



Design Studio

Framework and Activities for Innovative Problem Solving





Table of Contents

WELCOME!	1
The Purpose of Design Studio	1
A Design Studio Road Map	1
MEET ECORISE	2
Our Mission	2
Our Approach: Design Thinking and Project-Based Learning	2
What Is Sustainable Intelligence?	3
PROGRAM CONTENTS	4
PROGRAM OVERVIEW	5
A Design-Thinking Process	5
Supporting Framework	6
Values/Attitudes	6
Skills	7
Methods	8
CHOOSING A PROJECT	9
Three Recommended Pathways	9
Pathway 1: Green Campus Project	9
Pathway 2: Green Product Innovation	10
Pathway 3: Eco-Audit and Master Sustainability Action Plans	11
GROUP WORK	12
Timing and Project Management	12
Differentiation	12
ASSESSMENT STRATEGIES	13
Assessing Student Work	13
Final Assignment	13
Student Portfolios	14
ENGAGING THE COMMUNITY	16
Building Campus Buy-In	16
Mentorships	16
Campus Workdays	17
Field Trips, Guest Speakers, and Career Days	17
Grants, Sponsorships, and Materials	17
Gratitude and Social Media	17
Green Professionals in Your Community	18
Volunteer Workday Checklist	19



Table of Contents, continued

SHOWCASING STUDENT WORK..... 20

 End-of-Project Student Innovation Showcase 20

 Format..... 20

 Judges 21

 Showcase Planning Timeline 22

 Judging Rubric 22

 Prizes 22

 Showcase Checklist and Criteria for Judging 23

ADDITIONAL RESOURCES..... 24

 Helpful Vocabulary 24

 Resource Links 25

CREDITS..... 26



Welcome!

Welcome, and congratulations on launching the EcoRise Design Studio program! You and your students are about to embark on a unique classroom experience—one that involves choosing your own adventure by tackling a project that is exciting and meaningful because it adds real-world value. This Facilitator's Guide orientates you to the EcoRise design process and provides helpful classroom tips, templates, and enrichment opportunities.

THE PURPOSE OF DESIGN STUDIO

Design Studio guides students through a creative problem-solving process to help them devise solutions to sustainability challenges, such as reducing campus energy consumption, creating useful new public spaces, and increasing community access to healthy food. The EcoRise design thinking process can help students manage projects within *Sustainable Intelligence* and other EcoRise programs as well as other coursework and classroom experiences.

Design Studio provides an educational adventure that is grounded in the methodologies of design thinking, systems thinking, project-based learning, and participatory planning. It also encourages social-emotional learning and the development of essential 21st-century skills such as leadership, creativity, teamwork, and communication.

The program offers foundational lessons to help students understand key tenets of design thinking and systems thinking as well as a bank of engaging activities you can pick and choose from to guide them through the various steps of a design thinking process. Design Studio stems from the belief that powerful learning takes place in the context of real-world problem solving—and that engaging youth as leaders is essential to creating a healthy, sustainable future.

A DESIGN STUDIO ROAD MAP

Beginning on page 9, you will find descriptions of three different pathways you can take to accomplish projects with Design Studio. In addition, the Program Contents on page 4 of this guide shows how Design Studio is arranged into six modules that contain activities that can be used to guide students through a design-thinking process. We recommend that you choose activities from each module to help students progress through each phase of the process; however, you can pick and choose from the activities within each model to design your own classroom experience. The bold headings show the overall aim or purpose of a group of activities. For example, in Module 2, there are two activities under the category Identifying Possible Design Problems: Brainstorming with P.I.E. Activity and 3Ps Venn Diagram Activity. You could choose one or both of these activities. In each module, you will see these identifying categories, and you can choose one or all of the activities. You may also decide to assign activities based on the type of project students are working on, so different groups might use different activities. This Design Studio framework is very much yours to adapt as you see fit. Have fun!



FIRST-TIMER TIP!

You can model many of these activities or use exemplars from previous projects. For example, you could share with students an example of the “Walking in Your Shoes” activity and then let them work in small teams to complete the activity.



Meet EcoRise

OUR MISSION

EcoRise inspires a new generation of leaders to design a sustainable future for all. Our school-based programs engage youth to tackle real-world challenges in their schools and communities by teaching them about sustainability, design innovation, and social entrepreneurship.

OUR APPROACH: DESIGN THINKING AND PROJECT-BASED LEARNING

Design thinking, which is also called *human-centered design*, is a method of problem solving that focuses on cultivating students' creative potential. Design thinking has been called a "method of creative action" and its popularity is growing as a process that artists, designers, and business leaders throughout the world use to encourage and generate innovation. Design thinking was originally considered the domain of designers alone, but now all sorts of people in large and small companies, universities, nonprofit organizations, and social enterprises have used it to uncover creative solutions. It is a highly adaptable process that can be applied as effectively to product development as to complex social and environmental problems.

Design thinking is solution-focused with a key inquiry or design challenge at its center. It requires that students develop empathy for the context of a problem and understand the human needs, motivations, and behaviors that underlie a challenge. It encourages divergent thinking and unbridled creativity (brainstorming all possible ideas) to generate multiple perspectives, insights, and solutions. It then asks students to apply convergent thinking (a bringing together of ideas from a variety of sources) and a rationale (a set of reasons for a course of action or belief) as they analyze options, determine a final strategy, and implement an idea.



Project-based learning is an inquiry-based teaching method that engages students in developing solutions to real-world problems. Students drive their own learning by asking questions and making choices about how to apply what they have learned within the context of an authentic problem. Students act as investigators, think outside the box, explore new ideas, and work together to offer solutions to real problems they might not even have been aware of before. Project-based learning also encourages social-emotional learning and the development of essential 21st-century skills, such as leadership, creativity, teamwork, and communication. With this learning approach, students gain powerful, ingrained insights as they tackle problems that are meaningful and relevant to their lives. They also gain confidence in their ability to lead and create a healthy, sustainable future.



Meet EcoRise, continued

WHAT IS SUSTAINABLE INTELLIGENCE?

We are living in a time when the world is changing rapidly. It is under stress from a variety of complex and interconnected human and natural influences. This time requires a generation of new leaders to rethink much of what we do—the way we eat, the way we move around, the way we build, the way we consume, and even the way we educate. Cultivation of new leaders can begin when we take a close look at our actions and their influence on the world and understand how interconnected we are with natural systems. Looking at the long-term well-being of the planet and the people who inhabit it is *sustainability thinking*. It is giving serious consideration to how we can sustain the health of this wonderful planet we call home.

To help foster sustainability thinking, the EcoRise *Sustainable Intelligence* program offers students the tools and opportunities they need to reconsider our impact on the world and tackle complex global environmental challenges. This process begins with each of us recognizing our personal impact on the Earth as well as our responsibility to be its steward. Next, we can cultivate a deeper understanding of how to act sustainably, how to understand our impact on Earth's systems, and how to balance the dynamic relationship among people, the planet, and profit. With this approach, we can encourage teachers, students, and parents to rethink and redesign human systems and creations to exist in balance with natural systems, and we can create a new generation of leaders—young and old.

A great way to learn how human systems and societies impact the world is to start by taking a close look at local systems, structures, traditions, and geography. By first appreciating what we love about our communities, we can instill a deep connection to the place in which we live. From this sense of connection, we can begin to dream up solutions to local problems and seek out the ways that other communities have successfully addressed similar issues. Then we can begin to find motivation to relate to other people's perspectives and experiences around the world and develop a larger sense of responsibility to the Earth.

The *Sustainable Intelligence* program focuses on applying sustainability thinking to business practices. It also aims to help foster a lifelong commitment to sustainability thinking in ourselves, our students, and our communities. The program helps us become more aware of how human wants and needs impact our planet's well-being and helps us constantly evaluate whether we are integrating human and natural systems effectively. It also encourages us to rethink and redesign unsustainable habits and practices. Most of all, this program teaches us that each of us has the capacity to share ideas, offer creative solutions,

and exercise our power to make a difference in the world so that generations to come can look forward to a healthy, sustainable future.



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Program Contents

This Facilitator's Guide provides tips and strategies to empower you to confidently implement the Design Studio program in your classroom. Please note that this program consists of modules and activities. The modules begin with an introduction and then proceed through the steps of the design thinking method. You can pick and choose from the activities, which are organized into categories to help you determine those that are best suited to your timeline and students' needs.



MODULE 1: INTRODUCE **Introduction to Design Thinking** **Introducing Design Thinking**

- Introduction to Design Thinking Presentation
- Introduction to Design Thinking Presentation Teacher's Notes
- A Design-Thinking Process Handout
- Introducing Systems Thinking**
- What Is Systems Thinking? Handout



Module 2: IDENTIFY **Identifying a Design Challenge** **Identifying Possible Design Problems**

- Brainstorming with P.I.E. Activity
- 3Ps Venn Diagram Activity

Identifying Systems at Work

- Hacking the System Activity
- Little-Middle-Wide Activity
- Two Spheres Activity

Identifying Assets and Constraints Related to a Problem

- Glass Half-Full Activity
- Build-the-Box Activity

Identifying Design Challenge Parameters

- The Road Home Activity



Module 3: EXPLORE **Exploring the Design Problem** **Exploring to Gain Insights**

- The W Race Activity
- Detective Wall Activity
- Evolving Innovation Activity

Exploring to Develop Empathy

- Multiple Personalities Activity
- Walking in Your Shoes Activity
- Embody Walk Activity
- Story Booth Activity

Exploring to Understand Systems & Scale

- Nested Systems Activity



MODULE 4: CREATE **Brainstorming a Variety of Solutions** **Creating Solution Ideas**

- SCAMPER Activity
- SCAMPER Cards
- Mind Flip Activity
- Mix-and-Match Activity
- Inspired by Nature Activity
- Eco-Target Activity

Creating Prototypes

- Ideatoon Activity
- Quick Models Activity

Creating Consensus

- Dot Democracy Activity



Module 5: REFINE **Choosing and Refining a Solution** **Refining Elements of the Design Idea**

- BOP Quiz Activity
- Pain/Gain Analysis Activity
- Test of Time Activity
- Impact-o-Meter Activity

Refining by Testing

- Fail Forward Activity
- Model Making Activity

Refining by Planning

- Business Model Canvas
- Strategic Action Plan



Module 6: SHARE **Sharing the Vision** **Sharing Initial Thoughts About Design Solution**

- Success Storming Activity
- Hot Off the Presses! Activity
- Product Puppetry Activity
- Mini Saga Activity

Sharing a Clear and Compelling Message with Community

- Elevator Pitch Activity
- Manifesto Activity
- Poster Art Publicity Activity
- Design Board Showcase Activity



Program Overview

A DESIGN-THINKING PROCESS

The EcoRise design-thinking process is structured as a five-step framework that offers a tremendous amount of freedom and flexibility. Each step corresponds to a Design Studio module, and each module is organized into groups of activities from which you can pick and choose.



The following are the five key steps of an innovative problem-solving process that is based on design thinking:



IDENTIFY

Identify a challenge to address, including its stakeholders, criteria, and constraints.



EXPLORE

Explore the issue in greater depth.



CREATE

Brainstorm design ideas and create prototypes.



REFINE

Evaluate and improve the strongest design idea.



SHARE

Develop the materials needed to share your design solution with the world.



Program Overview, continued

SUPPORTING FRAMEWORK

In addition to giving students an understanding of and opportunity to apply design-thinking principles, the Design Studio program helps students develop key skills and integrate enduring principles. With this supporting framework, students can gain a deeper understanding of themselves and their roles within a community.

Values/Attitudes

The Design Studio program promotes the following values and attitudes:

Leadership	Great leaders challenge themselves and others to dream big. We are visionaries who are dedicated to building a better future with passion, humility, and integrity.
Resilience	Innovators must overcome failures and setbacks. We embrace our obstacles as opportunities to build will power and our failures as opportunities to grow stronger.
Mindfulness	Our actions affect the health of the planet. We encourage an open awareness of our thoughts and how our choices impact our fellow humans and the environment.
Optimism	Change is possible, and solutions are everywhere. We celebrate the power of ideas and believe that an investment in human ingenuity will result in health and prosperity for all.
Empathy	Being of service to the world begins with a posture of empathy. We are grateful for our own gifts and blessings and have compassion for the struggles others face. We listen and learn from others, and in an effort to slow our assumptions, we identify with the perspectives of others in order to develop solutions that will last.
Curiosity	A passion for knowledge leads to great discoveries. We promote questioning and the pursuit of a deep understanding of how the world works.
Global Citizenry	Humanity must work together to solve global problems. We are global citizens who collaborate with people from all nations and cultures to create a sustainable future for everyone.



Program Overview, continued

SUPPORTING FRAMEWORK, continued

Skills

The Design Studio program helps students develop many helpful skills, including the following:

Critical Thinking	Reasoning logically to analyze and evaluate information and various points of view to draw informed conclusions
Creative Problem Solving	Using creative, solutions-based thinking by analyzing and improving upon existing ideas as well as developing social entrepreneurship mindsets and skills
Collaborating	Contributing constructively in groups of different sizes with individuals of diverse backgrounds, skills, and opinions to meet a common goal effectively
Communicating	Articulating ideas and sharing information via group collaboration, public speaking, persuasive presentations, active listening, and marketing strategies
Information Literacy	Carefully evaluating information by assessing its currency, relevance, authority, accuracy, and purpose; ethically using information from a wide variety of sources to answer questions, solve problems, and create new media
Systems Thinking	Analyzing and understanding multiple perspectives and inferring dynamic connections by developing an increasingly deep understanding of underlying structures and how things connect
Adaptability	Adjusting to different environments, workflows, expectations, and feedback while maintaining a positive attitude



Program Overview, continued

SUPPORTING FRAMEWORK, continued

Methods

The following methods help students solve problems while using the Design Studio program:

Project-Based Learning	Inquiry-based, student-centered learning in which students investigate real-world problems to develop solutions and gain content knowledge
Real-World Application	Connecting concepts to real-life situations to engage and motivate students as well as underscore the relevance of the concepts
Design Thinking	Using design-thinking methods and processes to explore and build creative solutions by sketching, modeling, experimenting, constructing, and calculating
Brain-Based Learning	Applying an understanding of how the brain works to help students learn more effectively at different stages of their maturity
Multiple Intelligences	Providing various ways for students to access information and demonstrate knowledge to make learning accessible for students who process information best in different ways
Technology Integration	Enhancing the design experience by using digital modeling, accurate and up-to-date Internet research, computer software, social media, and communication technologies
Multidisciplinary	Integrating different disciplines, such as language arts, science, and social studies, where appropriate, to gain a deeper understanding of the topic



Choosing a Project

The goal of the EcoRise Design Studio program is to help students apply knowledge they are gaining from the EcoRise *Sustainable Intelligence* curriculum or other sources in a culminating project. In doing so, they can effectively put 21st-century skills, enduring principles, cooperative learning skills, and more into practice.

Whatever the chosen project, it is important to assign parameters and limitations to the challenge. These are referred to as “design constraints” and can be articulated via activities such as the Build-the-Box Activity in the Identify step. Design constraints can fuel creativity and lead to more effective and interesting innovations.

Some recommended constraints include:

- The design challenge must be relevant to students’ personal lives.
- Solutions must be actionable within six months.
- Product innovations must use recycled or reclaimed materials.
- Business solutions must create a “triple-bottom-line” impact by benefiting people, planet, and profit.

THREE RECOMMENDED PATHWAYS

The following are three recommended pathways to help direct student projects:

- **Green campus projects** such as creating an outdoor classroom, a rainwater collection system, a school garden, or a recycling and energy-conservation campaign
- **Green product innovations** including upcycled accessories and furniture, green-technology prototypes, and water-purification systems
- **Campus Eco-Audits** and master sustainability action plans

Pathway 1: Green Campus Project

A green campus project gives students an opportunity to devise and implement a specific action to improve the efficiency/sustainability of school operations. This approach leads to students designing and building at least the first phase of the project during a campus workday. All EcoRise programs offer ideas for green projects.



FIRST-TIMER TIPS!

Find out if there are any projects on campus that have already been started or abandoned. Cleaning up a campus garden is much easier than creating a brand new one!



Choosing a Project, continued

Pathway 1: Green Campus Project, continued

Framing the Project

What is an area of need on your campus or in your community? Which topics are your students passionate about? These are some questions you can ask yourself when deciding on a green campus project. Some examples of projects include creating outdoor classrooms, campus or community gardens, pollinator gardens, rainwater collection systems, and recycling programs. Students can use the Design Studio program to identify and pursue a design challenge related to an area of interest. For example, if students are interested in healthy living, they might create a campus garden to supply more fresh fruits and vegetables to the cafeteria food service team for school lunches. If students have completed an Eco-Audit, they could analyze the results to determine an area of need related to one of the seven Eco-Themes: Water, Waste, Energy, Food, Public Spaces, Air, or Transportation.

FIRST-TIMER TIP!

Start small! Choose one Eco-Theme and complete the entire audit for that theme. You may decide to add another Eco-Audit for a different theme later.

Pathway 2: Green Product Innovation

Green product innovations allow students to use their business savvy to create a product that results in a “Triple Bottom Line” by benefiting people, the planet, and the economy (profit). Students create a range of “upcycled” products—from wallets and clothing made from recycled materials to prototypes for larger products such as rainwater catchment systems or bicycle-powered generators. The objective of this project is to allow students to design and create innovations to improve the planet. The project culminates with an expert-judge showcase in which students pitch their products to potential investors (real or imagined). An eco-fashion show is another popular alternative.

Framing the Project

As students begin brainstorming products they’d like to create, help them identify clear goals for the product. Will it help people save energy? Does it repurpose materials that would have otherwise gone to the landfill? Could it help people practice sustainability in some way, such as by finding healthy, organic foods? You can also help students narrow and clarify their ideas by requiring that their product meet specific criteria. For example, you might give them a specific target audience (e.g., students at the school, parents, consumers who purchase food, etc.) Or you could ask them to design a product related to one specific Eco-Theme (Water, Waste, Food, etc.) or objective (e.g., waste reduction, sustainable food systems). Alternatively, you could give students complete freedom to address an issue they feel passionate about. Consider the specific circumstances of your school and class. Some students get distracted by too many options when they are given freedom to make their own decisions; these students require more structure.

FIRST-TIMER TIP!

Choose one theme upon which to focus. A great place to start is to have students conduct a waste audit and then create an upcycled product from something they normally would have thrown away. For example, one school had students repurpose old blue jeans into works of art with other discarded items. Students shared their results in a spectacular runway fashion show for the community.



Choosing a Project, continued

Other students may feel stifled with too many criteria; they know what they want to do and thrive when given the freedom to do it. Most students benefit when given a sample topic and some sample product ideas to start with. Some topics and related ideas include urban gardening (a related product might be a drip irrigation and rain catchment system), global food issues (a home aquaponics system for growing vegetables), or ecosystem fragmentation (e.g., mason bee houses to support pollinators).

Pathway 3: Eco-Audit and Master Sustainability Action Plans

EcoRise Eco-Audits, which can be found in the *Sustainable Intelligence* program, provide great fodder for green campus projects. Both programs include a campus Eco-Audit and a personal Eco-Audit for each of the seven program Eco-Themes—Water, Waste, Energy, Food, Public Spaces, Air, and Transportation. With an Eco-Audit, students gather and analyze data about the efficiency of systems on the school campus and/or at home. With a campus Eco-Audit, students can work cooperatively to recommend solutions to issues they discover on campus. This project ends with students creating a Sustainability Action Plan that they present to other classes, campus members, administrators, and community members to gain support for implementing real change on campus. A personal Eco-Audit is ideal for students who are receiving at-home instruction or who would like to share what they learn with their family and work together to make their home more sustainable.

Framing the Project

Decide in advance if you'd like student to complete a full campus Eco-Audit that encompasses all of the Eco-Themes (Water, Waste, Energy, Food, Public Spaces, Air, Transportation) or whether you'd like them to focus on just one or two themes. Also choose whether these will be campus or home-based projects. Once you have an idea of how comprehensive the audit will be, you can start organizing.



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Group Work

The Design Studio framework includes many opportunities for group work, including work in pairs, small groups, and larger groups. To develop students' teamwork skills, you may wish to use a variety of strategies for forming groups so that students work with a diverse range of classmates. For some activities, you may wish to assign groups based on students' learning preferences and strengths so that they form a well-rounded team and can help build one another's knowledge and skills.

For group work to be successful, it is important that each member contributes, is respectful of other members' contributions, and is accountable for the final product of the team. For small groups, it is helpful to make sure each group member has a specific role with delegated tasks so they can each assume ownership for their portion of the work and be accountable to other group members. You can identify important roles for students by listing critical aspects of the project, such as researching specific topics, illustrating designs, designing and developing the product or presentation, and managing the timeline and resources. Then you can point out the critical roles students can play related to each aspect. Assigning specific roles can help keep students from disengaging, as they all know what part they play in achieving a shared goal.

TIMING AND PROJECT MANAGEMENT

With Design Studio, students work in design teams to come up with a solution to a problem in your school or community that they identify. Students may even turn that solution into a functioning product or service by the end of their project. Doing so means that students must carefully manage their time throughout the course. You can help students by letting them know in advance how much class time you expect to dedicate to the different phases of their project and how much time you expect them to work on their own on an ongoing basis. You may also wish to conduct a lesson on time management or invite an expert to speak on the topic.

DIFFERENTIATION

Different Design Studio activities apply different learning strategies, so you can review all of the activities within a module and choose those that allow you to meet specific needs within your classroom. You can also make slight changes in an activity or in your classroom structure to tailor in- or out-of-class instruction and expand the effectiveness of a module for individual students or groups of students.



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Assessment Strategies

ASSESSING STUDENT WORK

You can use a variety of different tools, including both formative and summative assessments, to assess students as they work through the Design Studio framework. Many of the activities are student-driven projects, so it is important to remain flexible and support students as they work through ideas and change tactics when things don't go as planned. Measure students on their participation, creativity, willingness to cooperate, and perseverance, more than on their ability to achieve predetermined goals. Assess daily, or as frequently as possible, and use a variety of different methods. Some assessment tools that work well with this program include the following:

Daily Exit Quizzes	Reflection Questions	Activity Worksheets
Participation Checklists	Think-Pair-Share Activities	Verbal Assessments
Cross-Disciplinary Connections	Group and Peer Evaluations	Portfolios
Concept Maps	Student and Teacher Reflections	Short-Answer Progress Reviews

FINAL ASSIGNMENT

If students are completing a campus-wide project as a group, it may be difficult to assess them simply on the project results. Even if together students create an "A+" campus garden, each student may not have participated sufficiently to earn an A+. As a result, it is helpful to assign a final, individual assignment for individual accountability. This assignment might include a presentation, research paper, or portfolio that shows evidence of students' work on the project from beginning to end. Be sure to begin the project by telling students about the final assignment and sharing a rubric to clearly identify expectations.



FIRST-TIMER TIPS!

- **Keep It Simple.** Create constraints within the design challenge (e.g., implementation time frame, budget, materials) to keep the project size reasonable.
- **Find Campus Allies.** Create a work group on campus that includes multiple campus stakeholders (teachers, students, parents, administrators) who are invested in the project's long-term success.
- **Leverage Community Resources.** Recruit a community member with extensive experience related to the project topic to serve as a project mentor.
- **Start with an Eco-Audit.** Have students complete an Eco-Audit prior to beginning the project. For example, if students want to build an edible garden on campus, have them complete the Food Eco-Audit to help them build background knowledge and gain a deeper understanding of the "why" behind the project.



Assessment Strategies, continued

STUDENT PORTFOLIOS

The portfolio can be an extremely useful tool for documenting students' achievements and progress over time. A student design team can use it to document their work on their design solution from beginning to end. A portfolio can be a collection of physical evidence or a digital representation of completed work. Students can also create individual portfolios to document work they are particularly proud of and that they can share with prospective employers, entrepreneurship club members, etc.

No matter what form they take, portfolios provide an invaluable opportunity for both formative and summative assessment. You can check students' portfolios regularly throughout a project to ensure that students are participating and staying on track; students also often enjoy the opportunity to add to a growing portfolio of their work. In addition, you can review completed portfolios to see how students have expanded their understanding over time. This is valuable evidence of the learning process that students themselves can also appreciate with a final review of their own work.

Determine in advance how you would like students to use portfolios to capture results for their Design Studio project. The following are a few tips:

Format: Students can create a digital or physical portfolio; each format has strengths and weaknesses. Digital portfolios require consistent access to technology, ideally both in the classroom and somewhere where students can connect on their own time. This format is paperless and saves you the trouble of taking home 30-plus binders! Physical portfolios require a lot of paper and can get messy. Students will need some sort of container (binder, folder, box, etc.) to hold portfolio submissions and the wherewithal to keep track of the container and its contents. The upside of physical portfolios is that they never crash! They can also be more manageable if you are not comfortable reviewing technology submissions.



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Assessment Strategies, continued

STUDENT PORTFOLIOS, CONTINUED

Table of Contents: Help students create a table of contents/set of expectations for the portfolio at the outset of the project. This helps establish consistency that makes grading easier later. Also encourage students to carefully label and index everything they add to their portfolio so that you can easily keep track of ongoing progress and assess the final work for completeness.

Rubrics: It's helpful to create a rubric that lists specific criteria for portfolio evaluation and pass it out to students before the project. This will help students understand expectations and stay on track. One helpful strategy is to have students use the rubric to grade each of their submissions before adding them to their portfolio. This encourages them to slow down and ensure the submission is complete and up to their own personal standards.

Time: Decide exactly how much time you want to dedicate to portfolio work. Throwing it all together at the end will not result in a strong portfolio, as portfolios are a way for students to track their growth and learning throughout a project. A strategy that may work for your classroom is dedicating the last 15 minutes of class every day to portfolio work. Or you could designate every Friday in class as "portfolio day" and allow students to reflect on their work from the week.

Content: Think of the portfolio as a platform for allowing students to explore ideas, reflect, document data, play, and dream. The most successful and interesting portfolios are mixed-media and include insights and activities that are both logical and artistic, personal and academic, and represent multiple learning styles. Examples of items students could add to their portfolios include:

- Vision or aspirational statement
- Jargon and Key Vocabulary terms
- Entrepreneurship guiding principles
- Inspirational quotes
- Sketches, photos, illustrations, storyboards, cartoons, diagrams
- Clips/notes from interviews/case studies
- Mind maps/brainstorming notes
- Printouts or links related to successful triple bottom line businesses
- Inspiration board
- Diary entries/daily reflections
- Prototypes and models
- Presentations, press releases, brochures



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Engaging the Community

The Community Connections section of each *Sustainable Intelligence* lesson includes ways you can enrich Design Studio projects with support from the community. Local partners often appreciate the opportunity to engage with students on meaningful projects. Workdays, community picnics, showcases, and career days offer manageable opportunities for community members to participate.

Community partners can offer schools and teachers access to resources; many also offer ways in which students can apply what they've been learning toward meaningful real-world activities. As much as possible, seek alliances with socially responsible or "green" community partners, or any individual or organization that is committed to social entrepreneurship, sustainability education, and/or protecting the environment. This broad definition encompasses supporters from a wide variety of venues, including parents, for-profit businesses, nonprofit organizations, local municipalities, and college or university departments. Some suggestions of professionals you might contact in your community can be found on page 18.

The following are a few tips for gaining support from community partners.

BUILDING CAMPUS BUY-IN

Consider creating a Green School and Community Work Group that includes a mix of teachers, administrators, students (student environmental organizations), parents, and external community representatives who have significant connections (e.g., local chamber of commerce). It's important to have an engaged, diverse group that can help identify opportunities and create a viable plan.

You could also host a community planning workshop to discuss the following design challenge: How do we connect our schools to our green community to create mutually beneficial opportunities? Use modules from Design Studio to frame the session, and plan on taking at least half a day to move through all five stages of the design process. End products might include a Community Asset Map, a Strategic Action Plan, and/or a list of potential design challenges that are supported by the green community and that can be launched at local campuses.

MENTORSHIPS

Design teams could benefit from calling upon professionals to serve as mentors. Each team should plan to have several mentors guide them in the areas of finance, law, marketing, etc. For example, if your students are excited about greenscaping, they could connect with a local landscape designer who focuses on sustainable practices. The mentor can work with the students either in person or online to cultivate their interest in a particular career path related to green building.



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Engaging the Community, continued

CAMPUS WORKDAYS

Need some boots on the ground to help with a campus project? Students should be at the center of these projects, but they could take the lead on recruiting and organizing a group of strong volunteers to roll up their sleeves and help get a big project done quickly. See page 19 for a Volunteer Workday Checklist that students can use to help them set up and run a volunteer day.

FIELD TRIPS, GUEST SPEAKERS, AND CAREER DAYS

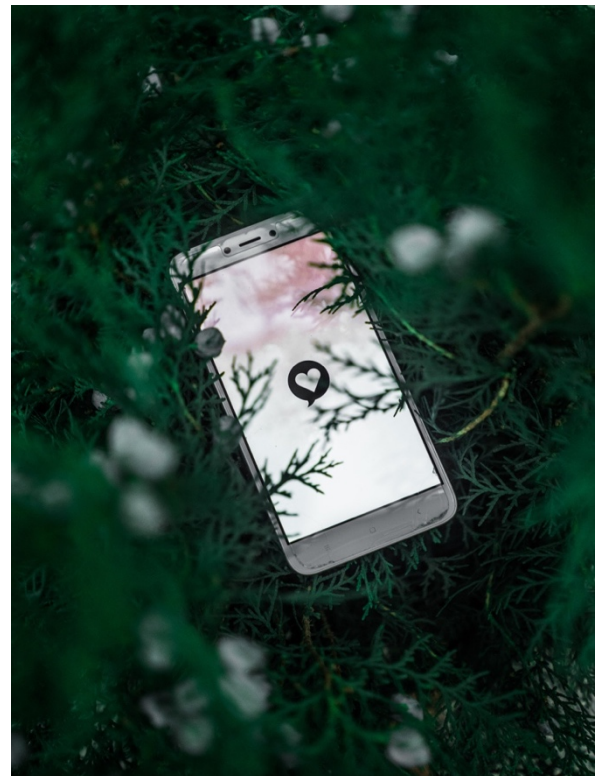
To help students make progress on a design challenge, many organization and business leaders will support a student field day at their location to share insights about what they do. You can also enhance student understanding of a topic by inviting a local expert to talk to the class about the topic and how it relates to their real-life experiences. You could even invite several experts from different organizations to create a panel discussion on the topic of the lesson. Alternatively, encourage students to organize a Green Career Day in which green professionals set up tables and visit with students throughout the grade, department, or school about various career options.

GRANTS, SPONSORSHIPS, AND MATERIALS

Short on cash? Need materials? Municipal departments or contract providers may be interested in sponsoring specific design challenges across your city/town/district that connect with their mission. Business partners can help students throughout this course in many ways, including with employee mentors, guest speakers, funding contributions, business tours, a site for the final business launches, and more. The best way to promote continued support and growth of a partnership is to follow up each engagement with a class-created thank-you card. A picture and note will do the trick! Have your campus/district thank the partner in the parent newsletter, on the website, and on social media channels (very important!). Follow up with a quick e-mail informing the partner and perhaps sharing data points about the number of community members who receive the newsletter or the number of followers on the district's social media page.

GRATITUDE AND SOCIAL MEDIA

A great way to promote continued support and growth of a partnership is to follow up each engagement with a student/class-created thank-you card with a photo and a note. You can have your campus or district thank the partner in the parent newsletter, on the website, and on social media channels. Follow up with a quick email to the partner sharing news from the event and perhaps include a brief data point about the number of community members who receive the newsletter or the number of followers on the district's social media page.



Unsplash.com: Pratik Gupta



Engaging the Community, continued

GREEN PROFESSIONALS IN YOUR COMMUNITY

The following are some suggestions for community members you could contact to assist with student projects.

SUBJECT	ORGANIZATIONS	FIELD TRIPS
 Water	Water utility Watershed department Rainwater harvesting specialists Conservation groups Wastewater plants Clean creek organizations	Caving and hydrology Watershed preserve Creek cleanup Water-quality testing Wastewater treatment plant Water utility Waster-wise landscapes
 Waste	Municipal waste department Upcycling artists or organizations Nonprofits that focus on keeping a region beautiful, such as Keep America Beautiful Recycling contractors Compost providers	Recycling plant Waste/landfill Compost center Resale shop distribution center
 Energy	Energy utility U.S. Green Building Council Energy efficiency contractors Solar and wind contractors Energy metering companies	Power plant Renewable energy facility LEED-certified building
 Transportation	Transit agency Bike/walkability city department Transit advocacy organizations Transit developers Safe routes to school Ride-share groups Electric/hybrid car vendors Car-sharing providers Bike advocacy groups Public transportation alliance groups	Transit agency maintenance facility (e.g., bus shed) Car- or bike-sharing tour Transit-oriented development (TOD) project Light rail station Hybrid/electric car manufacturer
 Public Spaces	Parks department Parks foundations Conservation groups Landscape and design architects Green developers Garden centers Green building retailers	Native landscape/flower center Permaculture design center Park project Water-wise landscaping project Local live-work-play development project Design firms (landscape design, architect) Street re-development project City/town central business redevelopment project
 Air	Children's Environmental Health Network Clean Air Force Indoor air quality program Environmental working group	Living wall tour Environmentally responsible cleaning company Green interiors retailer (paint, furnishings)
 Food	Local farms Farmers' markets Supermarkets Farm-to-school programs Community gardens Garden centers	Farm tour Community supported agriculture (CSA) project Farmers' market Food pantry Youth farm project Grocery store



Engaging the Community, continued

VOLUNTEER WORKDAY CHECKLIST

This following is a checklist you could use to help facilitate a community volunteer workday.

Timeline	Community Volunteer Tasks
2 months before	- Finalize project and workday plan with campus/district personnel. - Send out requests for sponsors, materials, etc.
1 month before	- Confirm project/workday plan with campus facilities/maintenance personnel. - Request and acquire tools.
3–2 weeks before	- Invite volunteers (via social media, local advocates, school website, flyers, PTA, etc.). Note: It's helpful to use a tool with an RSVP component (such as Eventbrite or Paperless Post). - Send outreach/volunteer email to contacts and volunteer nodes. - Post event to community calendars.
Week before	- Secure and follow up with volunteers. - Assign students to be project leaders. - Send final call for volunteers. - Acquire snacks and water. - Print directional signs to campus, liability sheets, sign-in sheets, name tags, etc. - Create sign-in sheet with logos of all sponsoring entities.
Day before	- Send final reminder to volunteers. - Pick up tools, materials, and supplies.
Morning of event	- Post directional signs on school campus. - Unlock school and set up sign-in and snack stations. - About 30 minutes beforehand, have group "huddle" with project leaders. - Welcome large group, and assign volunteers to help project leaders.
During event	- Rotate between project leader groups to ensure smooth operations. - Document the day with before-and-after photos, videos, etc. Take several pictures of group with sponsor sign. - Clean up and close school.
Week after	- Return tools and supplies. - Follow up and thank volunteers. - Post pictures to social media platforms (if consent paperwork is on file). - Write thank-you cards to all sponsors with picture of sponsor sign.



Showcasing Student Work

END-OF-PROJECT STUDENT INNOVATION SHOWCASE

Hosting a Design Studio Student Innovation Showcase is one of the most powerful activities you can undertake. This is the chance for your students to show off all the hard work they've done all year, a chance for you to show to administrators and other teachers all of the great learning you have facilitated, and a chance for you to engage community members! The great thing about the Student Innovation Showcase is that it can be modified in many ways to fit your classroom.

Format

There are many ways to format your day to allow students to be successful. A few things you need to think about before deciding on a format are: How much time do I have? How much technology is available? Are there other large campus activities happening on the day of the showcase? How comfortable are your students talking in front of adults?

A few example formats are listed below. You can mix, match, or create your own format!

Direct Presentations: Students present their Design Studio projects in front of the class. You can invite community members, administration, and others from the campus community to attend. Students can use software such as Pathbrite, PowerPoint, or Prezi to present, or they can create a trifold poster board if you do not have access to technology. Make sure students treat this as a professional presentation in both appearance and preparedness. Your expectations should be clear several weeks before students present and students should be given plenty of time to practice their presentations. (Encourage them to avoid "likes" and "umms.")

Science Fair Format: Student groups can set up presentation stations throughout your classroom or a larger room like the cafeteria. At each station, students give a short (~5 minute) presentation for judges. When they are planning their presentations, you might encourage them to create a two-minute pitch, allow another two minutes to share their portfolio and discuss how they created their project, and allot any remaining time for questions. Note cards are a great way for students to practice and to stay on track, but make sure students do not rely on the cards too much on the day of the presentations. Encourage them to practice, practice, practice so they are confident and prepared for their presentations. Visitors and judges can circulate through the classroom to see all the projects. This is a great option if students are comfortable conversing with adults because it allows students to have one-on-one time with the experts. Judges can be members of the campus community—such as administrators, teachers, other campus personnel, or even students from higher grade levels—as well as members of the wider community.

Digital Presentation Format: Students can create a digital presentation that can be watched and graded by you, sent to community members, or even posted to a social media channel. This is a great option if you have access to technology and do not have a lot of class time to dedicate to a showcase. Jing is a great program that allows students to screenshot anything they have on a computer and then upload it as a video. If you have microphones, you can add audio to your video. Often students have access to all kinds of technology on their phones. Have them create a video on their phone and then share it!



Showcasing Student Work, continued

Judges

Who are they, and what are they doing? It is always a little scary to have someone from the community come to your classroom for the first time. However, inviting community experts in to discuss students' design projects typically has a huge impact on students. It creates buy-in and encourages students to take their Design Studio project seriously. It's also a terrific way for you to get feedback on the great things you are doing in your classroom.

Tips related to judges and community members:

How to Find Them: Take a look at the "Engaging the Community" section beginning on page 16 for tips on who to contact and how to get in touch with them.

Use Your Resources: Do you have any environmentalists on your campus? Ask around! You may be surprised to find that many teachers, administrators, counselors, and others on campus are really interested in what your class is doing. Students love showing off for their other teachers, and it is a great way to alert the campus of the great things that your students are doing!

On the Day: Make sure that you have shared expectations with all judges before the day of the showcase. This will ensure that your day goes smoothly. A quick email or phone call is often all you need.

When inviting judges and community members, it's a good idea to make a list of questions you're likely be asked and ensure you know the answers, such as:

- What time is the showcase happening?
- Where do I park?
- How do I check in?
- Where do I go?
- How are students being judged?
- What kinds of questions should I ask students?
- Is there a winner? Is there an award and/or celebration (e.g., judges' choice, people's choice)?
- What sort of feedback will I be giving students?
- How much time should be dedicated to each presentation?



EcoRise.org: Laura Fuller



Showcasing Student Work, continued

SHOWCASE PLANNING TIMELINE

A general outline of teacher activities on the day of a showcase includes:

Activity	Who
Put up welcome signage in building.	Student
Set up room/student groups/stations.	Teacher/students
Greet and thank experts in office; distribute judge rubrics and judge name tags; walk judges to specified location.	Assigned student
Pass out and review rubric with judges.	Teacher
Welcome the community/kick off the event. Introduce judges or have them introduce themselves.	Teacher
Showcase student projects.	Students
Host awards ceremony and thank experts.	Teacher

Judging Rubric

If you plan to have judges formally assess student work, it's important to have a rubric for the judges to use on that day. This keeps the judges and students focused on the goals of the project. (Be sure to give students a copy of the rubric in advance to help them prepare for the presentation.) Check with your EcoRise Program Manager for examples of rubrics you could use.

Prizes

Everyone loves prizes! This may be the last push your students need to get motivated to create a really great project. Prizes can be given out for as many or as few categories as you like. Some example categories are: Judges' Choice, People's Choice, Innovation Award, Best Pitch, etc. You can create small gift bags with purchased or donated prizes. Gift cards are also often a hit. Use your community resources to see if you can get any small donations from local organizations and businesses.



Showcasing Student Work, continued

SHOWCASE CHECKLIST AND CRITERIA FOR JUDGING

Teacher:	
Student:	
Logistics	Choose your day and time. If you are working with multiple classes and wish to have community judges participate, it is best to combine all the classes into one Showcase event. Choose your format. • Set up tables like a science fair and have judges walk around to each. • Have student teams present one-by-one in front of a panel of judges. Choose a location that has the space and technology required.
Students' Preparation	Prepare your students for ... The pitch: a verbal presentation (Strongly encourage students to rehearse their pitch in advance.) The props: Portfolios (See tips for using Student Portfolios beginning on page 14 of this Guide.) Models and prototypes • Trifold display boards • Poster art, infographics, etc. • Presentations or videos
Community Involvement and Judges	Decide if you plan to invite judges. If you choose to have judges at the showcase, give them specific criteria for evaluating student projects, such as: • Creativity: originality, innovative thinking • Viability: practical, able to be implemented, thoughtful • Verbal presentation: clear, confident delivery and speech • Visual presentation: props are organized, interesting, and attractive
Celebration	Invite school community: principal, assistant principals, fellow teachers, and other students Consider the following: • Offer food or treats. • Have a People's Choice Award. • Join forces with another school event for a bigger audience.



Additional Resources

HELPFUL VOCABULARY

We find the following list of concepts to be useful in the design process. Feel free to add vocabulary you find relevant to your students' projects.

Aspiration	A strong desire, longing, aim, or ambition
Bias	An inclination to hold a perspective at the expense of (possibly equally valid) alternatives
Biomimicry	The science of emulating or taking inspiration from nature (its models, systems, processes, and elements) as a strategy to solve human problems
Catalyst	A person, thing, or event that causes radical change or an event
Cradle-to-Cradle Design	A holistic design approach that seeks to create products and systems that are efficient and waste-free
Disruptive Innovation	An innovation that helps create a new market and value network, and eventually goes on to disrupt an existing market or network (e.g., online TV streaming, online radio, ride-sharing services, etc.)
Incubator	A program designed to accelerate organizations' successful development (e.g., a business incubator facilitates development of entrepreneurial companies)
Mindset	A fixed mental attitude that predetermines how you will interpret and respond to situations
Open-Source	A philosophy that promotes free distribution and access to products and information
Paradigm Shift	A change from one way of thinking to another
Prototype	An early sample or model built to test a concept or process, which is then be replicated or learned from
Social Entrepreneur	A person who recognizes a social or environmental problem and creates a business venture to develop solutions and drives positive change
Stakeholder	A person, group, organization, member, or system that affects or can be affected by your organization's actions
Tinkering	To play around with, repair, or improve something in a casual or curious way
Transformative	The act or an instance of transforming; a marked change in appearance or character, usually for the better
Visioning	Developing a clear sense of purpose and goals to focus and drive creative energy
Whole Systems Thinking	A preference for looking at systems holistically, rather than looking at individual elements in isolation from the system, in order to solve problems.



Additional Resources, continued

RESOURCE LINKS

Portfolio Platforms

Pathbrite	www.pathbrite.com
Prezi	www.prezi.com

Tools to Enhance Student Portfolios

Da Font	www.dafont.com
Google SketchUp	www.sketchup.com
Homestyler	www.homestyler.com
LogoMaker	www.logomaker.com
Pinterest	www.pinterest.com
SlideShare	www.slideshare.net
The Noun Project	www.thenounproject.com
Wordle	www.wordle.net

Design-Thinking Online Activities

Business Model Generation	www.strategyzer.com
Gamestorming	www.gamestorming.com
Innovation Games	www.innovationgames.com
Tasty Cupcakes	www.tastycupcakes.org/category/games

Design-Thinking Organizations

Design Thinking for Educators	www.designthinkingforeducators.com
IDEO	www.ideo.org
Stanford d.school	www.dschool.stanford.edu
The Third Teacher	www.thethirdteacher.com

Other Helpful Sites

Ask Nature	www.asknature.org
Center for Green Schools	www.centerforgreenschools.org
Design Squad Global	www.pbskids.org/designsquad
Edutopia	www.edutopia.org
Global Oneness Project	www.globaloneness.org
Good – Infographics	www.good.is/infographics
TED	www.ted.com
TEDEd	ed.ted.com



Design Studio



Framework and Activities for Innovative Problem Solving

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