

# *GlobalTribe* Educational Curriculum

Mexico Lessons

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[www.pbs.org/globaltribe](http://www.pbs.org/globaltribe)

*GlobalTribe* is a PBS series that combines the spirit of travel with a meaningful exploration of the global issues that affect us all. On our journeys to remote corners of the world, we seek to understand in human terms the universal struggles of our planet: from healing racial wounds to saving the environment to improving the lives of the poorest among us. Our quest is also to find solutions and to meet the unsung heroes in every country who offer us hope and a path to a better tomorrow.

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## **Introduction / Pre-viewing**

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1. Make a list of what students know about Mexico (this might be based on first hand experience, family member's stories, or information from books and other media). Then make a list of what they want to know about Mexico. Look at the list and discuss whether they think it should be different, given that Mexico is one of our two bordering neighbors.
2. Share some basic statistics about Mexico City with the students: 1,000 babies are born a day; approximately 1/6<sup>th</sup> of the population live in extreme poverty, going without basic necessities such as indoor plumbing; city services, including garbage pick up, are sporadic. Given these facts, ask the students what they think it would be like to be a teenager growing up in Mexico City? What problems might they face? Especially consider problems caused by overpopulation, poverty, and environmental degradation.
3. Ask the students what they know about deforestation. If they're unfamiliar with the term, you might briefly tell them that it is when many trees are removed from a large area. What are some of the reasons for deforestation (e.g., trees are needed to make paper)?
4. Tell the students that one part of the program they'll be watching deals with an endangered animal that is being killed because many people enjoy eating it. Is there anything they eat that other people might find wrong or bad? Have they ever considered not eating a certain food because of environmental or ethical reasons? Who should make the decision about what people can and cannot eat?

## Permaculture

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**Objective:** Students will develop a working definition of “permaculture.” As part of a small team, they will devise plans to turn aspects of their school into a permaculture environment.

**Time:** Lesson can be adapted to between 4 and 12 in-class hours.

**Grade Level:** 9-12

1. Ask your students to write about the young people of Tierra Viva. How do they feel about the Mexican teens’ situation and about their response to it? As a class, share and discuss the ideas generated by the writing.
2. Ask the students for a definition of “permaculture” based on what they saw in GlobalTribe. Write responses on the board. Then direct them to this web page which includes multiple definitions:  
<http://www.permacultureactivist.net/intro/PcIntro.htm>. (Or, copy the definitions found on the page for students.) Ask students to underline specific examples that help them to understand the concept of permaculture. As a class, add to the definition written on the board until students feel satisfied that they have a useful working definition.
3. Working together, the class will create a plan to turn your school into a permaculture environment. Using the definition AND considering different components of the school and what makes it run, the students should decide on a list of sub planning groups (food, energy, water, and supplies are all possible subgroups). Some of the resources listed below will be helpful in this process. Students should then divide themselves into the sub planning groups.
4. Each group will assess the current status of their issue/resource, and then research alternatives. For example, the energy group will want to assess how much energy it takes to run the school, considering heat and air conditioning, lighting, and electricity for computers and other machines. They’ll also want to know what kind of energy is currently being used. They should consider who in the school can help them find answers to their questions, such as custodians and the person in charge of paying utility bills. It’s up to you and your students as to how in-depth to take this research. Over the course of two class periods, students can probably come up with a minimal answer; but a week or even two of time (much of it being out-of-class time) would allow for a more detailed collection of data.

Sub planning groups should also research alternatives to the way your school is currently providing certain resources. Could the school use solar or wind power? Are there different light bulbs that could be used? Ask the groups to create a chart of what the school is doing now, options, and pros and cons to each option. If possible, also include information on the amount of money that could be saved.

5. Have a Permaculture Summit. Each sub planning group will present its information to the class in an easy-to-understand format. Tell them to consider their classmates as part of a committee that can work together to transform the school. In order to make decisions, the rest of the class needs to understand the issues researched by your group, so you must find a clear, easy-to-understand format in which to share your findings. Including examples or case studies of other schools may be helpful in illustrating your points.

**Assessment**

Ask students to assess each other's work and the entire notion of turning the school into a permaculture environment. Some questions to ask: Did you understand the other sub planning group's information? Was it presented clearly? Did it seem thorough? What more would you need to know about each topic/resource in order to make an informed decision about how to change your school? Based on what you've learned, do you think it would be possible to turn your school into a permaculture environment? What parts could be most easily accomplished? What would be the most difficult to accomplish? Responses should reflect an understanding of the concept of permaculture.

**Extending**

1. Work with math teachers to create equations to best evaluate the school's current resource intake and ways in which to improve that intake. Work with science teachers to understand the resources and the ramifications of their use (e.g., carbon dioxide production by buildings, how solar power works, etc.).
2. Using some of the green school manuals below, take your research to the next level. As a class, come up with a plan for how to implement some of your ideas. Who will you need to convince? How will you organize yourselves to accomplish this?
3. In the same spirit as Tierra Viva, find a local group your class can participate with to help implement some small permaculture project. Try to implement healthful, economically feasible, and environmentally friendly solutions.

**Resources**

Plugging into Energy Savings: How Your School Can Save Money on Heating and Lighting

<http://www.asbj.com/199901/0199coverstory.html>

Green Schools: Getting Started

<http://www.ase.org/greenschools/start.htm>

Green Schools In Action

<http://www.ase.org/greenschools/spirit/index.htm>

Green Schools Manual

<http://www.yesworld.org/info/manual.htm>

Youth for Environmental Sanity's Green Schools Manual

<http://www.yesworld.org/info/GreenSchoolsManual.pdf>

Green Schools

<http://greenschools.schoolsgogreen.org/guidelines.shtml>

*Cradle to Cradle: Remaking the Way We Make Things*

William McDonough and Michael Braungart

**Standards** (from McRel.org)

Understands how human actions modify the physical environment

(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=14>)

Understands how physical systems affect human systems

(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=15>)

Displays effective interpersonal communication skills

(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=22&StandardID=4>)

Uses various information sources, including those of a technical nature, to accomplish specific tasks

(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=24&StandardID=2>)

Applies basic trouble-shooting and problem-solving techniques

(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=21&StandardID=5>)

## **Monarchs: The Interconnection of Humans and Nature**

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**Objective:** Students will understand the ways in which people and monarchs are sometimes in conflict. They will identify environmental/human conflicts in their community and research one of the issues they've identified, gaining awareness of all sides of the issue.

**Time:** Lesson is adaptable to between 4 and 10 in-class hours.

**Grade Level:** 9-12

1. Give students a homework assignment to learn about monarch butterfly migration. They should find short answers to the following questions:
  1. How and when does the migration happen?
  2. Where do the butterflies migrate to and from?
  3. What is necessary for monarchs to stay healthy and plentiful?
  4. What forces are hampering their survival?
2. As a class, collect answers to the four homework questions, posting them where everyone can read them. Then provide the students with this quote from GlobalTribe:

“We tend to separate human needs from the environment, and I think that’s impossible.”

– Guadalupe Del Rio, Alternare

Discuss this quote in relation to your findings about monarchs. Find examples of monarch’s needs and migration patterns coming into contact with humans. When do the needs of the two conflict with each other? (Alternative: You may choose to have students write about this instead of discussing it as a class.)

3. Briefly ask students for other notable examples of human and environmental needs coming into conflict (e.g., dolphins getting tangled in fishing nets). Then remind students of what Guadalupe said next: “There’s no way you can conserve resources if people are hungry.” For each of their examples, can the students imagine the people who would be negatively impacted if the practices identified, such as fishing tuna with nets, suddenly ended? Try to point out the often complex interactions between the environment and economic systems, human population and natural resources.

Then ask students to think of examples closer to home. Where in your town, state, or region do the environment and humans come into conflict? Perhaps a new housing development is threatening a rare turtle, or farming is affecting water quality. Try to identify several examples and then ask students to choose one to study in-depth.

4. Working in small groups or independently, students should research the conflict from all angles. Not only should they understand the basic issues involved, they should talk to people representing all sides. Interview environmentalists about what is at stake. Talk to business people who are associated with the human endeavor (e.g., a land developer). AND talk to the people who have the most to lose: people who could lose jobs or who need low-cost housing. Sometimes the two groups of people will be the same—this is often the case with farmers and fishermen—and sometimes they'll be different.
5. Have students compile their findings in a magazine-style article in which they not only inform readers of the issues and players involved, but also propose solutions. (For more examples of Alternare's creative problem solving in Mexico, see: <http://wildecology.ifcnr.com/article.cfm?NewsID=201>.)

### Assessment

1. Publish the articles in a class magazine. After students have had an opportunity to read their work side by side with that of their classmates, ask them to write a self-assessment. Does their article clearly explain the conflict? Does it provide the perspectives of all involved in the conflict? Does it provide solutions? Provided you took time to review magazine writing, also ask whether the student's writing includes such basic elements as a good lead and appropriate citation of sources.
2. Based on their own and their classmates' work, have students write essays about human and environmental conflicts: Is one side "right?" Are there any solutions to these conflicts that can be applied in most, if not all, cases? Their answers should reflect a synthesis of the issues, their research, and the concepts presented in GlobalTribe.

### Extending

1. Once again using Guadalupe's full quote—"We tend to separate human needs from the environment, and I think that's impossible. There's no way you can conserve resources if people are hungry."—ask students to reflect on the situation of Baja's sea turtles and Mexico City's children. How does the quote apply to each situation?
2. Both human and insect migration is mentioned in this *GlobalTribe* segment: the monarchs migrate between Mexico and the United States and Canada, and people, like the farmer Erasmo, migrate between rural and urban areas. Compare and contrast human and creature migration, including the reasons for each and the effects on the environment.
3. Encourage students to get involved with a local environmental issue, including the ones studied for this assignment. They may find themselves building nesting boxes for a depleted bird population or writing letters to political decision makers.

**Resources**

The Journey North  
<http://www.learner.org/jnorth/>

Monarch Watch  
<http://monarchwatch.org/>

“Monarch Butterflies Dying in Mexico”  
<http://www.northamericaninstitute.org/articlearchive/nytimes021302.htm>

**Standards**

Uses the stylistic and rhetorical aspects of writing  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=7&StandardID=2>)

Gathers and uses information for research purposes  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=7&StandardID=4>)

Uses reading skills and strategies to understand and interpret a variety of informational texts  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=7&StandardID=7>)

Understands that scarcity of productive resources requires choices that generate opportunity costs  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=15&StandardID=1>)

Understands the characteristics and components of the media  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=7&StandardID=10>)

Understands and applies the basic principles of presenting an argument  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=21&StandardID=1>)

Understands global development and environmental issues  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=18>)

Understands relationships among organisms and their physical environment  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=2&StandardID=6>)

Performs self-appraisal  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=23&StandardID=2>)

## Sea Turtles: Attracting Tourists

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**Objective: Students will understand ecotourism, an environmentally and culturally sensitive approach to tourism, through creating their own ecotourism destinations.**

**Time: Lesson can be adapted to between 3 and 8 in-class hours.**

**Grade Level: 9-12**

1. In GlobalTribe, Amy asks Roberto how he would convince a fisherman who accidentally caught a sea turtle to release it back into the ocean. One of the reasons he gives is that it will help attract ecotourists. What is ecotourism? Ask students to brainstorm definitions.

After you've written some characteristics of ecotourism on the board, provide this definition from the World Conservation Union:

"[Ecotourism]...is environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features - both past and present) that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations."

Discuss why Roberto and others who wish to protect Baja's sea turtles would want to attract ecotourists.

2. Have small student groups design ecotourist destinations, such as an Alaskan lodge or a safari camp in Kenya. You might assign several groups to design Mexican sites and several to the U.S., perhaps specifically in your state or region. Or, let them choose any places which appeals to them. Students should create a report for potential financial backers that includes visual elements, such as maps and sketches, as well as the following information:
  - Site selection: Where will their lodge/camp/retreat will be located? Why this place?
  - Low impact: How will their lodge/camp/retreat make as limited an impact as possible on the site?
  - Energy and conservation: How will energy be provided for the site? What are some conservation measures your site will use?
  - Cultural impact: How will the local community benefit from the lodge/camp/retreat?
  - Visitor activities: What are some of the activities your visitors can partake in and how do these relate to your eco-mission?

Direct students to some of the award-winning ecotourism sites below, and encourage them to find others for inspiration. They can create a brochure, web site, or Power Point presentation to share their final designs with the class.

**Assessment**

1. Using The National Audubon Society Travel Ethic for Environmentally Responsible Travel as a guideline (<http://www.ecotourism.org/audubonfr.html>), review the designs as a class and vote on the best overall design and the best by category. Have students discuss why they voted for particular projects.
2. Afterward, have students write about a vacation they've taken in the past. Compare and contrast their experiences to what they imagine an ecotourist trip to be like via their research. Their responses should reflect an understand of multiple aspects of ecotourism.

**Extending**

1. Have a class debate regarding the pros and cons of ecotourism. Read Timothy Egan's article as a starting place (see below).
2. Perform research about sea turtles, including their habitat, physical characteristics, and causes of death, as well as efforts to protect these reptiles. Have students write opinion papers on whether methods such as ecotourism and community based conversation (see "It Takes a Village") are sufficient measures to help sea turtle recovery. What else is and/or should be done?
3. Brainstorm ways that ecotourism could work in your area. Adopt a nearby public area, such as a beach, wetland, or prairie to help support and promote. Talk to rangers and other caretakers of such environments to find ways to be involved in this space.

**Resources**

***Sea Turtles***

"Of Turtles and Things"

<http://www.planeta.com/planeta/96/0896mexturtles.html>

Sea Turtle Information (including "causes of death" and "conservation")

<http://www.seaworld.org/infobooks/SeaTurtle/home.html>

"It Takes a Village"

<http://www.greendzn.com/village.htm>

Sea Turtle Conservation Network of the Californias

<http://baja.seaturtle.org/>

Wildcoast

<http://www.wildcoast-usa.com/index2.asp>

***Examples of award-winning ecotourism***

The MAQUIPUCUNA FOUNDATION

<http://www.arches.uga.edu/~maqui/maquifnd.htm>

Tropic Ecological Adventures

<http://www.tropiceco.com/html/ethics.html>

Lapa Rios

<http://www.laparios.com/lapgoal.htm>

Maho Bay

<http://www.maho.org/environment.html>

Naturegate's Methodology (a company that helps design ecotourist sites)

<http://www.naturegate.com/methodology.html>

“Rural Mexican Learning to Make Ecotourism Work”

[http://news.nationalgeographic.com/news/2001/09/0905\\_mexicoecotourism.html](http://news.nationalgeographic.com/news/2001/09/0905_mexicoecotourism.html)

***Ecotourism Information***

Investigate Your Alternatives

<http://www.ecotourism.org/travelchoice/investigate.html>

UNEP's About Ecotourism

<http://www.unep.org/pc/tourism/ecotourism/home.htm>

*Ecotourism and Sustainable Development: Who Owns Paradise?*, Martha Honey, Island Press (1999)

“Uneasy Being Green: Tourism Runs Wild.” *The New York Times*, May 20, 2001. Timothy Egan.

**Standards**

Knows the location of places, geographic features, and patterns of the environment  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=2>)

Understands the physical and human characteristics of place  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=4>)

Understands that culture and experience influence people's perceptions of places and regions  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=6>)

Understands how human actions modify the physical environment  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=8&StandardID=14>)

Understands and applies media, techniques, and processes related to the visual arts  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=13&StandardID=1>)

Uses various information sources, including those of a technical nature, to accomplish specific tasks  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=24&StandardID=2>)

Contributes to the overall effort of a group  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=22&StandardID=1>)

Effectively uses mental processes that are based on identifying similarities and differences  
(<http://www.mcrel.org/compendium/Benchmark.asp?SubjectID=21&StandardID=3>)