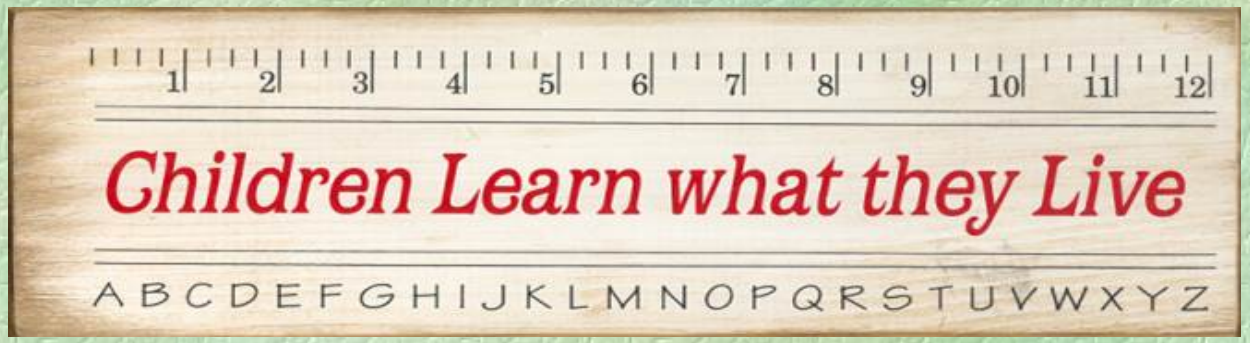
NJ Sustainable Schools Project

Alignment of Environmental Education Resources from the NJ Department of Environmental Protection

Tanya Oznowich
Environmental Education Supervisor
New Jersey Department of Environmental Protection

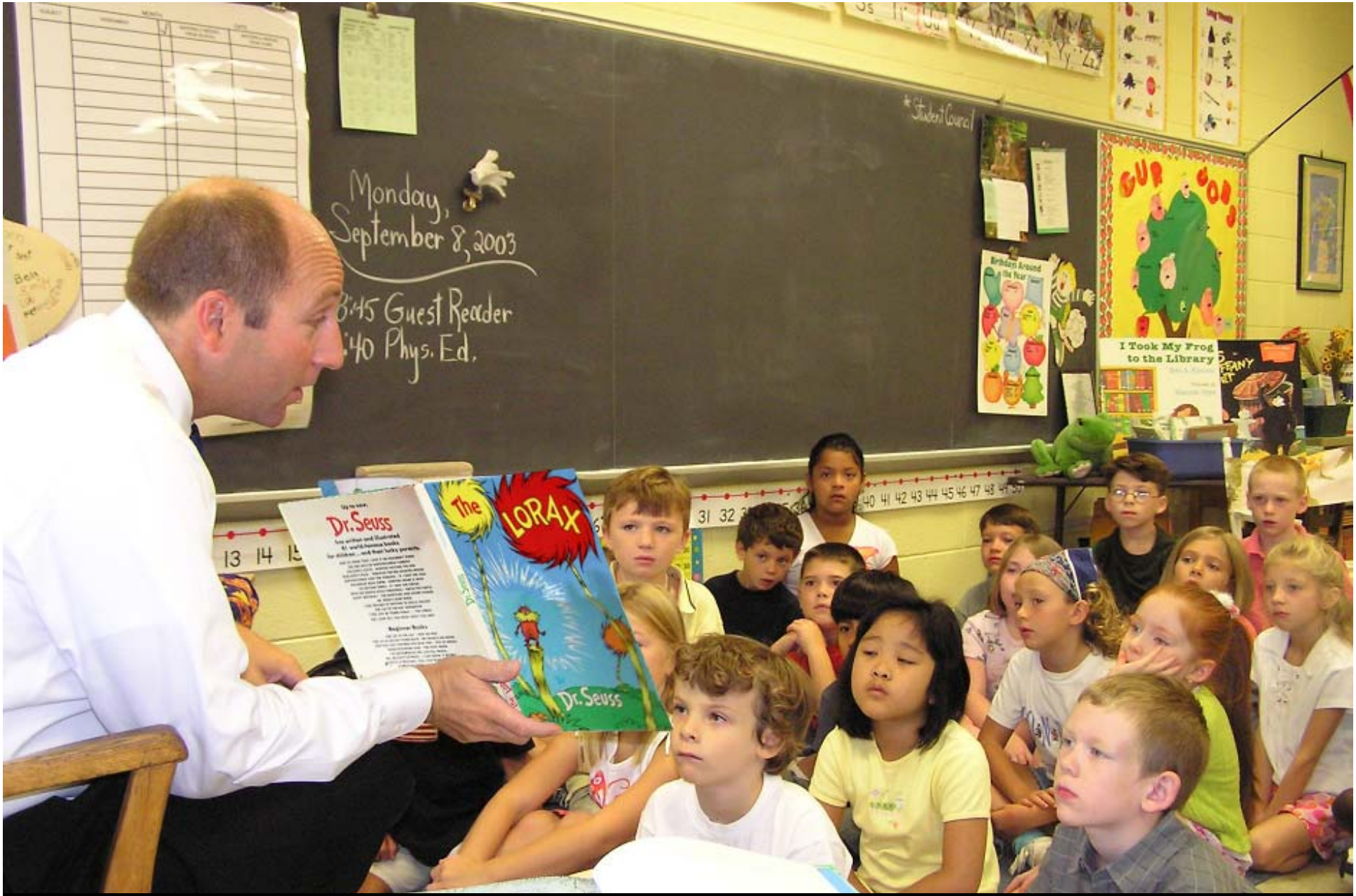
Four Areas of Focus

- What environmental education (EE) looks like and why it is important
- How EE relates to green, sustainable school features and practices
- EE resources for schools, from DEP
- Suggestions for EE alignment



Environmental education enters classrooms through textbooks, curriculum , research, worksheets, maps, audiovisuals, software, data and experiments.

It enters schools through student participation in competitions, science fairs and school festivals.

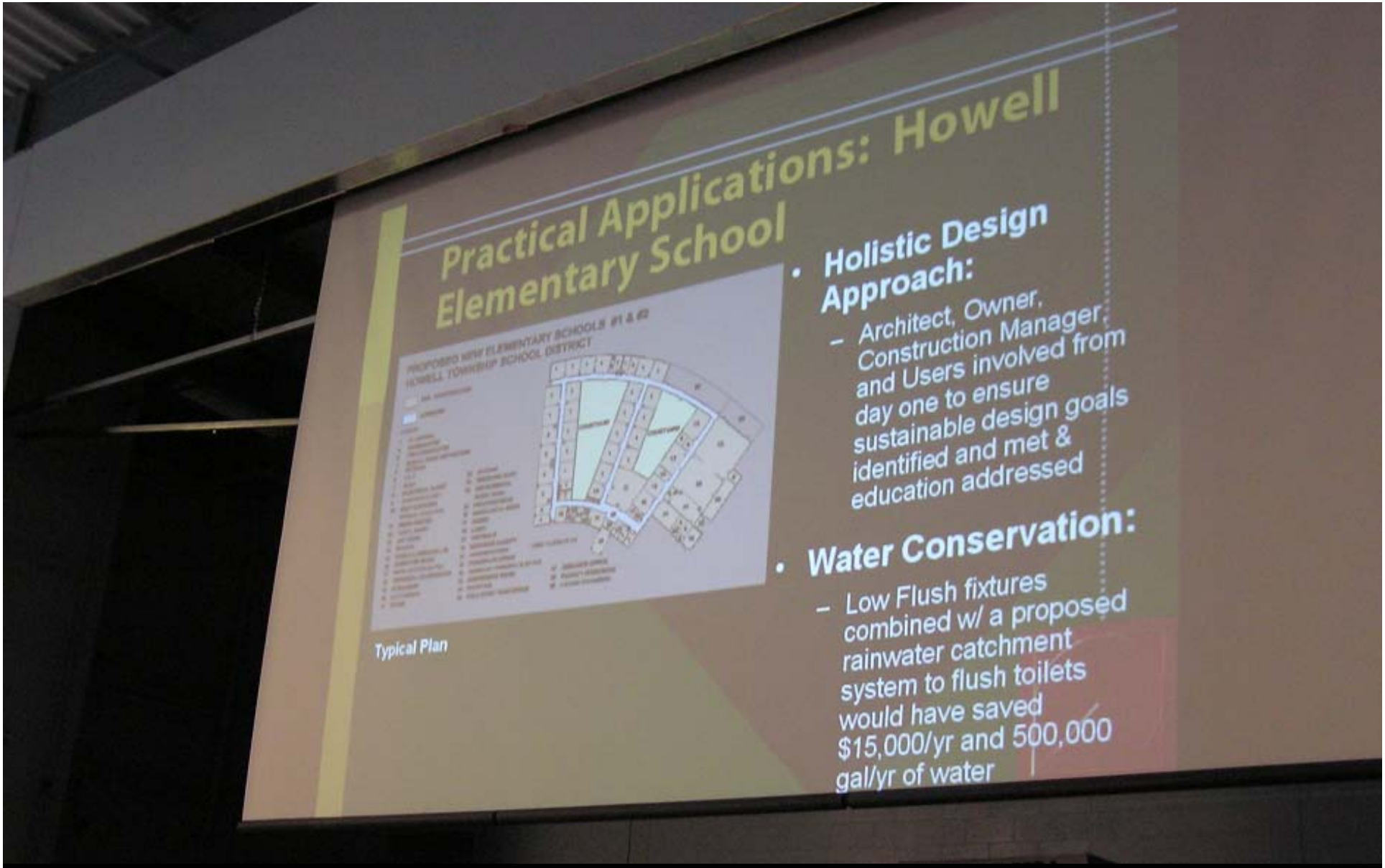


And, it enters classrooms through guest speakers, classroom presentations, assembly programs and after-school programs.

Environmental education also brings students outdoors onto school property and transforms these areas into extended classrooms and laboratories with the use of gardens, rain collection systems, trails, solar panels, green houses, aquatic sites and natural areas.

- **It also extends classrooms with field trips to museums, nature and science centers, parks, tours and overnight camps.**

- **It enhances classroom studies with community-based service learning, citizen science and stewardship projects that focus on the local environment and surrounding communities.**



Environmental education also turns the school itself – its operational systems and infrastructure, into a wall-to-wall functioning laboratory for hands-on investigations and project-based research.

Environmental education focuses on the relationships that exist between -

- Nature and people
- Natural resources and human activities
- Natural systems and human systems

Human Systems Include:

- Health care
- Economic and finance
- Cultural and political
- Business and industry
- Land use and development
- Transportation
- Solid and hazardous waste
- Drinking water and wastewater
- Agriculture and food production
- Technology and communications
- Education

An environmentally literate person understands:

* Natural systems and the interactions between the living and non-living environment;
* That the choices they make affect the environment;
* That choices can either help or harm the environment;
* How to deal sensibly with problems that involve scientific evidence, uncertainty, and health, economic, cultural, societal and aesthetic and ethical considerations; and
* What they should do to help keep the environment healthy, sustain its resources, and create a good quality of life for themselves and their children.

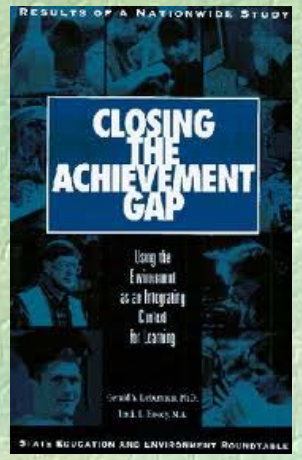
- **The New Jersey Commission on Environmental Education**

Benefits of Environmental Education

- **Relevant –** Has real-world, community-based applications
- **Engaging –** Is hands-on, whether independent or group learning
- **Interdisciplinary –** Supports content and skills in many subjects
- **Memorable –** Is experiential and can be project-based
- **Motivates –** Inquiry and investigative skills
- **Applies –** Critical, creative and problem solving skills
- **Empowers –** Actions, solutions and stewardship interests
- **Adaptive –** To indoor and outdoor learning environments

Closing the Achievement Gap

Using the Environment as an Integrating Context for Learning



- (EIC Approach)
- Improved performance on tests
- Increased student interest
- Reduced disciplinary problems and absenteeism

- State Education and Environment Roundtable (SEER), 2002

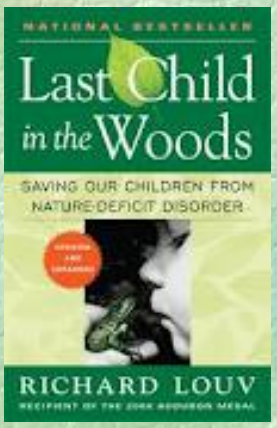
SEER

Last Child in the Woods

Saving Our Children from Nature-Deficit Disorder

- Increased time spent indoors
- Time spent on electronic devices, computer or television
- Less time spent outdoors exploring nature
- Less time spent on creative play
- Links with obesity, attention disorders and depression

- Richard Louv, 2006



Other Recent Influences on EE

- Increased emphasis on the actions of individuals
- Increased research that supports benefits of EE
- Environmental justice and healthy school programs
- Green school movement/formation of USGBC-NJ
- No Child Left Inside Coalition and Act
- Sustainable Jersey, Eco Schools USA and the NJSSP
- U.S. Green Ribbon Schools Program

DEP Resources for Sustainable School Activities

- **Water Resources**: Water conservation, stormwater, rain barrels, rain gardens
- **Air Quality**: Anti-idling, air monitoring, radon
- **Integrated Pest Management**
- **Outdoor classrooms & gardens**: Native species, habitat enhancements, aquatic sites, trails
- **Recycling & Waste Reduction**: Reuse, purchasing, recycling
- **Right to Know:** Chemical storage, reduced use
- **Community Database**: GIS-based local info.

DEP Curriculum Supplements

- Activity guides for pre-K-8
- PLT guides for HS courses
- Developed by ed./env. experts
- Field-tested/many revisions
- Flexible PD delivery
- Meaningful follow-up to PD
- Expertise in content areas
- NJ data in most content areas
- Linkages to 2009 CCCSs
- Easy prep, easy to use lessons
- Assessment strategies featured

PLT GreenSchools!

- Youth voice and leadership
- Promote healthy and sustainable schools
- Reduce environmental footprint – energy, waste reduction, and water use reduction
- Improve learning, test scores, and teacher retention
- Increase student and community engagement
- Schools can register online at www.greenschools.org

Suggestions for EE Alignment

- Align to practices that do or will soon exist
- Rely on faculty that have EE commitments
- Avoid creating EE resources from scratch
- EE resources are adaptable – adjust to fit
- Focus on measurable outcomes, not activity
- Focus on quality versus quantity
- Consider EE to be “transplant” vs. “add-on”
- Align EE outcomes with CCCS indicators

Tanya Oznowich
Environmental Education Supervisor
New Jersey Department of Environmental Protection
(609) 984-9802
Tanya.Oznowich@dep.state.nj.us

We shape our buildings
and afterwards
our buildings shape
our world.

- Winston Churchill

Aligning sustainability practices with curriculum

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Focus

- 1. Use the Eco-Schools framework to lead transformative change in schools.
- 2. Integrate the Eco-Schools pathways with existing curriculum for student-driven, authentic learning experiences that increase student achievement, reduce operating costs, and improve the built and natural environment.

Eco-School's 7 Step Framework for Transformational Leadership

Seven Steps Links

- Eco-Action Team
- Environmental Audit
- Eco-Action Plan
- Monitor and Evaluate
- Link to Curriculum
- Involve the Community
- Creating Your Eco-Code

The Eco-Schools framework provides you with a method for conscious sustainability leadership that transforms individuals and communities by stewarding our commons

Eco-Schools Pathways towards Sustainability

Energy

Biodiversity

Water

School Grounds

Transportation

Climate Change

Consumption & Waste

Healthy Schools

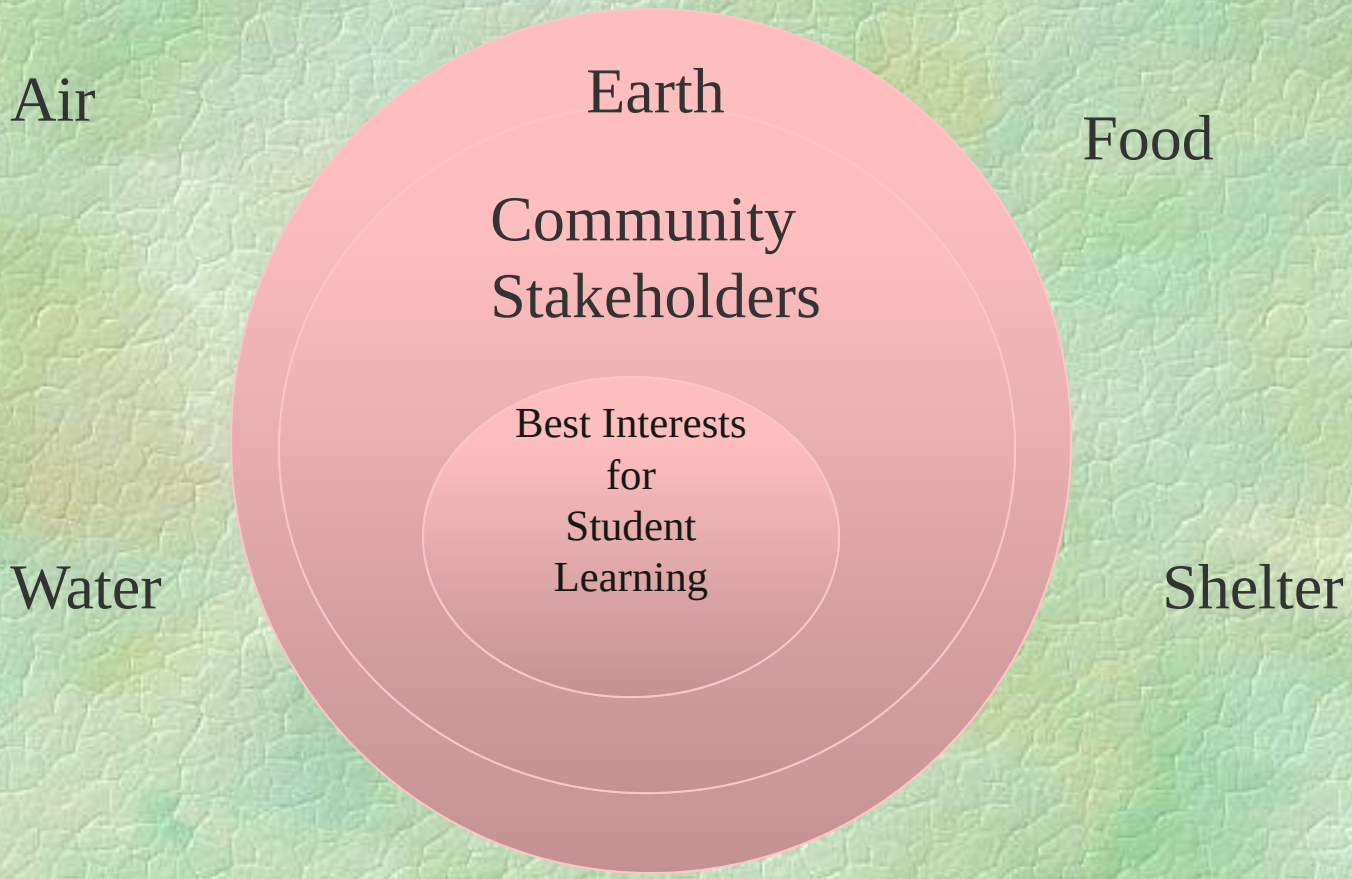
Sustainable Foods

Healthy Living

Visualize

How do you see your role in student learning?

Ethical Framework for Education



Step 1: Build an Eco-Team

- Focus attention on intention- Create a shared understanding of the purpose or vision. SMART Goal.
- Buy-in from diverse stakeholders- Multiple perspectives stimulate the creative process for alternative solutions
- Establish regular meeting times, organizational framework and communication patterns

Step 2: Environmental Audit

What is the purpose of the Environmental Audit?

What is the relationship between the Environ. Audit and the shared vision?

- It gives us data around which to communicate. Using data is a leverage point for change (Meadows, 2009).
- It shows us our current reality in relationship to our shared vision.

Step 2: Environmental Audit

- Establish a baseline
- Identify questions to measure thinking and behaviors that contribute to target indicators
- Determine communication and organizational structures for storing data
- Conduct Audit
- Link to Enduring Understandings for Sustainability (Cloud Institute)

Step 3: Aligning with Curriculum

Review the Environmental Audit

- Step 1: Establish the content links to approved curriculum
- Step 2: Align with CCSS through backwards design process
- Step 3: Identify additional resources you need to answer those questions and provide professional development.

Map the Curriculum

- Enduring Understanding
- Essential Questions
- Thematic Units
- Assessment
- Content Statements
- Core Content Standards
- Lessons
- Activities

STEP 3: Strategic Planning Tools

- Group Decision-Making Techniques
- Dialectical Inquiry Technique, Nominal Group Technique, Delphi Technique, Brainstorming Technique, Fishbone Diagram, and Pareto Chart

Step 7: Institutionalizing Change

- The mission of Unity Charter School is “to teach the importance of protecting and improving the environment by educating our students on the principles of sustainability, ecology, and diversity in a way that celebrates and honors this planet and all its inhabitants.”
- Sustainability is the primary focus of Unity Charter School. Sustainability is defined as meeting the needs of the present while enhancing the ability of future generations to meet their needs.
- The curriculum is explored through the lens of sustainability. Experiential learning and inquiry allow students to understand the impact of human endeavors on the environment and its inhabitants.

Guiding Questions

- 1. Who are the stakeholders you would include for a diverse team focused around student learning?
- 2. What content knowledge will students need to impact the data gathered for the baseline? Where is it already in our curriculum?
- 3. What steps can you take to move your current reality towards your group vision?
- 4. When will you evaluate and monitor progress, and how will you communicate the progress to the larger community?
- 5. Where is your vision statement? How will you know when the vision is reality?

CCSS.ELA-Literacy.CCRA.R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
CCSS.ELA-Literacy.CCRA.R.3 Analyze how and why individuals, events, or ideas develop and interact over the course of a text.
CCSS.ELA-Literacy.CCRA.R.6 Assess how point of view or purpose shapes the content and style of a text.
CCSS.ELA-Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.1
CCSS.ELA-Literacy.CCRA.R.9 Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
CCSS.ELA-Literacy.CCRA.R.10 Read and comprehend complex literary and informational texts independently and proficiently.
CCSS.ELA-Literacy.CCRA.W.1 Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.

CCSS.ELA-Literacy.CCRA.W.2 Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
CCSS.ELA-Literacy.CCRA.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CCSS.ELA-Literacy.CCRA.W.6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
CCSS.ELA-Literacy.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
CCSS.ELA-Literacy.CCRA.W.8 Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
CCSS.ELA-Literacy.CCRA.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCSS.ELA-Literacy.CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
CCSS.ELA-Literacy.CCRA.SL.4 Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
CCSS.ELA-Literacy.CCRA.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-Literacy.CCRA.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Contact Me

Jennifer Dowd
Eco-Schools USA – NJ Coordinator
New Jersey Audubon (c)908-292-8030
908-766-5787 ext:42
Jennifer.Dowd@njaudubon.org

1. Eco-Schools Newsletter: Featured Schools, Opportunities/ Resources, Nature Articles
2. Web-based and human tools for each pathways
3. Free and materials-only cost Professional Development Opportunities
4. School visits, ES Professional Learning Community Series
5. Individualized Programmatic support