



## Summer High School Program Toolkit

### Introduction

Higher education institutions host summer programs to introduce high school students to the college experience. They provide opportunities for students to explore academic interests and get a taste of college life. Incorporating green building and sustainability concepts into these experiences is a natural fit for many of the common summer programs being run by schools of Architecture, Engineering, Construction, Design, Urban Planning, STEM, Landscape Architecture, Interior Design, and Environmental Studies.

The purpose of this toolkit is to prepare high school students attending college summer programs for 21<sup>st</sup> century careers using sustainability as a solutions driver. This toolkit provides higher education faculty curated access to resources and processes, organized to aid in teaching about and engaging high school students in the concepts of sustainability, green building and LEED. The materials can be adapted and scaled to fit a variety of topics, programs, and student learning levels to provide content for experiential learning experiences.

USGBC is here to help you apply these resources to your summer high school programs. Please contact us at [education@usgbc.org](mailto:education@usgbc.org) to let us know how you’ve customized use of these resources to meet your needs. Also, please let us know if there are additional resources that will further support your efforts.

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## USGBC and LEED Resources for Summer High School Program Curriculum Development

Would you like your summer high school program to introduce concepts in sustainability, green building, or LEED? We encourage you to use these resources to ensure your activities and projects include the most up-to-date information.

Free online courses available to share or present to students (free usgbc.org user account required):

- [Take a Virtual Tour of USGBC Headquarters](#)
- [Green Building for Everyone](#) (available [in Spanish](#) too)
- [Green Campus Speed Training](#)

Additionally, if your institution has a USGBC Campus Subscription to [Education @USGBC](#), then you have access to hundreds of hours of online course materials. [Watch our video](#) to learn more and contact [education@usgbc.org](mailto:education@usgbc.org) to speak with USGBC about this full access subscription for your institution which would benefit all instructors, staff and students all year.

USGBC YouTube Channel

- Big Ideas [playlist](#)
- USGBC CEO "[All In](#)" presentation

USGBC Slide Share presentations: <https://www.slideshare.net/USGBC/presentations>

Additional USGBC Resources:

- [LEED Rating System](#)
- [Center for Green Schools](#)
- [USGBC Higher Education](#). Go-to place to receive the latest information on the resources and products to support higher education sustainability efforts on campus.
- [USGBC website](#). Information on the U.S. Green Building Council and its programs.
- [GBCI website](#). Information about Green Business Certification Inc., the administration of LEED project certifications, professional credentials and certificates.
- [USGBC Student page](#). Encourage students to sign up for a free usgbc.org user account and check off the "I am a student" box to receive discounts and access to additional resources. Encourage them to create a profile in the [USGBC Student Directory](#).

[Higher Education Curricular Toolkits](#). Resources to teach about and engage students in exploring green building and sustainability topics and related rating systems such as LEED. Each toolkit includes links to resources and suggested teaching materials and student activities.

- [Green Building Design and Construction](#)
- [Green Building Operations and Maintenance](#)
- [Green Careers](#)
- [Sustainable Sites](#)
- [Zero Waste](#)

[USGBC Articles](#). Search by topic or sort by channels. Specific articles that may be interesting and useful to share or discuss with students:

- [Green Building 101: What is LEED](#)
- [What is Green Building?](#)



- [Benefits of Green Buildings](#)
- [The Business Case for Green Building](#)
- [Live. Learn. Work. Play. LEED. \(with video\)](#)
- [Introducing the Case for LEED \(with video\)](#)
- [Green Building 101: What makes a site sustainable](#)
- [Green Building 101: How does water efficiency impact a building?](#)
- [Green Building 101: Why is energy efficiency important?](#)
- [Green Building 101: Sustainable materials and resources](#)
- [Green Building 101: What is indoor environmental quality?](#)

### [Learning Lab](#)

Learning Lab is USGBC's online education platform for K-12 teachers, and features more than 500 lessons in English and Spanish, which were developed with sustainability principles and are hands-on and project-based. Lessons for grades 9-12 can be easily adapted for summer high school programs on campus. Take a look at these lessons that may be interesting and useful to share or discuss with students:

- [LEED Prep: Green Building Lessons for a Sustainable Future](#)
- [Sustainable Cities: Nature-based Solutions in Urban Design](#)
- [Biomimicry Design Challenge](#)
- [LEED Green Associate Exam Prep](#)
- [Greening Classrooms, Communities, Careers](#)

Learning Lab lessons are available at varying price points – most are available as part of the [Learning Lab Annual Subscription](#). View a selection of free lessons [here](#).

### Suggested Presentation Topics

Show the videos from the [Green Building for Everyone](#) course. After each one, discuss key points and show connections to spaces with which the students would be familiar (i.e., home, school, coffee shop, store, etc.)

Present “Become a Sustainability Detective.” Use the provided slide deck, video links and talking points to introduce students to green building design and the LEED green building rating system. (Slide deck provided in the Additional Resource section of [Summer High School Program Toolkit](#))

Use the “[Why LEED for your clients](#)” slide deck. This is a free public presentation to explain why LEED works for buildings of all shapes and sizes.

Invite a local USGBC staff or member to present or to support an activity. In addition to presentations and discussions, encourage casual networking and Q&A sessions where students can ask about future studies and jobs in sustainability and green buildings. (See below about locating local experts)

Discuss green building and sustainability priorities in the local region. Have students compare with the priorities in their home cities. The LEED Regional Priority credit [database](#) can identify local issues addressed by LEED. Learn more about the [LEED Regional Priority Credits](#).



## Locating Subject Matter Experts and Guest Speakers

Invite local green building and sustainability professionals to join your program as guest lecturers, local project tour guides, or design project jurors.

- [USGBC Member Directory](#) links to USGBC member companies and their employees.
- [USGBC & GBCI Speaker Request Form](#) facilitates connections between USGBC & GBCI representatives and your class.
- Search the [USGBC Organizations](#) directory to reach out to your local USGBC community and connect to experts in your area.
- [USGBC Faculty Directory](#) presents a global network of credible, qualified instructors, teachers and facilitators. USGBC Faculty members are go-to experts in sustainability across sectors, cultures and geographies. Many USGBC Faculty also support LEED projects and can help to facilitate working with a project team for teaching purposes. Learn more about the [USGBC Faculty Program](#).

## Student Activity Ideas

Consider these activities to support hands-on learning of green building and LEED concepts.

Worksheets provided in the Additional Resource section of [Summer High School Program Toolkit](#):

- Green Building Mind Map. Students brainstorm what green building means to them.
- Green Building Scavenger Hunt. Students explore a building on campus and look for green building features. Recommend students spend ~ 45 minutes exploring a space plus additional time for discussion.

Worksheet activities available in the [Green Building for Everyone](#) course:

- Your Turn: Explore a Green Building - Discover green building features in the spaces where you live, work, learn, and play!
- Your Turn: Why Are Green Buildings Important? (To me) - Assess green building features and benefits in a building with which you are very familiar such as your home, work, school, place of worship, or a store you visit frequently.
- Your Turn: What Can I Do? - Explore ways you can make a difference in the green building movement.
- Your Turn: Locate LEED Projects – Explore LEED projects to see how green building and sustainability strategies are implemented in real buildings.

[LEED Green Building Assessment](#). A more comprehensive look at a building and researching green features and connection to LEED. Best to allow students multiple days to complete this activity.

Tour a green building. Arrange tours of LEED-certified or other green buildings on campus or in the local area. Invite project team members to present. Invite local USGBC staff or members to join and participate in a casual networking or Q&A session afterwards. The [LEED Green Building Assessment Activity](#) in the [Green Building Design and Construction Curriculum Toolkit](#) is a great tool for looking at green building features on a tour. Encourage students to think of questions to ask the building professionals.

If you are in the Washington, D.C. area, arrange for a tour of the LEED-certified USGBC headquarters by filling out the [survey](#) or [emailing USGBC](#). Or [take the online virtual tour](#).



Have students create promotional materials to educate the public and occupants about the green features of a building. This can be as simple as signage, brochure or article or it can be a website or video.

Explore career pathways. Research and identify job opportunities in green building and sustainability. Resources and activities available in the [Green Careers Curriculum Toolkit](#).

Instruct students to read articles or watch videos on their own and come to class sessions prepared for discussions. Content from [usgbc.org/articles](http://usgbc.org/articles), [USGBC+ magazine](#), or [USGBC's YouTube Channel](#) is free and easy to access.

Access Education @USGBC. Students complete USGBC's online courses on their own to prepare for classroom activities or discussions. *Does your institution have a USGBC Campus Subscription to the Education @USGBC online learning platform? Take a look at content available for use in your summer program. If interested in learning more contact [education@usgbc.org](mailto:education@usgbc.org).*

### Locating LEED Projects

Exploring real LEED projects is a great way to make green building and sustainability concepts tangible for your students. The case studies listed here provide a snapshot of challenges faced and overcome by the project team, providing insight into the problem solving skills required by green building professionals. Want to take the learning experience even farther? Have your students develop their own case studies about LEED projects on your campus or in your community.

- [LEED Project Directory](#). A searchable online directory of publicly registered and certified LEED projects.
- Some of the profiles include information on goals, outcomes, and lessons learned. Examples:
  - o [AEON MALL Makuhari New-City FAMILY/ACTIVE](#)
  - o [BendBroadband Vault](#)
  - o [Broshim C-3-4-5](#)
  - o [Dunbar Senior High School](#)
  - o [Lake Mills Elementary School](#)
  - o [UC Davis Brewery, Winery, and Food](#)
  - o [UMass Research and Education Greenhouse](#)
  - o [Valley Health Center Downtown San Jose](#)
- Research if there are any LEED buildings on your campus. Arrange for students to tour the space.
- Reach out to your local USGBC community and connect directly with LEED projects and teams in your area. Search the [USGBC Organizations Database](#) by region to connect with USGBC near you.
- Use Case Studies for further project exploration:
  - o [Case Study: USGBC Headquarters](#)
  - o [Case Study: AGU Headquarters](#)
  - o [Case Study: Arc at Boston Latin School](#)
  - o [Case Study: American University](#)
  - o [Case Study: Lake Mills Elementary School](#)



## LEED Green Associate Credential Resources

LEED Green Associates have a documented, up-to-date understanding of the most current green building principles and practices and are committed to their professional future. Earning the LEED Green Associate credential can be a worthwhile and tangible outcome of a summer high school program.

Students can study for the exam over a two or three week period and then either take the exam at the end of the program or complete it when they return home. Available resources include:

- [LEED Green Associate Candidate Handbook](#) - The task and knowledge domains in the candidate handbook may be used as a resource for developing student learning outcomes for courses.
- [LEED Green Associate exam: Two week study plan](#) – The syllabus could be adapted for a summer program.
- LEED Green Associate credential [frequently asked questions](#)
- [Learn LEED: How-to Guide for Planning and Conducting LEED Study Groups](#)
- [LEED Core Concepts Guide v3](#) (for purchase)
- [Study Bundle: LEED Green Associate Exam Preparation Guide, LEED v4 Edition and LEED Core Concepts Guide](#) (for purchase). Special pricing available for educators and students.
- [Exam Prep materials on Education @USGBC](#) (available as part of the Education @USGBC subscription described above)
- [LEED credential maintenance 101](#) - Information, video and link to Credential Maintenance Guide

## Discounts for Institutions and Students

Currently, USGBC offers [student discounts](#) to individuals who indicate they are a student in their USGBC account. This includes discounts on USGBC products including the [LEED v4 web-based reference guide](#) (\$50), [Education @USGBC subscription](#) (\$99), [publications](#) (USGBC member price) and the [LEED Green Associate exam](#) (\$100).

For additional support for your summer high school program on campus - or to provide feedback on these resources - please contact [education@usgbc.org](mailto:education@usgbc.org).

### Toolkit-in-Action

The Catholic University School of Architecture and Planning [Experiences in Architecture](#) (EIA) pre-college program dives deep into architecture and design. This three-week workshop introduces college-bound high schoolers to the academic and professional sides of the architecture arena, using the renowned DC-based campus as a living laboratory. They incorporated these USGBC resources into their 2018 EIA program:

- “Become a Sustainability Detective” presentation to introduce students to green building design and the Leadership in Energy and Environmental Design (LEED) green building rating system.
- Student scavenger hunt to identify the sustainable features of a LEED-certified building on campus
- Tour of local LEED-certified elementary school led by project architects

## Appendix

- “Become a Sustainability Detective” Agenda
- “Green Building Scavenger Hunt” Instructions



## Appendix: “Become a Sustainability Detective” Agenda

Students become Sustainability Detectives and can assess any building through the lens of sustainability. The presentation can be adapted to fit desired time length and learning level.

USGBC videos are available to stream or download from the [Green Building for Everyone](#) course. Presentation slides are available in the Additional Resources section of [Summer High School Program Toolkit](#)

Topic	Activity
Opening 10 minutes	“Did you know...” sustainability facts
This is Green Building 45 minutes	Show USGBC video: <a href="#">What is green building?</a> (02:34) Show USGBC video: <a href="#">What does a green building look like?</a> (04:53) Discussion: Consider buildings in your community, are there buildings that come to mind that fit the definition of a green building? What are some of the features? Show USGBC video: <a href="#">Why is green building important?</a> (03:20) Show USGBC video: <a href="#">How can I support green building?</a> (02:00) Discussion - How could you improve the buildings you interact with on a daily basis? Consider your school, grocery store, your house – What are some easy first steps? Present slides about USGBC organization, vision, mission and LEED as a tool for market transformation. Show USGBC video: <a href="#">What is LEED?</a> (05:10)
Green Building Scavenger Hunt 60 minutes	Students complete the Green Building Scavenger Hunt. Afterwards, engage students in discussion. (See Green Building Scavenger Hunt instructions and worksheets in Appendix)
Bringing Green Building to Life 30 minutes	Show video “ <a href="#">Integrative Design - Phipps: A Case Study</a> ” (06:54) Discussion: Brainstorm all the roles/stakeholders involved in a green building project. Discuss how the architect role connects to/relates to other roles ( <i>or the career role this summer program is teaching</i> ) Share suggestions on how to use their new lens of sustainability/checklist (i.e., during the summer program, when they go home, when they go back to school, etc.)



## Appendix: “Green Building Scavenger Hunt” Instructions

Goal: Identify green building and sustainable features of a building.

Select a building on campus that students can access with sustainable design and/or operation features they will be able to see. Students can all tour the same building or different buildings.

1. Introduce the activity and provide overview of the building they will tour
2. Distribute and review the “Green Building Scavenger Hunt” worksheets.
3. Divide up students.
  - Small groups of ~ 5 works well. Best if an instructor or guide can lead each group to help call out sustainable elements and guide discussions.
4. Explore the building
  - Guide students through the building. Have them filling in items on the worksheet as they go. Make it fun – tell them to take photos of their ‘finds’ and group selfies to share.
5. Debrief afterwards
  - In small or large groups, have students share what they found. Discussion prompts:
    - What did you find?
    - Did anything you find surprise you?
    - How could this building be even more sustainable or greener?
    - What other types of buildings do you think could really benefit from LEED certification?
    - What’s is something you saw that you think you could incorporate at your school or home?
    - Why do we need green buildings? What about our future concerns you with regards to the built environment?
6. Share some of the green features of the space they might not have seen. If a LEED-certified project use the scorecard to connect features to LEED credits earned.