Addressing the Core Standards through Interdisciplinary Sustainability Projects

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Workshop Objectives

1. Acquaint you with “sustainability.”
2. Demonstrate how sustainability can serve as an integrating vehicle for engaged, multi-faceted problem-based learning.
3. Explain how sustainability education aligns with Core Standards.
4. Offer follow-up services to support you – and perhaps utilize your talents – in incorporating sustainability education into your class, school, and district.
“How can the present generation meet its needs in ways that are not only economically viable, environmentally sound and socially equitable, but that also allow future generations to do the same?”

Sustainability Mindset

• Sustainability is not so much a subject as a way of thinking about problems

• Finding sustainability solutions requires tweaking our mindsets

We cannot expect to be able to resolve any complex problem from within the same manner of thinking that created it in the first place. --Albert Einstein
Sustainability is an integrated, connecting-the-dots idea

- People / Social
- Planet / Environmental
- Profit / Economic
Towards a sustainability curriculum: Leveraging what you already have

• Take an interesting environmental, health or social problem affecting the school/community, or a green initiative in your school, and start working on it across subject areas to meet standards
  • Sciences, e.g., bio, chem., earth, botany, meteorology
  • Social Studies, e.g., geog., history, sociology., psych., politics, government
  • Math, e.g., calculate carbon footprint, economic costs/benefits
  • Language/Media, e.g., persuasive letter, graphics
Some “Ripe” Local Sustainability Problems (School, Home)

- **Energy Waste** – Costs, Climate Change
  - Energy conservation
- **Poor Diets** – Obesity, Illness
  - Nutrition & Wellness
- **Material Waste** – Costs, Pollution
  - Reduce-Reuse-Recycle

- Other?
Advantages of Problem-Based Learning Approaches

- **Engages** students, parents, Board, community
- **Develops higher order thinking skills** and problem solving
- **Improves Learning Outcomes** – enhanced student ability to:
  - Master content serving each discipline and core standard
  - Think about and work on complex problems holistically -- as systems, and from multiple perspectives
Energy Waste:
4th grade

Energy Conservation

- Language Arts
- Math
- Social Studies
- Science

- Read about Energy-Savings Plan for Home/School
- Compose a Persuasive Letter
- Develop PowerPoint
- Energy Costs
- Energy Audits
- Energy Access & Poverty
- History of Energy Consumption
- Research Climate Impact
- Experiment on Energy Consumption
Childhood Obesity and Nutrition: 4th grade

- **Language Arts**
  - Read two informational texts about nutrition and present information to group

- **Economics/Math**
  - Compose a persuasive letter to principal requesting healthier school lunches
  - Create a menu plan for one week and calculate the costs
  - Develop an itemized list of items and costs for one week and determine a budget

- **Social Studies**
  - Conduct a survey of student dinner habits and determine how access to resources
  - Investigate the new food guidelines published by the US Dept of Agriculture

- **Science**
  - Research diet-related diseases
  - Investigate food labels on various foods and what they mean
LITERACY COMMON CORE STANDARD RI #9

Read 2 informational texts about nutrition and present to group

Integrate information from 2 texts on the same topic in order to write or speak on the subject knowledgeably RI #7

Read *Good Enough to Eat: A Kid's Guide to Food and Nutrition* by Lizzie Rockwell and [http://kidshealth.com](http://kidshealth.com). Integrate information into a presentation to a small group of students.
Develop an itemized list of food for a weekly school lunch menu and determine costs

Solve multi-step word problems using the 4 operations. Represent as an equation. Math 4.O.A #3

\[(10.51 \times 150) + (0.45 \times 150) + (3.99 \div 4) = x\]
Core Standards Focus Instruction

- Need to adapt lessons to meet standards
- More rigorous than the previous NJCCCS
- Set grade-specific standards but do not define the intervention methods to support students who are well below or well above grade-level expectations.
- Several standards can be addressed by a single rich interdisciplinary task.
The Literacy Standards

1. Reading: Text complexity and the growth of comprehension
2. Writing: Text types, responding to reading, and research
3. Speaking and Listening: Flexible communication and collaboration
4. Language: Conventions, effective use, and vocabulary
The Math Standards

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.
Using the Standards

- Integrating the standards easily into lessons with sustainability topics
- Making learning interesting, meaningful and relevant while grasping content and acquiring skills
- Sparking children’s interest in world around them
- Helping them learn how to solve real-world problems that need to be addressed to maintain a sustainable and viable world.
Life of the Classroom

A. From Farm to Table
B. The History of My Lunch
C. Trash We Pass
D. We Are What We Drink
E. Whose Resource Is It?
What WE can offer YOU

- If you enroll yourself & maybe a few of your colleagues in our program:
  - Resource material provided to support lesson plans
  - Personal support from our team (on site, by phone, & online) to help you & colleagues implement unit plans
What YOU could offer US

- Some of you may
  - Keep in touch with us about your progress in this area
  - Help us flesh out unit plans for you and others to use in the classroom, receiving small stipends from FDU as part of grant from Alcoa Foundation
- Respond to a couple questions about this workshop
Questions about this workshop

1. How informative was this workshop about using sustainability topics to meet Core Standards? (1 Not at all, 7 extremely informative)

2. To what extent did this workshop make you more likely to use sustainability topics in your classroom? (1 No more likely, 7 a great deal more likely)

3. Other comments?
We’re available – Let us know

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