Workshop Packet
Using the Building as a Teaching Tool

Overview
Developing curriculum that use the building as a teaching tool requires a dedicated team and innovative thinking. At the end of this workshop participants will be able to begin the process of developing curriculum and projects surrounding a green building project, or their own existing buildings.

The workshop is built around the Learning Gate Community School (LGCS) from Lutz, FL. They were successful in developing a LEED Platinum certified expansion to their school, while creating successful curriculum at every stage of the process.

The workshop will be most successful given in one day, but the option exists to split the sections between smaller professional development sessions.

Target Audience
Administrators and Teaching Staff

Learning Objectives
- Describe and explain opportunities for curriculum development in the design, building and post-building phases of a green school program.
- Create an action plan for designing and implementing green curriculum based in their own school buildings and property.

Materials
- Workshop printout
- *Building a Green School* – PREZI presentation
- Using Building as a Teaching Tool – Narrative
- Workshop Handouts

Assessment
Participants will:
- Be able to describe and explain the positive aspects of a green school.
- Understand who the USGBC is and what a LEED certification is.
- Complete an opportunities worksheet for their school.
- Be able to visualize and create curriculum using the building as a teaching tool.
- Have good answers and ideas for all 10 critical questions.
- Create concrete plans to begin developing their building as a teaching tool.
## Workshop Lesson Plan

### Agenda:

<table>
<thead>
<tr>
<th>For Presenter</th>
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<tbody>
<tr>
<td>- Review entire PREZI for “Using the Building as a Teaching Tool” presentation.</td>
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<td>- Read and review workshop handout</td>
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<td>- Review additional materials links in workshop</td>
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<td>- Print-out Workshop worksheets.</td>
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<td>- Prepare Anticipatory set video</td>
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<tr>
<td>- Read and review “Using the Building as a Teaching Tool” narrative.</td>
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<tr>
<td>- Review all critical questions at the end of the PREZI in preparation for discussion</td>
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<th>Anticipatory Set</th>
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<tr>
<td>Start class by showing the video “Green Schools: Growing healthy kids and a sustainable future”. Follow by initiating a group discussion on why and how a green school is important in your district or area. Encourage both the intrinsic and extrinsic factors.</td>
<td>10 min.</td>
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<tr>
<th>Step 1</th>
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<tr>
<td><strong>Green building benefits and overview</strong></td>
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<tr>
<td>Review first section of the PREZI presentation titled “Green Building Background” and materials provided. During the benefits of schools slide lead a discussion on what other benefits the participants can think of for the benefits of a green school.</td>
<td>30 min.</td>
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<thead>
<tr>
<th>Step 2</th>
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<tr>
<td><strong>The Learning Gate Community School</strong></td>
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<tr>
<td>Review the 2nd section of the PREZI titled “Learning Gate” and the full narrative.</td>
<td>30 min.</td>
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<th>Step 3</th>
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<td><strong>Curriculum</strong></td>
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<tr>
<td>Review the 3rd section of the PREZI titled “Curriculum”. Print out “Opportunities” worksheet. After the teacher-led / student-driven slide pause to have small groups work on the “Opportunities” worksheet for 5 minutes. Then work with participants to generate a complete list of opportunities in their school.</td>
<td>30 min.</td>
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<td><strong>Critical Questions</strong></td>
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<tr>
<td>Review the 3rd section of the PREZI titled “Critical Questions”. Print out “Critical Questions” worksheet. Prepare the participants for group work and share–outs for this next section. Pass out the “Critical Questions” worksheet and have participants work in small groups on the questions. Give them about 5 minutes, more if necessary to answer the questions and then work to collect good ideas from each group. Each question should be approached as a group to find the greatest range of ideas and viewpoints possible.</td>
<td>1 to 1 1/2 hour</td>
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<td><strong>Actionable Items</strong></td>
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<td>Work with the group to create actionable items to begin creating building oriented curriculum. This can be a focus session during planning time, a new curriculum committee, or a few specific tasks. A successful closure will provide plans to have at least one new building as a teaching tool lesson plan as a future goal with timeline and assigned tasks.</td>
<td>20 min.</td>
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Goals and Objectives
1) Participants will be able to list and define the benefits of a green school.
2) Participants will explain the possibilities for using their building as a teaching tool.

Proven Benefits of a Green School?
**Protect Student and Teacher Health** - Schools designed with attention to proper ventilation, material selection, acoustical quality and other indoor environmental factors, can expect improved student and teacher health and higher attendance.

**Better Student Performance** - Attention to site planning and adequate day lighting has been shown to heighten student performance by as much as 25%.

**Lower Operating Costs** - Operating costs for energy and water can be reduced by 20% to 40%, allowing more money to be used for teacher salaries, textbooks and computers.

**Provide a Unique Educational Opportunity** - When advanced technology and design in new schools are made visible, buildings can become teaching tools and important features of science, math, and environmental curriculum.
Source: [www.globalgreen.org/greenurbanism/schools/](http://www.globalgreen.org/greenurbanism/schools/)

For more information on the benefits of green schools:
Realtor School Tools Kit: 10-page summary
[www.realtor.org/wps/wcm/connect/771f22004767ca86a94aaba3b85ca9a/PET_Benefits_of_Green_Schools.pdf?MOD=AJPERES&CACHEID=771f22004767ca86a94aaba3b85ca9a](http://www.realtor.org/wps/wcm/connect/771f22004767ca86a94aaba3b85ca9a/PET_Benefits_of_Green_Schools.pdf?MOD=AJPERES&CACHEID=771f22004767ca86a94aaba3b85ca9a)

The Center for Green Schools
[www.centerforgreenschools.org](http://www.centerforgreenschools.org)

Global Green
[www.globalgreen.org/greenurbanism/schools/](http://www.globalgreen.org/greenurbanism/schools/)

United States Green Building Council

What is USGBC and LEED certification?

The U.S. Green Building Council’s Vision:
To transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life.

**LEED (Leadership in Energy and Environmental Design)** is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. LEED five building owners and operators the tools they need to have an immediate and measurable impact on their buildings’ performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water saving, energy efficiency, materials selection and indoor environmental quality.


**Case Study: The Learning Gate Community School**
The Learning Gate Community School in Lutz, Florida is a progressive environmentally focused school that just completed an expansion on their campus. The new buildings achieved LEED Platinum certification, the highest award that a green school can attain. This success is a demonstration of what a focused team of teachers, students, parents and administration can accomplish with good leadership and innovative teachers. The teachers use the buildings and the property of the school as a teaching tool. They are able to create lesson plans and curriculum that tie into the state standards while providing the students with hands-on and real-world applications in their classrooms and cross-disciplines.

For more information on the Learning Gate School:
- Learning Gate Case Study
  [Add link to case study here](#)
- Learning Gate Community School Website
  [www.learninggate.com](http://www.learninggate.com)
- Green School Video for the Learning Gate Community School
  [http://www.youtube.com/watch?v=p_eUALeVT4g](http://www.youtube.com/watch?v=p_eUALeVT4g)
- Project Based Learning at the Learning Gate Community School
  [http://www.youtube.com/watch?NR=1&v=vgQCMylcZ4](http://www.youtube.com/watch?NR=1&v=vgQCMylcZ4)
- Nature is our best teacher at the Learning Gate Community School
  [http://www.youtube.com/watch?v=C_H4cKeTpMg&feature=related](http://www.youtube.com/watch?v=C_H4cKeTpMg&feature=related)

**Leadership in the School**

Building a green school involves dedication and commitment from all stakeholders. The characteristics of the communities, as well as the staff and students at the school affect the development and implementation of green school programs. A school will need to create a solid foundation of leadership in order to develop both small and large green projects in their buildings.

To learn more on leadership in the school follow this link to a successful leadership case study
  [Link to Rebecca’s Work](#)

**Architecture and Builders as Partners**
Architects, builders, designers and engineers are integral for the success of a green school program. Not only do these professionals need to have the technical knowledge to create these schools, but the knowledge and skills to work with the teachers, administration and students to create a sense of place. Schools, unlike most professional buildings, are very unique depending on the staff and location of the property.

All stakeholders need to understand the importance of involving the staff in the decisions, and also to include them in the discussions about how their school will be. These professionals need to spend time in the schools and listen to the staff to discover the needs and flow in their environment. In the end, the importance is to create a building that teaches and will help the teachers meet their standards and needs for the children. This is what will set you apart from a company that is just LEED certified, from a company that can work with the school to develop the tools and opportunities that they need to educate the students in their care with the new green building.

To learn more about working with a green school see the Learning Gate Community School: Using the school as a teaching tool case study.  
Add link to case study here

What opportunities are in your school?

Every school has different opportunities. It depends on how much space you have, and how invested the community is to converting the school to a green school. Energy efficiency programs and minor remodels and modifications can save enormous amounts of money for the district.

**Large Scale** - At this level every component can be chosen to reflect economy and energy savings while providing opportunities for teachers to use the building as a teaching tool.

- Full Remodels – retrofitting water, light and heating components to reduce energy use.
- New Ground-up Construction – If your school is expanding or replacing and existing building, by using green building tools you can save money on the utilities while keeping the project cost the same.

**Small Scale** - If your school isn’t doing a large project some small things can be done to move towards being green.

- Replace the light bulbs with higher efficiency models
- Replace the toilets and/or faucets with higher efficiency models
- Add wind or solar power to your campus
- Monitor heating and light usage to cut down on use during non-peak hours
- Replace carpets and flooring with recycled material and without toxic fumes
- Utilize more daylight in the classrooms to cut down on energy use

To learn more on ways to green your school, see these resources:
Consumer Energy Center  
[www.consumerenergycenter.org/tips/schools.html](http://www.consumerenergycenter.org/tips/schools.html)

11 Ways to green your school
For more information on improving your schools environmental air quality:
Link to Becky’s research

For more information on water conservation and use:
Link to Brian’s Research

For more information on green school success stories:
Link to Stephanie Barr’s Research

Great Examples of Schools
Learning Gate Community School
www.learninggate.org

Fossil Ridge High School Green Building
www.buildinggreen.com/hpb/overview.cfm?projectId=672

Rocky Mountain High School
www.today.colostate.edu/story.aspx?id=4445

Using the Building as a Teaching Tool

1. What kind of things can you do to nurture investment from your students in their school to create a sense of place?
   a. Class units, lessons, research, reports, activities, awareness campaigns, others?

2. What kind of things can you do to keep staff involved and motivated in development?
   a. Planning time, support from administration, stipend for extra work, help with lesson plans and units, other?

3. How could you involve the students and staff in the design and building process for this project?
   a. Lessons, research, tasks, other?

4. What features can you build into the school to promote learning in the future?
   a. What can the students see, feel, research and experience on site?

5. What units and lessons can you envision during the design and building process, and how will you tie them into the standards?
   a. Water conservation, electricity conservation, insulation, air quality, attendance, performance, other?

6. How is the administration going to support the curriculum development process?
   a. Professional developments, guided focus groups, time to plan and implement, suggestions, advice, other?

7. What are some of the considerations as an educator that the builders and designers will need to take into account?
   a. Classroom uses, functionality, safety, other?

8. What kind of multi-disciplinary and/or cross-grade curriculum would be possible?
   a. Science, language arts, humanities, electives, other?
9. What are some challenges and opportunities that you can see in your classroom and at the school with the new green building structures on campus?

10. How could you compare and contrast energy saving features and also keep track of benefits to the school in savings, health and student achievement?

To learn more on developing lessons plans on using the building as a teaching tool:
The Green Schools Initiative
www.greenschools.net/article.php?id=159

The Green Education Foundation

To learn more on using the building as a teaching tool:
Link to Mike’s Case study
## Opportunities for Curriculum

<table>
<thead>
<tr>
<th>Section</th>
<th>Examples</th>
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<tbody>
<tr>
<td><strong>Cool things our school has now</strong></td>
<td><em>Solar, student garden, furnace, air conditioning</em></td>
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<tr>
<td><strong>Cool things we could get for our school</strong></td>
<td><em>Barometers, weather gauges, air monitors, rain gauges, moisture monitors</em></td>
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<tr>
<td><strong>Local resources</strong></td>
<td><em>Power plants, dams, solar</em></td>
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<tr>
<td><strong>Other opportunities</strong></td>
<td><em>Student environmental club</em></td>
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<tr>
<td>Question</td>
<td>Possible Responses</td>
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Additional Resources

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www.realtor.org/wps/wcm/connect/771f22004767ca86a94aabaa3b85ca9a/PET_Benefits_of_Green_Schools.pdf
The Center for Green Schools
www.centerforgreenschools.org
Global Green
www.globalgreen.org/greenurbanism/schools/
United States Green Building Council

For more information on the USGBC and LEED:
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www.usgbc.org/LEED/

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