



# **GEF Sustainability Programs Overview for NASDCTEc**

**September 27, 2011**



# Green Education Foundation (GEF) Mission

**Green Education Foundation (GEF)**, a non-profit organization, is committed to creating a sustainable future through education. GEF provides curricula and resources to K-12 students and teachers worldwide with the goal of challenging youth to think holistically and critically about global environmental concerns and solutions.



# GEF's Goals

GEF aims to identify key factors and impediments influencing sustainability education, evaluate existing approaches, and develop effective educational materials and programs to promote behavior change towards sustainable practices.



# Leading the New Sustainability Education Movement



Sustainability education connects environmental, economic, and social systems and develops the 21st century skills, vision and habits to build a sustainable future.





# GEF Community Demographics

- ▶ Over 8,500 member schools and counting
- ▶ Over 5 million kids
- ▶ All 50 states
- ▶ Online content allows accessibility to all 125,000 schools across the U.S.
- ▶ GEF reaches schools through teachers unions, administrator and principals' organizations, national and local departments of energy, national and local departments of education, and like-minded non-profits





# GEF Programs

## National Green Week

- K-12 sustainability campaign focused on waste, energy and water reduction
- GEF's flagship program mobilized five million students



## Green Thumb Challenge

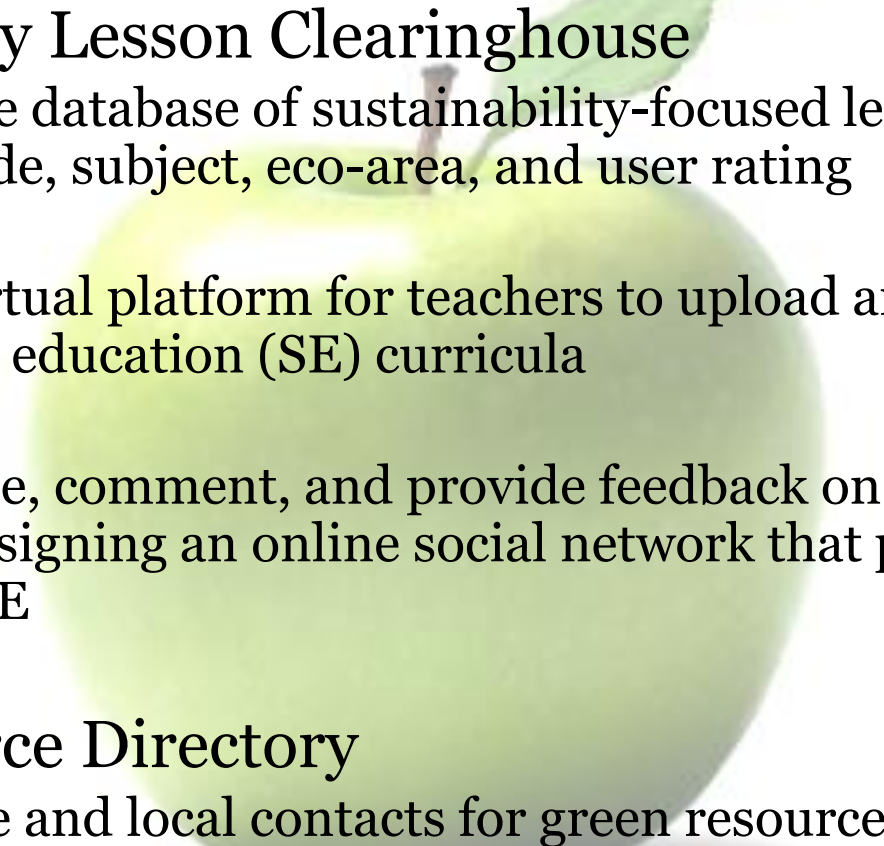
- The largest youth gardening initiative connects new and existing garden programs nationwide
- 5,000 school and youth groups signed up for the pilot year — reaching over 771,000 kids

## Green Energy Challenge

- Addresses the science of energy, non-renewable and renewable sources, and energy and water conservation strategies
- Student projects include school and classroom energy and water audits



# Sustainability Education Resources Directories

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- A large, green apple with a single green leaf is positioned behind the text, centered horizontally. The apple is slightly out of focus, creating a soft background for the text.
- ▶ **Sustainability Lesson Clearinghouse**
    - Largest online database of sustainability-focused lessons for K-12 sorted by grade, subject, eco-area, and user rating
    - Provides a virtual platform for teachers to upload and share K-12 sustainability education (SE) curricula
    - Educators rate, comment, and provide feedback on curricula, with the goal of designing an online social network that promotes best practices in SE
  - ▶ **State Resource Directory**
    - Provides state and local contacts for green resources and programs



# Sustainability Education Professional Development Program

- ▶ Provides educators with the knowledge, skills, and resources to infuse SE into their existing curricula
- ▶ Fosters a new generation of innovative teaching strategies and performance metrics across traditional disciplines
- ▶ Educators have the option to earn PDPs/CEUs and academic credit
- ▶ For more information visit:  
[www.greenteacherprogram.org](http://www.greenteacherprogram.org)

## Online course curriculum Train-the-Trainer Resources

### *Foundational Understandings Course*

Infuse SE into the content of current disciplines

### *Grade Specific Courses (K-5, 6-8 & 9-12)*

SE as a context for Common Core standards-based teaching and 21<sup>st</sup> century metric strategies

### *Content Electives with Applied Learning Projects*

Green Energy/Technology, Populations & Global Citizenship, Green Building, Sustainable Agriculture, The Economics of Sustainability



# GEF CTE Sustainability Program

- ▶ Prepare students for the Green Economy
  - Green jobs
  - Traditional jobs employing environmentally advanced technology and practices
  - Green entrepreneurs and business men and women
  - Green consumers





# GEF CTE Sustainability Program

- ▶ *Introduction to Sustainability Concepts – 30 hour*
- ▶ *Green Building Course –75 hour, one semester elective*
  - Includes a comprehensive *Digital Resource Kit* with a teachers manual, digital textbook, pre/post unit assessments, lessons, hands-on audits, pacing guide & capstone project
- ▶ *CTE Sustainability Supplements*
  - Includes an overview on current market trends, introduction to green technologies and career options, lesson sets and case studies
- ▶ *Individual Lesson Sets*

# GEF CTE Sustainability Program

- ▶ Sustainability Supplements for CTE Career Clusters
  - Architecture and Construction
  - Agriculture, Food and Natural Resources
  - Transportation, Distribution and Logistics
  - Manufacturing
  - Science, Technology, Engineering and Mathematics



# Sustainability Supplement for the Plumbing Trade



## CTE Sustainability Program

### Sustainability Supplement for the Plumbing Trade



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#### Overview

GEF's *Career and Technical Education (CTE) Sustainability Program* is an exciting new offering for CTE schools nationwide. It is aimed at providing an introduction to sustainability practices, technologies and career opportunities in select CTE Programs of Study.

The goal is to prepare students for "green" jobs and vocations employing environmentally advanced technologies and practices. Through this program, students are motivated to become green businessmen and women, entrepreneurs and green consumers.

The *CTE Sustainability Program* provides sustainability curriculum, courses, certification, tests and supporting materials for the following Career Clusters:

- Architecture and Construction
- Agriculture, Food and Natural Resources
- Transportation, Distribution and Logistics
- Manufacturing
- Science, Technology, Engineering and Mathematics

While there are many educational programs at the state level for CTE Programs of Study, very few, if any, include materials with an emphasis on sustainability. The objective of the GEF *CTE Sustainability Program* is to offer educator's state-of-the-art sustainability education resources that can be easily integrated into class and shop based instruction.

#### Sample: Sustainability Supplement for the Plumbing Trade

The following sample of GEF's *CTE Sustainability Supplement* focuses on the Construction Trades Program of Study and specifically on Plumbing. GEF's *Sustainability Supplement for the Plumbing Trade* will provide educators and students with insight into the skill sets required for the following:



- Water systems (aquifers and watersheds);
- County and municipal water and waste water systems;
- How the constructed world impacts water system;
- Opportunities for water conservation and waste water reduction;
- The relationship between water and energy within a building; and
- The availability and proper use of new plumbing and energy technologies to reduce water and energy use.

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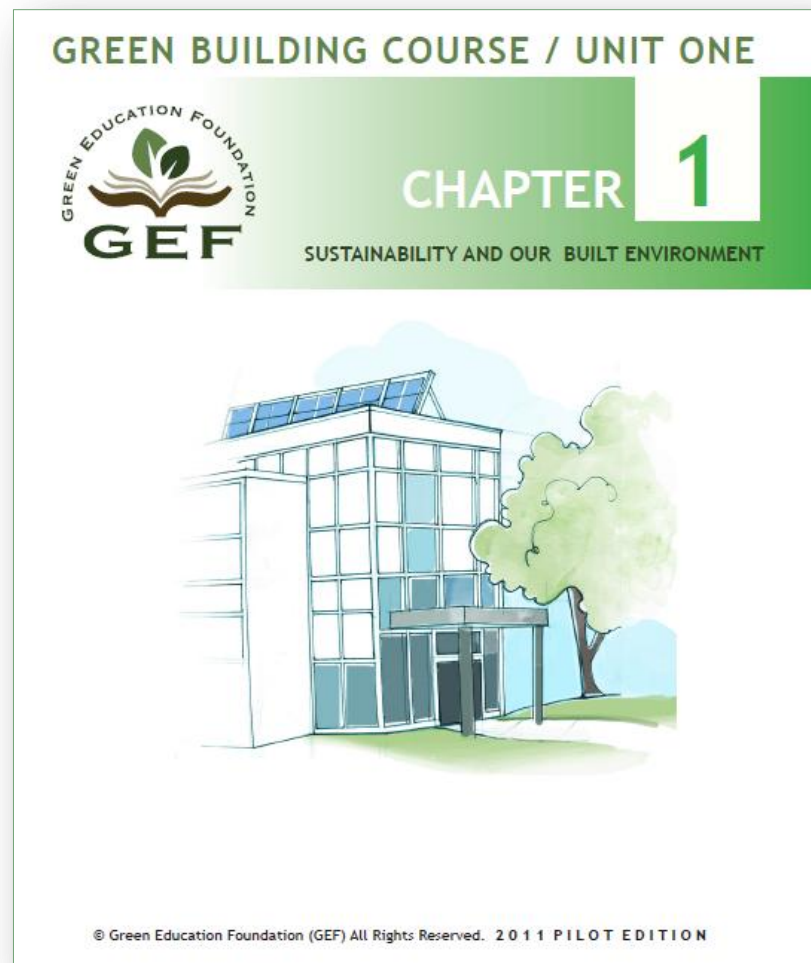
# Green Building Course

- Developed for 11 and 12 grade students (and AP) to learn about green building attributes and benefits to provide a healthier and more energy-efficient school and home
- Provides the educational resources necessary to understand, identify and improve environmental inefficiencies



# Green Building Course Outline

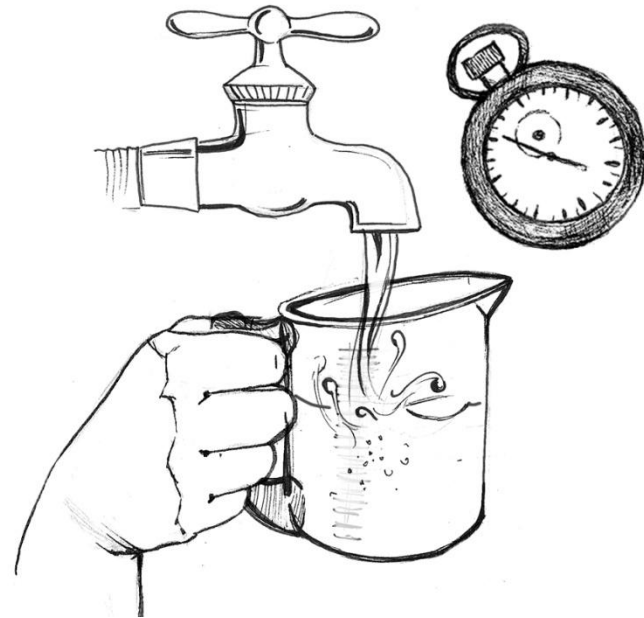
- ▶ Unit 1: Introduction to Green Building
- ▶ Unit 2: Energy
- ▶ Unit 3: Water
- ▶ Unit 4: Sustainable Sites
- ▶ Unit 5: Materials and Resources
- ▶ Unit 6: Indoor Environmental Quality



# Green Building Course Materials

Pilot teachers receive the following in digital format:

- Teacher Manual
- Lesson Plans
- Pacing Guide
- Course Textbook
- Audit Materials





# Green Building Audits

## ► Unit Audits

- Prioritize areas for enhanced efficiencies in the students' school building in preparation for capstone project

## ► Capstone Project

- Students analyze and recommend building improvements based upon feasibility, greatest need and return-on-investment (ROI).
- Students research how and where to request funding (from government sources, utility rebates, etc.) in an effort to offset the costs of their proposed upgrades.

GEF's *Green Building Course* and audit are aligned with U.S. Green Building Council (USGBC) guidelines for what constitutes green building construction according to their LEED (Leadership in Energy and Environmental Design) rating system.





# Pilot School Experiences

“I will really be emphasizing the hands-on aspect and the audit component of the course. ”

- Jenny Kostka, South Shore Charter Public School in Norwell, MA

“For a few years now I have been teaching a course on Green Architecture and another on Sustainable Design, but with very little funding for materials or development. The GBC Green Building Pilot is a wonderful hybrid of both courses with a more streamlined approach and with superior materials.”

— Jeremy Stone, Common Ground High School in New Haven, CT



# Get Involved!



For more information about GEF programs and opportunities, please visit:  
[www.greeneducationfoundation.org](http://www.greeneducationfoundation.org)

Contact:  
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# GEF Sponsors and Partners



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# APPENDICES:

## Green Building Course FAQ

- ▶ Is there a website I can visit?
  - Yes! [www.greenbuildingprogram.org](http://www.greenbuildingprogram.org)
  
- ▶ How do I become a pilot school?
  - Read, sign, and return the [Pilot School Agreement](#) to GEF at [service@greeneducationfoundation.org](mailto:service@greeneducationfoundation.org)
  
- ▶ When does the pilot start and how long is it?
  - January 2012
  - One semester: it includes 6 units and 75 hours of classroom instruction, digital/pdf textbook, pre/post assessments, pacing guide, student lessons, hands-on audits per, capstone project(s)
  
- ▶ What online platforms are required to participate?
  - PDF Viewer
  
- ▶ Can I take a closer look at the Table of Contents:
  - Sure! Read more about all 6 units in the [Table of Contents](#)





# APPENDICES:

## Sustainability Education Professional Development FAQ

- ▶ Learn more or join the pilot for [\*Sustainability Education and Teaching Methods\*](#)
- ▶ How do I enroll?
  - First, register as a GEF member, then simply check the box next to *Sustainability Education Course* under the GEF Programs heading. Member registration is free and includes access to GEF curriculum.
- ▶ Who can participate?
  - K-12 educators interested in sustainability as an integrating context for learning, at all grade levels and across subject areas.
- ▶ What are the costs?
  - The pilot course is free. If educators are interested in PDP/CEU or academic credit there is a fee, payable to the accrediting university.
- ▶ When does the pilot begin and end?
  - The pilot launches on November 1 and allows 90 days to complete the 15 hour, self-paced, online course. You may enroll after November 1 if you're able to complete the course before it closes on Feb. 1
- ▶ Can I read through the course outline?
  - Yes! [Preview textbook here](#)

# APPENDICES:

## Program Websites & Resources

- ▶ Visit: [www.GreenThumbChallenge.org](http://www.GreenThumbChallenge.org)
- ▶ Visit: [www.GreenEnergyChallenge.us](http://www.GreenEnergyChallenge.us)
- ▶ Visit: [www.NationalGreenWeek.org](http://www.NationalGreenWeek.org)
- ▶ Visit: [www.GreenBuildingProgram.org](http://www.GreenBuildingProgram.org)
- ▶ Visit: [www.GreenTeacherProgram.org](http://www.GreenTeacherProgram.org)
- ▶ Visit: [www.SEClearinghouse.org](http://www.SEClearinghouse.org)