambassador clubs using the discussion forum.

HOME GARDENER (Grades 9-12)**Exploration****Students can explore some of the following questions:**

- What plants do Ghanaian home gardeners grow? Do gardeners across the country grow the same plants? How do they choose which plants to grow? How are these the same or different as the plants that Americans grow?
- What have they planted in the past? Are you familiar with these plants?
- What is the purpose of home gardens in Ghana? Do home gardens serve the same purpose in the United States?
- How can we find out how Ghanaians value plants? Often when people value objects-like plants-they express how they feel about them in stories, myths, or folktales. This is also how they pass along information about the history, culture, and beliefs of their people. Can you find any evidence of this African, or more specifically Ghanaian, literature? Based on these writings, can you infer which plants are valued the most? What important roles do these plants play in the lives of Ghanaian people?

Helpful sites:

[Food and Agriculture Organization: Food and Nutrition for Africa](#)
[Africa Access Review](#)
[Yale-New Haven Teachers Institute](#)
[Ghana.com](#)
[The West African Vegetable Homepage](#)

Making Connections

- Can you think of examples in American literature where plants are represented in similar ways? Are

there Native American tales that reference plants? Are the plants that Native Americans value the same as or different than those valued in Ghanaian or African literature? Why do you think this is so?

- Refer to the list of characteristics you compiled at the beginning of this theme. How might you modify those ideas based on the new information that you have learned? What new questions do you have?
- Complete the information in your KWL chart.

Branching Out

- The media frequently highlight the starvation taking place in parts of Africa. Based on what you now know about home gardens in Ghana, what do you think about the media's coverage of the hunger problem? How does the food situation impact the relationship between plants and people in Ghana? How do people in the United States share a similar relationship with plants?

How can you use what you have learned?

- After reading several samples of Ghanaian or African literature that incorporate plants, choose a typical Ghanaian home garden plant, research its value in Ghanaian society, and write your own folktale about it to share with the class, your Ghanaian school partner, and other Ambassador clubs using the discussion forum.

FARMER (K-4)

Exploration

Students can explore some of the following questions:

- What is the history of farming in Ghana? Have Ghanaians always been farmers? If not, how did they get their food?
- When and why did they become a farm-based society?
- What was the first crop grown in Ghana? Who grew this crop? Why was this crop grown?
- What crops are grown in Ghana today?
- Are these the same as or different from crops that are grown in the U.S.? In your state?

A day in the life:

- Brainstorm what the daily life of a farmer in Ghana might be like.
- How can you find out what their daily life is actually like? Brainstorm how you might gather this information, then try out your ideas. How closely did your vision match reality?
- What types of difficulties do Ghanaian farmers encounter? How do they overcome these? Do farmers in the United States face similar difficulties?

Helpful sites:

[University of Pennsylvania African Studies Center](#)

[Working in Ghana](#)

[Ghana—A Country Study](#)

[Food and Agriculture Organization](#)

[Navrongo and Lawra Homepage](#)

[The West African Vegetable Homepage](#)

Making Connections

- Contact a local farmer in your state and interview him or her about daily farm life. Compare and contrast

- the lives of the Ghanaian and American farmer. How do they compare with your predictions?
- Use the information you have gathered to complete your KWL chart.

Branching Out

- Are there any practices used by Ghanaian farmers that might benefit the American farmer you interviewed, or vice versa? How could you share this information with the farmers? Brainstorm what kinds of materials you could use to effectively convey this information.

FARMER (5-8)

Exploration

Students can explore some of the following questions:

- What is the history of farming in Ghana? Have Ghanaians always been farmers? If not, how did they their food?
- When and why did they become a farm-based society?
- What was the first crop grown in Ghana? Who grew this crop? Why was this crop grown?
- What crops are grown in Ghana today?
- Are these the same as or different from crops that are grown in the U.S.? In your state?
- What role does agriculture play in Ghana's economy?

From hand to mouth:

- Brainstorm what products you think are made from the agricultural plants grown in Ghana.
- Which of these products do you use in your daily life? Do we grow some of the same plants that are to make these products in the US? Which ones?
- Are the agricultural products made in Ghana used domestically? Are there some big, money-making export crops raised in Ghana? What type of impact does trade export of these crop products have on welfare of this country?

Helpful sites:

[Mbendi: Information for Africa](#)

[On the Line](#)

[Ghana—A Country Study](#)

[Navrongo and Lawra Homepage](#)

[The West African Vegetable Homepage](#)

[The University of Pennsylvania African Studies page](#)

[Food and Agriculture Organization](#)

Making Connections

- Although cocoa production has declined in Ghana, in the 1960's Ghana was the world's largest producer of cocoa. What are the difficulties associated with cocoa production that may have contributed to its decline? What other factors contributed? How have cocoa farmers attempted to make a comeback? If any, did the decline in cocoa production have an effect on the people and economy of Ghana?
- Make some candy bars! Visit the [Thinking Fountain site](#) to learn how.
- Complete the information in your KWL chart.

Branching Out

- Who do you think should benefit the most from the sale of an agricultural product? Examine the cor

of fair trade.

- How could you use the information that you have just learned to help others become conscientious shoppers?
- Brainstorm what factors you think you should-or do-consider before you purchase a product. How o are these factors a consideration for you when you are buying a product? What do you think is the m important factor that most people consider when they are buying a product?

Helpful sites:

[The American Museum of Natural History](#)
[Ghana—A Country Study](#)

FARMER (9-12)

Exploration

Students can explore some of the following questions:

- What is the history of farming in Ghana? Have Ghanaians always been farmers? If not, how did they their food?
- When and why did they become a farm-based society?
- What was the first crop grown in Ghana? Who grew this crop? Why was this crop grown?
- What crops are grown in Ghana today?
- How do they compare with crops that are grown in the U.S.? In your state?
- Are the same crops grown all over the country? What factors determine what crops are grown in different parts of the country? Where does the majority of farming take place in Ghana?
- What land is used for farming? What characteristics does a Ghanaian farmer consider when choosin farmland? How is farmland created in Ghana?
- What techniques and practices are used to farm in Ghana? How do these compare with those used ir U.S.?

Helpful sites:

[Ghana—A Country Study](#)
[Food and Agriculture Organization](#)
[University of Pennsylvania African Studies Center](#)
[Navrongo and Lawra Homepage](#)
[The West African Vegetable Homepage](#)

Making Connections

- There is a natural conflict over land use between farmer and environmentalist in Ghana. Your studer farmers and environmentalists should use the information that they have gathered to formally debate their positions concerning farming in Ghana.
- Are there compromises that those on each side of the debate could make to resolve this issue?
- Complete the information in your KWL chart.

Branching Out

- Contact PeaceCorp volunteers living in or near your community, especially those who were involve agricultural programs in Ghana. They might come to your class to answer questions and talk about tl experiences while working in Ghana. Contact World Wise Schools Office (800) 424-8580 (ext. 228: locate volunteers living nearby.
- Using the discussion forum, share with other Ambassador clubs what you have learned from the

PeaceCorp volunteer who visited your classroom.

- If a PeaceCorp volunteer does not live nearby, visit the [Friends of Ghana Web site](#) to hear the account of other PeaceCorp volunteers who served in Ghana.

ENVIRONMENTALIST (K-4)

Exploration

- Using the resources you used in Theme 1: Sense of Place, reproduce a map of Ghana and a map of the United States (same scale). Paste as many maps of Ghana inside the United States map as will fit. How many fit?
- Visit the [Animal Info site for Ghana](#) to find out how many mammals there are in Ghana. Since the United States is ___ times larger than Ghana, how many mammals would you guess there are in the United States (based on the number found in Ghana)?
- Now visit the [Animal Info site for the U.S.](#) to see how accurate your guesses are. Were you close? What does this tell you about the biodiversity—the variety of living things in an area—of Ghana?
- Where do the majority of wildlife live in Ghana?
- What types of activities have been taking place in this ecosystem that might threaten the wildlife there?
- Why do the activities taking place in this ecosystem pose a threat?

Helpful sites:

[Conservation International](#)

[World Resources Institute](#)

[The Conservation Agriculture Network](#)

[Environmental News Network](#)

[Rainforest Alliance](#)

Making Connections

- Why do you think it is important to protect the rainforest ecosystem in Ghana? How do you think they might benefit from these rainforests?
- Brainstorm things that you can do—like buying rainforest friendly products—to help preserve the rainforest in places like Ghana. Are there ecosystems in the United States that are being used in a non-sustainable way? How could you find out if anything is being done to protect these ecosystems? What can you do?
- Complete the information in your KWL chart.

Branching Out

- How can you use what you have learned to educate others about the rainforest destruction taking place in Ghana? How can you help others to care for the environment? Brainstorm how best to share this information and then do so. Use whatever method you choose to inform your classmates and other Ambassador clubs.

ENVIRONMENTALIST (5-8)

Exploration

- The most important export crop in Ghana is cocoa.

149

Students can explore some of the following questions:

- Where is cocoa grown in Ghana? Where does it grow best? What factors make this location ideal for growing cocoa?
- What problems are associated with using this location for cocoa production?
- Why is it important to preserve this land? Are there plants and animals that are unique to this area? Is it important to protect them?
- What is being done to help protect any species that are unique to Ghana?
- Choose a plant or animal that can be found in the Ghanaian rainforest. Use the Internet to find out about your organism. What does this organism need to survive? How does the rainforest meet these needs? Is this organism found in other parts of the world or is it unique to Ghana? Is this organism in danger of becoming extinct? If so, why?

Helpful sites:

[Rainforest Alliance Conservation Programs](#)
[Rainforest Alliance Activities for Kids & Teachers](#)
[The American Museum of Natural History](#)
[Africanconservation.com](#)
[Biodiversity Support Program](#)
[World Resources Institute](#)
[Conservation International](#)
[Animal Info](#)

Making Connections

- What is biodiversity? Why do you think it is important to maintain biodiversity in our world's natural ecosystems?
- What effect do you think the loss of biodiversity has on humans?
- Complete the information in your KWL chart.

Helpful sites:

[Biodiversity Support Program](#)

Branching Out

- Is this situation unique to Ghana? Are there species in other parts of the world or the U.S. that are being threatened by human activities?
- What can you do?
- Are there ways that you can act locally to preserve biodiversity in places like Ghana?
- How will you inform your schoolmates and your Ghanaian school partners about what you have learned and what actions they can take to prevent a further loss in biodiversity?

ENVIRONMENTALIST (9-12)

Exploration

- The most important export crop in Ghana is cocoa.

Students can explore some of the following questions:

- Where is cocoa grown in Ghana? Where does it grow best? What factors make this location ideal for growing cocoa?

- What problems are associated with using this location for cocoa production?
- Why is this land worth protecting? Gather the information that you think would be necessary to convince a cocoa farmer that this practice is damaging.
- Can you think of another way to produce cocoa without causing this damage?
- Who produces the majority of cocoa in Ghana? Do they rely on this crop to survive? Do these same people rely on the rainforest for things other than cocoa production?

On the map:

- Print out a blank map of Ghana from [About.com](#). Next, visit [Conservation International's site](#). This is a map of the Upper Guinea Forest Ecosystem in West Africa. Using both maps to identify the country boundaries, locate the land in Ghana that is covered by rainforest and transfer this information-using colored pencils-to the blank map of Ghana. Based on the information that you have obtained through your Web quest, what percentage of rainforest is being destroyed by non-sustainable agriculture? Block out that percentage of the rainforest on the map that you have just compiled. Is it a large enough area to warrant concern? How do you decide what "large enough" means?

Helpful sites:

[Rainforest Alliance Conservation Programs](#)
[Rainforest Alliance Activities for Kids & Teachers](#)
[Jamieson's](#)
[The American Museum of Natural History](#)
[Environmental News Network](#)
[Conservation International](#)

Making Connections

- There is a natural conflict over land use between farmer and environmentalist in Ghana. Your students and environmentalists should use the information they have gathered to formally debate their positions concerning farming in Ghana.
- What types of compromises might be made by those on each side of the debate to address this issue?
- Complete the information in your KWL chart.

Helpful sites:

[Biodiversity Support Program](#)

Branching Out

- Is this situation unique to Ghana? How are humans practicing non-sustainable agriculture in other parts of the world? In the United States?
- What can you do?
- Are there ways in which you can act locally to preserve the environment in places like Ghana?
- Search the Web for organizations that sell environmentally friendly products. How do these places ensure that environmentally-friendly practices are being used?
- How will you inform your schoolmates and your Ghanaian school partners about what you have learned and what actions they can take to prevent further damage?

Helpful sites:

[Green Consciousness Movement](#)
[Rainforest Action Network](#)
[The Rainforest Alliance](#)

150

NUTRITIONIST (K-4)**Exploration**

- Conduct a search on the Internet for "food" and "Ghana." What kind of information do you find? How are food-related issues the same as or different from those facing Americans? What would you-as a nutritionist in Ghana-focus on?
- Send a letter to your Ghanaian school partner. What types of food do they eat everyday? Ask them for their favorite family recipe. What do they learn about nutrition in school? How does this compare to what you have learned in school about nutrition?
- Why are malnutrition and starvation bad?
- What are the root causes of malnutrition and starvation?

Helpful sites:

[Kids Can Make a Difference](#)

[Bread for the World](#)

[Hunger: Myths and Realities](#)

Making Connections

- What does it mean to you to be hungry? What do you do when you are hungry?
- If you were among the people in Ghana who are starving, what do you think you might do to find food?
- Complete the information in your KWL chart.

Branching Out

- After researching the problems with overcoming starvation and malnutrition in Ghana, brainstorm solutions. Share your list of solutions with other Ambassador clubs using the discussion forum. Could you follow through with any of your ideas and actually make a difference, either locally or in Ghana?
- Following a recipe from your Ghanaian school partner or [the University of Pennsylvania African Studies site](#), prepare a Ghanaian dish to share with your classmates.

NUTRITIONIST (5-8)**Exploration****Students can explore some of the following questions:**

- What is the most important export crop in Ghana? What products have you eaten that are produced from this crop plant?
- Learn about the history of this crop at [the American Museum of Natural History Web site](#) and make a time-line of its history, including how people through the years have consumed it.
- What is the history of this crop in Ghana? How has the crop affected Ghanaians' lives?
- What are the health benefits associated with products made from this crop?

Helpful sites:

[Mbendi: Information for Africa](#)

[Godiva.com](#)

[Jamieson's](#)

[Science News Online](#)

[CNN](#)

[OnHealth](#)

[OnHealth](#)

152

Making Connections

- Now that you are aware of the benefits of cocoa, it is time to receive some of those benefits! Visit [Jamieson's Web site](#) to choose a recipe to prepare for your classmates.
- Complete the information in your KWL chart.

Branching Out

- How will you share this information about the benefits of Ghana's most important export crop with your Ambassador clubs?

NUTRITIONIST (9-12)

Exploration

Students can explore some of the following questions:

- What are the root causes of malnutrition and starvation? In Ghana, specifically?
- What resources do people need to have to overcome hunger?
- What is being done to improve the hunger situation in Africa? In Ghana?
- What role are women playing in the fight to end hunger in Ghana?

Helpful sites:

[Hunger: Myths and Realities](#)

[The Hunger Project](#)

[Bread for the World](#)

[Youthworks](#)

[Kids Can Make a Difference](#)

[Food and Agriculture Organization](#)

[Food and Agriculture Organization: Natural Hazards](#)

Making Connections

- Are there people going hungry in your state? In your community?
- How do the causes of hunger locally compare with the causes of hunger in Ghana?
- Are there organizations in your area that are focused on the hunger problem?

Branching Out

- What can you do about hunger in Ghana? In the United States?
- After researching the problems with overcoming starvation and malnutrition in Ghana, brainstorm solutions. Share your list of solutions with other Ambassador clubs using the discussion forum. Could you follow through with any of your ideas and actually make a difference, either locally or in Ghana?

Helpful sites:

[Kids Can Make a Difference](#)

Wrapping Up

- Since student groups explored different topics related to agriculture in Ghana, we recommend that you close this theme by having each group—home gardeners, farmers, environmentalists, and nutritionists—develop a presentation, using the appropriate resources and technologies (e.g.

Hyperstudio, play, posterboard), to share with their classmates what they have learned.

[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](#)

© 2000 Kidsgardening.com All rights reserved

1206

kidsgardening.com

international programs

home

families

teachers

store

digging deeper se

Curriculum Activities

THEME 4: "A COUNTRY DIVIDED"

In the last theme, students were introduced to the idea that Ghana's climate and terrain are quite variable. In this theme, students will explore this variation by investigating the different biomes found in Ghana and the environmental issues threatening them. In addition to collecting information about Ghana's environment, students will recognize that it is not only inappropriate to generalize about the continent of Africa but also about the individual country of Ghana.

Freshman Ecologist (K-4)

Junior Ecologist (5-8)

Senior Ecologist (9-12)

FRESHMAN ECOLOGIST (Grades K-4)

Laying the Groundwork

Ask students:

- What does it mean to put something into categories?
- What categories do we have for the foods we eat or the music we listen to?
- What characteristics do you think people might have considered when coming up with these categories?
- How would you describe the weather where you live? The landscape? The plants? Would you use the same descriptions for your entire state? The entire country?
- How do you think we can categorize the areas that have different characteristics? (Introduce the concept of ecological zones).
- What characteristics do you think could be used to classify a particular place into an ecological zone? Make of these characteristics.
- Construct a KWL chart. Include in the chart how many ecological zones you think Ghana has and the characteristics you think define them.

Exploration

The task:

The Environmental Protection Agency (EPA) located in Accra, the capital of Ghana, has asked you and your class to complete a very important task. In order to protect their environment, the EPA must understand the ecology of their country. Your task is to collect information about Ghana's ecological zones.

Students can explore the following ideas:

- Ecological zones are also referred to as biomes. For the definition of a biome, go to [The World's Biomes](#).
- Visit the [Biome Map](#). Locate Ghana on the map and identify its biome(s). How many are there? What are their names?
- Identify the characteristics of each of Ghana's biomes at [Enchanted Learning](#). What are the temperature range and rainfall for each biome? How much rainfall does each biome get? How many and what types of plants and animals are in each?
- Make a comparison chart listing the similarities and differences among the biomes of Ghana.
- Now visit the [University of Queensland, Australia site](#). How is this map different from the one you have just

Dr. Mary Phillips, a teacher of environmental studies in Waco, Texas, began a unit on environmental issues in Ghana by having her students create a puzzle of the different biomes found in Africa. Have your students use the map found at [University of Queensland, Australia site](#) to create their own color-coded biome puzzle of Ghana.

Making Connections

- How is the information you learned about the ecological zone(s) in Ghana the same as or different from what predicted in your KWL chart? Use the information you have gathered to complete the chart.
- Revisit the [Biome Map](#) and determine how many biomes there are in the U.S. Does Ghana or the U.S. have biomes? Are there any biomes shared by both?

Branching Out

- The EPA could really use the information you have just gathered. How could you share with them what you learned? Incorporate your comparison chart and puzzle.
- Share the information you have learned with other Ambassador clubs by using the discussion forum.

JUNIOR ECOLOGIST (Grades 5-8)

Laying the Groundwork

Ask students:

- Describe what comes to mind when you think of the following words and phrase in relationship to Ghana: C topography, vegetation, biome, and environmental issue. Make a list of these descriptions and include them in the first column of your KWL chart.
- What was it that led you to make these suggestions?
- How are your descriptions of these environmental features of Ghana similar to descriptions you would use in places you have visited?

Exploration

The task:

The Environmental Protection Agency (EPA) located in Accra, the capital of Ghana, is conducting a comparison. They have asked you and your classmates to gather information on the climate, topography, vegetation, ecoregion (biomes), and environmental issues in northern and southern Ghana.

Students can explore the following ideas:

Climate

- Use the [Library of Congress](#) and [Encarta](#) to learn about the climate of Ghana.
- Investigate the two main characteristics of Ghanaian climate at [Encyclopaedia Britannica](#). How do monsoons affect the climate of northern and southern Ghana?
- Visit [Encyclopaedia Britannica](#). What is the harmattan? How does it affect the climate in northern and southern Ghana? Is the harmattan good or bad for the people of Ghana?

Topography

- The topography of Ghana can be divided into three regions. Visit the Library of Congress site to learn about the [Low Plains region](#), the [Akwapim-Togo Ranges](#), and the [High Plains region](#). Using this information, map the regions on a printout of a political map of Ghana from the [University of Texas](#). How does the topography affect agricultural practices in these regions?
- One of the most prominent topographical features in Ghana is man-made. Visit [Encyclopaedia Britannica](#) to learn more about Lake Volta.

Vegetation

- Use [Encarta](#) to investigate how the vegetation differs in northern and southern Ghana.

Biome

- Visit the [Biome Map](#). Locate Ghana on the map and determine which biomes are found there. How many are found there?

and what are they called? Use the [MapMachine from National Geographic](#) to learn more about the different regions in Ghana.

Environmental Issues

- What are the main environmental issues facing northern and southern Ghana? Visit the "environment" section of [Ghana Virtual Journey](#) to find out. Explore these issues further using [Ghana Virtual Journey](#) and [Golden Es](#)

Making Connections

- How does the information you learned about the environmental features of Ghana compare with what you predicted in your KWL chart? Use the information you have gathered to complete the chart.
- How do the differences in these environmental features in northern and southern Ghana affect the lives of the people who live there?
- How should the EPA go about designing a conservation plan for Ghana?
- Why is it inaccurate to generalize about Africa-or even Ghana?

Helpful sites:

The "society" section of [Ghana Virtual Journey](#)

Branching Out

- Make a comparison chart for northern and southern Ghana that could be incorporated into the EPA's comparative study report. Make sure to include both similarities and differences.
- Share this information with other Ambassador clubs by using the discussion forum.

SENIOR ECOLOGIST (Grades 9-12)

Laying the Groundwork

Ask students:

- Name some environmental issues you are familiar with. Make a list of these issues.
- Are these issues we are facing in the U.S. or are they more common in other parts of the world?
- Based on what you have learned in earlier themes, which of these environmental issues do you think Ghana be faced with? What led you to suggest these?
-
- Construct a KWL chart. Include in the chart which environmental issues you think are plaguing Ghana.

Exploration

The task:

In Theme 3: "How Does Your Garden Grow?," a number of you investigated cocoa production in Ghana and the associated environmental issues. Now that you are knowledgeable about this subject, your expertise is being sought by international journalists committed to reporting on environmental issues in Ghana. Your task is to collect information on the major environmental issues facing Ghana today.

Students can explore the following ideas:

- Visit the "environment" section at the [Ghana Virtual Journey](#) to find out what the main environmental issues in Ghana.
- What regions of the country are most affected by these environmental issues? Why are these regions vulnerable? Why are they vulnerable?
- What are the primary causes of deforestation? Why is it a problem? What can be done to ease the effects of deforestation? What is being done? Why was deforestation not a problem in traditional Ghanaian society?
- What is desertification? Why is it a problem? What natural and human activities contribute to desertification? What are some possible solutions to the problem of desertification? What is being done worldwide to combat

desertification? In Ghana?

- Examine the relationship between desertification and deforestation and air/water pollution at the [United Nat University site](#).
 - [University of Freiburg, Denmark site](#).
- do Ghanaians use fire for? What is being done to prevent bushfires?

Helpful sites:

[Environmental Protection Agency](#)

[Friends of the Earth](#)

[Ghana Virtual Journey](#)

[Golden Essays](#)

[Melissa](#)

[On the Line](#)

[United Nations](#)

[United States Department of Agriculture Forest Service International Programs](#)

Making Connections

- How is the information you learned about the environmental issues facing Ghana the same as or different from what you predicted in your KWL chart? Use the information you have gathered to complete the chart.
- How do deforestation and desertification affect the lives of the Ghanaian people?
- How do you think deforestation affects the plants and animals who have adapted to rainforest conditions? What do you think happens to the plants and animals who depend on the trees for survival?

Helpful sites:

[Ghana Virtual Journey](#)

[Golden Essays](#)

[On the Line](#)

[United Nations](#)

Branching Out

Now it is time to convey to the journalists the information you have gathered.

- Create a brochure for the journalists explaining what you have learned about the major environmental issue in Ghana. Use cause-and-effect diagrams to illustrate the relationship between factors. For an example of a cause-and-effect diagram, visit [Clemson University's site](#).
- Share this information with other Ambassador clubs by using the discussion forum.
- What other questions do you now have about environmental issues in Ghana?

[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](#)

© 2001 Kidsgardening.com All rights reserved

158

kids gardening  com

international programs

[home](#)[families](#)[teachers](#)[store](#)[digging deeper se](#)

Curriculum Activities

THEME 5: CELEBRATION

Students will celebrate their new knowledge of Ghana and the culmination of *Making Connections Through Gardening* by throwing a festival, mirroring how Ghanaian people commemorate special occasions. Students will learn that festivals are extremely important in Ghanaian society. They serve as a symbolic link between the living and the dead and enable Ghanaian people to pass cultural traditions on from one generation to the next.

Exploration

Pick a new name

- Have students recall from Theme 2 that while English is the official language in Ghana, the Akan language is widely used. Have students visit the [Language Map of Ghana](#) to see where the dialects of Akan are spoken in Ghana.
- People in Ghana name their children according to the day of the week they were born. Have students visit [Facts from around the World](#) to find their name in Akan. Encourage them to use this name throughout the festival.
- To learn more about ethnic groups and languages in Ghana, students can visit the [Library of Congress Colonial Africa Study](#).

Choose a festival

Now that students have assumed their Ghanaian identity, it is time to celebrate in true Ghanaian fashion.

- Have students visit the [Ghana Tourist Board](#) and [Republic of Ghana](#) sites to learn about and choose a Ghanaian festival to celebrate.

Festival clothing

Adinkra and Kente cloths are made by the Asante people of Ghana. Ask students to recall from Theme 2 details about the Asante people. If students need their memories refreshed, they can visit [Wonders of the African World](#).

- To learn about the history, significance, symbols, and making of the Adinkra cloth, students can visit [Adinkra Symbols](#), [On the Line](#), and [Akan Adinkra Cloth Symbols](#).
- Ask students: How was the Adinkra cloth used historically? How is it used today? Where did the symbols originate? Collectively, what do the symbols represent?
- Students can create their own Adinkra cloth for the festival (on paper or fabric) by following the instructions from [Africa](#).
- To learn about the history, significance, and making of the Kente cloth, students can visit [Kente Cloth](#), [Akan Cloths](#), and [Wonders of the African World](#).
- Ask students: What does the Kente cloth represent in Ghanaian society? Who wore Kente cloth garments historically? Who wears them today?
- Students can create their own Kente cloth for the festival by following the instructions from [Africancrafts.com](#) [Kente Paper Weaving](#), [Building a Triangular African Children's Loom](#), or [Building a Loom for Weaving Kente](#).

Festival food

Students can prepare traditional Ghanaian food for the festival. For instance, for the Odwira, or Yam Festival—a festival that represents national unity for the Asante people—students might follow the recipes for Yam Fufu Balls and Oto (mashed yam with eggs) in the recipes section of [On the Line](#). Even if the festival that students choose is not centered around food, there are plenty of recipes at [Ghana Lounge](#) to choose from.

Festival entertainment

There is a rich tradition of music and storytelling in Ghana.

- In the southern part of the country—where the Asante people are concentrated—music is usually drum-based; the far north, fiddles and other string instruments are more common. Students can visit [On the Line](#) to learn the djembe drum is made in Ghana.
- Have students visit [Africa Online](#) to learn about popular music in Ghana. Students can check the public library, local music stores for CDs of Ghanaian music or create their own to play at the festival.
- Storytelling is one of the ways in which Ghanaian people hand down traditions from one generation to the next. Folktales were especially important in the times before print materials existed. Have students visit [Kid's Zor](#) to find folktales involving Anansi the spider. Anansi is one of the main characters in African folktales.
- Have students choose one of the folktales about Anansi or write their own to tell at the festival. If they create their own folktale, encourage them to follow Ghanaian tradition by incorporating a lesson in their story. Remind them that a good storyteller is one who encourages the audience to participate through answering questions, clapping, or singing.
- Students can visit [Kid's Africa](#) to learn how to make their own Anansi the spider to use as a prop while telling their story.

Other festival activities

- Students can test their knowledge of Ghana by playing [Bingo! The African Connection](#).

Making Connections

Ask students:

- Are you familiar with any of these African cultural traditions?
- Have you seen any clothing in the United States that resembles the traditional clothing of the Ghanaian people?
- How do you suppose these traditions found their way to the Americas? Visit [Wonders of the African World](#) to find out.

Branching Out

- Share one student project that resulted from this theme with other Ambassador clubs using the discussion form.
- Administer the post-test, complete evaluations, and send results to Joan White.
- Don't forget to send in your KWL charts, too.

[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](#)

© 2001 Kidsgardening.com All rights reserved

Need help? 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 Valerick@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.



MISSION STATEMENT:

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

Attachment H

National Gardening Association

180 FLYNN AVE., BURLINGTON, VT 05401
(802) 863-1308 or (800) LETSGRO
Web Site: www.garden.org E-mail: NGA@garden.org

Founded in 1972 (as "Gardens for All")

BOARD OF DIRECTORS

William Dredge, Steven Frowine (Chairman), Chris Gilbert, Neil Hamilton, Frederick Kieckhefer, Renee Shepherd, Cathrine Sneed, Katherine Tierney, Peter Tonge, W. Alan Vandenburg, and Ramsey Yoder

PRESIDENT AND PUBLISHER

David E. Els

KIDS AND CLASSROOMS

GrowLab, *Growing Ideas* newsletter, *Growing Science Inquiry*

Valerie Kelsey, Ed.D. Vice President, Education and Programs

Eve Pranis Associate Director

Karen Reinhardt Professional Development Coordinator

Joan White Program Director

Mitchell H. Kurker Director Sales and Marketing

Ann Pearce Sales Coordinator

Eileen Kamerling Sales Assistant

Robin Gorges Customer Service Specialist

YOUTH GARDEN GRANTS

Jim Flint Director

DEVELOPMENT

James Schaffer Director

ADMINISTRATION

A. William Miller II Vice President

William Van De Venter Accountant

Laurie Beth Putnam Bookkeeper

Trudi Beauchemin Accounts Receivable

Patti Jones Mailroom Supervisor

JoAnn Gaye Reception

GARDENING MARKET RESEARCH

Bruce Butterfield Director

NATIONAL GARDENING MAGAZINE

Michael MacCaskey Editor-in-Chief

Beth Marie Renaud Managing Editor

Charlie Nardozi Senior Horticulturist

Linda Provost Art Director

Lisa Winkler Assistant Editor

Mollie J. Barwis Intern

Margaret L. McKinnon Consulting Editor

Rick Darke, John Fech, and Leonard Perry

Horticultural Consultants

Jill Mason and Kimberly Werner Proofreaders

Michael Ableman, Robin Chotzinoff,

Sara Stein, and Jane von Trapp

Contributing Editors

Betsy Bradbury Pond Circulation Director

Susan Lefebvre Circulation Manager

Alison Watt Production Manager

ADVERTISING SALES (800) 538-7476

Larry A. Sommers Vice President, Publisher

Cheryl DeCarr Associate Advertising Director

Geri Ann Winsor Print Sales Representative

Kathryn Hale Print Sales Representative

Bobbi-Jean McGrath Advertising Coordinator

Jake Eddy Online Sales Representative

Western Representative:

Marshall Rubin, (818) 888-2407

Detroit Representative:

Peter C. Kelly, (248) 816-1772

ELECTRONIC MEDIA

Dan Hickey Director

Suzanne DeJohn Online Course Manager

Jane Giosek Webmaster

Kathy Bond Borie and Barbara Richardson Staff Horticulturists

Cathy Cromell, Keira Durham, Pat Kasa, Barbara Martin,

and Skip Richter Regional Horticulturists

National Gardening magazine (ISSN 1052-4096) (USPS 759-910) is published bimonthly by the National Gardening Association, 180 Flynn Ave., Burlington, VT 05401. Periodicals postage paid at Burlington, VT, and additional mailing offices. Subscriptions are \$18 per year (foreign \$24) or \$32 for two years. Back issues are \$3.50 each, postpaid. Member of the Audit Bureau of Circulations. Copyright 1999 by The National Gardening Association. All rights reserved. No responsibility is assumed for unsolicited contributions. POSTMASTER: Send address changes to

National Gardening, P.O. Box 52874, Boulder, CO 80322-2874.

=====

GROWING INTERNATIONAL CONNECTIONS:
PARTICIPANTS WANTED

=====

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 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.

=====

FREE CONSERVATION RESOURCE

=====

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.

=====

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@wii,BradleyL@ag.arizona.edu,External
Subject: [sg] SYH: STUDENT AMBASSADORS NEEDED
To: Eve Pranis
school_garden@mailorn.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>

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

schoolgarden@mallor, 10:22 AM 11/24/99, International Project

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 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/school member 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.

165

Just for registering to participate, you'll be entered in a drawing to win a Panasonic 20" TV/VCR combination. The drawing will be held on Wednesday, June 14th, so be sure to sign up by Monday, June 12th. Thanks for your help!

Homegrown Tea—and "Sugar"

=====

Summer is nearly here, so it's a great time to experiment with your own herbal iced tea blends. You may have noticed that bottled herbal teas appear in more supermarket coolers all the time. Many brands now feature "tonic" herbs in their blends, but they're still heavily sweetened with sugar or corn syrup. It's a step in the right direction, but you can make your own healthy tea blends with homegrown herbs, and have control over the sugar impact by adding stevia from your herb garden as a sugar substitute. Read on to learn how to make delicious teas and sweeten them without the calories or side-effects of sugar.

Herbal Teas

Growing and brewing your own
<http://www.garden.org/redirect/herbal.html>

Sweet Stevia

Nature's own non-caloric sweetener
<http://www.garden.org/redirect/stevia.html>

Second Call for Student Ambassadors

=====

We're looking for about 20 more classrooms to join NGA's new project, Making Connections Through Gardening, an enhancement to science, social studies, or gardening curricula. The program launches in the fall of 2000 to provide learning activities that help students consider the vital roles of gardening and agriculture throughout the world. This interdisciplinary education program for students in grades K8 will connect schools in Ghana with 50 schools across the United States. Students learn about their Ghanaian friends' culture, gardening practices, and nutritional habits, and gain an awareness of the environmental issues faced by people living in Ghana. All participants have access to curriculum activities on the KidsGardening Web site at <http://www.KidsGardening.org/>.

To participate, you need Internet access, an email address, and an interest in global environmental issues. To be considered for an Ambassador role in Making Connections Through Gardening, please send your name, email address, school name, class size, and grade

Only Issues

Robin Gorges, 02:56 PM 10/23/2000 -0400, Ghana

X-Sender: robing@mail.kidsgardening.com (Unverified)
X-Mailer: QUALCOMM Windows Eudora Light Version 3.0.3 (32)
Date: Mon, 23 Oct 2000 14:56:02 -0400
To: joanw@kidsgardening.com
From: Robin Gorges <robing@garden.org>
Subject: Ghana
X-RCPT-TO: <joanw@kidsgardening.com>

STUDENT AMBASSADORS NEEDED

Students, teachers, and parents: Are you looking for a way to enhance the science, social studies, or gardening curricula in your school? NGA's new project, Making Connections Through Gardening, launches in the fall of 2000 to provide 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 will connect schools in Ghana with 50 schools across the United States. Students learn about their Ghanaian friends' culture, gardening practices, and nutritional habits, and gain an awareness of the environmental issues faced by people living in Ghana. All participants have access to curriculum activities on the KidsGardening Web site at <http://www.kidsgardening.org>

To participate, you need Internet access, an e-mail address, and an interest in global environmental issues. To be considered for Ambassador in Making Connections Through Gardening, please send your name, e-mail address, school name, class size, and grade level to project coordinator Joan White at joanw@garden.org

Cultivate International Connections

Serwaa-Aboagye's class has many different kinds of pets: cats, dogs, monkeys, and "tonoo," a beetle about the size of a half-dollar that kids tie a string to. This posting, which came through our Making Connections Through Gardening project, makes the global village just a bit smaller. This internet-based project has brought students from the U.S. together with peers in Nicaragua and Ghana. The goal? To further understanding of the role gardening plays in sustaining people and cultures. The harvest? That and much more. Now all educators and students are invited to visit the project on our Web site (www.kidsgardening.com/ambassador). There you can access photos and stories from students in these countries, thematic curriculum activities with related Web links, and a discussion forum.

(Arbor Day, continued from p. 2) grades did tree-related readings. Sixth graders filmed a video about trees, complete with background music, tree wisdom, and whimsical scenes. Older kids also gave tours of the school garden and neighborhood trees using a map they'd developed.

The celebrations culminated with an Arbor Day fair featuring a student-created tree game; crafts, such as tree branches covered with tissue paper flowers (representing forced buds); a giveaway of seedlings donated by a local natural resource agency; a birdhouse sale; and a video showcase featuring "The Man Who Planted Trees" and American Forests' "Silent Trees." "Planning for and executing the event was a big deal for kids and a great way to engage the community," explains Sarah.

Consider how you could use Arbor Day and Earth Day (April 22) as a focal point for tree-related projects. Each state also has its own official Arbor Day, which is listed on the National Arbor Day Foundation Web site (www.arborday.org/larborday/arbordaydates.html).

Support a growing movement by becoming a member of the National Gardening Association!

Inspire ingenious investigations....

Concoct a classroom of young collaborators....

Rely on proven resources that inspire GREEN learning!



You can do all these and more with an Education Membership to NGA. We are committed to garden-based education. Every day teachers nationwide use our services, programs, and products in their gardens and classrooms to grow great minds.

Your annual membership brings you all the great benefits listed here, **plus a FREE canvas tote bag!** Just check the box below, and return the form with your check.

Education Membership Benefits:

- 3 issues (one year) of our award-winning *Growing Ideas* newsletter
- 2 packets of **FREE** seeds
- A coupon worth **\$5 off your order of \$50** or more from our *Gardening With Kids* catalog
- A coupon worth **10% off** plants purchased from *mySeasons.com*

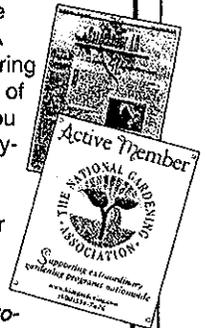
- 12 issues (one year) of our *Kidsgarden e-newsletter* (please provide your e-mail address below!)
- **PLUS: a FREE canvas tote bag**

Sponsoring Membership

Become an NGA Sponsoring

Member by making a donation of \$25 or more, and we'll send you our colorful, new 10"x12" heavy-gauge plastic "Active Member" sign, plus our *Gardens For All* newsletter, with updates on our youth programs and more.

100% of your membership or donation supports our youth programs! Please make checks payable to NGA and mail with the filled-out coupon (below) to 1100 Dorset St., So. Burlington, VT 05403.



Thank you for your tax-deductible membership or donation!



EDUCATION MEMBERSHIP

- Enclosed is \$19.95 for my Education Membership and my **FREE** Tote Bag!
- Enclosed is \$29.95 for my Education Membership, my **FREE** Tote Bag, and NGA's new Active Member sign!

SPONSORING MEMBERSHIP

- Enclosed is my donation, earmarked for NGA's youth programs:
 - \$100 \$75 \$50 \$25 other _____

Method of Payment:

- Check or Money Order Visa MasterCard Discover

TOTAL ENCLOSED: \$ _____

Name _____ Card # _____ Exp. _____

Address:

Name _____

Organization _____

Address _____ work home

City _____ State _____ Zip _____

Telephone (_____) _____ day night

E-Mail (for Kidsgarden E-newsletter) _____

Electronically Speaking

School Gardening Site Features International Project

GrowLab, a website of the National Gardening Association at www.kidsgardening.com, is a great resource for anyone interested in school gardens. Of particular interest may be their international project, "Making Connections Through Gardening." In the 1999-2000 school year, the project connected K-8 students in the US with students in Nicaragua. The 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. In their second project, U.S. students are forming Ambassador Clubs with students in Ghana to further the connection between people, places, and produce. Curriculum activities for the project at three levels are available online

On this site, you'll also find a teachers' resource room, information about "Youth Garden Grants," and much more.

Earth Trends

Up-to-date information on global environment and sustainable development issues is now easily available on EarthTrends, the new interactive website of the World Resources Institute. You can reach it at www.wri.org/wri/. Through a searchable database, plus maps, country profiles, data tables, and feature pieces, you can access information in ten topic areas, including agriculture and food; climate and atmosphere; population, health and human well-being; economics and business; energy, and more.

Report on Public Attitudes

The "Americans and the World" website (www.americans-world.org) is a source of comprehensive information on US public opinion on international issues. The site includes "The Digest," which provides comprehensive analyses of polling on various

international topics.

Recent releases include: Africa, the United Nations, Population, U.S. Relations with China, and Biotechnology.

You can sign up to receive e-mail notification of each new report by going to the website.

Join GLOBALED-L!!!

Want to get global ed. information hot off the wires? Sign up for the Global TeachNet listserv (free, weekly, announcement-only). It's easy; just contact Anne Baker at gloaled@rpcv.org with your e-mail address or click on listservs off www.globalteachnet.org.

Membership/Renewal Form

(Check expiration date on mailing label.)

To join/renew NPCA's Global TeachNet, or make a donation, please complete this form, clip it out, and send it to:

Susan Linyear, Global TeachNet, NPCA, 1900 L Street NW, Suite 205, Washington, DC 20036

phone: (202) 293-7728, ext. 11, fax: (202) 293-7554 e-mail: teachnet@rpcv.org

Now you can also join online at <https://secure.schoolyard.com/rpcv/gnjoin.cfm> and pay with a credit card in a secure environment.

____ I would like to join/renew NPCA at \$40/yr (includes GTN and 1 affiliate group _____)

____ I would like to join/renew Global TeachNet at \$25/year.

____ I want to help keep Global TeachNet going strong. Here is my donation of \$ _____

Name: _____

Phone: _____

Address: _____

E-mail: _____

____ Please sign me up for the GTN listserv

Grade/Subject if a teacher: _____ School: _____

____ My check made out to NPCA/GTN is enclosed or Please charge \$ _____ to my ____ MC ____ VISA ____ AmEx

Card number _____ Expiration Date: _____

Signature _____

I want to receive regular GTN mailings only; no additional mailings, please.

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.



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.”

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'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

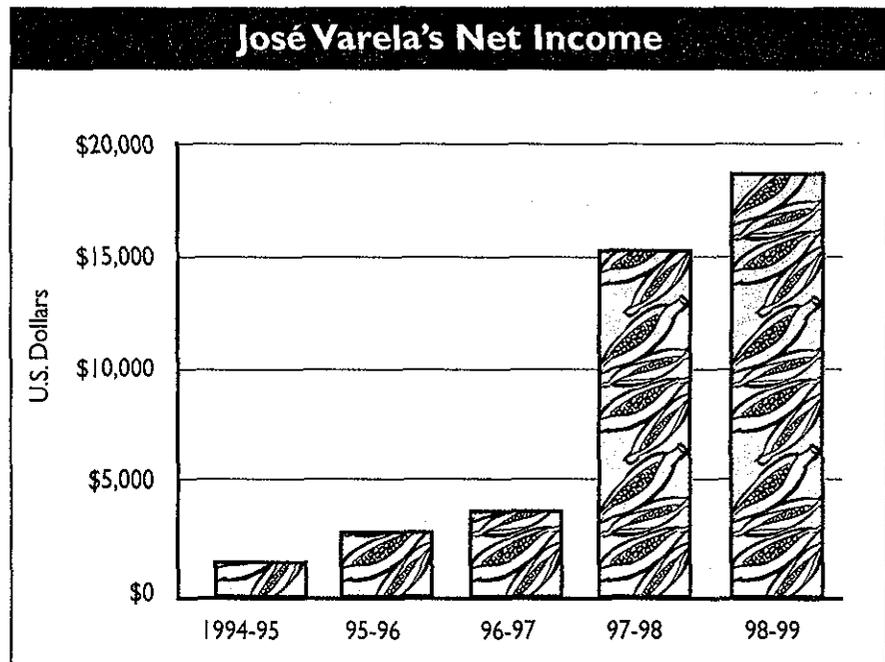


José Varela oversees the process of selecting, packaging, and labeling his sweet corn. This adds value to his raw produce and generates employment within his community.

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.



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.

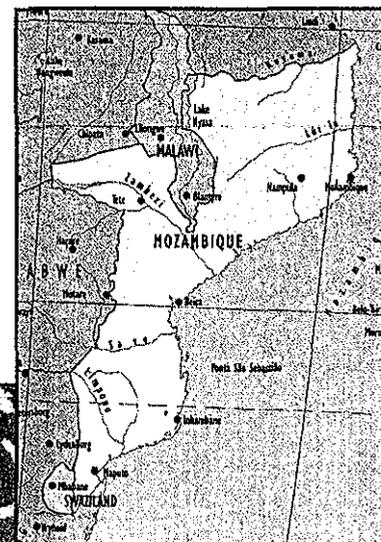


Jinotega Mayor Humberto Vasquez Centeno presents TechnoServe President Peter Reiling with the key to the city of Jinotega.

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.



TechnoServe Joins Forces with the National Gardening Association to Teach Americans about the 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

educate American schoolchildren and adults about the developing world, highlighting the vital roles gardening and agriculture play in other countries and how that is different or similar from the role of gardening in American households.

Kindergarten through eighth grade students who use the National Gardening Association's GrowLab curriculum in their science classes will receive information about schoolchildren in rural Latin America and Africa — their lives, culture and the role of 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.

WAYS YOU CAN SUPPORT TECHNOSENVE

Direct Contribution

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

Appreciated Stock Contribution

Giving gifts of stock or other investments which have recently grown in value can be an even more advantageous 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.

 Printed on recycled paper

Gardening Exchange Program opens new prospect for connecting school children

Pamela Okyere
 Research & Development Department



The National Gardening Association (NGA) and TechnoServe have joined forces with development education funding from the United States Agency for International Development (USAID) to bring students from the US and Ghana together. The project "Making Connections through Gardening" aims to increase understanding of the role gardening plays in sustaining interaction between cultures and countries.

Students in the US will exchange information, personal histories, and gardening knowledge with students in Ghana. Kindergarten through 12th grade classes in the US have joined the NGA's "Ambassador clubs" which provide them with thematic curriculum activities, e-mail pen pal services and up-to-date reports from Ghana.

Interactive Interviews

Payson Bullard from TechnoServe serving as NGA's reporter, spent three weeks in the Ashanti Region visiting 35 Basic and Junior Secondary Schools (JSS) in five districts, namely: Ejisu-Juaben, Sekyere-East, Amansie-East, Kumasi

Metropolitan and Kwabre. He interviewed selected children, teachers and parents in both primary and JSS classes about their culture, language agricultural practices, and gardening traditions. Issues discussed included activities undertaken daily, before and after school. Interviews were also held with teachers, parents of the children and officials of the district education offices.

The NGA learnt that schools in Ghana have things in common with the schools in the US and that the ability to connect with people on the other side of the world leads to the need for global knowledge; learning about other customs, cultures

and people keeps the world connected. The data collected were compiled into feature stories and these stories have been posted on the NGA web-site for schools and teachers in the USA to access on the Internet. Seven feature stories have so far been posted on the Web-site

<http://www.kidsgardening.com/ambassador/ghana00/index.asp>

Common heritage

The goal of the project is to expose school children in the US to the role agriculture plays in activities of their counterparts in Ghana. The exchange of communication between school children can serve as the basis for mutual understanding. ■



APPROPRIATE HOBBY: School Children working in the garden

174



TECHNO SERVE
Business Solutions to Rural Poverty

WORLD

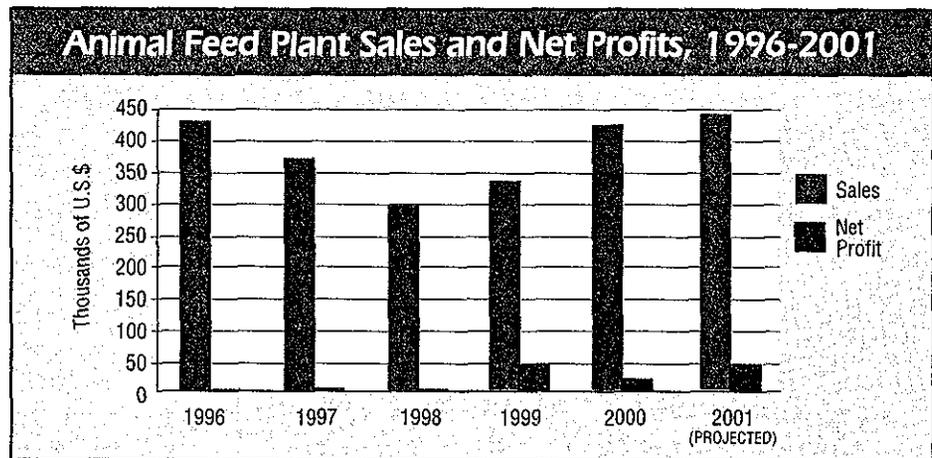
A Newsletter For Friends Of TechnoServe • Fall 2001

TechnoServe Helps Small-scale Farmers in El Salvador Compete

In the early 1990s, when El Salvador's civil war came to an end, the country faced great challenges of how to stimulate business growth and compete in a global marketplace. Leaders of several cooperatives in the region of La Paz recognized that they needed to become more business-oriented and competitive. As a result, in 1994, they came together to form the *Central Cooperativa Agropecuaria* (CCA), to increase the cooperatives' productivity and profitability. The CCA now has 11 member cooperatives made up of about 1,500 small-scale farmers.

In 1997, TechnoServe began assisting the member cooperatives of the CCA, focusing mostly on agricultural and livestock production issues. In 1999, TechnoServe's focus shifted to management of the CCA itself, and to one of its main business activities – a processing plant that produces animal feed for the cooperatives' dairy cows. TechnoServe's team, led by Gabriel Rosales, a 15-year veteran of TechnoServe with an additional 10 years of experience in livestock management, prepared a business plan for CCA. The staff quickly determined that the CCA's greatest potential for profit was in its animal feed processing facility. Established in 1994, the processing plant had shown strong sales, but it was hardly a profitable business.

With management assistance from TechnoServe starting in 1999, the animal feed plant's profits began to grow. Although sales had dipped



because three member cooperatives ceased their dairy activities, with TechnoServe's help, the CCA expanded into new local markets and established relationships with buyers from outside its network of cooperatives. Over the next year, TechnoServe will help the CCA to explore expanding into new product lines, including feed for poultry, pigs and shrimp.

TechnoServe's advisors developed special animal feed formulas for the CCA's dairy cows. They also help the plant's managers to source high-quality ingredients, like corn and soybeans. As a result, CCA member cooperatives like Nilo I have seen dramatic increases in milk production – their cows are now producing 30% more milk every day.



Rodolfo Randeros Arias, CCA Animal Feed Plant Worker

"I've been working here for three years. Before, I worked in the fields, earning a little over \$2 a day. It was hard for me to support my wife and son. Now I'm making over \$1,600 a year, and working at the plant gives me a sense of security. As an employee, I now have life insurance and I'm enrolled in social security. With the money I'm earning, I've expanded my house and built a kitchen made out of bricks. I even have some money left over to save. I opened a savings account at the bank, and I hope to build a new brick house for my family some day."

(continued on page 4)

175

Starting with Bananas, TechnoServe Is Help

Of all the countries in southern Africa, Mozambique has the greatest potential to produce high-quality fruit. Its fertile soils and range of climates can yield top-quality bananas, most citrus, avocados, mangos, litchis, pineapples, papaya, passion fruit, strawberries and guava. Mozambique traditionally produced some of the highest-quality fruit in southern Africa, but the country and its fruit industry were decimated by years of civil war and socialist rule.

TechnoServe is now helping Mozambican growers to improve quality, increase volumes, connect to new markets, and build a strong consumer brand. Since most of the country's fruit is grown by poor, small-scale farmers who live in rural areas – where annual per-capita income averages \$65 – a revitalized fruit industry will have a tremendous impact on Mozambique's economy. By supplying the domestic market, neighbors like South Africa, and as an off-season supplier to the Middle East and Asia, TechnoServe believes that Mozambique's fruit industry can grow from \$600,000 a year to \$40 million, buying fruit from 10,000 small-scale farmers and employing 7,000 others earning twice the per-capita income.

TechnoServe's plan begins with producing high-quality bananas for Mozambique's capital city of Maputo, which consumes over 35,000 tons of fresh bananas per year, and for South Africa, which represents a market of 250,000 tons. In 2000, under contract to the national *Associação dos Produtores e Exportadores de Banana* (APEB), TechnoServe began working with hundreds of small-scale growers in the area around Chimoio, a city in northern Manica Province.

TechnoServe is training small-scale farmers to reduce pests that cause blemishes; to properly maintain their plants so that the bananas will be large and sweet, and to crate their bananas to protect them on the grueling 16-hour truck ride from Chimoio to Maputo. Sixteen tons of Chimoio-grown bananas are now being trucked to Maputo every week.

In the past, banana farmers earned \$.02 per kilogram, when their buyers paid them at all. But APEB pays small-scale growers \$.04-\$.06 per kilogram according to quality, and pays within one day. This gives farmers tremendous incentive to improve the quality of their product, and they are responding. Currently TechnoServe is helping about 300 small-scale producers to sell their bananas to APEB, and expects to work with up to 7,000 growers in the near future.

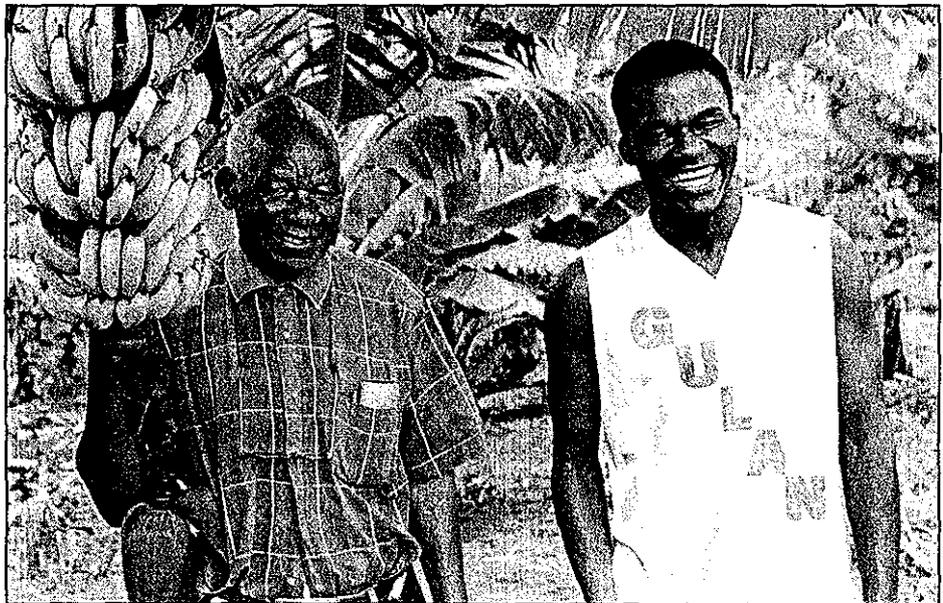
With *pro bono* assistance from Young & Rubicam, TechnoServe also created a brand name and logo – *Sweet Mozambique* – so that consumers will identify Mozambique with high-quality bananas and other fruits. Once the growers are producing a consistent volume of top-quality bananas, TechnoServe will introduce its *Sweet Mozambique* brand to consumers in Maputo and South Africa.

Who Benefits from TechnoServe's Assistance? Meet Tomas Jane.

At 70 years old, Tomas Jane is a well-respected elder in his community of Macate. He has been a banana

farmer for over 40 years, and still works in his fields every day with his son Titos. When Mozambique was still a Portuguese colony, Mr. Jane exported bananas to Zimbabwe. But then a brutal 16-year civil war left the country's economy and infrastructure in ruins. During the war, Mr. Jane and his wife, Leonor, left their farm and brought their children to the safety of nearby Chimoio.

Eight years later, in 1994, the family returned to Macate. But transportation costs had increased so much – due to the war and the poor condition of the roads – that Mr. Jane could no longer afford to export his bananas. Instead he had to sell his fruit to any trader who came to Macate to buy it. Often a trader would tell Mr. Jane and his neighbors that he would buy their bananas. Then, after the bunches had been cut, the trader would bring a truck but no money, saying that he would pay the farmers after he sold the bananas. At that point, Mr. Jane had no choice but to let the trader take the fruit, otherwise the bananas would rot. Sometimes the trader would only pay for a portion of the bananas that he took; sometimes the trader wouldn't come back at all. Thousands of small-scale banana growers who live in Macate and throughout Manica Province have



Tomas Jane and his son Titos with some of their crop.

ing Mozambique Rebuild Its Fruit Industry

encountered similar problems.

Today, Mr. Jane is one of 300 small-scale banana growers who TechnoServe is assisting to produce top-quality *Cavendish* bananas and then sell them to APEB. As a result, Tomas now earns almost three times as much for his fruit. With an assured market for his bananas, Mr. Jane plans to expand his production and hire 12 people to care for his plants.

Is TechnoServe Making a Difference in Mozambique? Ask Matias Mboa.

Matias Mboa is one of the leaders in the development of Mozambique's promising tropical fruit industry. As President of the national *Associação dos Produtores e Exportadores de Banana* (APEB), he has worked tirelessly to place Mozambique's fruit industry front and center in the country's development agenda. Through his leadership, the Mozambican government recently granted APEB 3,952 acres of land that will be used to grow bananas and test the potential for other fruits.

Mr. Mboa is the former President of *Agroverde*, a banana-producing company that was receiving assistance from TechnoServe up until February of 2000, when floods devastated the country, killing 700 Mozambicans and destroying thousands of farms, including Mr. Mboa's.

Here, Mr. Mboa describes the impact of TechnoServe's work in



Matias Mboa, president of the national Associação dos Produtores e Exportadores de Banana (APEB)

Mozambique's fruit industry:

"In January of 2001, with the support of TechnoServe, an important project was launched by the Banana Producers and Exporters Association, covering the provinces of Manica, Maputo and Gaza. [At that time,] farmers in Manica Province were falling into a pit of despair. They saw their bananas rot due to a lack of buyers, or usurped by dishonest truckers to whom they sold bananas on promises to pay, but who often did not keep their word. [But] now they know that there is a strong, honest hand that will buy their bananas every week, at a fair and profitable price.

"The Manica project, designed and led by TechnoServe, is helping

thousands of people throughout our entire country. Peasant families are learning from TechnoServe how to improve the quality of their *Cavendish* bananas, to better sell them. Instead of wandering the streets of the city, young men and women are filling our sales depot to buy and go resell our bananas throughout the city. And finally, our consumers can now choose to reject poorly ripened bananas with an undesirable appearance.

"It is a long and often difficult journey [from Chimoio to Maputo] due to the state of the roads, which takes at least 16 hours. We began by trucking six tons a week, then eight tons a week, and then we made our first weekly shipment of 16 tons of bananas. In this way, the sad faces of thousands of Mozambicans, on which hunger and unemployment have created furrows, bit by bit are opening into smiles that they had never known.

"Our dreams go a long way. What may limit our ambitions is our poor economic situation. Nonetheless, our goals remain. We would like to see the entire country expand its banana production. We would like to see more investment on large farms and also by small-scale farmers. We would like to see the end of the hunger that has assailed our country. And we believe that the banana has a role in solving this difficult problem.

"In every country, I think, there are many smart, enterprising and hardworking people. And when you give to them just a little bit of opportunity, they can do great things. That is what TechnoServe is all about."

WAYS YOU CAN SUPPORT TECHNOSERVE

Direct Contribution

Gifts of cash, real estate or personal property will support our work in Latin America and Africa.

Appreciated Stock Contribution

Gifts of stock or other investments which have recently grown in value can be more advantageous 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 principal 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 nonprofit organization as defined by IRS code section 501(c)(3). Contributions to TechnoServe are tax deductible to the extent permitted by law.

TechnoServe and National Gardening Association Educate American Children About the Developing World

For the past two years, TechnoServe and the National Gardening Association (NGA) have worked together to connect thousands of American school children to their peers in developing countries, using gardening and agriculture as a basis for helping students to learn about each other's way of life. American students in kindergarten through eighth grade used the NGA's GrowLab curriculum and formed Ambassador Clubs to share information with children in Nicaragua and Ghana, exchanging letters, e-mails and presents. NGA devoted an entire section of its www.kidsgardening.com web site

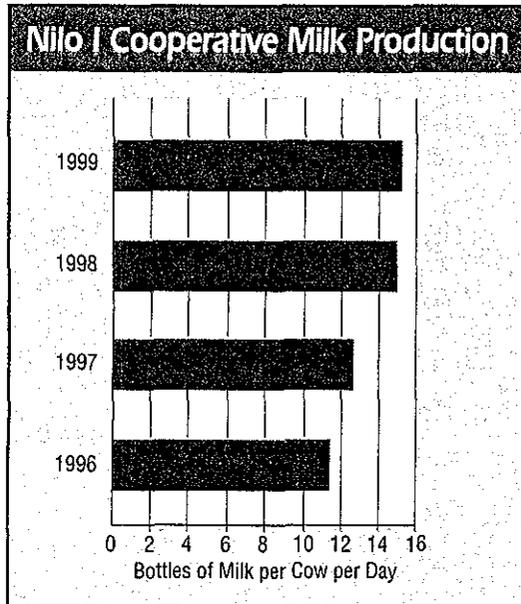
to this special "Making Connections Through Gardening" program. Here, Ambassador Club students accessed photos and stories of Ghanaian and Nicaraguan children collected by TechnoServe staff and information about these countries' people,

economies and cultures, while teachers could download entire lesson plans and other classroom activities. The program was so popular that the NGA created a special curriculum and related activities for high school students and teachers.

most
active

	Ambassador Clubs formed in U.S.	U.S. teachers participating	U.S. students participating
Year 1 Results Nicaragua	53	46	1,203
Year 2 Results Ghana	240	75	5,382
Total U.S. Outreach	293	121	6,585

TechnoServe Helps Small-scale Farmers in El Salvador (continued from page 1)



Angel Rivas, Manager, CCA Animal Feed Plant

Angel Rivas is a longtime member of the Santo Tomás cooperative, which is part of the *Central Cooperativa Agropecuaria*. He was trained in accounting, and became their bookkeeper. After two years, he was promoted to Treasurer, and four years later he became Manager. With six years of experience managing the cooperative, in 1999, Angel was asked to manage the animal feed plant.



"The plant provides great advantages for dairy producers in this region. Our feed is top quality. We use only the best corn, soy, mineral salts and other ingredients to make a formula that provides a good balance of energy, protein and micro-nutrients. We deliver the feed within two days of making it, so it's always fresh. Farmers have told us that after trying our feed, their cows won't eat anything else. In addition, the feed plant is close to the farms, so producers don't have to pay transportation costs from San Salvador, and if they run out of feed, it's easily accessible."



TECHNO SERVE
Business Solutions to Rural Poverty

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

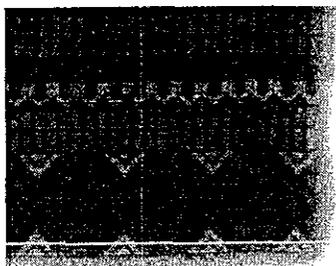
For more information, contact us at: 49 Day Street, Norwalk, CT 06854
(203) 852-0377 or (800) 999-6757
e-mail: technoserve@tns.org Web: <http://www.technoserve.org>

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.

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.

Printed on recycled paper

"Old Web Site"



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](#)

©copyright 2000 TechnoServe

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, science and other relevant programs.

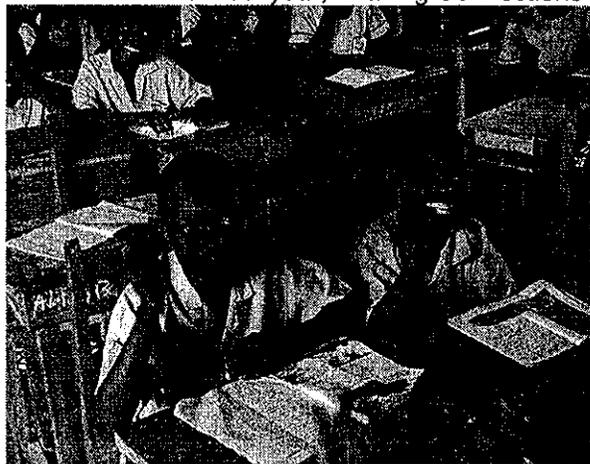
119



[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](#).

[Back to Top.](#)



TECHNO SERVE

Business Solutions to Rural Poverty

TechnoServe and the National Gardening Association Make the Connection Between Children in the Developed and the Developing Worlds



Overview

For better or worse, it seems that globalization is shrinking our world. People around the planet are more connected to each other than ever before. Even as national borders are becoming less prominent, international communication is becoming more commonplace. That's why we at TechnoServe believe it is increasingly important for Americans to learn more about "the 'developing' world," a place that seems so far away but is, in fact, where 2.4 billion of our neighbors live on less than \$2 a day.

That's why TechnoServe and its partner, the National Gardening Association (NGA), created the Making Connections Through Gardening program, a two-year initiative designed to increase American school children's awareness and knowledge about the developing world. With funding from the U.S. Agency for International Development (USAID), TechnoServe and the NGA have been working to give American children a glimpse into the everyday lives of children living in Nicaragua and Ghana.

"The Ambassador Club is an incredible resource for us. The Web materials, the curriculum, and the themes provide great potential for educating students and teachers about the cultures, needs, and development issues of other countries. We learn through a better understanding of these issues," said Tina Nilsen-Hodges, a teacher at the Susquehanna School in Binghamton, New York.

A partnership between TechnoServe and the NGA may seem a bit unusual, but it is the combination of our different yet complimentary strengths that makes the Making Connections through Gardening program work. Utilizing TechnoServe's on-the-ground experience in Ghana and Nicaragua, and the NGA's established network, curriculum and web site, Making Connections through Gardening was able to reach hundreds of teachers and thousands of students in the U.S. with a dynamic curriculum based on information drawn directly from the developing world.

Overview

The Program

Year One: Making Connections in Nicaragua

Year Two: Making Connections in Ghana

Results

TechnoServe Pays Follow-up Visit to Nicaragua

Links



Links

[TechnoServe Homepage](#)

[Read more about TechnoServe's work in Ghana](#)

[Read more about TechnoServe's work in Nicaragua](#)

[Visit the National Gardening Association's "Making Connections through Gardening" web site for teachers and students](#)

[Visit the U.S. Agency for International Development's development education web site](#)

Map courtesy of <http://www.theodora.com/maps> used with permission.

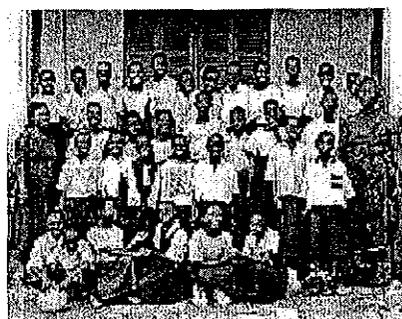
[TOP](#)

182



TECHNO SERVE

Business Solutions to Rural Poverty



Mrs. Victoria Sewaa-Aboagye's class five students



Classroom in Nicaragua

The Program

Children the world over can relate to gardening. From the commonality of this activity, the NGA's educators were able to design an engaging hands-on curriculum about Nicaragua and Ghana that focused on gardening, the environment and related issues. The curriculum introduced children in the U.S. to the idea of being an effective ambassador, with a lesson about environmental and agricultural practices in Nicaragua and at home. Centered on the environment, other themes in the Nicaragua section covered deforestation, environmental protection and corrective measures and stewardship. The unit culminated with the U.S. students examining the history of agriculture and horticulture and then exploring their roles in the present and future status of agriculture and the environment. The Ghanaian curriculum focused on the ecological, agricultural and resulting cultural diversity of Ghana and Africa as a whole. In one theme, specific groups of home gardeners, farmers, environmentalists and even nutritionists were studied to learn more about the diversity of factors driving the Ghanaian agricultural sector and the economy.

The Making Connections through Gardening program was publicized by way of announcements made by the NGA to thousands of teachers and students all across the U.S. The NGA listserv newsletters KidsGarden and GardenWire were sent to over 30,000 recipients. Other online newsletters, such as Schoolyard and Schoolgarden, picked up these announcements and rebroadcast them to their readers. The NGA also published articles about the program in their Growing Ideas and Gardens for All newsletters, and on its NationalGardening.com web site. TechnoServe likewise posted information about the program on our web site, and the news was picked up by other publications including Global TeachNet, and was featured in the NPO Spotlight section of the Foundation Center web site. In this way, more than 200,000 people were informed about the program and invited to actively join in or follow its progress on the Internet.

Interested teachers in the U.S. signed up their classrooms as Ambassador Clubs to take part in the Making Connections through Gardening program. Participants followed a curriculum designed by the educators at the NGA, which supplemented their studies of Nicaragua and Ghana with the stories and photos supplied by TechnoServe and posted on the NGA web site. Students and teachers from all over the U.S. also worked together by way of the NGA's online discussion forum to further their understanding through the process of cooperative education. This collaboration was taken one step further when letters from American teachers and students were sent to their counterparts in Nicaragua and Ghana. The completed cycle of knowledge had come full circle in an ever-rising spiral of understanding when the first letters from students in Nicaragua and Ghana began to return to their new pen-pals in America.

[Overview](#)

[The Program](#)

[Year One: Making Connections in Nicaragua](#)

[Year Two: Making Connections in Ghana](#)

[Results](#)

[TechnoServe Pays Follow-up Visit to Nicaragua](#)

[Links](#)

[TOP](#)



TECHNO SERVE
Business Solutions to Rural Poverty

Year One: Nicaragua

Before the pen-pal letters were sent out, before discussions were held, even before pictures and stories were examined, students and teachers alike were asked to *first stop for a moment*, close their eyes and think about what life is like in a small rural village in a forgotten corner of the developing world. What is a typical day like for a pineapple farmer and her household in Ghana, or for a coffee grower and his family in the hills of Nicaragua? For most of the Ambassador Club participants, it was not easy to put aside the barrage of media-driven news and draw this mental picture. So much of the information on the developing world that is available focuses on wars, famine, disease and a host of other manmade and natural disasters that the people, smiles and our common humanity tend to get lost in the daily shuffle.

Two years ago, with a mind towards educating the youth of America about what really goes on in the developing world, local professionals from TechnoServe's staff in Nicaragua left the office in Managua to head into the field. They made the same journey they had always made up into the hills above the city of Jinotega in the central northern region of the country. They arrived at the same villages that housed the leaders of the coffee cooperatives they had been giving assistance to for the past months. Instead of seeking an audience with these entrepreneurial ex-combatants of a 10-year civil war, they sought out their children and their schools. Students in seven different villages in the hills above Jinotega became the subjects of the biographies and stories that made their way back to the NGA offices in Vermont.

U.S. Ambassador Club participants were given a glimpse into some of the subtle differences of life in the developing world. They learned that the school children in the small villages in the hills of Nicaragua have parents who work hard all their lives to put food on the table and to clothe and educate them. They learned that poverty is not a product of a poor work ethic or a lackadaisical attitude, but rather it is the result of a number of environmental and political factors that have combined to limit people's potential for economic growth. In studying a country so recently ravaged by civil war, U.S. students saw that there is little ground to be gained in the war to make money for the family when the constant daily battle to put food on the table consumes all of a parent's efforts.

Impelled by information like, which was posted on the NGA web site, as well as the information they had already gathered on their own, students in the U.S. Ambassador Clubs formulated ways to circumvent the language barrier and begin communicating with their new friends in Nicaragua. Dr. Mary Phillips' students in the Lake Waco Montessori Magnet School in Texas decided to use art as a universal language, creating "biographical cutouts" to send to their pals in Nicaragua. "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," said Dr. Phillips.

Christine Danley, a teacher in the Holland School in Fort Wayne, Indiana, decided to return the favor and help the children in Nicaragua to learn about the U.S. Students in her school put together a hand-painted red, white and blue "Introduction box" for the Santa Barbara School. It contained a U.S. map highlighting their location in Indiana, an illustration of the American flag, pictures of the school, students and school animals, a pressed peony (the state flower), tape recordings of the national anthem and some of their favorite classroom songs, and other decorations for their classroom. (A description in Spanish was attached for explanation.)

[Overview](#)

[The Program](#)

[Year One: Making Connections in Nicaragua](#)

[Year Two: Making Connections in Ghana](#)

[Results](#)

[TechnoServe Pays Follow-up Visit to Nicaragua](#)

[Links](#)

[TOP](#)



TECHNO SERVE
Business Solutions to Rural Poverty

Year Two: Ghana

Building on the success of the inaugural year and the positive feedback from the initial participants, year two saw dramatic increases in the number of U.S. Ambassador Clubs joining the program. Making Connections through Gardening gained momentum as the focus shifted to West Africa and the spirited people of Ghana.

In Ghana, a special TechnoServe "roving reporter" was on the ground for a month, dedicated solely to the task of collecting photos and information for the NGA and researching and answering questions posted by U.S. teachers on an online discussion forum. Local staff members worked to identify schools throughout the Ashanti region of Ghana that would be best suited to contribute to the curriculum. TechnoServe devoted hundreds of man-hours to make investigative visits to 35 schools.

The second year began with Americans, as well as Ghanaians, discussing the initial perceptions they had about their peers overseas. Ghanaian children initially held as truth the common features of "Americana" that they had gathered from watching television or gleaned from third- or fourth-hand sources. They thought that all Americans were rich, that every house had a washing machine, and that every school was full of computers. They did not recognize that many Americans live in poverty, and that some households could not afford a television. They knew that there were both black people and white people in the U.S., but they were surprised to learn of the diverse races and varied nationalities that composed a great portion of the population. Ghanaian children were happy to comment on their ideas about life abroad in the U.S. and they were even more eager to put aside their perceptions for substantive knowledge.

Likewise, the American students perceived life in the developing world to be different from its reality. Most of their impressions also came from television and its presentation of the developing world, seen largely in the context of natural and man-made disasters. Participants in the U.S. Ambassador clubs soon learned that their peers overseas were kids who loved to play with their friends, kids who disliked eating their vegetables -- kids who were just like them.

Making Connections through Gardening then gave children a peek at the realities of their initial perceptions. The "roving reporter" held discussions with Ghanaian classes and answered questions about all facets of American life. American participants in the Ambassador Clubs, through the information on the NGA web site, were also given a glimpse into the reality of schools and everyday life in Ghana:

Clean, well-kept and truly cared for by the community, Ghanaian students and teachers alike do more than their share to ensure that their school buildings are preserved. The government provides no money for janitors or general maintenance projects. The school is an integral part of a local community that has little means to support it. Everyone pitches in. At the beginning of the school year, children can be seen walking down the rural roads to school in their tidy brown and orange uniforms. Some carry books, some carry desks and chairs, some carry a cutlass or machete. The desks and chairs have either been borrowed from the school to take home for the summer, or are being lent to the school for the year. The machetes are not for self-defense or aggression, but for use in maintenance of the grounds. The first few days of school after the long summer holiday are spent cleaning up and readying the building for the busy year ahead. The children help to weed the gardens and clear the paths of stones. The desks and blackboards are washed and the rooms and halls are swept clean. Everyone pitches in to make his or her school a better place. As one of the Ghanaian teachers explained, it helps the children to understand that they have a stake in their school and their education. They are all partners taking an active role in maintaining a valuable portion of their community.

One episode of note that the students in the Ambassador Clubs had an opportunity to learn about took place on a dusty Friday afternoon outside of Kumasi, Ghana's second largest city. As the TechnoServe staff drove up to the Bekwai Catholic Junior Secondary School, a group of

"I wanted us, as a class, to examine our assumptions about culture and poverty and what these mean to someone in Ghana and to someone in America. The class explored what poverty is and the concept of poverty. Does it mean different things to different cultures? The class researched what is relevant to different cultures through the KidsGardening Web site and related links. I wanted my students to learn more about cultural practices with less comparison to wealth or status," said Tina Nilsen-Hodges, a teacher at the Susquehanna School in Binghamton, New York.





Children from the Bekwai Catholic Junior Secondary School contributing to their community.



Students jumping rope



Ghanaian children at the "canteen"

children in their uniforms, and all carrying buckets on their heads, lined the side of the road that led up to the school. In the place of their normal Friday afternoon chores of cleaning the building and tending the gardens that grew around it, they were each assigned to bring a bucket of gravel up from the riverbed. This was no disciplinary action for mistakes the children had made; rather, it was a form of active participation in a construction project to enlarge their school. The students were collecting the ingredients for the making of cement. Two new classrooms lay half-built at the north end of their aging building. The construction work was being done on the weekends by local members of the village who were volunteering their time to the project. Every Friday the children would deliver their buckets of gravel and sand to the piles next to the cement mixer. When they returned to school on Monday, the piles were gone and a few more rows of cinderblocks had risen up from the foundation. The community and children were each doing their part to contribute to the much-needed new classrooms they would soon be enjoying.

American students were also able to draw some valuable lessons from the idiosyncratic differences between themselves and their counterparts overseas. The Ghanaian children all wear the same government-mandated uniform. For the boys it is a pair of brown shorts and an orange shirt, and for the girls it is a brown and orange dress. None of the children, including the girls, are permitted to have their hair any longer than half an inch. Procedures such as this are done in order to promote a homogenized community of school children, one that is less distracting to the education process. It also serves to unite all the children of the various tribes and cultures into a unified body of Ghanaians. Uniforms -- as well as a formal respect for their elders and visitors with the use of such words as "sir" and "madam" -- are carryovers from Ghana's not-so-distant days as a British colony.

American students also read all about how Ghanaian children don't like to get out of bed in the morning. They went on to discover that at recess the boys play endless games of soccer, and the girls compete in games like "Ampe" (a combination of hopscotch, jump rope and tag) and "Lidu" (similar to the American game of Snakes and Ladders). They buy their lunches from local women who set up small food stands around the school "canteen" (lunch area). After school they play with their friends and travel home to do their chores. Most of the Ghanaian children have responsibilities like helping their mothers with the cooking, cleaning up around the house, or taking care of their younger siblings. And they lend their hand to tending the gardens and assisting with the harvest.

[Overview](#)

[The Program](#)

[Year One: Making Connections in Nicaragua](#)

[Year Two: Making Connections in Ghana](#)

[Results](#)

[TechnoServe Pays Follow-up Visit to Nicaragua](#)

[Links](#)

[TOP](#)



TECHNO SERVE
Business Solutions to Rural Poverty

Results

Connections were made through gardening. In the first year, 46 teachers representing 53 Ambassador Clubs in the U.S. helped over 1,200 American students to increase their knowledge about Nicaragua and their understanding of how interconnected people of all cultures are. Word rapidly spread about this unique program and in the second year, 75 teachers enrolled 240 Ambassador Clubs in the U.S. -- with over 5,000 American students participating - to learn about Ghana. The NGA educators also received requests to expand their curriculum to include students in grades 9 through 12, a request that the NGA was happy to comply with.

The accompanying web site produced by the NGA (www.kidsgardening.com/ambassador/) has received over 15,000 visits since its inception.

Beyond these numbers, the Making Connections through Gardening program was a success or a more intimate level: Children and teachers in the U.S. were able to make a cross-cultural connection with their peers in Nicaragua and Ghana. Children from the northern hills of Nicaragua received letters from students in the hills of South Carolina. Worlds apart, they found a common ground right under their feet. The students in South Carolina compared their Temperate Rain Forest with the Tropical Rain Forest in Nicaragua. Another Ambassador Club compared the problems they were having with erosion to the related field of deforestation in Nicaragua. Schools in central Texas identified similarities they had with Ghana in everything from major crops to oil production.

Students and teachers from all over America have enriched their understanding of what life is like for other people around the globe. To date, over 6,500 students have been given the opportunity to examine primary sources of information from the developing world. They have been able to remove the blinders of media-borne information to see that the developing world is full of children identical to themselves in all aspects except for the opportunities available to them.

Likewise, the hardworking Nicaraguan and Ghanaian students, along with their teachers, have also been given a similar opportunity. They are better able to dispel the myths that all Americans are rich and that every household in the states has a TV, a washer/dryer, and a computer. They now know that children just like them are what make up classrooms around the world.

As true ambassadors, the children of these three countries will be able to enlighten their peer about the similarities, differences and discrepancies in our global community. Via the Making Connections Through Gardening program, TechnoServe and the NGA have helped to lay the foundation for a peer-to-peer exchange that is continuing to cross the seas of stereotype, breach the distances between continents, and dissolve the borders of the information gap.

Overview

The Program

Year One: Making Connections in Nicaragua

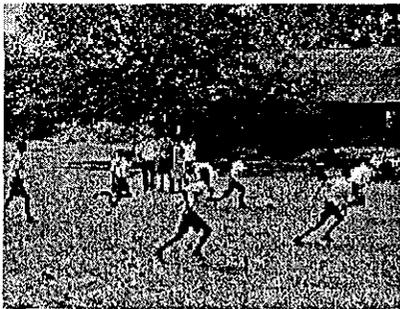
Year Two: Making Connections in Ghana

Results

TechnoServe Pays Follow-up Visit to Nicaragua

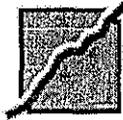
Links

TOP



"We have noticed a dramatic improvement in the program this year," says Dr. Mary Phillips, an environmental studies teacher in Waco, Texas. "The Ghana Ambassador Club curriculum has helped raise our level of awareness and knowledge about other countries and helped the students zero in on different subjects." Dr. Phillips teaches environmental studies and the gifted and talented student program at Lake Waco K-12 Montessori School.





TECHNO SERVE

Business Solutions to Rural Poverty

TechnoServe Pays a Follow-up Visit to School Children in Nicaragua

During the last week of January 2002, James Orr, a TechnoServe Board Member and Managing Partner of James Orr Associates, visited Nicaragua with his 16-year-old son, Alex. Mr. Orr and his son conducted a series of site visits to observe TechnoServe's work with dairy, coffee and vegetable farmers. Alex also managed to track down and do follow-up interviews with three students who were featured in year one of the Making Connections through Gardening program..



From left to right: Omar, Alex Orr, Teresa, and Andrea

Alex first talked with Omar from El Espino, a small community in the Jinotega district. Omar was a 14-year-old student in the 4th grade, who enjoyed helping his father with gardening, when TechnoServe first interviewed him two years ago. Now, at the age of 16, he says that not all that *much has changed*. Omar loves to play baseball, and when he grows up he wants to be a schoolteacher in his community. At the moment, though, his village doesn't have the money to pay for 5th and 6th grade teachers, and because Omar cannot afford the monthly fees to attend school in neighboring San Marcos, he is not currently enrolled in school.

Andrea should also be in the 6th grade; however, just like Omar, she is not able to afford to go to school in San Marcos. Two years ago, Andrea told TechnoServe about how much she enjoyed school, particularly studying Spanish. She explained to Alex that she does not want to be a farmer like her father, or a housewife like her mother. Instead, Andrea wants to be a schoolteacher.

Fourteen-year-old Teresa is still attending school. She is in the 6th grade in San Marcos, and she wants to be a nurse when she grows up. Like Omar, Teresa also wants to stay in the El Espino area later in her life. In 1999, Hurricane Mitch wiped out her family's garden, but since then they have replanted and are now growing minimal crops. Teresa's chores at home include collecting water from a pump a little way outside of town, which was installed when an organization helped them to redirect a stream for a water supply. Besides the improvements in roads in the area, Teresa says that things have not really changed much in her community.

Sixteen-year-old Alex Orr talked about his impressions after the interviews: "I found it interesting that the two students who are not currently enrolled in school want to be teachers. I thought that this shows that they have a genuine interest in education, and it is sad that they are not able to continue for lack of a very small amount of money. Overall, I would say that these students were very bright and had a reasonably optimistic outlook on life."



Alex and James Orr
(second and third from the right)

[Overview](#)

[The Program](#)

[Year One: Making Connections in Nicaragua](#)

[Year Two: Making Connections in Ghana](#)

[Results](#)

[TechnoServe Pays Follow-up Visit to Nicaragua](#)

[Links](#)

[TOP](#)

Attachment J

**“MAKING CONNECTIONS THROUGH GARDENING”
AMBASSADOR CLUBS Nicaragua Pre - Post Test**

<u>Class #</u>	<u>Grade Level</u>	<u>Student #</u>	<u>Pre- Mean Score</u>	<u>Post-Mean Score</u>
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. Raising 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 K



Ambassador Clubs



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

Discussion Forum

[Back](#)

 **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:

Message:

Post Now

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [E-mail Pals](#)



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

Discussion Forum

Back

 **Using art to communicate with El Espino pals**
 by Mary Nied 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-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. 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:

Post Now

124



Discussion Forum

Back

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

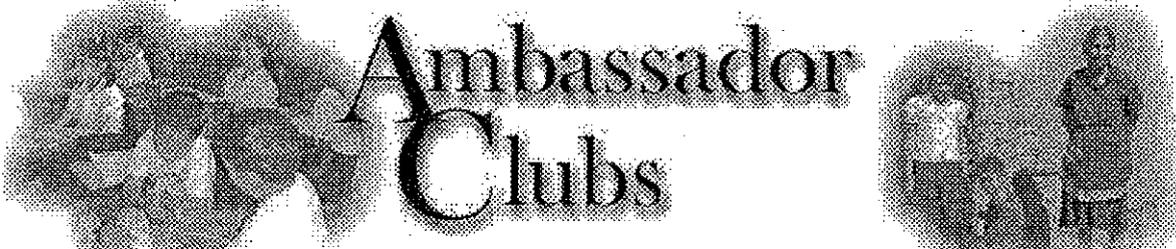
One of my responsibilities as not only the Environmental Educator but also the Lead GT teacher on our campus is to provide enrichment opportunities for our gifted and talented students. The Ambassadors Club program has been a wonderful way to do this and involve the students in learning research and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



- [Curriculum Activities](#)
- [Discussion Group](#)
- [E-mail Pals](#)
- [Favorite Websites](#)

Discussion Forum

Reply

School Gardens
by Janice Tietz

I teach a sixth grade class in Tehachapi, California. We are located about 120 miles NE of L.A. in the mountains. Since we are at 4000 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 gardens 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:

Message:

▲

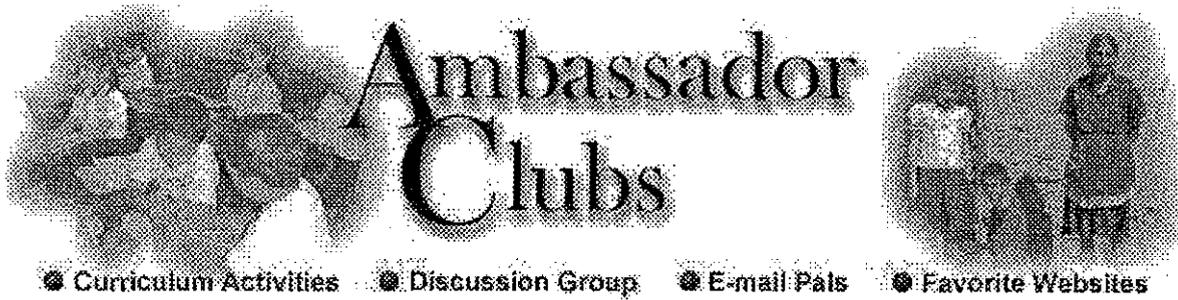
▼

Post Now

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [Project E-mail Pals](#) | [Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved

196



Discussion Forum

[Back](#)

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 of 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:

Message:

Post Now

197



Ambassador Clubs



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

Discussion Forum

[Back](#)

 **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:

Message:

Post Now

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [E-mail Pals](#)

198

Attachment L

Teacher/Class	Pre-Test Mean	Post-Test Mean
C. Smith/JT Home school	80	100
T. Nilsen-Hodges	0	88
W. Boone	10	74
B. Conway	50	77
D. Cycz	50	84
J. Abernathy	60	93
H. Rhea	60	91
S. Crane	50	79
T. Alvite	50	81
D. Frantz	60	87
E. Nelson	40	72
G. Smith	60	97
J. Bauer	40	83
J. Wallace	55	81
K. Russell	50	89
Hoffman	43	76
Walsleben	57	84
Noel	57	81
Seely	50	77
M. Harnick	50	82
C. Larro	51	79
J. Doucette	50	83
A. Leeds	0	81
E. Baur	60	94
P. McGinnis	54	86
N. Dohner	50	75
D. Hamilton	50	89

27

47.6 mean

83.8 mean

Attachment M

Letters from Ghana

Bonwire L/A primary
Post Office Box 47
Ashanti - Ghana
2nd April 2001

Dear Jonathan,

I am very glad to write you this letter. How are you? I hope you are fine as I am. I am a girl of ten years old and I am in Basic Stage five. I have chosen English and science as my favourite subjects. And I want you to know something about my school. My school has six ~~teachers~~ three females and three males. There is a large compound. Different kinds of trees have been planted ~~in the~~ in the compound. The school is not painted and it is roofed with iron sheets. We have a school farm which contains cassava and plantains. We have vegetable garden which contains Okro, garden eggs, pepper, tomatoes and onion. Extend my greetings to your friends and science teacher Mr. John Capozzoli.

I am done

Thank you
Yours sincerely

Stephanie Oduro-Mensah

Bonwire L.A. prime
 P.O. BOX 47.
 Bonwire - Ashanti
 2nd April 2001.

Dear Mr Jonathan

I am very glad to write you this letter. How are you? I hope by the grace of God you are fine as I am. I am a girl of twelve years old and I am in Basic Stage five. I have chosen Integrated Science, English Language, Religious and Moral Education as my favourite subjects. I also want you to know something about my school. My school has six teachers, three females and three males. There is a large compound. It can be found at the eastern of the town. The school is built with cement blocks and roofed with iron sheets. It has six ^{classrooms} ~~class~~, store, and office. We have foodstuffs farm and a vegetable garden. There is a football field the back of the school block. The building is not painted. The headteachers bungalow is in front of the school. Greetings to you friends and your science teacher Mr. John Capozzoli.

Thank you.

Yours sincerely
 Kyei Elizabeth.

QUEENS INTERMEDIATE
 1112 QUEENS RD.
 PASADENA, TEXAS 77502
 USA
 ATT: John Capozzoli.

~~Kyei Elizabeth~~

BONWIRE LIA JSS
 Box 18
 BONWIRE, ACH. REA
 GHANA WEST AFRICA

29th Jan, 2001

Dear Ms Danielle Zchnewicz,

Thank you for your second letter which was at hand on 28th Jan 2001.

1) School Uniform: We obtain them from the shops, purchases them from shops or markets for the wear.

2) As the head, I allow the pupil for some time. As happens not to wear proper uniform whilst he/she have the teachers beat the student.

3) They have garden. They plant cassava. I have introduced new idea so the student will now plant palm oil. At our school we sell the proceeds and put the money into school accounts.

4) We spend 90 days a term so we spend 270 days in a year. Always our holidays are very, very short at times we spend 18 days, 25 days 18 days for the year.

5) The time table starts from 8:00am to 2:00pm with 45 minute break for breakfast and lunch.

6) Most of the students like playing football, Volley, netball and others. We do not have Television or computer in our school. I also give homework to student to work at home.

7) The students like songs of praises. Then also the National Anthem and School Anthem.

Cindy Escamilla
 Queens Intermediate Sch
 1112 Queens Road
 Pasadena, Texas 77502

JUABEN L/A -1 PRIMARY
 P. O. BOX 3
 JUABEN - ASHANTI.

5TH FEBRUARY, 2001.

Dear Cindy,

Good day to you, unfortunately, your letter met my absence, I was at my brother's funeral at my home. Sorry for that delayance in reply letter.

Cindy I would be very grateful if you could take me as your personal friend besides this correspondings. I am very happy to answer your questions and think the answers will help you to know the problems encountering as teachers in Ghana in general and at Juaben in parti

- 1). School uniforms are prescribed by the Ghana Government ^{but} about a by parents and guidance. A student may wear it or not. Head teachers and teachers don't have any authority to punish any student on issue.
- 2). The school is situated within some settlement hence no land fee
- 3). The school year is divided into 3 terms and a total of forty five so in all is about 200-205 days on the average. We have 3 breaks thus - X'mas holidays, Easter holidays and end of academic year holiday thus in August or July every year.

1112 Queen Rd.
Pasadena, Texas 77582
713.928.8888
713.928.8848 (fax)
jcapozzo@pasadena.net

Queens Intermediate

November 3, 2000

Mr. Gabriel Osei Yaw (Head Teacher)
P.O. Box 10
Bosomtwe, Ashanti Region
Ghana, West Africa

Dear Ms. Bonfo,

My name is Krystal Trevino. I am an eighth grade student from Queens Intermediate School in Pasadena, Texas. I am appointed as your *Official Ambassador* to represent our campus to your school in Ghana.

Mr. John Capozzoli is our Science Teacher and has requested that we share our experiences with you and your students under a program from the *National Gardening Association* and *Techno-Serve*.

Pasadena is a suburb of Houston, Texas located 12 miles northwest. Our city is over one hundred years old and is considered to be famous for many chemical factories and oil refineries. Our population is over 90,000 people with several major highways and the second largest ship channel in the USA. We are very close to the Gulf of Mexico and enjoy a tropical climate most of the year.

204

BONWIRE METHODIST PRIMARY
SCHOOL
P. O. BOX 15
BONWIRE - ASHANTI

30TH NOVEMBER, 2000.

Dear Mr. Capozzoli,

I have acknowledged receipt of your letter and the content well noted.
Do accept our appreciation. We thank you very much for writing to us. We are grateful to you.

Bonwire is about twenty kilometers from Kumasi in the Ashanti Region. Kente weaving has been the main occupation of the men in this town for many years.

Tourists from all walks of life come to buy Kente cloths. Kente cloths have received world - wide recognition. This has made the town famous.

Bonwire Methodist Primary School was established in 1927 and the oldest School in the town.

The School has One Hundred and Seventy Seven Pupils with seven teachers. One of the teachers is a craft instructor.

We are delight in the effort you are making to twine your School and that of ours. The School Management Committee and the Parent Teacher Association that help our

205

~~Mrs. J. O. O. O. O. O.~~
Queens Intermediate School
1112 Queens Road
Pasadena Texas 77502
U.S.A

1. SCHOOL UNIFORMS: Where do you obtain them?
What happens if a student does not wear a uniform to school?

A. We are required to wear uniforms but failure to put on our parents are advised to provide us. There are no hard measures taking against us.

2). Do your students have a garden at school?
What do you do with the plants?

A. Our school has a plantain garden. We do plant cassava and maize on a portion allocated for such purpose. At the end of the harvest the maize is roasted and shared among us. (the students)

4. How Long Do you stay in School during the Day?

We begin the day at 8.00am and last until 2.00pm with 30 minutes break in two sessions. First break starts from 10:25 and ends at 10.50am with only 15 minutes. The second break begins at 12.30noon and ends at 12.45pm with 15 minutes also for lunch.

5. WHAT DO ~~FOR~~ THE STUDENTS DO FOR FUN AFTER SCHOOL? A: Do you know what? As a day

School pupils do not stay in school.

I was told the means of entertainment is watching T.V. programmes. Sometimes they occupy themselves in playing a game of foot ball.

6. WHAT IS THE FAVOURITE TYPE OF MUSIC YOUR STUDENTS ENJOY? DO THEY HAVE FAVOURITE SINGERS?

A. Most of our music is called High life.

Our music is called High life.

Attachment N

TEACHER SURVEY - Please cut and paste, put an X next to your answer, and email. OR, Type 1-5 with chosen answer and email.

1. On the whole, how would you rate your level of agreement with the following statement?
The environmental impacts of agricultural and garden practices in Ghana impact our lives here in the U.S.
Strongly agree
Agree
Don't know
Disagree
Strongly disagree

2. On the whole, how would you rate your level of agreement with the following statement?
U.S. foreign assistance efforts benefit people living in the U.S.
Strongly agree
Agree
Don't know
Disagree
Strongly disagree

3. What percentage of the federal budget do you believe goes toward foreign aid?
Choose one: 1-1%
 1-5%
 1-10%
 1-20%

4. What percentage of the federal budget do you believe should go toward foreign aid?
Choose one: 1-1%
 1-5%
 1-10%
 1-20%

5. On the whole, do you favor or oppose our giving economic aid to other nations?
Choose one: Favor
 Don't know
 Oppose

Attachment O

kids garde

making connections through gardening

home

families

teachers

sto

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 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/ambassador. 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.

Stories and photos posted on our Web site described the daily life of school children from villages surrounding Jinotega in northern Nicaragua. U.S. students learned about their typical school day, games, and chores. They also learned about the vegetables (mostly root) and tropical fruits grown in Nicaraguan huertas (home gardens). Nicaraguan children described how they help with worm composting (vermicomposting is very popular in Nicaragua), terracing, and spraying herbicides and fumigants. Photos of smiling children in homes with dirt floors, wood-fired cooking stoves, and dirt yards filled with chickens gave our Ambassador Club kids a powerful taste of how the Nicaraguan children live.

The curriculum posted provided opportunities for students to investigate such topics as Agriculture Practices, Hunger and Nutrition, Environmental Disasters such as Hurricane Mitch, Deforestation and other environmental problems. Many interesting projects were carried out by the Ambassador Clubs. Students in the Upper Piedmont region of South Carolina compared their Temperate Rain Forest to the Tropical Rain Forest in Nicaragua. Another Club that has erosion problems at their school - which means their carpets are soaked after every rain - related this to deforestation in Nicaragua. Children wrote letters in Spanish, constructed biographic cut-outs of themselves, and sent their state map, pressed state flowers, posters of native plants and animals, and more to their friends in Nicaragua.

Teachers used the Discussion Forum to share resources, projects, and difficulties. If they did not know Spanish, they sought help through the translation sites on the Internet.



Spanish-speaking parents, community members, students. Pre- and post-test results revealed a significant increase in both students' and teachers' knowledge of agricultural practices and environmental issues in Nicaragua. Ambassador Clubs across the country closed the school year with presentation festivities demonstrating their understanding and appreciation of Nicaraguan culture.

[Home](#) | [Parents' Primer](#) | [Classroom Stories](#) | [Activities](#) | [All About Plants](#) | [FAQs](#)
[Resource Directory](#) | [Online Courses](#) | [Our Mission](#) | [Discussions](#) | [E-mail Pals](#) | [Events Calendar](#)
[International](#) | [Garden in Every School](#) | [Millennium Green](#) | [Give Back to Grow](#)
[Kidsgardening Catalog](#) | [Youth Garden Grants](#) | [Store](#) | [Contact Us](#)
[Vermont Community Botanical Garden](#)

© 2000 Kidsgardening.com All rights reserved

The text on this page is cut off on the right-hand side. See next page for full text.

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.

Stories and photos posted on our Web site described the daily life of school children from villages surrounding Jinotega in northern Nicaragua. U.S. students learned about the vegetables (mostly root) and tropical fruits grown in Nicaraguan *huertas* (home gardens). Nicaraguan children described how they help with worm composting (vermicomposting is very popular in Nicaragua), terracing, and spraying herbicides and fumigants. Photos of smiling children in homes with dirt floors, wood-fired cooking stoves, and dirt yards filled with chickens gave our Ambassador Club kids a powerful taste of how the Nicaraguan children live.

The curriculum posted 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. Many interesting projects were carried out by the Ambassador Clubs. Students in the Upper Piedmont region of South Carolina compared their Temperate Rain Forest with the Tropical Rain Forest in Nicaragua. Another Club that has erosion problems at their school – which means their carpets are soaked after every rain – related this to deforestation in Nicaragua. Children wrote letters in Spanish, constructed biographical cut-outs of themselves, and sent their state maps, pressed state flowers, posters of native plants and animals, and more to their friends in Nicaragua.

Teachers used the Discussion Forum to share resources, projects, and difficulties. If they did not know Spanish, they sought help through the translation sites on the Internet, Spanish-speaking parents, community members, and students. Pre- and post-test results revealed a significant increase in both students' and teachers' knowledge of agricultural practices and environmental issues in Nicaragua. Ambassador Clubs across the country closed the school year with presentations and festivities demonstrating their understanding and appreciation of Nicaraguan culture.

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 P

DEPARTMENTS

- 6 Ask Charlie**
by Charlie Nardozi, Senior Horticulturist
Perennial sweet peas, dividing African violets, caring for apricot trees, pruning oak trees, and planting flower bulbs in January.
- 10 Letters**
Your ideas, comments, and questions.
- 12 Destination:**
Arizona-Sonora Desert Museum
by Michael MacCaskey, Editor-in-Chief
If you find yourself in the Southwest this winter, this desert museum-zoo-garden is a must-see.
- 18 Eco-Smart: Wood Preservatives**
by Alex Wilson, Vermont
Do wood preservatives make sense for garden use? The first part of our three-part series on using wood in the garden.
- 28 Gardening Matters: Beyond Our Own Gardens**
by David E. Els, President and Publisher
Creating a worldwide network of students who better understand gardening around the globe.
- 30 What's News**
edited by Charlie Nardozi, Senior Horticulturist
NG testers' choices for new flowers, bloomin' greeting cards, everblooming wisteria, Ice Block update, grow tunnels, living garden chairs, organic seeds, bird's-eye view camera, Seed Swap, EcoBug lawnmower, NG's 1999 article index, and Perry's perennial pick.
- 78 Technique: Keeping Honeybees**
by Marla Spivak, Minnesota
Beekeeping may be less intimidating—and more rewarding—than you ever thought.
- 84 Regional Guide to Winter Gardening**
Our guide to gardening where you live.
- 94 Resource Guide**
Reference books and Web sites; where to find plants, products, and more information; map of USDA Plant Hardiness Zones.
- 96 The Last Leaf**
photo by Lynn Karlin, Maine
Gesso the cat trots over new-fallen snow on a Maine farm.

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 let changes like that give us all the more reason to keep one foot planted firmly in the natural world.

So the only little prediction for the millennium: Do you remember those old movies about aliens invading the earth and all the people uniting to overcome them? It will be somewhat like that. We'll unite all right, but to save nature. We'll be saved, partly from unforeseen impacts of our technology, but mostly because it is precious and beautiful. Perhaps we'll even remember that nature includes us, too.

Join the effort to save the earth. Grow some plants this year.—M.M. (mikem@garden.org)

RECK WETTERBEE



Beyond our own gardens

Helping children increase their global awareness through gardening

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.

For the past five years, the 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

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



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.

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.

Attachment Q



National Gardening Association

Copyright 1999, National Gardening Association. All rights reserved.

Beyond Our Own Gardens



Helping children increase their global awareness through gardening

by David E. Els

Original Publication Date: Feb00



FREE!
EXPERT
TIPS
BOOK

Search NGA Library

Questions & Answers

Gardening Links

NGA Online Courses

Dictionary

Industry Research

Recommend Our Site

[NGA HOME](#)



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.

For the past five years, the statement on the front of the National Gardening Association's brochure has said, "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.

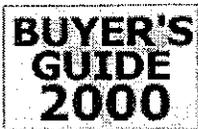
In the project, students in the United States, one Central American country, and one African country will learn about the environmental impact of gardening and agricultural practices in developing countries. The project will create ambassador clubs in 100 schools in the United States that will share 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.

Questions? Comments? Contact the Webmaster.
Copyright 1998 National Gardening Association. All Rights Reserved

240

See Next page



mySEASONS.com
Your Online Gardening Partner

20% to 40% off
Fall Bulb Sale

GardenWire Newsletter

your@email

Subscribe!



National Gardening Association

Last Updated: 10/20/00

Gardening Resources

- [Regional Reports](#)
- [Article Library](#)
- [Gardening FAQ's](#)
- [How-To Projects](#)
- [Learning Garden](#)
- [Horticultural Dictionary](#)
- [Plant NameFinder](#)
- [Find Gardening Products](#)
- [Industry Research](#)

Community

- [Garden Events Calendar](#)
- [Message Boards](#)
- [Seed Swap](#)
- [Vermont Community](#)
- [Botanical Garden](#)

Gardening With Kids

- [Kidsgardening.com](#)
- [Kidsgardening Catalog](#)
- [Youth Garden Grants](#)

About National Gardening

- [What is the NGA?](#)
- [Recommend Our Site](#)
- [NGA Home](#)

Feature Article: Natural Fuels

by Lee Reich

Sooner or later, every gardener discovers that for good results -- whether in the vegetable garden, perennial border, or lawn -- replenishing soil nutrients is necessary. And one of the key choices is whether to use organic or synthetic fertilizers.

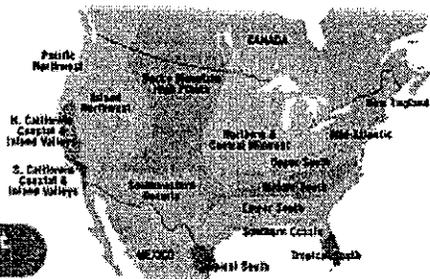
(click for full story)



Features	FAQ's
Fall Lawn Fertilizing	Aerating a Lawn
Seeding a Lawn	Lawn Care
Meadows Come to Town	Improving Weed-Infested Lawns
A Lawn in a Day	Planting Wildflowers
	Care of Zoysia Grass

Bi-Weekly Regional Reports

Click here for the current report for your region



Select a Region

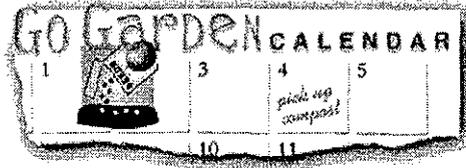
Go!

215

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.

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

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/sponic.html>

<http://members.tripod.com/~NicSocial/geography.html>

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

<http://www.thehungersite.com>

[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](#)

© 2000 Kidsgardening.com All rights reserved

kidsgardening.com

international programs

home

families

teachers

store

digging deeper search

Ghana: A Genuinely Diverse Culture

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



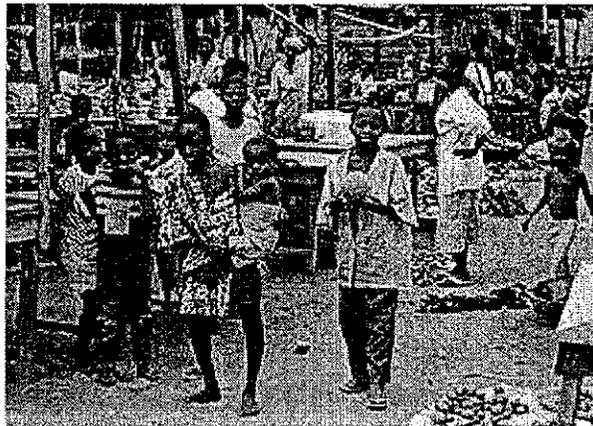
miles, there are four major religions, five major ethnic groups, and at least nine languages, plus a myriad of regional languages and religions.

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:

Curriculum

[Theme 1](#)[Theme 2](#)[Theme 3](#)[Theme 4](#)[Theme 5](#)[Discussion Forum](#)[Email pals](#)[Feature Stories](#)[Schools](#)[A Far Away Country](#)[Ghana at a Glance](#)[Diversity in Ghana](#)



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.



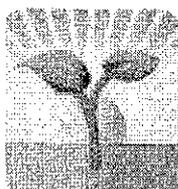
People throughout Ghana still practice various traditional religions, but almost two-thirds of the population is Christian and one-sixth is Muslim. Many indigenous Ghanaian religions honor a higher power, which include natural phenomena and the deceased. Dead ancestors are considered omnipresent beings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

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](#).

[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](#)

© 2001 Kidsgardening.com All rights reserved



national
gardening

kidsgardening.com

home

teacher's room

family room

5

international programs

Join NGA

Kidsgarden Online
Newsletter

store
E-specials
Kidsgardening Store
Request Info

gardening resources
Nationalgardening.com

digging deeper
Parents' Primer
Classroom Stories
School Greenhouse
Guide
Activities
All About Plants
Q&A Library
Online Courses

community
Discussions
E-mail Pals
Events Calendar
School Garden Registry

grants and resources
Youth Garden Grants
Resource Directory
Dutch Bulbs

partner projects
International
Give Back To Grow
Vermont Community
Botanical Garden

about us
Our Mission
Educational Membership
Contact Us

Back to Home

sponsored by



A Far Away Country

Getting a feel for a far-away country's geography and physical characteristics is difficult in part due to the lack of common reference points with places we do know. Maps show scales and locations, but getting a real sense of place is a multi-dimensional exercise. The country of Ghana is often compared to the state of Oregon due to the similarity in their sizes. Furthering the comparison, imagine that the state of Oregon (just under 3.5 million people) has the population of Ghana (just over 18.5 million people) and that most of those 18.5 million people live between the cities of Eugene in central Oregon and Lakeview on the southeastern border with Nevada. Ghana has just become a little easier to visualize. The geography of a place also helps tell the story of a country's agricultural heritage and production.

Layer by Layer



Ghana consists of two major ecological zones—the closed-fore (high-forest or closed-canopy forest) zone and the savannah zone. The closed-forest zone occupies the southwestern third of the country, home to almost two-thirds of Ghana's population. The productive Ghana's export crops of timber, cocoa, minerals, and ores take as well. The savannah zone has open tree canopies, shrubs, and grasses.

The savannah zone stretches along a narrow band of coastline, west of Accra to the border of Togo, and into an interior region covering the northern two-thirds of the country. Much of Ghana's original vegetation in both zones has been cut down, planted over, or mined through.

Two-thirds of the country's population is living in one-third of the country's area; where the production of a large volume of products requires an intensive use of the land. Maintaining a high level of production and conserving environmental resources have become big challenges for the people of Ghana.

Perils of Production

Agriculture—producing crops and raising livestock—is critically important to Ghana's economic health. More than half the people in Ghana make their living through some means of agriculture. Producing crops such as yam grains, cocoa, oil palms, kola nuts, and timber makes up the majority of the country's large agriculture. Yet home gardens and subsistence farming account for many Ghanaian's economic survival. Small gardens in both the countryside and urban areas produce crops that are used for consumption, traded for other staples not grown by the family, and sold at roadside stands but vital, source of income.

- Curriculum
- [Theme 1](#)
- [Theme 2](#)
- [Theme 3](#)
- [Theme 4](#)
- [Theme 5](#)
- [Discussion](#)
- [Email pals](#)
- [Feature Story](#)
- [Schools](#)
- [A Far Away](#)
- [Ghana at a](#)
- [Diversity in](#)





During the 1960s and 70s, Ghana's agricultural output dramatically. Clear-cutting of forests, depletion of nutrient-rich soil, lack of infrastructures to transport and market produce, and a devastating drought contributed to a dramatic decline in Ghana's agricultural economic stability. Governmental policies during the 1980s focused on increasing cocoa and timber exports rather than sustainable agriculture for domestic consumption. Increasing production of cocoa and timber led to clearing more land, cutting more forests, and growing crops in ecologically sensitive areas. By the early 1990s, the government began to look at ways to increase the local production of food. Extension services were set up to assist local farmers, agricultural research was begun, and a farmer's organization was formed to help organize a cooperative for marketing and selling produce. Although these steps help identify the needs of local farmers, the

majority of governmental economic incentives remain with large-scale farming.

Gender Roles in Farming

Most of the workers in commercial agricultural enterprises are men. Large-scale timber companies, mono-crop agri-businesses, mining companies, and fishing industries employ men to do the hard labor needed for producing these goods. Women in Ghana work in non-commercial agricultural production, mostly small-scale farming in the country and the city. Along with their children, women cultivate home gardens and raise livestock and poultry. The money made from selling produce, eggs, and meat at small roadside stands contributes an important source of income to the family. The role of women in Ghana's agricultural production and marketing is historically and culturally vital to the family's survival. The growing number of female-headed households in Ghana has sparked the interest of international advocacy groups. New studies are being conducted to examine ways of improving women's opportunities to market their produce. Research is also focused on improving food safety and long-term agricultural sustainability.



Sustaining Crops and Culture



While research projects and studies are being undertaken, the pressure on the economy, tillable land, and traditional agricultural practices. The exportation of goods has created a need for many Ghanaians. Working for large agriculture or in commerce provides the family with an income to pay for schooling, housing and provides an opportunity to become less dependent on subsistence farming to feed the family. But it also creates pressure for more arable land. Forests and savannas are being converted to tilled fields and hillsides. Trying to find the balance between economic prosperity and sound agricultural practices involves men and women, cities and villages, progress and tradition. Ghana is asking—How do we sustain small-scale farming and create opportunity for our people? What

practices should we abandon and what practices should we implement to ensure the health of the land and the people? How do we grow crops and cultural practices that enrich and enhance all people? These questions aren't unique to Ghana or Africa. Finding the answers requires a concentrated effort by all countries struggling to find the balance between sustenance and success.

Digging Deeper Search

Search

© 2001 Kidsgardening.com All rights reserved

222

kidsgardening.com

international programs

[home](#)
[families](#)
[teachers](#)
[store](#)
[digging deeper search](#)

Schools in Ghana

Welcome to the first "Making Connections Through Gardening's" Ambassador Club report from Ghana. Our reporter in the field - in the city, really - is Payson Bullard from TechnoServe, National Gardening Association's partner in this project. Payson has begun traveling to schools in Ghana and talking with students, teachers, and parents about their culture, language, agricultural practices, and gardening traditions. The schools in Ghana have some things in common with the schools in America, here's what Payson learned:

The schools in Ghana operate on a **F - C U B E** system.

- Free (no cost)
- Cumpulsory (must do it)
- Universal (everywhere)
- Basic (the 3 Rs)
- Education (knowledge)



The government of Ghana pays the teachers' salaries and supplies the building, but students must buy their own books, and uniforms, and pay for any extracurricular activities. Some students can't afford to buy these

things so they do not go to school until the family has money for supplies. (This means that school is *not necessarily compulsory* for kids who can't pay for supplies.) Until the family can raise the money for school, the kids work on the family farm growing crops like cocoa, coconuts (*copra*), and sugar.

Students may start attending school at the age of four. The grades are set up much like schools in the U.S. Children 4 to 6 years old attend kindergarten; 6- to 12-year-old kids attend "Primary School" Class 1 (elementary and middle school); 12- to 15-year-old kids go to "Junior Secondary" school (*junior high*); and 15- to 18-year-old students are in "Senior Secondary" school (high school). Students must pass an entrance exam in order to attend "Senior Secondary" school. If they pass the exam, they may choose a high school anywhere in Ghana.

Some students decide to go to high school far away from their home town. Can you imagine going to high school in a different town or state? "Senior Secondary" Ghanaian students choose to go to other schools to learn a new language or live in the village of their ancestors.

In the first curriculum theme, "*A Sense of Place*," we learned that Ghana has many different languages and cultures. Students living in Accra may speak a different language than students living in Ashanti. English is the official language of Ghana, but most Ghanaians speak several languages. To learn more about the different languages in Africa, visit [this Web site](#).

Curriculum

[Theme 1](#)
[Theme 2](#)
[Theme 3](#)
[Theme 4](#)
[Theme 5](#)
[Discussion Forum](#)
[Email pals](#)
[Feature Stories](#)
[Schools](#)
[A Far Away Country](#)
[Ghana at a Glance](#)
[Diversity in Ghana](#)



Ghanaian students spend the first few days of school cleaning the school's classrooms and grounds. There are no janitors or maintenance people, so the students and teachers work to spruce up the entire school. The teachers feel that if the kids do the clean-up work, they will have more pride in their school. If a student starts school after the initial cleaning has been done, that student spends the first few days weeding or washing walls before starting lessons. Keeping their school looking good is important to both students and teachers.

Many of the schools in Ghana have their own gardens or small farms that the teachers and students work on during the school year. (Sometimes when the school is closed for a holiday, grazing cattle trample the gardens

and then the students must replant.) The gardens are used to teach traditional gardening methods, crop planting, and harvesting.

In the coming months, we'll tell you about some "Primary" schools, we'll visit rural "Junior Secondary" schools, and we'll take a look at the roles for women in Ghanaian society. Until then, keep learning and growing.

To learn more about Ghana, visit these Web sites:

www.africaonline.com.gh/AfricaOnline/kidsonly/people/index.html

www.afroam.org/children/discover/discover.html

Be sure to read our [Curriculum Activities](#) to view and download any useful activities for your classroom needs.

You can contribute to the [Ambassador Club Discussion Board](#).

[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](#)

© 2001 Kidsgardening.com. All rights reserved



Ghana at a Glance

Ghana is located on the western 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](#)
- [Discussion Forum](#)
- [Email pals](#)
- [Feature Stories](#)
- [Schools](#)
- [Ghana at a Glance](#)

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

225

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, Akyi-roo (until we meet again).

[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](#)

© 2000 Kidsgardening.com All rights reserved

NG.com
March



Utility bills skyrocketing?
Get \$100 toward your utility bills.

flowers & bulbs fruits, veggies & herbs home & hearth lawns & landscaping garden care & pests

SEARCH FOR _____ GO

shopping

- mySEASONS
- Kidsgardening
- Buyer's Guide

gardening resources

- Regional Reports
- Q&A Library
- Article Library
- How-To Projects
- Online Courses
- Dictionary
- GardenWire Newsletter

community

- Message Boards
- Seed Swap
- Events Calendar

about us

- Who We Are
- Write To Us
- Business-to-Business

Back to Home

The Official Site of:

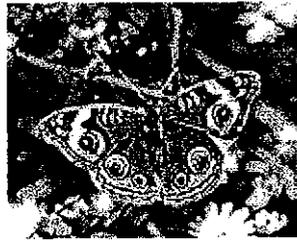


Give Your Support

GARDENING WITH KIDS

Butterfly Gardening

Growing plants that attract butterflies is a sure-fire way of engaging children in the garden, and it invites discoveries about pollination, insect life cycles, and the interdependence of insects and plants. The first step is understanding what makes butterflies tick at different stages of their life cycle.



From Egg to Butterfly. The cycle begins when adult butterflies lay eggs on a "host" plant. Some butterflies will only lay their eggs on a single type of plant (e.g, monarchs and milkweed), while others have several choices. In about five to ten days, the egg hatches and the tiny caterpillar begins eating the host plant, shedding its skin four to six times as it grows [more](#) »

WHAT'S NEWS

News from the National Gardening Association

[2001 Healthy Sprouts Award Apply Now for Free Dutch B Youth Garden Grant Application Seeking Rooftop Garden Sites](#)

REFLECTIONS

The World in a Seed

It's August and I'm sitting in the middle of my field in the sun eating the heart out of a 20-pound watermelon. [go](#) »

PARTNERS

Learn about the role of gardening and agriculture in Ghana, the focus of NGA's International Program, "Making Connections Through Gardening." [go](#) »

GLOBAL STEWARDS

Community Gardener Jill Jones



Jill Jones of Cedar Rapids, Iowa, had watched with dismay as her inner-city neighborhood of Wellington Heights--once home to grand old houses and tree-lined streets--declined into falling-down buildings; trashy, empty lots; and a haven for drug dealers, addicts, and vandals. She had

EVENTS CALENDAR

Find garden tours, plant swaps, festivals, and more on the **GoGarden Calendar.** [go](#) »



Butt
Explor
of bul
this
sc
ent



Bu
Fe
Lure bi
your
this
feede
be
atta

Kids Connect Internationally Through Gardening

by Joan White

Last year more than 50 U.S. "Ambassador Clubs," including more than 2000 K-8 students, communicated and shared activities with one another, and with schools in Nicaragua.



(mostly root) and tropical fruits grown in Nicaraguan *huertas* (home gardens). Nicaraguan children described how they help with worm composting (vermicomposting is very popular in Nicaragua), terracing, and spraying herbicides and fumigants.

Photos of smiling children in

homes with dirt floors, wood-fired cooking stoves, and dirt yards filled with chickens gave our U.S. Ambassador Club kids a powerful taste of how many Nicaraguan children live.

Ambassador Clubs used our curriculum to investigate agricultural practices, hunger and nutrition, environmental disasters such as Hurricane Mitch, deforestation and

Through our international project, Making Connections Through Gardening, funded by the U.S. Agency for International Development (USAID), U.S. and Nicaraguan students have learned important lessons about other cultures. The project's goal is twofold: to increase American students' understanding of the environmental impact of gardening and agricultural practices in developing countries, and to gain an appreciation for the importance of U.S. development programs.

Each club had access to curriculum materials developed by NGA; photos and stories collected in the field by staff from TechnoServe (our partner organization); and a discussion forum and e-mail pals on NGA's Web site, www.kidsgardening.com. All Clubs received an introductory package that included a Nicaraguan map and flag, and information on how teachers could incorporate the materials across the curriculum.

Stories and photos posted on our Web site throughout the year described the daily life of school children from villages surrounding Jinotega in northern Nicaragua. U.S. students learned about the vegetables



other environmental problems.

Students in the Upper Piedmont region of South Carolina compared their Temperate Rain Forest with the Tropical Rain Forest in Nicaragua.

Pre- and post-test results revealed a significant increase in both students' and teachers' knowledge of agricultural practices and environmental issues in Nicaragua

Another Club with erosion problems at school—their carpets are soaked after every rain—related this to deforestation problems in Nicaragua. Children wrote letters in Spanish, constructed biographical cut-outs of themselves, and sent state maps, pressed state flowers, posters of native plants and animals, and more to their friends in Nicaragua.

Teachers used the Discussion Forum to share resources, projects, and difficulties. If they didn't know Spanish, they sought help through translation sites on the Internet, Spanish-speaking parents, community members, and students.

Pre- and post-test results revealed a significant increase in both students' and teachers' knowledge of agricultural practices and environmental issues in Nicaragua. The Ambassador Clubs closed the school year with presentations and festivities demonstrating their understanding and appreciation of Nicaraguan culture.

This year, more than 5,000 U.S. children will participate in the program by connecting with students in Ghana via traditional and electronic mail. They'll use curriculum materials, share activities, and exchange photos and stories via the Internet.

For more information contact Joan White, NGA Program Director at (joanw@kidsgardening.com). ■

CURRENT ISSUE . REVIEWS . RFPs . JOBS . SPOTLIGHT . SEARCH PND . ARCHIVES . SUBSCRIBE . FC HOME

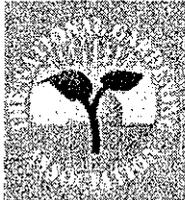
PHILANTHROPY NEWS DIGEST
Vol.7, Issue 7
February 13, 2001

NPO spotlight

See page 2



Browse the Spotlight archives.



Name: National Gardening Association
Founded: 1972
President: Valerie Kelsey, Ed.D
Address: 1100 Dorset Street, S. Burlington, VT 05403
Phone: 802.863.5251
Fax: 802.864.6889
E-mail: joanw@kidsgardening.com
URL: <http://www.kidsgardening.com/>

Mission: To sustain and renew the fundamental links between people, plants, and the earth. Through gardening, the National Gardening Association promotes environmental responsibility, advances multidisciplinary learning and scientific literacy, and creates partnerships that restore and enhance communities.

Background: In 1990, NGA published an NSF-funded K-8 plant-based curriculum, *GrowLab: Activities for Growing Minds*. This highly regarded curriculum, now in its seventh printing, uses a four-part teaching cycle to help teachers guide student-centered, inquiry-based plant explorations. NGA also developed companion resources and services, including the *Growing Ideas and Growing Partnerships* journals, teacher resource videos, and national GrowLab training workshops. The curriculum and companion materials meet a well-documented need for programs that help teachers guide meaningful, learner-centered investigations so students can build an understanding of key life-science concepts. The GrowLab curriculum is now used by more than 25,000 teachers nationwide.

With continued NSF support, NGA created a staff development

model and materials (videos and professional development toolkit) for supporting an inquiry-based approach to teaching using plants as a context. The project worked closely for four years with site-based teams of teachers, administrators, and horticultural partners on the Growing Science Inquiry (GSI) teacher enhancement initiative. Project activities included work with eleven sites, including two Urban Systemic Initiatives (Cleveland and St. Louis) and a Statewide Systemic Initiative (Vermont). NGA staff worked with local school leaders to provide professional development for K-8 teachers, as well as curriculum development (Cleveland), assessment training, and local partnership building.

In Cambridge, Massachusetts, NGA staff worked with science teachers to integrate GrowLab curriculum with other exemplary curricula (FOSS, Insights, STC) as part of the district's Habits of Mind Program. Also in Massachusetts, NGA collaborated with four districts to implement GrowLab as part of the CESAME statewide Math and Science Initiative. In North Carolina, NGA worked with Durham public schools to develop the Using Plants to Teach Science project. These initiatives involved staff in all aspects of professional development with a substantial population of teachers, teacher leaders and school officials, and reinforced the power of plants as teaching vehicles.

Current Programs: NGA is also a major proponent of the Garden In Every School (GES) initiative. As part of this effort, NGA has formed an effective partnership with the Los Angeles Unified School District and provided professional development workshops for more than 400 teachers implementing school garden programs involving 25,000 students throughout the district.

The GES movement is enhanced through NGA's Youth Garden Grants Program (YGG), which every year awards grants of equipment, seeds, plants, tools, and horticultural supplies to 400 exemplary youth gardening programs representing a diverse array of cultural and socioeconomic communities across the U.S.

At the international level, NGA is collaborating with TechnoServe on Making Connections Through Gardening, a project funded by the U.S. Agency for International Development (USAID). In the 1999-2000 school year more than 2,000 K-8 students in the U.S. shared garden- and environment-based activities with one another and schools in Nicaragua. An additional 5,000 U.S. schoolchildren 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 during the 2000-2001 school year.

Locally, NGA is collaborating with the City of South Burlington in preserving a 100-acre parcel of public land through the creation of

the Vermont Community Botanical Gardens (VCBG). The State of Vermont has awarded a \$21,000 Community Development Block Grant for project's planning and design. In addition, VCBG has more than 400 members contributing more than \$20,000 to this project. Phase I plans for the gardens will begin in the spring of 2001, and a capital campaign is in progress.

Recent Successes: NGA has received funding from the Oracle Foundation to develop an online botany course for educators. The course will comply with National Science Education Standards and will include relevant classroom activities for educators involved in garden-based education to use.

Web Site: In March 2000, NGA launched its educational site www.kidsgardening.com, an interactive hub where teachers, parents, and community organizers can find horticultural expertise, quality resources, networking opportunities, and classroom-tested project ideas that enrich plant-based exploration. The site also offers a national Garden in Every School Registry where schools with gardens, wildlife habitats, and other environmental projects can showcase their efforts. Classrooms using the Registry can search and exchange information and resources with classrooms who share their interests. The site is visited by more than 100,000 educators monthly and has received recognition and awards from a number of educational organizations, including "Blue Web'n," Education World, the National Association of Biology Teachers, the National Science Teacher Association, the American Association for the Advancement of Science, and the National Environmental Education Association.

Funding Needs: NGA is seeking funds to collaborate with professionals from higher education institutions to conduct an empirical study that demonstrates how garden-based education impacts the cognitive growth of elementary school children. Educators involved in school garden programs have little doubt about the benefits students reap from living garden laboratories. Students' comments, behaviors, and products; photos and portfolios; teachers' observations; and parent reports also speak volumes about how students benefit from garden programs. But most funders, policymakers, and administrators want to see quantitative results before embracing garden-based educational initiatives.

What are kids really learning? Do school gardening programs affect students' performance on standard achievement tests? These are the kinds of questions that need to be answered if school gardens are to receive broad validation as effective learning tools. This data can also help ensure that school gardens are appropriately funded.

Concerned about educators' needs to "state the case," NGA has

scoured the country in search of school gardening research study results that will help fuel debates and funding proposals. Garden-based education studies have focused on outcomes such as language, self-esteem, social skills, and student behavior; school, environmental, and nutritional attitudes; and nutritional attitudes and behaviors. All of these studies reveal significant gains when garden related activities were used. While a lot of great work has been done, NGA found that there have been no empirical studies that focus on children's cognitive growth.

.....

Last Week
WaterPartners International
Spotlight Archives



The Foundation Center

Every week, the "Spotlight" highlights the activities of a different U.S. nonprofit organization; periodically, the spotlight shifts to an NGO in a country other than the U.S. The selection of organizations for the "Spotlight" is based on criteria such as programmatic interests, geographic focus, and size to ensure the broadest possible representation of the nonprofit sector, both in the U.S. and abroad.

If you'd like to see your NPO or NGO in the "Spotlight," e-mail a description of your organization, **following the above format**, to spotlight@fdncenter.org, or send a hard copy via snail mail to:

NPO Spotlight
Philanthropy News Digest
The Foundation Center
79 Fifth Avenue
New York, NY 10003

The editors of *Philanthropy News Digest* reserve the right to edit submissions.

Copyright ©1995-2000
The Foundation Center

Attachment S

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

Please enter your email address to enter your name in the

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

234

Approved-By: gardenwire@NATIONALGARDENING.COM
X-Mailer: Microsoft Outlook IMO, Build 9.0.2416 (9.0.2911.0)
Importance: Normal
Date: Tue, 16 Jan 2001 16:29:03 -0500
Reply-To: GardenWire <gardenwire@NATIONALGARDENING.COM>
Sender: <listadmin@garden.org>
From: GardenWire < >
Subject: GardenWire: I
To: GARDENWIRE
X-RCPT-TO: <ngastaff@>

*General
Public
Surveys
Premium of garden coop*

GARDENWIRE: From the
January 16, 2001

For a Web version of GardenWire
<http://www.garden.org/gardenwire>
AOL Subscribers <A HREF
here .

sp">click

Table of Contents

=====

- New on Our Web Site: Take Our Survey, Win Garden Books!
- Feature: Climbing and Rambling Annuals
- What's News: Kids Gardening Photo Contest
- Question of the Week: Planning a Garden with Kids
- Regional Gardening Reports & Reminders

*****Our Sponsor This Week*****

Thompson & Morgan

Thompson & Morgan, the renowned English seed supplier, offers thousands of world-class flower and vegetable seeds. See our online catalog and receive \$2.50 off your order of \$30 or more. Visit:

<http://www.nationalgardening.com/gardenwire/thompsonmorgan.html>

AOL Subscribers <A

HREF="<http://www.nationalgardening.com/gardenwire/thompsonmorgan.html>">click here

New on Our Web Site: Take Our Survey, Win Garden Books!

=====

The National Gardening Association and TechnoServe are working on a collaborative project, funded by U.S. Aid, to connect students in the U.S. with students in other countries in an effort to raise awareness of gardening and gardening practices in the developing world. As an important component

of this project, we are seeking to learn more about your knowledge of and perspective on U.S. involvement in international development. Just for your participation in this 5-question survey and one follow-up survey, we'll enter you in our drawing to win a garden book library worth \$150. For details, please visit

<http://www.nationalgardening.com/RSRCH/survey/surveyintro.asp>

Thanks in advance for your help!

Climbing and Rambling Annuals

=====

There are few flowers as easy and dramatic as vining and trailing annuals. Aside from something to climb on, they don't ask for much just plenty of sun and soil that drains well. Whether they clamber up a trellis, the side of your house, or out of a window box, they're sure to please. This week's articles describe some you'll want to try in your garden this year.

Amazing Annual Vines

Fast-growing climbers with beautiful tresses

<http://www.nationalgardening.com/gardenwire/articles/675.html>

Durable, Delectable Nasturtiums

They're charming, easy, and good to eat, too

<http://www.nationalgardening.com/gardenwire/articles/59.html>

What's News: Announcing the Kids Gardening Photo Contest

=====

Dig out your priceless shots of kids in school, home, and community gardens and enter the best ones in the National Gardening Association's first Kids Gardening Photo Contest. We're looking for images of kids discovering the wonders of gardens and habitats, and we'll offer one grand prize (a cedar bench) and separate prizes (gift certificates) for the best photos in each of three categories. Winning photos will also be featured in a gallery on the Kidsgardening Web site (<http://www.kidsgardening.com>). The deadline for submissions is February 15, 2001.

Intrigued? Visit the Kids Gardening Photo Contest page for details.

<http://www.kidsgardening.com/photo1.asp>

Question of the Week

National Gardening Association and Technoserve are working on a collaborative project, funded by U.S. Aid, to connect students in the U.S. with students in other countries in an effort to raise awareness of gardening and gardening practices in the developing world. As an important component of this project, we need to collect baseline information concerning the knowledge and perceptions of the NGA community about U.S. involvement in international development. You can help us identify current levels of understanding by answering the five questions below. Simply choose a response from the drop-down menu next to each question and choose your response. We will e-mail participants when articles about international development issues are posted on our web site. Once you have had time to read these articles, we will conduct a second survey. This will give you another opportunity to win prizes as well as provide us with valuable information. We'll e-mail you when this second survey is posted on our web site. Thank you in advance for taking the time to participate in this short survey.

1. On the whole, how would you rate your level of agreement with the following statement? U.S. efforts and programs to help the world's developing countries are largely successful.

 ▾

2. On the whole, how would you rate your level of agreement with the following statement? U.S. foreign assistance efforts benefit people living in the United States.

 ▾

3. What percentage of the federal budget do you believe goes toward foreign aid?

 ▾

4. What percentage of the federal budget do you believe should go toward foreign aid?

 ▾

5. On the whole, do you favor or oppose our giving economic aid to other nations?

 ▾

6. What is your e-mail address?

Thank you for taking the time to fill out this survey. Please click "submit" send in your answers.

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 TechnoServe (link to www.technoserve.org), NGA is collecting information about Americans' current level of awareness of the impact of gardening and agricultural practices in developing countries. 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.

Impact of clearing land for agricultural use in Nicaragua.

Nicaragua's membership and role in the Central American Common Market.

Agroecological products and socioeconomic benefits of "huertos caseros" (home gardens).

Use of naturally occurring, renewable resources in "huertos caseros" (home gardens) in Nicaragua.

Soil erosion in "huertos caseros" (home gardens) in Nicaragua.

Impact of natural disasters on the Nicaraguan agricultural sector.

Impact of farming practices on the environment in Nicaragua.

Impact of agricultural pesticides on health in Nicaragua.

Impact of water resources on agriculture in Nicaragua.

Please enter your email address to enter your name in the 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!

Email entry
submit button

contact NGA for more information (link to joanw@garden.org)

Making Connections Through Gardening funded by The U.S. Agency of
International Development (link to www.info.usaid.gov)

Attachment T

kids gardening  com**international programs**[home](#)[families](#)[teachers](#)[store](#)[digging deeper se](#)**The Project**

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.](#)

Mapping the World**U.S. Students Bring America and Africa to Scale**

The Susquehanna School in Binghamton, New York, is participating in National Gardening Association's Ambassador Club during its

2000-2001 school year. The students are studying Ghanaian culture through stories, photos, and books. NGA provides curriculum lessons, stories about Ghanaian schools and students, and an online forum for discussion.

Susquehanna School is an independent non-profit institution committed to the principle that students construct their own knowledge through the adventure of learning. The classrooms are grouped according to developmental level and assessment is made based on previous accomplishments. Tina Nilsen-Hodges, who is an Upper Elementary Lead teacher at the school, has delved into the Ghana project with her class of 10- to 12-year-old students.

"Our first lesson compared maps of Ghana and Africa with maps of the United States. We looked at atlases and globes and devised methods to translate various scales from different maps," Tina explains. The students created their own scaling device by measuring one map's scale and comparing it to the scale of another map so they could compare relative sizes of different regions and countries. Tina also challenged the class to create a way to translate distances on a round map (globe) to a flat map; some students used string, some used rulers. By comparing different countries' sizes, locations, and allowing for the shape of the maps, students were able to create a fairly uniform scale that helped them gain a better understanding of how Africa and Ghana differ in size and location from the U.S.. For more on map scaling, click [here](#).



"This hands-on activity helped my students with problem solving, research skills, identifying a problem, and finding their own solution," Tina says.

The class discussed their preconceived ideas about Africa and Ghana. After reading the profiles of schools

[Nicaragua](#)[Ghana](#)[Discussion For](#)[Email pals](#)

and students on [Kidsgardening.com](http://www.kidsgardening.com)'s Web site, the class began a list of comparisons between Ghana and the U.S.. Tina asked her students to consider these questions: *Imagine yourself as one of the students in Ghana; what would you think about receiving a letter from a student in America? What makes an American? An African? How would you compare the differences and similarities between the U.S. and Ghana in religion, agriculture, gardening, and school?* After the class discussed these ideas, she had each student write down two questions that arose during the assignment.

"I wanted us, as a class, to examine our assumptions about culture and poverty and what these mean to someone in Ghana and to someone in America. The class explored what poverty is or the concept of poverty. Does it mean different things to different cultures? The class researched what is relevant to different cultures through the Kidsgardening's Web site and related links. I wanted my students to learn more about cultural practices with less comparison to wealth or status," Tina explains.

Tina's students have just completed letters to the students in Ghana and are anxious to begin a pen pal correspondence. The class sent two letters—one composed by the students and one by Tina as an introduction to the class and their studies. Tina and her students feel that hearing directly from the students in Ghana will enhance their knowledge and understanding of life in Ghana and in Africa.

"The Ambassador Club is an incredible resource for us. The Web materials, the curriculum, and the themes provide great potential for educating students and teachers about the cultures, needs, and development issues of other countries. We learn through a better understanding of these issues," Tina observes.

[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](#)

© 2001 Kidsgardening.com All rights reserved

kids gardening .com

international programs

[home](#)
[families](#)
[teachers](#)
[store](#)
[digging deeper sea](#)

The Project

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.](#)

Featured Ambassador Club

[Nicaragua](#)


Ghana Ambassador Club Curriculum Makes the Grade

[Ghana](#)
[Discussion Forum](#)
[Email pals](#)

"We have noticed a dramatic improvement in the program this year," says Dr. Mary Phillips, an environmental studies teacher in Waco, Texas. "The Ghana

Ambassador Club curriculum has helped raise our level of awareness and knowledge about other countries and helped the students zero in on different subjects."

Dr. Phillips teaches environmental studies and the gifted and talented student program at Lake Waco K-12 Montessori School. This is the second year Phillips has been involved with NGA's program. The Ambassador Club curriculum is helping her students connect with the world outside of their classroom.

First, second, and third grade students in Phillip's Environmental Education class are using the Ghana curriculum to explore environmental issues and cultural differences. NGA's program materials and curriculum activities guide the students' exploration into Ghanaian culture, climate, arts, music, geography, environment, agriculture, language, and people. The Ghana curriculum is woven into Phillip's environmental studies so her students learn how different climates and geographies affect biomes in individual countries. An introduction to this section of her environmental curriculum included having students study a floor-size continent map to find out where the equator divides Africa. Her students identified the different biomes on the continent and created a color-coded biome puzzle, then they examined the relationships between continental biomes and various climate zones in Ghana.

"First we look at the big picture and then we can take an up-close look at Ghana. My students are more prepared to focus in when they have an idea of the whole picture," notes Phillips. She is using all available information to teach her students how things are all connected.

The first assignment given to the multilevel class was to compile and present research on Ghana, from A to Z. Each student wrote a short informational section beginning with each letter of the alphabet. For example, F was for Fufu which is a



kind of food eaten in Ghana, and N was for Natamas which are blouses or kabas. Learn all the ABCs of Ghana by reading "[Ghana from A to Z](#)."

"We are integrating all disciplines into the project," Phillips explains. "The students had to research each letter topic and use many sources of information. They went to the library to look up Ghana-related subjects, used the Internet, and learned geography and climate from a CD- Rom program."

Phillips decided to feature the students' learning in her PTA presentation. "I can't tell you how proud we all were of our first, second, and third graders," she recalls. The students presented the A to Z information on Ghana while wearing Kente cloth sashes they made from recycled file folders. The students researched the historical significance of Kente cloth and the meanings of its symbols and colors. They cut out the shapes from recycled file folders, colored them, and wore them as ornamental art for their PTA presentation. (For more on Kente art, visit this [Kente Web site](#).)



"Each student gave their Ghana speech with such self-confidence and enthusiasm," says Phillips. "The students taught the audience Ghanaian songs and dances, and by the end of the evening everybody was singing and dancing. The Ghana presentation was a huge success."

The Ambassador Club program, explains Phillips, has contributed to the "considerable rate of growth" in her students' understanding of development and agricultural issues in other countries. Lake Waco Montessori is working with the local branch of the World Hunger Relief organization to have an intern from Ghana come to the school and work with the students in their new outdoor classroom. "We have dedicated our own outdoor laboratory, 'the Green Classroom,' to provide extensive hands-on opportunities for our students to learn about growing things," says Phillips.

Her students will then share information on gardening techniques and indigenous plant life, as well as environmental concerns and cultural traditions, with students worldwide.

Phillips and the Lake Waco School are great examples of how global connections help expand our horizons. The teachers, students, and community are learning that the environmental concerns and cultural traditions of Ghana are not unlike our own.

kidsgardening.com

international programs

home

families teachers store digging deeper se

The Project

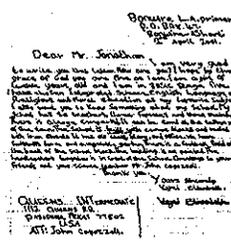
In the 1999-2000 school year, our international project, Making Connections Through Gardening, in partnership with TechnoServe and funded by US AID, connected K-8 students in the US with students in Nicaragua. These Ambassador Clubs communicated and shared activities with one another and schools in Nicaragua.

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.](#)

Earth Science Around the Globe

Eighth grade students find similarities with Ghana pen-pals



John Capozzoli's eighth grade Earth Science class has been studying Ghana through the National Gardening Association's Ambassador Club, for more on the project, [click](#). His students are studying Ghanaian culture, agricultural practices, and conservation methods using the

curriculum lessons, school stories, pen-pal correspondence with Ghanaian students, and the online forum for discussion posted on [NGA's Web site](#).

At Queens Intermediate School in Pasadena, Texas, John Capozzoli is an interactive science teacher who works with his students to pose questions and find answers about the natural world. For more on the school and science class, [click here](#). His Earth Science class used their own experiences to formulate questions and comparisons with Ghana students. The first area of study was water usage--in their own south Texas classroom and in Ghanaian home gardens. Students used the Internet, reference books, and information from their pen-pal correspondence with students in Ghana to research how Ghanians got their water, how they used their water to grow crops, and how they protected their water supply. "My students wanted to find out how kids in Ghana used water to grow their food. What they discovered was how precious potable (drinkable) water was to Ghanaian people," says John.

The class decided to monitor their own water usage after realizing most people don't have seemingly endless supplies of clean water. The science sleuths removed the sink drains and discharge pipes in the science lab and set up a small pipe directed into a five gallon bucket to measure the amount of greywater used (any water that has been used, except water from toilets, is called greywater). During their class, they monitored the buckets, measured the water levels, and recorded the amount of water collected. The students charted the amount of water used per day over a month's time; they estimated an average of 400 gallons of water a day was used in the science lab sink alone!

John's class discussed ways to reduce their consumption of water at school. His students designed a series of drain pipes to discharge the greywater from the lab out to

[Nicaragua](#)

[Ghana](#)

[Discussion For](#)

[Email pals](#)

244

their ornamental flower garden, thereby combining the use of water inside with the need for water outside and effectively eliminating the need to water this section of the garden. The earth science classes also designed a more drought-resistant garden, using succulent plants which require less water and represent some of Texas' native plant species.

"We also compared our south Texas climate with Ghana's and found some similarities. We noted our longitude-latitude and Ghana's longitude-latitude to try and answer student's questions about climate, crops, and culture," says Capozzoli. "My students were amazed at the commonalities they found with their own culture and the culture in Ghana."

Surprising Similarities

A few of Texas' major crops are sorghum, corn, rice, and soybeans. These are land-intensive crops which use a lot of resources and energy to grow. Ghana's agricultural products include cocoa, rice, sugar, and palm oil (similarly labor and resource intensive). Capozzoli's students had either seen most of the Ghanaian crops being grown or knew what they were and how they were used. "I think they expected something more tropical in terms of crops," he said. "The Ghanians rely on their crops as a source of income, just like many of my student's families."

Both Ghana and Texas have a history of riding the ups and downs of an oil-based economy. Ghana discovered oil in 1970 and exports most of its oil production in order to reduce the country's national debt. Texas drilled its first small oil well in 1921 and has ridden the boom and bust cycle ever since. "Using other locations on the planet in real-time allows the students to experience other cultures and environments," says Capozzoli. The eighth grade science students learned their world was not that different after all.

245

Attachment U

kidsgardening.com

international programs

home

families

teachers

store

digging deeper search

Discussion Forum

Post Now

[\[Usage Tips\]](#) [\[Terms of Use\]](#)

- ↳ [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:

[\[Usage Tips\]](#) [\[Terms of Use\]](#)

[Home](#) | [Curriculum Activities](#) | [Discussion Group](#) | [Favorite Websites](#) | [E-mail Pals](#)
[Map of Nicaragua](#)

© 2000 Kidsgardening.com All rights reserved

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

Back

RE: Soil, water, birds, and bug juice
by Kristen Russell

What kind of composting do people do in Ghana?

Name:

Email Address:

Message Title:

Message:

Post Now

kidsgardening.com

international programs

home



families



teachers



store



digging deeper sea

Discussion Forum

Back

RE: Soil, water, birds, and bug juice by Payson Bullard

I believe that most of the composting done in Ghana is based on the collection of simple garden refuse. Most likely if people are making a concious effort to compost they would start a collection pile or hole for weeds, cassava and plant peels, maize husks etc. I did not see any structures or containers that were specifically designated for composting.

Name:

Email Address:

Message Title:

RE: Soil, water, birds, and bug juice

Message:

Post Now

250

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

fertilizers & pests by [tamara north](#)

My students are interested in knowing what, if any, fertilizers schools are using in Ghana (our students experiment e year, trying to extend our growing season in Mass.). They'd also like to know what kind of garden pests have to be di with in the school gardens.

Name:

Email Address:

Message Title:

Message:

▲

▼

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

Back

RE: fertilizers & pests by Payson Bullard

A few of the fertilizers that I have encountered in Ghana: "black dirt" - a nutrient rich dirt made from the organic comp plant and vegetable wastes. "animal" fertilizer - manure/ruminant droppings from small farm animals (poultry) and ca inorganic fertilizers: "N.P.K." an inorganic mix of nitrogen, phosphorous and some other component.

Pests that are most commonly encountered: people from the community stealing the crops during the weekends or holidays, cattle and other grazing animals that are brought in or find their own way into the farms. I have not heard a significant complaint about any pest or bug besides domestic animals and people. I will make some inquiries tomorr

payson

Name:

Email Address:

Message Title:

Message:

Post Now

252

kidsgardening.com

international programs

[home](#)
[families](#)
[teachers](#)
[store](#)
[digging deeper sea](#)

Discussion Forum

Back


Area
 by Mrs. Nelson - T.

What is the area of the garden plot at the schools?

Name:

Email Address:

Message Title:

Message:

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

 **RE: Area**
by Payson Bullard

Mrs. Nelson,

The area of the garden plot varies. Soms schools have no gardens at all. Some shools have farms of a few acres wt they plant cassava, maize and plantain to harvest and sell on the market to raise money for the school.

I would say that on average the schools have two or three gardens measuring two meters by six meters. Schools are designed with the classrooms in a long line with exterior hallways on either side. Usualy there will be a small garden of each classroom.

Name:

Email Address:

Message Title:

Message:

▲

▼

Post Now

254

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

 **marigolds**
by donna cycz

one of the plants you mentioned was marigolds. Is it possible to send some seeds from the African schools in Ghana can try to grow them in our classrooms?
Also do you have access to a computer intel camera so a class can do videoconferencing with our class in Massach

Name:

Email Address:

Message Title:

Message:

Post Now

255

kidsgardening.com

international programs

home families teachers store digging deeper sea

Discussion Forum

[Back](#)

 **RE: marigolds**
by Payson Bullard

Donna,

I am sorry to say, but I believe that it is illegal to bring any fruit, dirt, or seeds back from a third world country to the U Customs does not want to introduce any new organisms that are not indigenous to North America.

I am also sorry to report that the internet and computer facilities in Ghana are limited and unreliable at best. There is access any where outside of the two maor citys. I am equiped with a digital camera that can also take five second m It takes me about ten minutes to send fifteen pictures back tothe states.

Eighty percent of the continent of Africa has no concept that the internet even exists.

I will see if I can sneak some seeds back for you.

Name:

Email Address:

Message Title:

Message:

↑

↓

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

Tools for garden by [Janet Wallace](#)

My students would like to know what kinds of tools the students use for gardening and if they have to do a lot of water

Name:

Email Address:

Message Title:

Message:

[Post Now](#)

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

RE: Tools for garden
by [Payson Bullard](#)

Some schools have no tools and the teachers ask that the children, class four and above, bring in their cutlasses (machettes). Other schools do have spades and "hand forks" but most of the time the cutlass is used.

A cutlass has a wooden handle with a long blade for use in cutting grass and weeds. At the top of the blade widens a flat arc. The tip of the cutlass resembles a small flattened spade, and is usually used in digging and weeding.

Name:

Email Address:

Message Title:

RE: Tools for garden

Message:

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

 **RE: watering**
by [Payson Bullard](#)

Only one of the schools said that they water their garden (and I think that they were trying to give me an answer to pl me instead of telling me the reality of the situation). So most if not all school gardens are rain fed. Farms and home gardens are almost entirely rain fed as well (we are in a region of Ghana that gets a lot of rainfall, in more arid areas use irrigation and other watering meathods)

Payson

Name:

Email Address:

Message Title:

Message:

Post Now

259

international programs

[home](#)

[families](#)

[teachers](#)

[store](#)

[digging deeper st](#)

Discussion Forum

[Back](#)

Great resources by Tina Nilsen-Hodges

I've visited numerous libraries looking for books about Ghana that are appropriate for my 5th and 6th graders, and finally found one that I really like. Published in 1999 by Children's Press, a division of Grolier Publishing, simply en "Ghana", this book was written by Ettagale Blauer and Jason Laure, and is part of the Enchantment of the World S Series. (ISBN 0-516-21053-X) It has many, many beautiful photographs, and its 133 pages are full of satisfying de Ghana that makes the people, their history and culture come alive. I think I can say without exaggeration that we a "enchanted" by this book.

There's also a poster published by Key Curriculum Press entitled "Math of Africa" that features a drawing of an As in kente cloth and his keeper of scales, with information about the Asante peoples' system for weighing their gold (trading. The brass weights used with the scales were beautiful sculptures incorporating images with symbolic mea kids recognized the connection with the symbols used in adinkra cloth right away). My kids really studied this poste carefully, noticing details about who was wearing kente cloth and who wasn't, the golden stool next to the Asanteh Key Curriculum Press can be reached at 800-995-MATH; they also have a website.

It's taken me a lot of time to find these resources, so I'm happy to have the opportunity to pass them along. Hope y enjoy them as much as mine have. (And that you enjoy them as much as I have!)

Name:

Email Address:

Message Title:

Message:

Post Now

[Home](#) | [Discussion Group](#) | [E-mail Pals](#)

© 2000 Kidsgardening.com All rights reserved

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

 **garden**
by [donna cycz](#)

what types of plants do the students grow in the garden at school?

Name:

Email Address:

Message Title:

RE: garden

Message:

Post Now

kidsgardening.com

international programs

[home](#)
[families](#)
[teachers](#)
[store](#)
[digging deeper sea](#)

Discussion Forum

Back


RE: garden
 by [Payson Bullard](#)

Donna,
 None of the teachers or students that I have come across seem to know the names of the plants and shrubs that are in the gardens in front of the schools.
 The students and teachers here in Ghana sometimes have a farm where they plant crops that are both comonly four the area and can be sold to raise money for the schools. Usually they plant cassava, and maize. But I have found everything from plantains to herbs.
 Payson

Name:

Email Address:

Message Title:

Message:

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

RE: garden
by [Payson Bullard](#)

Donna,

I found a teacher today who knew the names of most of the plants in the garden in their school. The school was known "kokoase" because of the groves of cocoa trees that surround it. They also had "flamboyant", acacia, forget-me-nots, marigolds, and "pride of Barbados".

Name:

Email Address:

Message Title:

RE: garden

Message:

▲

▼

Post Now

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

RE: Where I am in Ghana by Kristen Russell

We are planting many native plants to attract butterflies. Do you try to attract butterflies in parts of Ghana? What plants are growing in November(vegetables and fruits)? We would like to have a virtual salad party with kids fr Ghana around the U.S. holiday of Thanksgiving. Could this happen?

Name:

Email Address:

Message Title:

Message:

Post Now

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

RE: Where I am in Ghana by Payson Bullard

I have seen many butterflies on the plants in Ghana. I do not think that people, especially the schools, plant flowers to butterflies. Most plantings are done for agricultural needs or for aesthetics.

Ghana is in the middle of the minor wet season right now (september to november). There are usually two harvests in Ghana. The major one just took place in July/August. Most of the gardens and farms are full of crops that will be harvested again in December. All the plants and crops that have been mentioned in other sections of this discussion are being grown right now. Some of the major ones are: cassava, plantain, maize, pineapple, oranges, tomatoes, ga eggs, cocoa, and cocoayams.

I am sure that some of the schools and students would be thrilled to have a "virtual salad party" with your students, b there are a few limitations. Most of the classrooms I visited did not have electricity, not to mention access to the inter do not think it is feisable to set up any kind of realtime link with schools in Ghana. The best bet is to start a pen pal ty corespondance.

Name:

Email Address:

Message Title:

Message:

Post Now

kids gardening .com

international programs

[home](#)

[families](#)

[teachers](#)

[store](#)

[digging deeper sea](#)

Discussion Forum

[Back](#)

 **school day**
by [Cyndal Smith](#)

How long is a normal school day and how much time is usually spent tending the garden?

Name:

Email Address:

Message Title:

Message:

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

Back

RE: school day
by Payson Bullard

The school day usually starts at 7:30 or 8:00 in the morning And ends at 2:00 or 2:30. These times are almost stand throughout the country because schools are a government agency. There are also one or two breaks for lunch and p The breaks are half an hour each in length.

Usually the teachers ask the children, in grades 4 and above, to bring in their cutlasses (machette) on Friday so the students can spend an hour or two fixing up the gardens. Most of the children contribute to the farms at home so the skilled at their task and the gardens look great in no time.

Name:

Email Address:

Message Title:

Message:

Post Now

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

Soil and Water by Cyndal Smith

What is the soil like? How do they get there water for the plants? Do they use pesticides or natural things like ladybugs?
Cyndal

Name:

Email Address:

Message Title:

Message:

Post Now

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

RE: Soil, water, birds, and bug juice by Payson Bullard

This is from a local student's thesis about gardens in the area: "The soils have been classified locally as Forest Ochrosols and gleisols. The Ochrosols are red, brown and yellow-brown, relatively well-drained soils, developed from acid granitic phyllites. The gleisols vary from yellow to grey or white, are associated with yellow bottoms, and are poorly drained. Those derived from granites are loamy sand in texture, while those derived from phyllites are clay in texture. The soils are derived from thoroughly weathered parent materials and are therefore low in nutrients especially nitrogen and phosphorus. The plant nutrients are concentrated in the top soil, and loss of this horizon therefore markedly lowers the soil's productivity. The soils are light clay in texture and the main clay is kaolinite."

That is from a study of the area as a whole. The school gardens are basically composed of stony and clay like material. The farms are on richer soil and the ones that intercrop things like maize with cassava have a very rich soil.

There are almost no insects that attack the gardens or crops. Once in a blue moon there is a problem with "Army Worm" but that seems to be a rare and short lived problem. Not many pesticides are used (I only found one person who did them). If you do want to use pesticides you can purchase them and the government will come out and apply them to the farm for free.

The birds that I have seen: None that would be considered a threat to the crops or gardens. Mostly crows and poultry, unidentifiable song birds, but those are rare.

Most of the crops are rainfed. In only one instance did I find someone who said that they watered their garden, and that he was trying to give an answer that I wanted to hear. Here in Kumasi and the Ashanti region there are two rainy seasons per year that feed the crops.

Payson

Name:

Email Address:

Message Title:

Message:

Post Now

kidsgardening.com

international programs

home



families



teachers



store



digging deeper sea

Discussion Forum

Back

 **fruit trees**
by Janet Wallace

We would like to know if there are any kind of fruit trees other than banana and cacao trees? Do they have apple or pecan trees?

Name:

Email Address:

Message Title:

Message:

▲

▼

Post Now

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

[Back](#)

RE: fruit trees
by [payson bullard](#)

I have seen many diferent kinds of fruit trees in Ghana. While they do grow bananas, they are not as abundant as th plantain.

I have encountered many farmers that have orange groves, as well as famlies that have orange trees in their backya garden. I have also seen "sweet apples" which are a sweet fruit shaped like an oversized and bumpy green apple. I encountered gardens with avacados (fruit or vegetable, I don't know). Pineapple is the other major fruit grown in Ghe. Many farms are producing pineapples not just for domestic consumption, but primarily for export to Europe.

I am sure that there are many kinds of fruit grown in the country (possibly apple, peach, or pecan) but I did not encol any others in the limited area of the country that I traveled to.

Payson

Name:

Email Address:

Message Title:

Message:

Post Now

271

kidsgardening.com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

Back

Languages taught in school by Tina Nilsen-Hodges

Hello, Payson,

My students were wondering if children in Ghana learn to write the languages that they speak at home at school, or if they focus primarily on learning English. They also noticed that several rivers are named "Volta," as is the lake created when the rivers were dammed. Does the name have any special historical meaning or significance that you know of?

Thank you!

Tina Nilsen-Hodges
The Susquehanna School, Binghamton, NY

Name:

Email Address:

Message Title:

RE: Languages taught in school

Message:

Post Now

272

kids gardening .com

international programs

home

families

teachers

store

digging deeper sea

Discussion Forum

Back

RE: Languages taught in school by payson bullard

Tina,

Language classes in schools in Ghana are much like the ones in the states. Children learn how to speak, read, and their native languages. The Ashanti region where I spent most of my time teaches "Twi". Twi uses the roman alphabet only one or two different letters. Reading and the spelling used in Twi is almost non-sensical to westerners who are unfamiliar with the language. Even after being in country for a month I had a very limited grasp on the language. Other regions usually teach other languages, ones that are native to that region. English is also taught in school just the states. Children learn proper grammar as well as reading and writing.

Before lake Volta there was just a river that ran from the northern boarder of Ghana to the sea. The river has its own but I can't remember it. The government then decided to build a hydroelectric dam on the river. The dam created the BELIEVE that the lake was THEN named "Volta" after the electricity created from the dam. Most likley the other river called "Volta" were formed after the dam was built or renamed after the lake was created. I do not think that there is special historical origin of the name. I will see if I can find out some more information.

Payson

Name:

Email Address:

Message Title:

Message:

Post Now

kidsgardening.com

international programs

[home](#)
[families](#)
[teachers](#)
[store](#)
[digging deeper sea](#)

Discussion Forum

Back


Where I am in Ghana
 by Payson Bullard

I am just on the eastern edge of the city of Kumasi in Ghana. Kumasi is the second largest city in the country and is 150 km west of Accra (the capital and largest city) and 175 km north of the coast. I am going to schools in Kumasi at the northern, southern, and eastern boaders of the city.

Name:

Email Address:

Message Title:

Message:

Post Now