



# Smart By Nature: Growing Sustainable Schools

Center for Ecoliteracy  
Head-Royce School  
Marin Academy

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**Carolie Sly**

Director of Education, Center for Ecoliteracy

**Paul Chapman**

Head of School, HRS

**Crystal Land**

Assistant Head/Academic Dean, HRS

**Travis Brownley**

Head of School, MA

**Mark Stefanski**

H.D. Thoreau Faculty Chair, MA

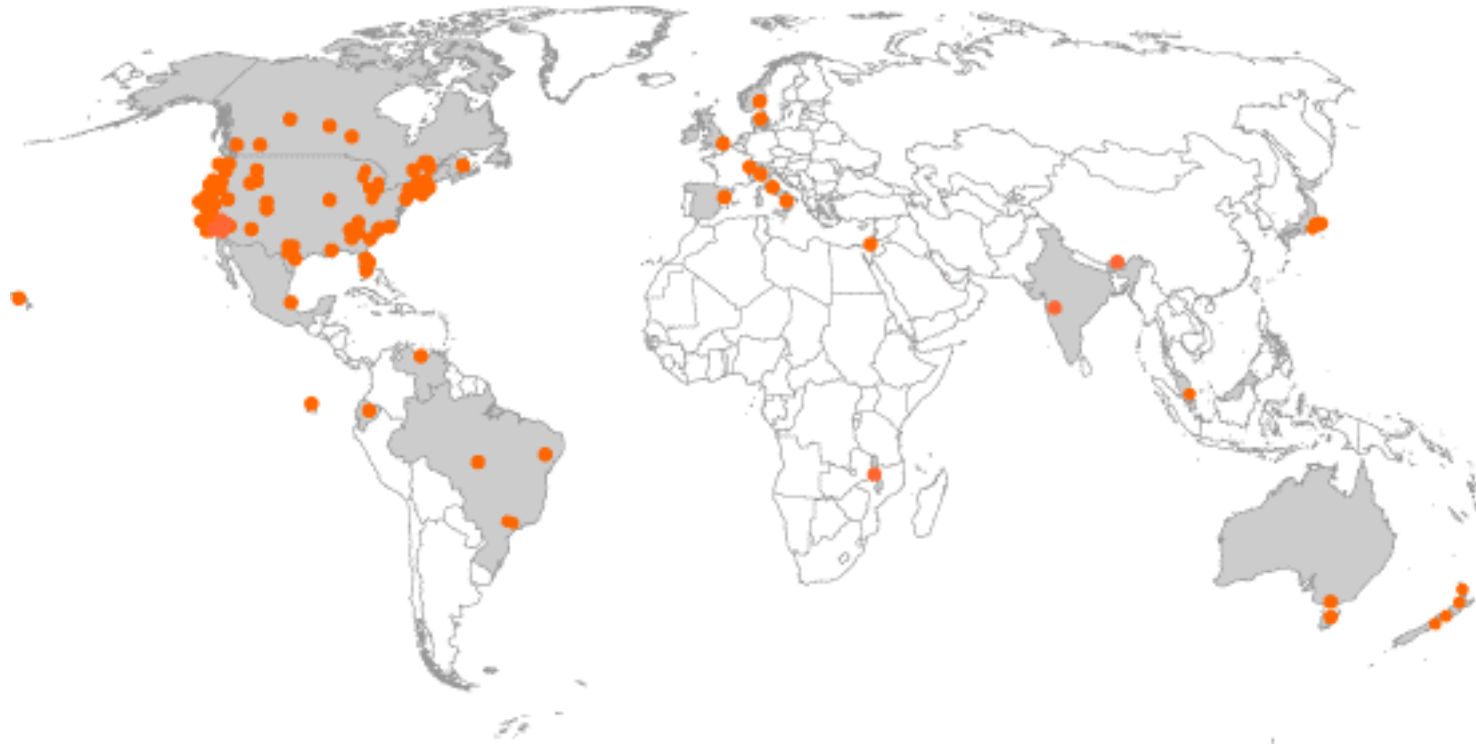
# Center for Ecoliteracy

Berkeley, California  
[www.ecoliteracy.org](http://www.ecoliteracy.org)



Collaborating to create a model  
school for sustainable living

center for ecoliteracy around the world



SCHOOLING FOR SUSTAINABILITY

# SMART BY NATURE



A new book from  
the Center for Ecoliteracy  
by Michael K. Stone

Watershed Media, Publisher  
University of California Press,  
Distributor



## 4 Guiding Principles

Nature is our teacher

Sustainability is a community practice

The real world is the optimal learning environment

Sustainable living is rooted in a deep knowledge of place

# A Systems Approach

Campus

Food

Community

Curriculum



# Ecological Literacy

The ability to understand natural systems and design ways to live that sustains those systems.

# Our Work with Schools

Establish foundation of  
ecological understanding

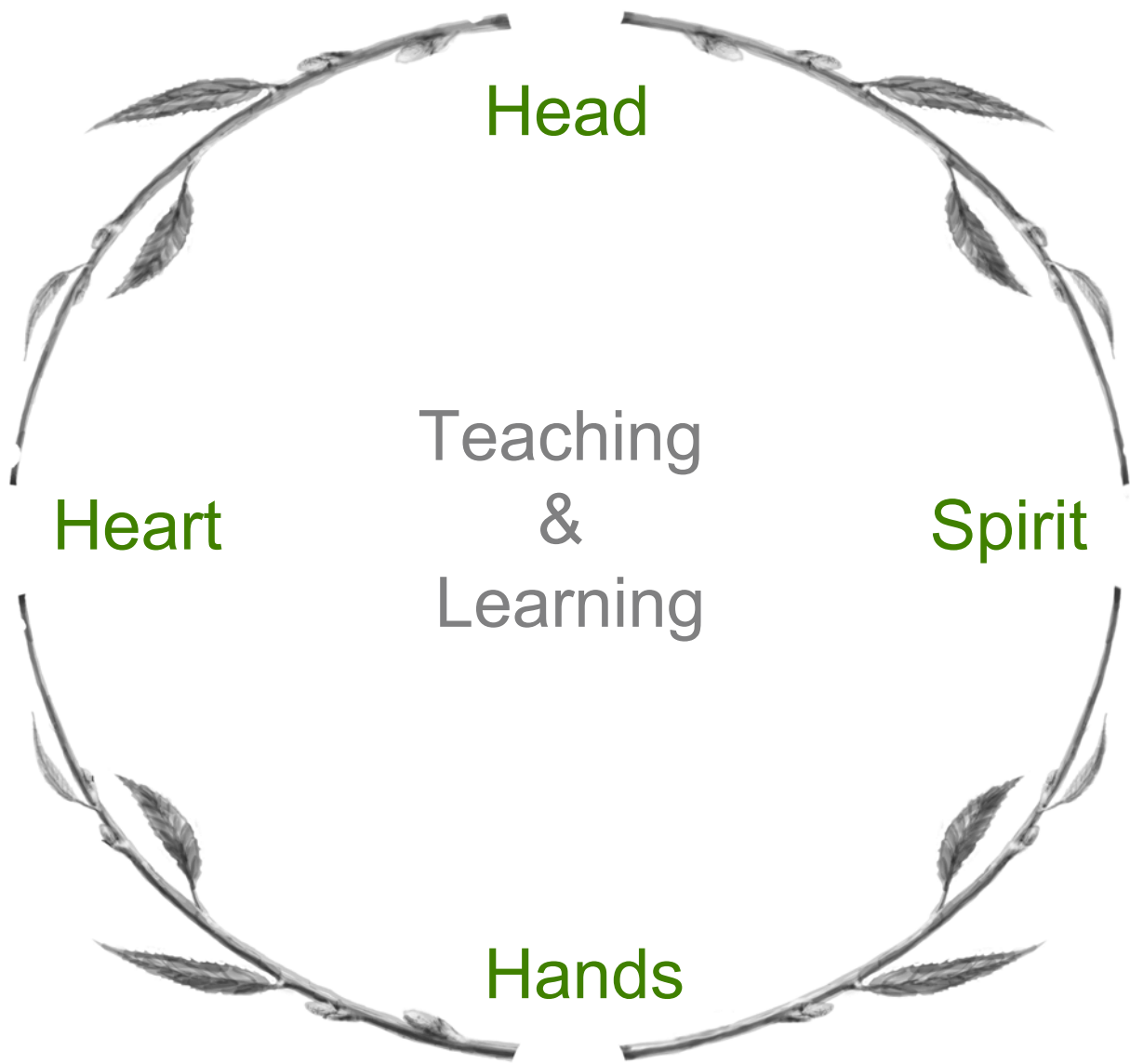
Identify what faculty is already doing

# Our Work with Schools

Locate the easy access points

Collaborate with those who want to go deeper

Reflect, assess, celebrate



# BIG IDEAS

**Linking Food, Culture, Health, and the Environment**

**Center for Ecoliteracy**

Foreword by Michael Pollan

# Head-Royce School

Oakland, CA



# Mission Drives Change at Head-Royce School

Aware of the significant environmental challenges we face in the 21<sup>st</sup> century, our school strives to be a leader in demonstrating how to establish a more sustainable way of living.

Part of the "green schools initiative," Head-Royce is committed to providing a healthy environment for students and staff while promoting ecological sustainability.



# Alejo's Story



# Head Royce Green Goals

Use resources in a sustainable way

Create an environment free from toxic substances

Offer nutritional food on campus

Develop the educational program to emphasize ecological sustainability

Embrace sustainable living practices

Educate the next generation of leaders

# From Vision to Practice: Transforming Head-Royce



# The New Campus: Investing in Sustainability



# Green Business Certification

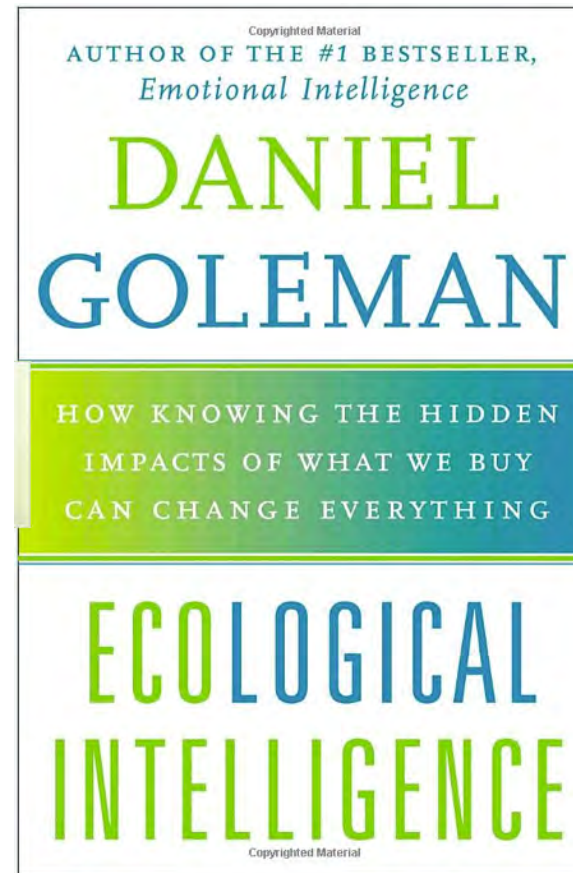
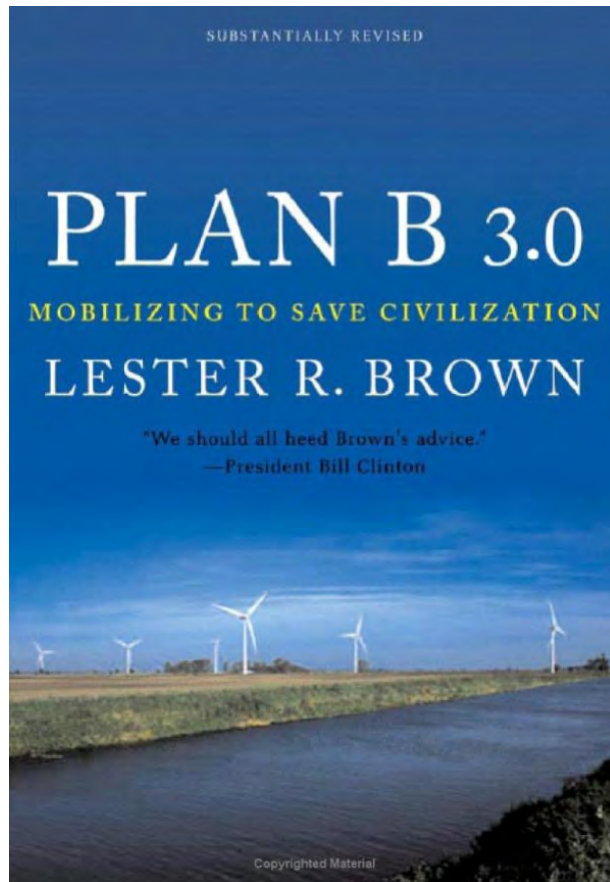
# Changing the School Food

- A Day On the Hill With Barbara Lee
- Alice Waters' Edible Schoolyard Project
- Michael Pollan Speaks
- Our Great Healthy Food Program
- Redesigning and Funding Our Café
- How Our Garden Grows



How does our garden grow?

# On-going Faculty Professional Development

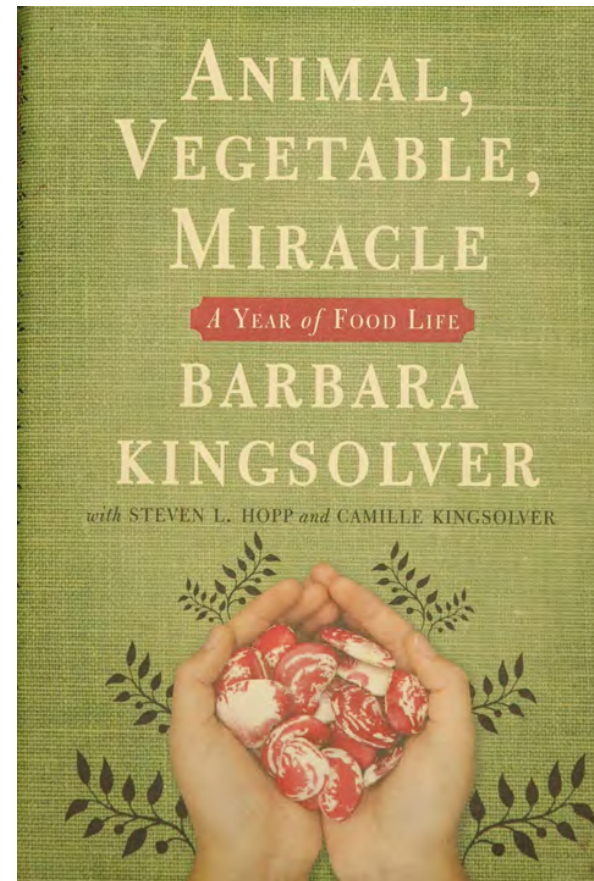
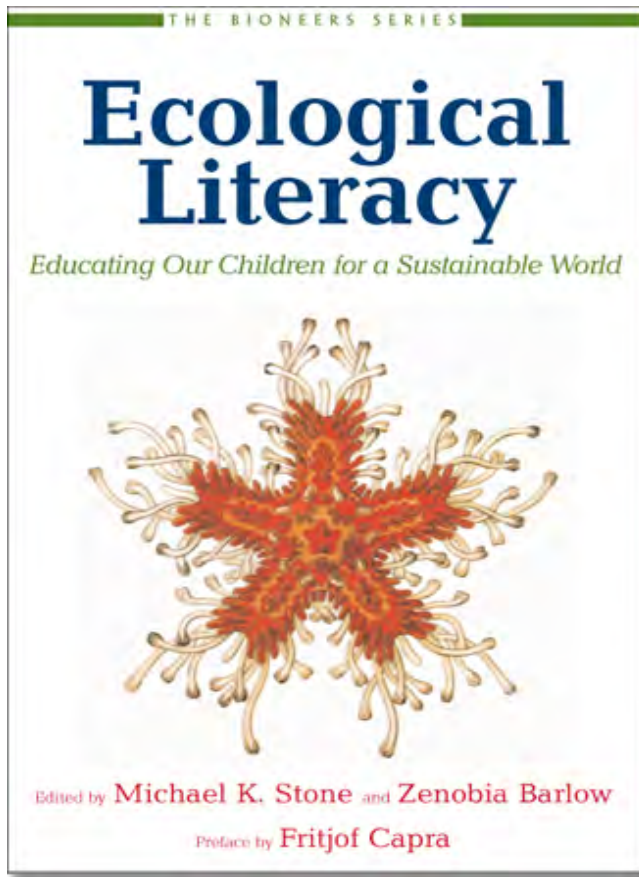


# Reframing Curriculum Design Through a New Lens

“Education, as they knew, had to do with the timeless question of how we are to live.” David Orr



# Changing the Curriculum



# Process for Curricular Change

- Summer reading for faculty—facilitate finding a personal connection to sustainability
- Year One:
  - Consultation with Center for Ecoliteracy
  - Curricular audits: What do we already do?
  - Model curricular possibilities in all disciplines
- Year Two:
  - Ask for focused design/redesign on one project
  - Assess for effectiveness
  - Continue work over multiple years
- Year Three: Continue to refine for long-term sustainability

# Lower School Redesign

K: Tree study

1st: Fall harvest of our new garden

2nd: Local creek study integrated with Egypt/Nile unit

# Lower School Redesign

- 3rd: Endangered animals report; focus on honeybees in connection with garden
- 4th: California history and geology: impact of cities, pollution, farming on land formations
- 5th: Energy research report in science; connects with housing discussion in world language class and own “green housing design” in social studies

# 4th Grade Geology/Landforms



# Middle School

**7th grade math:** Home water use project (measure how much water we use in shower) and compare Oakland and personal water usage to other countries.

**6th grade art:** Ecology posters

**8th grade English:** Kaffir Boy and Africa: Study of sustainability issues in modern day Africa

**French:** Farmer's market and food unit. Students explain advantages and disadvantages of "shopping local"; extends to next unit on clothing as well.

# 8th Grade Kaffir Boy and Africa Project

## Key Question

*How is a character a product of his/her environment?*

## Project Directions

We have recently studied the major laws of Apartheid in South Africa (1948-1991). You and your research group are to choose a research topic and work together to look for the effects of apartheid on modern day South Africa.

It is crucial to weave in the themes of *sustainability and multiculturalism* into your findings and reports.

## Suggested Topics

- Ecology and Environment
- Infrastructures: townships vs. urban vs. country
- Population growth & job opportunities/job rate
- Racism

# Upper School

- Algebra II:** Examination of trends in population growth and global warming

- 10th grade English:** Social Class in the Great Gatsby and Bay Area 2009-10

- 11th grade Biology:** Pacific Island comparison: Easter Island fate compared to Tikopia's fate

- Spanish:** Study and powerpoint presentation of environmental problems and possible solutions

- 12 Grade Comparative Politics/Asia Rising:** Product Life Cycle: import-export systems, recycling, garbage

- Video Production Class:** "The Greening of Head-Royce" film



# Seniors at the Davis Street Recycling Center



# Marin Academy San Rafael, CA



# Marin Academy's Mission Statement

Marin Academy asks every individual to think, question, and create in an environment of encouragement and compassion, and challenges each person to accept the responsibilities posed by education in a democratic society.

# Marin Academy's Strategic Plan

Approved June, 2009

## **The Five Lenses of Sustainability: Focusing Marin Academy's Future**

- 21<sup>st</sup> Century Education
- Citizenship
- Community
- Environmental Stewardship
- Financial Stewardship

# The Lens of Environmental Stewardship



Vision:

Marin Academy's program operations, and community will model environmental sustainable practices.

Goal:

Systematically integrate environmental sustainability into the curriculum and operations of the School.

# The H.D. Thoreau Faculty Chair



# The MA Eco-Council



# A Systems Approach to Our Garden, Food, and Compost





# The Garden Integrated into the Curriculum

**Garden Stewardship Elective**



**Throughout the Disciplines**



# The Marin Academy Café



Our Food Guidelines:  
The Purpose of Marin Academy's Café is to promote a healthy, sustainable relationship with food...

# Our Composting System



# Place-Based Learning



# Community Connections



# A Comprehensive Sustainability Study and Energy Audit

Completed Summer, 2009

Funded by PG&E and Marin Academy

4 Major Components:

- Energy Audit
- Water Conservation
- LEED Assessment
- Baseline Carbon Footprint Assessment

# Energy Literacy in the Curriculum

What does it mean to be energy literate?



# Student Voices: What is Education For?





# Our Current Master Planning Process: A Community Practice



# Lessons Learned



# Lessons Learned

- Have a compelling vision of change
- Use the power of network and team
- Empower teachers but make projects and work manageable
- Sustainability is a community practice

# Lessons Learned

- Overcome resistance with respect and dialogue
- Find outside voices to inspire & motivate
- Foster a culture of self-study
- Invest in professional development



Thank you

Head-Royce School

[www.headroyce.org](http://www.headroyce.org)

Marin Academy

[www.ma.org](http://www.ma.org)

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