

# *GlobalTribe* Educational Curriculum

Mexico Lesson: Permaculture

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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.

For more information, contact:

Creative Visions  
1223 Sunset Plaza Drive  
Los Angeles, CA 90069  
[www.creativevisions.org](http://www.creativevisions.org)

Developed by:

Creative Visions &  
Jennifer New

## **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>)