Project-based Learning in a Sustainable School:
A Key to Supporting Young Adult Success
Who We Are: Presenters

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Who is in the room?

Facilities Directors
Designers
School Based Educators
Network Based Educators
Suppliers

Who else??

What are you hoping to get out of this session? (Tell a neighbor)
Session Objectives

1. I can define an Education for Sustainability framework that leads to successful outcomes for children.

2. I can discuss and describe aspects of a Place Based learning approach.

3. I can describe the relationship between a Project-based Educational model and the importance of site / place.

4. I can give specific program and architectural examples that enrich a school’s Education for Sustainability framework.
<table>
<thead>
<tr>
<th><strong>Who We Are: School</strong></th>
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<tbody>
<tr>
<td><strong>Mundo Verde Bilingual Public Charter School</strong></td>
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<table>
<thead>
<tr>
<th><strong>Mission</strong></th>
<th>To foster high levels of academic achievement among a diverse group of students by preparing them to be successful and compassionate global stewards of their communities.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Public Charter School - Washington, DC</td>
</tr>
<tr>
<td><strong>Campus</strong></td>
<td>Two award winning buildings ~ Renovated historic elementary school (LEED Gold) and new early elementary annex (LEED Platinum)</td>
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# Who We Are: Firm

<table>
<thead>
<tr>
<th><strong>Mission</strong></th>
<th>We promise design that makes lives better. Creativity, Collaboration, and Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Locations</strong></td>
<td>Washington, Houston, Austin, Dallas, San Francisco, Denver, Mexico City, and Dubai</td>
</tr>
<tr>
<td><strong>Firm / Studios</strong></td>
<td>Started in 1898 with two brothers and a friend. Now a 550-plus person multidisciplinary A/E firm.</td>
</tr>
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Who We Are: School Context

By the numbers: 2018-2019

Chartered: 2010
Opening Year: 2011
Grades Served: PK-3 – 5th
Enrollment: 595
Full-time Staff: 114
Student : Faculty school-wide ratio: 8:1
Student : Teacher classroom ratio:
  - 8:1 (PK)
  - 12:1 (K-1st)
  - 22:1.5 (2nd)
  - 22:1 (3rd-5th)
Student diversity:
  - Female: 49.9%
  - Male: 50.1%
  - Hispanic/Latino: 34.8%
  - Black/African American: 18.0%
  - White: 34.3%
  - Mixed Race: 10.4%
  - Asian: 2.5%
English Language Learners: 20.0%
FARM Eligibility: 24.0%
Special Education: 11.1%
Who We Are: School Context: City
Who We Are: School Context: Before

A beginning
I can define an Education for Sustainability framework that leads to successful outcomes for children.
Definition of Sustainability

• Connection to student outcomes / mission
• Set of standards
  • Alignment to other core academic standards
  • Vertical alignment to profile of a graduate

Place-based Learning *(scale based on development appropriateness)*

• School building as curriculum
• Service learning
• Assets and beauty of school community and city

Project-based Learning *(expeditions)*

• Interdisciplinary
• High quality student work (authenticity, craftsmanship, complexity)
• Fieldwork and Experts
Does your institution have a working definition of Sustainability?

At Mundo Verde, we prepare our students to be global stewards through our sustainability curriculum.

Mundo Verde defines sustainability as working to support and improve the quality of life for all beings - economically, socially, environmentally - now and for future generations.

Through our sustainability model our students:

- Form deep connections to the environment and their local community.
- Understand the interdependent nature of the world and develop systems-thinking skills.
- Believe in their ability to make change.

(Image source: Sustainable Schools Project, Shelburne Farms)
Definition of Sustainability

Standards and Measurability / Metrics

Education for Sustainability (EfS) standards and performance indicators + 12 Enduring Understandings from The Cloud Institute for Sustainability Education

Common Core State Standards for reading, writing, speaking and listening, language, and mathematics

Additional: Next Generation Science Standards, DC Social Studies Standards, National Association for Music Education Standards, etc.

THE 9 CORE EfS STANDARDS

- Cultural Preservation & Transformation
- Responsible Local & Global Citizenship
- The Dynamics of Systems & Change
- Sustainable Economics
- Healthy Commons
- Natural Laws & Ecological Principles
- Inventing & Affecting The Future
- Multiple Perspectives
- Strong Sense Of Place
Metrics for Successful Student Outcomes

Key factors allowing a young adult to manage and adapt to changing demands and successfully navigate various settings with different cultures and expectations:

- Agency
- Integrated Identity
- Competencies

*Foundations for Young Adult Success: A Developmental Framework*

Agency

Ability to make choices about and take an active role in one’s life, rather than solely being the product of one’s circumstances

Requires the intentionality and forethought to derive a course of action and adjust course as needed to reflect one’s identity, competencies, knowledge and skills, mindsets, and values

Supported at Mundo Verde through:
- Focus on sustainability problems that students are empowered to address
- Restorative justice / Responsive Classroom / Habits of Community Stewardship (Empathy, Speak your Truth, Appreciation)
Integrated Identity

A sense of internal consistency of who one is across time and across multiple social identities (e.g., race/ethnicity, profession, culture, gender, religion)

Serves as an internal framework for making choices and provides a stable base from which one can act in the world

Supported at Mundo Verde through:
- Focus on language learning (Spanish / English)
- Place based learning / projects with authentic local problems
- Focus on culture / social justice / race / equity
Competencies

The abilities that enable people to effectively perform roles, complete complex tasks, or achieve specific objectives

Allow young adults to be productive and engaged, navigate across contexts, perform effectively in different settings, and adapt to different task and setting demands

Supported at Mundo Verde through:

- Place based learning / projects with authentic local problems
- Common core alignment and focus on cognitive skills (Stanford rubric)
- Habits of Community Stewardship: Collaboration, Inquiry, Perseverance
Session Objectives

1. I can discuss and describe aspects of a Place Based learning approach.

2. 

3. 

4. 
Place-based Learning

- *Teaches* students to be global stewards
- *Provides* students inquiry-based experiences in their natural and human communities
- *Develops* a student’s “sense of place” and builds their empathy and value for their natural and human communities
- *Ensures* that we explore sustainability problems/opportunities from a developmentally appropriate scale of place and time
Place: From Home to Globe

Session Objective Two
Session Objective Two

Place: Scaled Curriculum
Session Objective Two

Place: Scaled Curriculum

5th grade

4th grade

3rd grade

2nd grade

1st grade

Kinder

PK

Representation, Earth System Interconnections

Historic societies, Global Climate Change

DC, Chesapeake Watershed

Local farms, local businesses

School community

Classroom community

Personal Body, Family, Schoolyard
Place: Community
Session Objective Two

Place: Building to Community

1. existing 1925 school building
2. identify existing bar scheme + building scale
3. replicate the bar at the east end of the site to create green space between existing building & new building
4. adjust building to programming requirements
5. extend local rowhouse site texture to articulate and scale the building
6. shift individual blocks to create entrance and rooftop classroom
Place: Nature All Around Us
Session Objectives

3. I can describe the relationship between a Project-based Educational model and the importance of site / place.
Project-based Educational Model

- Long term, in-depth studies
- Overarching guiding question
- Interdisciplinary: social studies, science, literacy, sustainability
- Real world connections and case studies
- Experts and fieldwork
- Hands-on, active learning
- Final products: professional formats and authentic audiences
- Character: inquiry, collaboration, perseverance (multiple drafts), spirit of adventure
- Culminating event: celebration of learning
- Enduring understandings / transfer
Place: Programming Site

Session Objective Three
Place: Programming Site

Session Objective Three
Session Objective Three

Curriculum for Project-based Model:

Grade: **K**
**Content:** Vegetables // Animal adaptations  
**Space / place:** Onsite garden, urban farm, community gardens  
**Sustainability standards:** Responsible Local & Global Citizenship; Strong Sense of Place; The Dynamics of Systems & Change

Grade: **1**
**Content:** Common spaces // Waste cycles (recycling and compost)  
**Space / place:** School building (shared spaces), school compost systems  
**Sustainability standards:** Strong Sense of Place; Healthy Commons; The Dynamics of Systems & Change; Sustainable Economics

Grade: **2**
**Content:** Market (consumers & producers) // Rock cycle  
**Space / place:** Local organizations and farms, ground beneath us  
**Sustainability standards:** Sustainable Economics, Natural Laws & Ecological Principles

Grade: **3**
**Content:** Right to Read (literacy access) // Water  
**Space / place:** City of DC, school water systems, Anacostia watershed  
**Sustainability standards:** Healthy Commons; Multiple Perspectives; The Dynamics of Systems & Change

Grade: **4**
**Content:** Pre-colonial / early colonial history of United States // Energy  
**Space / place:** Historical local context, mid-atlantic region, school energy efficient systems, global climate change  
**Sustainability standards:** Multiple Perspectives; Cultural Preservation & Transformation; Natural Laws & Ecological Principles; Strong Sense of Place

Grade: **5**
**Content:** Representation throughout US and Latin American history // Sustainable engineering  
**Space / place:** Historical global context, school systems, vision for the future  
**Sustainability standards:** Responsible Local & Global Citizenship; Multiple Perspectives; Inventing & Affecting the Future
Curriculum for Project-based Model:

7am
12pm
3pm
Curriculum for Project-based Model:
1. I can give specific program and architectural examples that enrich a school’s Education for Sustainability framework.
Expeditions In Action: A Closer Look

3rd Grade: Save Our Water

Guiding Question: How do people and natural systems interact?

Final Products:
- Spanish: Bilingual postcard (informational writing) featuring water conservation tips for your daily life as well as a scientifically accurate and beautiful drawing of the shad fish
- English: Persuasive speeches (opinion writing) proposing solutions to water problems affecting DC
- Authentic Audience: Community (postcards mailed to hundreds of neighbors) and DC Water Board / local council members

Community Connections / Service Learning: Anacostia Watershed Society (river cleanup, shad hatchery and release); investigating water systems at Mundo Verde (permeable pavers, rain cistern, etc.)

Sustainability Standard: The Dynamics of Systems & Change
- Focus Performance Indicator: Define how their own (or other people’s) actions affect the systems they are in.
Expeditions In Action: A Closer Look

3rd Grade: Save Our Water

Community Connections / Service Learning: Investigating water systems at Mundo Verde (permeable pavers, rain cistern, etc.)
Expeditions In Action: A Closer Look

3rd Grade: Save Our Water
Expeditions In Action: A Closer Look

4th Grade: Energy and Us

Guiding Question: How can we ensure we live within the means of nature for the next 1,000 years?

Final Product:
• Bilingual magazine featuring narrative, informational, and persuasive writing and original student artwork (feature articles, op-eds, interviews, stories). Student writing focuses on sustainable solutions to reverse the effects of the human interruption of the natural carbon cycle/ climate change.
• Presentation to our governing Charter Board to propose solar panel installation at Mundo Verde

Community Connections / Service Learning: Investigating energy efficient systems at Mundo Verde (daylight harvesting, lighting/ heating, sourcing renewable materials, etc.); fieldwork to net-zero buildings; case study of energy sourcing in DC

Sustainability Standards: Natural Laws & Ecological Principles // Strong Sense of Place
• Building on prior learning: Student seek multiple perspectives (focusing on BIPOC) when studying the disproportionate effects of climate change and limited access to healthy and sustainable information and solutions, on communities that are historically marginalized.
Community Connections / Service Learning: Investigating energy efficient systems at Mundo Verde (daylight harvesting, lighting/ heating, sourcing renewable materials, etc.); fieldwork to net-zero buildings; case study of energy sourcing in DC
In Action: A Closer Look
4th Grade: Energy and Us

Enduring Understandings:

• **EFS EU 1 - A Healthy and Sustainable Future is Possible**
  *What will kids say?:* We can learn to make change so that we have everything we want and need while taking care of natural systems.

• **EFS EU 8 - Think 1000 Years**
  *What will kids say?:* Think about the future you want and work towards it. We can meet all of our needs in a way that does not interrupt, damage or destroy natural systems. There are many renewable sources of energy. We must use them to meet our needs in a way that makes sure they will still be available to future generations. We need to tear down current nonrenewable systems and build more sustainable ones.

• **EFS EU 11 - Live by the Natural Laws**
  *What will kids say?:* You can’t change nature. Instead we need to learn to work with and in nature. Energy is not created or destroyed, only changed. We can choose to get energy from sources that are renewable.
In Action: A Closer Look

Session Objective Four
In Action: A Closer Look
In Action: A Closer Look
A4LE Enduring Understanding

1. Education for Sustainability framework

2. Place Based learning approach

3. Project-based Educational model and the importance of site/place.

4. How can you employ these educational models and activities into your current and future projects?
Discuss and Explore (AKA Q+A)

Think - Pair - Share:

• Establish / Adapt an Education for Sustainability Framework
• Encourage Place Based Learning Approach
• Explore Project-based Educational Models (expeditionary)
• Create Site and Buildings that integrate this framework
Contact Information

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