RE-ENERGY CHALLENGE

Become a Renewable Energy Engineer!

2023 - 2024

The Re-Energy Challenge is a fun and engaging STEAM task where learners have the opportunity to build a working prototype of a solar oven, solar car, wind turbine, hydroelectric generator, biogas generator, electric vehicle, penny battery, flywheel model or another renewable energy prototype of their choice. By building their own prototypes, learners can see firsthand how applied science is helping create a more sustainable future. This package contains everything you need to complete and submit an entry for the 2024 Energy Revealed Challenge. Get inspired for your participation by taking a look through our showcase of previous entrants!

Complete the following entry form and upload it to the submission page (accessed GreenLearning's Challenge Page) by **Friday, May 3, 2024 at 11:59pm PST**. Best of luck to you and your learners! If you have any questions or concerns at any time, please contact us at programs@greenlearning.ca or check out our Frequently Asked Questions page.

Challenge Instructions

To participate in the 2024 Re-Energy Challenge, please follow the steps below:

Step 1: Preparation

Introduce yourself to the concepts outlined in the Educator Resource, which features quick videos and summaries of renewable energy technologies.

We **recommend** completing a selection of learning activities from the Re-Energy Program to equip your learners with the necessary knowledge and skills for the challenge.

We have provided a few examples these resources below:

What is Renewable Energy?
Introduction to Solar Electricity
Exploring Electric Vehicle Charging Stations in Your School or Community
Wind Turbine Simulator
Introduction to Hydro Energy
Exploring Energy Storage in Your Community

Step 2: Choose Your Renewable Energy Technology

For the challenge, you are tasked with building a working prototype of a renewable energy technology. Your prototype construction can be based on the construction plans for renewable energies provided below, or you can get creative and come up with a renewable energy prototype of your own. The following construction plans are just the beginning of possibilities for your Re-Energy prototype(s), and we encourage you to get creative!

Electric Vehicle
Penny Battery
Flywheel Model
Solar Oven
Solar Car
Wind Turbine
Hydroelectric Generator
Biogas Generator

Step 3: Share and Spread the Word

Share your learning, planning, or action with your family, within your school, community, on the radio, on social media, or any other forms! Celebrate your learnings and accomplishments and educate others on how they can learn about renewable energies and take climate action!

*We would love to see your Re-Energy Challenge process, tag **@GreenLearning** on Twitter (X), Instagram and Facebook.*

Step 4: Submission

Use the following checklist as a guide to help get organized for submitting all materials and forms by **May 3, 2024 at 11:59 pm PST.**

Submission Checklist:

- ☐ Re-Energy Challenge Package with completed Entry Form, Sharing Your Learning, and Reflection Questions
- ☐ Documentation of students' working prototypes of renewable energy technology
- ☐ Supporting materials for judging, such as:
- ☐ Copies of student work and worksheets
- ☐ Photos and videos of students and their projects- *tell us your story!*
- ☐ Media Release Form(s) for individuals shown in photos or videos

Use the Selection Criteria below to support your Challenge process.

Entries that meet the requirements outlined in the Re-Energy Challenge Rules and Regulations will be judged between May 6, 2024 and June 5, 2024. The first, second and third place submissions will be awarded cash prizes of $1,000, $500 and $250 respectively. Winners will be announced online on or around June 5th, 2024.

Selection Criteria

GreenLearning has recruited a panel of industry experts with experience and expertise on renewable energy technologies to judge and provide feedback on challenge submissions. This panel of judges will be evaluating submissions based on the following selection criteria:

Criteria	Level 4	Level 3	Level 2	Level 1
Prototype: Construction and, Function *Operation and Application.* **(10 points)**	A strong Prototype design that is highly logical and excellently built including strong ability to harness renewable energy.	A good Prototype design that is logical and well built including the ability to harness renewable energy.	Prototype design that is somewhat logical and built well with some ability to harness renewable energy.	Prototype design that is illogical and/or not built. Minimal to no inclusion of harnessing renewable energy.
Prototype: Design and Creativity *Creativity & Sustainability.* **(10 points)**	Design is highly creative with excellent use of sustainable design and materials.	Design is creative with good use of sustainable design and materials.	Design is somewhat creative with some use of sustainable design and materials.	Design is not creative with minimal to no use of sustainable design and materials.
Supporting Materials *Evidence of Learning* **(15 Points)**	5+ photos, videos or student worksheets were submitted demonstrating student experience.	3-4 photos, videos or student worksheets were submitted demonstrating student experience.	1-2 photos, videos or student worksheets were submitted demonstrating student experience.	No photos, videos or student worksheets were submitted demonstrating student experience.
Sharing Your Learning *Communication and collaboration.* **(10 points)**	Learning was shared with clear educational intention and through multiple forms.	Learning was shared with some educational intention *and/or* through multiple forms.	Some learning was shared.	No learning was shared throughout this challenge.
Reflection Questions *Creativity, critical thinking and knowledge mobilization.* **(10 Points)**	Student response displays a strong understanding of renewable energy technologies and is highly creative.	Student response displays an understanding of renewable energy technologies and is creative.	Student response displays some understanding of renewable energy technologies and is somewhat creative.	Student response displays minimal understanding of renewable energy technologies with low creativity.

Entry Form

Please tell us about yourself and your class. If more than one educator or group leader was involved please complete this form based on who will be the ***main contact***.

This section is not scored.

Educator's name:

Educator's email address:

Preferred Title: *(E.g. Ms. Frizzle, Mx. Simpson)*

School Name and Board:

School City:

School Province:

Educator and/or School Social Media Handles:

Number of Learners Participating:

Grade Level(s):

Subject(s) or Club Name:

Type and number of prototypes created:

List sustainable materials used *(ie. reclaimed cardboard & plastic bottles):*

Estimate of quantity and/or percentage of sustainable materials used in prototype construction:

Sharing Your Learning

*The following question can be answered by the **joined effort** of educators and learners and is **supported by the photos, videos, and other relevant materials** provided in your submission. Sharing learning may include social media platforms, school assemblies, school announcements, school posters, sharing within the school (i.e. to younger grades), community events, presentations to community leaders, local media coverage, or any other forms.*

This section is scored out of 10 points. Please see the Selection Criteria for details.

1. How did you share your experience learning about renewable energies and associated technology while participating in the Re-Energy Challenge? What did you do to help inspire others to take action? How many people did you reach as a result? *Please break down the number of people you shared your learnings with and how you shared it.*

Total # of people shared with: _____

Reflection Questions

*The following questions **must** be answered **by learners**, either individually or as a team and can be submitted in any media form (written, video, slideshow, song/rap, etc.).*

This section is scored out of 10 points total. Please see the Selection Criteria for details.

a) How has building a working prototype of a renewable energy technology helped you better understand renewable energy and their possible uses at your school or in your community? ***(/5)***

b) Reflecting on your experience with your prototype(s), If you had the opportunity to design and construct your prototype again what changes or improvements would you make? What is the reasoning behind your changes and how do they improve your prototype? ***(/5)***

Educator Feedback

GreenLearning is consistently looking for ways to improve our challenges and collect participant feedback. Please take a few moments to tell us about your experience by answering the questions below.

This section is <u>not scored</u>, but we <u>greatly</u> appreciate your feedback!

Efficacy of Challenge & Supporting Resources:

Please complete the table regarding the efficacy of the Challenge and associated learning:

	Not Effective	Somewhat Effective	Effective	Quite Effective	Very Effective
Developing student understanding of renewable energies.	☐	☐	☐	☐	☐
Building confidence in teaching about renewable energies.	☐	☐	☐	☐	☐
Providing students opportunity to demonstrate their understanding through action.	☐	☐	☐	☐	☐

Reflecting On <u>YOUR</u> Experience:

Tell us about *<u>your</u>* experience as an educator with the Re-Energy Challenge:

Did you face any barriers? Align with your objectives? Use the resources? Do you have suggestions?

Reflecting On <u>STUDENT</u> Experience:

Tell us about your *<u>students</u>'* experiences with the Re-Energy Challenge:

Did they face any barriers? What were your students most excited about? Do they have suggestions?

Please use this opportunity to share any other questions, comments, or thoughts with us.

Congratulations!

Dear Parent / Guardian,

Your child's class, school, or eco club is participating in an exciting Climate Action Challenge hosted by GreenLearning! It's a great chance for them to learn and work together with their peers to make a difference in the fight against climate change. Plus, they could win up to $1000 for their school, amplifying the impact of their climate actions!

To help share their story and experience in the Climate Action Challenge, please complete the attached media release form and return it to the school. This form gives permission to capture and include photos, statements, and projects created by the students. More details can be found on the *Media Release Form* below.

More about us: GreenLearning creates free education programs about energy, climate change and green economy that engage and empower students to create positive change for our evolving world. Our programs include both hands-on and critical thinking activities to equip educators with the educational tools they need to help students understand complex environmental issues.

For Your Attention:

*** Please Sign and Return the Media Release Consent Form on Page 2**

SCAN the QR codes below for more info!

Website | **Challenges** | **Showcase**

GreenLearning's Challenges: Media Release Consent Form

Sign and return to secure your child's participation!

Due date: _____

I, _____ hereby authorize

(Name of parent or guardian if participant is a minor, under the age of 18)

GreenLearning Canada Foundation to use and publish my child's name, image, likeness, statements, participant work and performance without charge, for public viewing and promotional purposes in publications, advertising, video, web, new media and other formats as determined by the organization. I also give permission for any content as uploaded to the Google shared folder associated with GreenLearning's programs or challenges to be used and/or edited as required.

I am aware that my child's name and/or picture and/or voice may appear in a print advertisement or other promotional material or be shown on the internet on which my child's picture can be seen or voice heard on a recording and I hereby grant permission to GreenLearning Canada Foundation to use my child's picture, voice, and/or name for these purposes.

I hereby waive any right to inspect or approve the use of these works or any electronic materials that may be used in conjunction with them now or in the future, whether the use is known to me not. I also waive all rights to any royalties related to the use of these works.

I hereby release GreenLearning Canada Foundation, and its officers, employees, shareholders and directors from any and all liability whatsoever, for now and forever.

External Media and Special Events

I also understand that external media or partner organizations might attend special events that are related to GreenLearning's programs and challenges. At these events, I give permission for my child's name, image, likeness, statements, participant work and performance to be photographed, filmed, audio or video taped for the purpose of being published and/or broadcasted online or on radio and television.

☐ Please mark this checkbox if you **AGREE** for your child to be photographed, filmed, audio or video taped as mentioned or described above **in parts one and two.**

Child'sname:_____

School:_____

Grade:_____

Teacher's name:_____

Parent's / Guardian's name:_____

Parent's / Guardian's email:_____

Parent's / Guardian's signature:_____

Date:_____