

SUSTAINABLE LIVING

Grades 4 - 6

NJCCCS: 5.1, 5.2, 5.3

Field Trip Overview:

On the field trip, students will discover what it means to make a “green” building. The trip will begin with a short PowerPoint introduction to green buildings and environmental sustainability, followed by a tour of the Center for Environmental and Scientific Education (CESE), the Meadowlands own green building where the students will learn about the building independently. Students will then go back to the classroom and construct their own green buildings using the concepts they have learned to choose environmentally friendly building materials. Their project will be available to bring back and display in the classroom at your school. Time permitting, the students will rate the building according to LEED (Leadership in Energy and Environmental Design) standards.

Background Information:

A green building is one that makes use of sustainable development techniques in order to minimize the impact that the building has on the environment. Sustainable development includes using rapidly renewable and recycled materials, using certified wood, utilizing renewable energy (solar power, wind turbines, etc...), conserving power by using proper building and heating and cooling techniques, and conserving water.

With the increase in world population, precious resources that we once took for granted are quickly being depleted or misused. Forests are disappearing and lakes are drying up. If we continue down the path we are making, there will be nothing left to sustain life. With this in mind, we are shifting the way we make buildings and houses so that we can maintain our current quality of life while conserving our natural resources.

Vocabulary:

Certified Wood: Wood that is certified by the Forestry Stewardship Council to have originated from a well-managed forest; the logging company must utilize methods that will promote continual survival of the forest and environment from which the wood originated

Green Building: The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from site selection to design, construction, operation, maintenance, renovation and deconstruction

Native Vegetation: Vegetation that is natural to an area, and has not been introduced; the plant has adapted to the local conditions and doesn't need human intervention (fertilizers, watering, or additional sunlight) to aid in its survival

Rapidly Renewable: Materials that are distinguished from wood by the shorter harvest rotation—typically 10 years or less; they are biodegradable, often (but not always) low in harmful chemical emissions, and generally produced from agricultural crops

Sustainable Development: A pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but in the indefinite future

References / Resources:

- [The Center for Green Schools](#)
- [NJMC Center for Environmental and Scientific Education](#)
- [U.S. Green Building Council](#)

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Pre-Trip Activities

Green Dream House

Explain that the class will be visiting the Meadowlands Environment Center to learn about living sustainably. With that in mind, have your students draw a picture of their "green dream house." Allow them to be as creative as they like, including any/all amenities they desire. Have them consider the size of the house (# of bedrooms), what materials the building would be made of (steel, brick, wood, etc.), the type of plants that would be around the building (trees, grass, garden, etc.). Allow students to present their "green dream house" to the rest of the class.

Following your visit to the Environment Center, review the LEED green building principles and revisit the students "dream houses" and have them think about how they could make their houses more sustainable. What, if anything, would they change about their house / property to make it more environmentally friendly?

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Post-Trip Activities

Going Green!

Grades: 4-6

Type: Indoor

Duration: 1-3 hours

Subject(s): LEED building, sustainable development, water and energy conservation

NJCCCS: 5.1, 5.3, 5.4

Objectives: Students will be able to identify recyclable and rapidly renewable materials and determine methods of sustainable development.

Skills: Plant identification, unit conversions, area calculation, comparing and contrasting

Materials needed: Green School Checklist (attached below)

Other Preparation: None

Procedure:

1. Introduction

- a. Review the LEED principles
- b. Walk around your school building, including outside if possible, concentrating on areas where sustainable development techniques might be in place.

2. Activity (Indoor)

- a. Evaluate your building based upon the Green School Checklist (teacher will need to be able to determine whether the local flora is native, exotic, or invasive).
Feel free to modify the checklist to your building's specific strengths and weaknesses.
- b. Determine whether your school building is environmentally friendly. Is there anything you can do to change this?

3. Closure

- a.** Discuss with students how LEED building and technology can affect them, their community, and the world. Encourage them to write to their congressman to encourage more “green” building.
- b.** Replace any non-native decorative plants with native plants. Discuss how they consume less water and require less fertilizer.
- c.** Have the students begin a composting/recycling program at the school.

References/Resources:

[Center for Green Schools](#)

Green School Checklist

Green School Feature	Points Available	Points Earned
Transportation <ul style="list-style-type: none"> • Do at least 50% of students ride the bus to school? • Are the school buses clean burning diesel? • Do at least 50% of teachers/staff carpool? (2 or more) • Do at least 25% of students walk or ride bikes to school? 	5 5 5 5	_____ _____ _____ _____
Energy <ul style="list-style-type: none"> • Does your school use Energy Star-qualified computers, appliances and vending machines? • Has your school performed an energy audit? 	5 5	_____ _____
Lighting <ul style="list-style-type: none"> • Does the school use natural sunlight when possible to light the classrooms? • Does your school use fluorescent and/or compact fluorescent light bulbs? • Do you turn off the lights when rooms are not in use and at night? 	5 5 5	_____ _____ _____
Recycling <ul style="list-style-type: none"> • Does your school have a recycling program? • Does your school use recycled paper products? 	5 5	_____ _____
Native Vegetation <ul style="list-style-type: none"> • Does the school use native vegetation on the school grounds? • Does your school use water efficient irrigation on your outdoor landscape? 	5 5	_____ _____
Water <ul style="list-style-type: none"> • Does your school have low flush toilets? • Does your school have flow control faucets? 	5 5	_____ _____
Total Points Earned		_____

Scores

0-25 = Lots of room for improvement!

26-50 = Not too bad but room for improvement.

51-75 = You may have a green school!