Panasonic Student Eco Citizenship Program

TEACHER GUIDE

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Panasonic Student Eco Citizenship Program

Welcome to the Panasonic Student Eco Citizenship Program!

You and your students are embarking on a journey to become active participants in creating a sustainable global environment. Thousands of Panasonic employees across the world have become global citizens — engaging in local environment protection activities, joining forces with local residents, fundraising to support environmental initiatives — and now the invitation is extended to you.

The Panasonic Student Eco Citizenship Program is a four lesson, project-based, team experience that leads students to take actions to protect the environment and to document them for submission to the Panasonic *Eco Diary* competition. The lessons are designed to develop student skills in STEM, literacy, research, critical thinking and problem-solving as defined in the Next Generation Science Standards (www.nextgenerationscience.org). They are also aligned with the student standards from the International Society for Technology in Education (ISTE). The ISTE standards are designed to empower student voice and support student-based learning. An alignment guide is provided on pages 15-16 listing the applicable standards to each lesson.

Following the guidance in the curriculum, student teams will take action to become "eco citizens" in their community. They will illustrate and write about their journey and actions in an *Eco Diary*. You will select three of the best team diaries for submission and the opportunity to win prizes and recognition. The submissions must be uploaded in a pdf or digital format through the program website.

The Student Workbook contains all directions and guidance students will need and the Teacher Guide has resources, tips and suggestions for successful implementation of each lesson. Additional resources are available at **www.ecocitizenship.org**

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Before You Begin

1 Review the Panasonic Student Eco Citizenship Program website, www.ecocitizenship.org. Become familiar with the competition and take time to review past winning entries before you lead students through the program. The competition rubric is in the back of this guide. Additional resources are available on the program website.

2 Visit www.panasonic.com to learn more about Panasonic's engagement as a global eco citizen. This will give you and your students some great ideas.

3 Read the Student Workbook and become familiar with the actions students must take for their projects. Student teams will identify an environmental topic and implement an action or activity to respond to it. They will document their activities and actions in an Eco Diary.

4 Before beginning the project you may want to take some time to engage the students in a discussion of the topic "protecting the earth and its environment."

Here are some suggested questions to start the discussion.
- What environmental issues do you often hear or read about?
- Why do you think these are important issues?
- Who should be responsible for finding solutions for them?
- What is your role?
- What are you already doing?
- What more would you like to do?

5 Hand out the Panasonic Student Eco Citizenship Workbook.

6 Explain the program and how students will participate.

- Students will conduct a team project and implement their project to help the environment in their community. Community could be a school, city/town, state.
- Teams will be comprised of 2 - 4 students.
- The program consists of four lessons:
  1. Research environmental issues
  2. Select a project goal and develop an action plan
  3. Carry out your project in you school or community
  4. Evaluate your results
- Emphasize to students that the goal is to conduct an activity in the community. Students should be mindful of the goal when completing the preparatory lessons (1 and 2).

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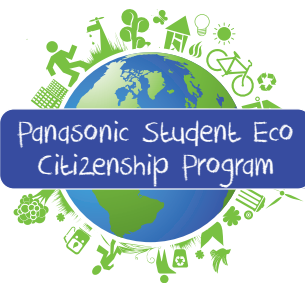
- The results for each lesson will be documented in an Eco Diary
- Share the diary format with students.
- Four entries, one for each lesson.
    Each of the four entries will include one illustration and one paragraph. The illustration may be a photograph or original artwork prepared by the team and showing the team at work on the lesson topic. Emphasize to students that the illustration, whether a photograph or original artwork, must represent their work on the lesson topic.
- Explain that students will complete a draft eco diary when they complete each lesson. The draft diary will be used to prepare a final Eco Diary. Suggest students save all work from each lesson as an addition resource when completing the final Eco Diary.

7 Explain the competition:
- Each student team will submit its final Eco Diary to you (the teacher).
- You will select the top three for submission to the Panasonic Eco Diary Competition.
- The diaries will be read and evaluated by a team of judges using an evaluation rubric. Direct students to evaluation rubric on page 18 of their workbook.
- The top rated diaries will be recognized by Panasonic.

8 Assign students to teams. Each team should be comprised of 2 – 4 students. This is a requirement of the competition, so please ensure that each team has the required number of students.

9 Guide the students on how to work as a team. Here are some suggestions:
- Listen carefully when a team member is speaking, do not interrupt.
- Do not dominate the conversation.
- Be open to compromise.

10 Direct the students to Lesson 1 in their Student Workbook.

Let's get started!

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Lesson 1

Research environmental issues

Next Generation Science Standards
Practice 1: Asking questions and defining problems.
Practice 2: Planning and carrying out investigations.
Practice 8: Obtaining, evaluating, and communicating information.

NCTE National Literacy Standards
Standard 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

Standard 8: Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

Suggested Time
60-90 minutes

Materials
One Student Workbook for each student

Chart paper
Computers
Access to Internet
Effective On-Line Research document available at www.ecocitizenship.org under Teacher Resources.

Leesson Objectives
Students will:

- Explore and share prior knowledge about environmental issues.

- Draw conclusions about how their actions can positively affect the environment.

- Brainstorm a list of actions they can do to protect and save the environment.

Facilitation Tips

STEP 1 Arrange the class so team members can sit together. Give the team time to consider the topics on the Environmental Issues chart on page 3 in the student workbook and to select two or three topic(s) of interest for its research.

Allow sufficient time for students to conduct their research.

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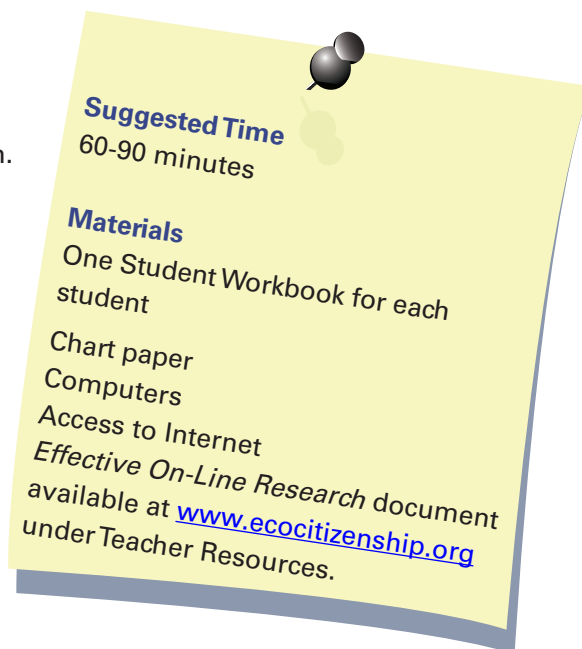
When students complete the chart, engage them in a discussion of what they learned that was new to them and most interesting. You could conduct this as a whole class activity or ask one member of each team to report out on the team's findings—what was new and most interesting.

STEP 2

For the chart "Observing My Neighborhood", have students select three or four of the issues from the topics researched in Step 1. They will compare what they learned in their research to what they personally see in their own community.

STEP 3

Reference the charts completed by the student teams and guide them in a brainstorming session wherein they provide possible solutions for human actions harming the environment. Encourage them, as they brainstorm, to list all possible solutions. In a brainstorming session there are no right or wrong answers. Creative thinking is encouraged. Have each team record its responses and place each chart in a central location for all students to reference during later lessons.

From the many ideas or solutions students identified, have each team select three that are of interest to all team members.

Have each student team use the draft Eco Diary at the back of the Student Workbook to complete entry 1, documenting their work for this lesson. Remind the student teams they will have time to edit their draft diary before completing the final diary for submission.

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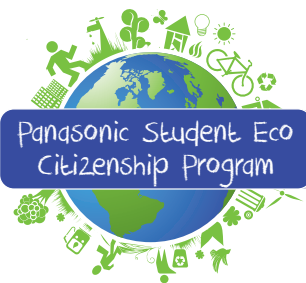
Lesson 2
Project goal and action plan

Next Generation Science Standards
**Practice 2:** Developing and using models
Practice 6: Constructing explanations and designing solutions
Practice 7: Engaging in argument from evidence

NCTE National Literacy Standards
Standard 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Standard 8: Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

Suggested Time
2 - 3 days

Materials
One Student Workbook for each student
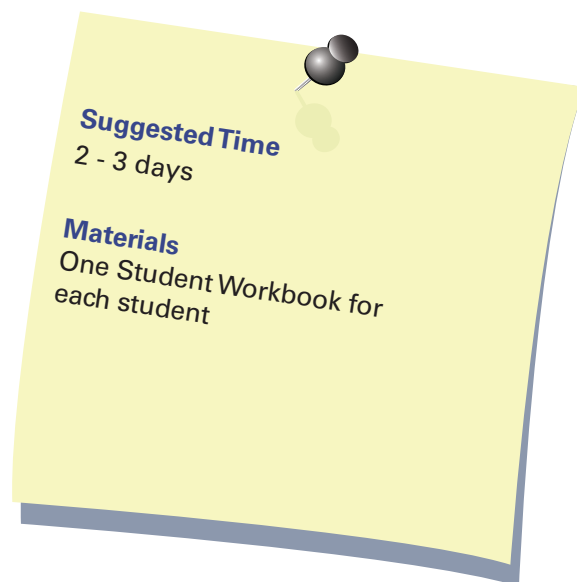
Lesson Objectives
Students will:

- Identify specific actions they can take that may have a positive impact on their local environment.
- Determine an Eco Project Goal.
- Create a plan to achieve their Eco Project Goal.

Facilitation Tips

- Have students sit in their assigned teams.
- State objectives for this lesson.
- Remind teams of ground rules for working as a team.
- Provide guidance on working in a team. This is an activity that you could facilitate with students providing the ground rules for their teams.
  - Listen carefully, do not interrupt
  - Do not monopolize the conversation
  - Be open to compromise
  - Be positive and not judgmental
  - Honor time limits — staying on schedule is everyone's responsibility
  - Complete assigned tasks
  - Let other team members know if you need help or clarification

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As the teams come together to discuss their ideas or solutions from Step 3 of the previous lesson, you may need to help them select one idea or solution. If teams appear stuck on making their selection, consider facilitating a class discussion to generate ideas. Ask students what they would like to do to help "fix" the environment. Plastic pollution? A solution could be to decrease the number of plastic water bottles used by students. Global warming? A solution could be to help other students better understand what global warming is and how individuals can help slow it down. Students can also visit www.ecocitizenship.org for more ideas!

STEP 1

In this step, it is very important that the student teams create an Eco Project Goal that will enable them to implement an activity to improve the environment. If they want to help "fix" plastic pollution by having students use fewer plastic water bottles, what type of activities or actions can they carry out to make it happen? Generate a discussion on what activity or activities a team could implement to lower the use of plastic bottles in the school. Encourage students to be action oriented in their ideas. Remind them to carefully consider resources they may need to implement some of the activities proposed. Are those resources available or easily obtained?

STEP 2

Advise students that, while they may use social media to help publicize their project, this should not be the main focus of their work.

Review each team's Eco Project Goal to confirm there is no replication of project goals, the activity can be implemented within the time available, and resources are available or can be easily obtained.

> Example: If the entire class selects water pollution as its overarching theme, then each team's project must be a unique aspect of water pollution.

Direct students to read the introductory paragraph for Step 3. As student teams complete their action plans, encourage them to think about all the individual actions they need to complete to achieve their Eco Project Goals. You may want to check in with teams during this step to ensure they are not overlooking important actions such as getting permission from appropriate authorities or soliciting support from valuable stakeholders.

STEP 3

Have the students use a calendar to establish a schedule for their work. Suggest they work backward from the final submission deadline when entering their deadline dates on their action plans. **It may be necessary for them to adapt or condense their Eco Project Goal because of limited time.** If your school has a program such as Google classroom, have students use it to create their documents—action plan, calendar, presentation documents, for all team members to access.

Have each student team use the draft Eco Diary at the back of the student workbook to complete entry 2, documenting their work for this lesson. Answer questions students may have about this entry.

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Lesson 3

Carry out your project in your school or community

Next Generation Science Standards
Practice 3: Planning and carrying out investigations

NCTE National Literacy Standards
Standard 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Standard 5: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

Standard 12: Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Suggested Time
Varies per group

Materials
One student workbook for each student, access to calendar, other materials needed or identified in their lesson 2 action plan.
Plan Implementation Tips

Lesson Objectives
Students will:

- Implement their plan to achieve the Eco Project Goal.
- Collect data and record progress.

Facilitation Tips

This is the point at which the student teams will implement their planned projects. Team projects will have different starting and ending points and occur at a range of sites. Some teams may implement a one-time activity or conduct an event to raise awareness about green living. Other teams may be making presentations to more than one class or conducting multiple cleanups in area parks. Consider keeping a calendar visible to all student teams with the dates and times of their planned activities. You may want to advise the school leadership and other teachers about this project and expectations for student activities
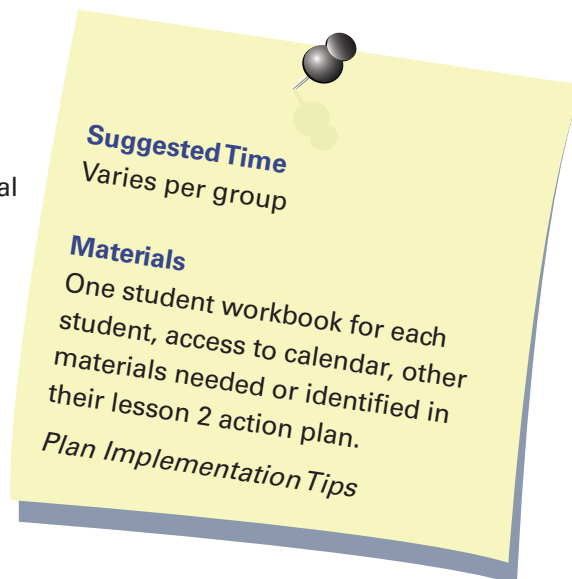
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- Have students read the questions in Lesson 3.

- Make copies and hand out the Plan Implementation Tips in this Guide. Explain that teams are not expected to do every item on the list.

- Consider having time each class period for students to work with their teams. Students can share their progress with each other, review their plans together, check off completed actions and discuss how they can be sure to complete remaining actions by the designated timelines.

- Provide other support, as needed, to the student teams.

  - Confirm dates, locations, all applicable approvals and required materials, and the name and contact information of the adult, if not you, who will be present at off site project activities.

  - Be available for team check-ins and to troubleshoot problems or challenges.

  - Throughout, engage students in conversations about their projects. If applicable, ask "what, who, how, why" questions or "help me understand." Encourage students to think critically and evaluate their progress.

  - Confirm that students are documenting their actions on their action plans.

  - Remind students to take photos of their teams at work. **All Eco Diary entries must include one photo of the team in action working toward its end goal.**

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Plan Implementation Tips

Creating an advertisement or informational flyer?

- Check spelling, date, time, location and be sure it is written large enough.
- Do you have permission to hang it or post online? Make sure to set a reminder date to take it down!

Setting up for an event or going somewhere to complete the task (at lunch or before/after school)?

- Be sure to get permission.
- Have a purpose, be organized and polite.
- Collect before/after data as showing results is necessary for the Eco Diary.
- Stick to the time frame.
- Know who should be in attendance.
- Be sure to follow-up or clean-up at the conclusion of event/task.

Writing an announcement.

- Be clear and concise with your statement - give it in a short amount of time
- Have a teacher or another group proofread what is going to be said
- If you will be reading the announcement, practice, practice, practice!

Planning a meeting?

- Write down meeting discussion points and have a clear purpose.
- Prearrange the meeting date and time.
- Decide who will attend, who will speak, and who will take notes.

Implementing the project at home.

- Take photos of your family coducting the project.
- Get quotes from family members regarding the project and actions taken.
- Record the outcomes/results of the project.

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Lesson 4

Evaluate your final results

Next Generation Science Standards
Practice 2: Developing and using models
Practice 4: Analyzing and interpreting data
Practice 8: Obtaining, evaluating, and communicating information

NCTE National Literacy Standards
Standard 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Standard 5: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

Standard 11: Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

Suggested Time
2-5 class periods

Materials
One Student Workbook for each student, computer, one Eco Diary per team, other team notes/photos, diary supplies (colored pencils, pens, markers, etc.)

Looking Forward document available at www.ecocitizenship.org under Teacher Resources tab

Lesson Objectives

Students will:

- Create *Eco Diary* for competition submission.

- Share *Eco Diary* with peers in order to provide and receive feedback.

- Reflect on the work of the team over the course of the lessons.

Facilitation Tips

This is when students celebrate their successes and identify their challenges. Remind them to reference the notes from their action plans/project implementation.

- Who and how were participants impacted by what they did?

- What were the outcomes? What was the impact? (For example, number of people/students, bags of litter, number of plastic bottles collected?

- Did the team work well together?

- What challenges did they encounter?

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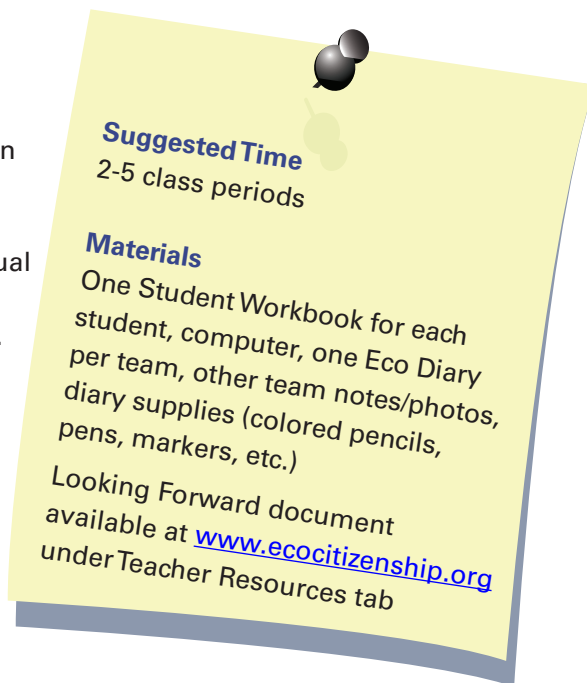
STEP 1

Have students complete the Successes and Challenges chart on page 11 of their Student Workbook.

- Engage students in a discussion of the successes and challenges. Ask each team what they would do differently.

- Engage students in a discussion of next steps.
  - What would you change?
  - What were your successes?
  - What were your strategies?
  - Who else would you engage?
  - What were your challenges?

Copy and hand out Looking Forward found at www.ecocitizenship.org, (Teacher Resources tab).

STEP 2

Have students complete step 2 on page 12 of their Student Workbook.

- Ask students for their ideas or plans for next steps.

- Note where student teams could work together to carry out next steps. One idea, is to start a club focused on environmental issues.

Before completing Step 3 in the Student Workbook, have each team use the draft Eco Diary at the back of the student workbook to complete entry 4, documenting the outcome of their projects and identifying next steps. Answer questions students may have about this entry.

STEP 3

Direct students to read the introductory paragraph in their workbook for Step 3.

- Remind students that there is only one Eco Diary per team.
  - As teams they should review their draft Eco Diaries and come to agreement on what may need to be added, changed or edited. Do the draft entries illustrate and describe, in a concise and direct way, the essence of their projects?
  - Direct students to the Evaluation Rubric in the back of their Student Workbook (page 18). The rubric will be used by the judges to evaluate diary submissions.
  - Remind students that the final submissions must be original work completed by them and include at least one photograph of the team in action.
  - Suggest they may want to have an adult read their draft diaries for spelling and grammar errors.

- Direct students to complete their final Eco Diaries using the Eco Diary booklet for submission to you (the teacher) when completed.

- Explain how you will select the top three diaries to submit to the Panasonic Eco Diary competition.

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Instructions

1. Review the Official Competition Rules prior to submitting entries. Rules can be found on the website: www.ecocitizenship.org.

2. One entry form must be completed and submitted with each student team entry to the *Eco Diary* Competition. Students teams must be comprised of 2-4 students.

3. The *Eco Diary* must consist of 4 entries (one for each lesson) and be completed in the *Eco Diary*.

4. When you select the top three, you must submit through the submission link on the program website.

4. Each entry will highlight specific actions taken by the student team to protect the earth and improve the environment in their community.

5. Each Diary entry will include a picture and a paragraph to explain the actions taken.

6. The pictures must be actual photos of the student team working or original, hand-drawn or digitally created artwork of each student team.

7. All paragraphs must be typed in English and must be the original work of the student team.

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Eco Diary Rubric

This rubric will be used to evaluate the Panasonic Student *Eco Diary* entries.

All students should be familiar with the expectations. All entries must be the original work of the team and completed by teams comprised of 2-4 students.

Category	Scoring	PointsEarned
Diary Entry 1	___ The entry includes one photo or original piece of artwork that is a clear representation of what the team learned from its research. (up to 5 pts) ___ The entry includes one paragraph explaining the team's research process and clearly stating the ideas or issues it found most interesting for follow up. (up to 10 pts) ___ The writing is coherent, accurate and uses correct sentence structure with no errors in spelling or grammar. (up to 5 pts)	___/20
Diary Entry 2	___ The entry includes one photo or original piece of artwork that is a clear representation of the environmental issue selected by the team for its action. (up to 5 pts) ___ The entry includes one paragraph clearly stating the environmental issue selected by the team and its response or planned action with a detailed plan showing how the team will implement it. (up to 10 pts) ___ The writing is coherent, accurate and uses correct sentence structure with no errors in spelling or grammar. (up to 5 pts)	___/20
Diary Entry 3	___ The entry includes one photo or original piece of artwork that is a clear representation of the action or activity completed by the team in the community. (up to 5 pts) ___ The entry includes one paragraph describing the implementation of the action or activity including what occurred, how and where in the community and the teamwork involved that made it happen. (up to 10 pts) ___ The writing is coherent, accurate and uses correct sentence structure with no errors in spelling or grammar. (up to 5 pts)	___/20
Diary Entry 4	___ The entry includes one photo or original piece of artwork that is a clear representation of the team's outcomes or results. (up to 5 pts) ___The entry includes one paragraph describing the successes of the project, how, if any, challenges were overcome, and the next steps planned by the team to build on or continue the project. (up to 10 pts) ___ The writing is coherent, accurate and uses correct sentence structure with no errors in spelling or grammar. (up to 5 pts)	___/20
Overall Presentation	The project story, as illustrated and written, shows enthusiasm and engagement by the whole team. It is clear the team took action in the community to improve the environment and collected information documenting its project outcomes and impact. The illustrations draw your attention and are aligned with the narrative. The story is clear, well written and descriptive with attention to grammar and spelling. (up to 20 pts)	___/20
	GRAND TOTAL OF POINTS AWARDED	___/100

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ISTE Standards Alignment Guide

The International Society for Technology in Education has developed seven student standards that empower student voice and allow the learning experience to be driven by students. A further set of skills and behaviors are listed to define each standard.

All students should be familiar with the expectations.

ISTE Standard	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Empowered Learner: Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.	1d - Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.	1a – Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.	1a – Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.	1c - Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
Digital Citizen: Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.	2b - Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.		2b - Students engage in positive,safe,legal and ethical behavior when using technology, including social interactions online or when using networked devices.	2b - Students engage in positive,safe,legal and ethical behavior when using technology, including social interactions online or when using networked devices.
Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.	3a - Students plan and employ effectiveresearch strategies to locate information and other resources for their intellectual or creative pursuits.	3d - Students build knowledge by active actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.	3d - Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions	3d - Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

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ISTE Standards Alignment Guide

ISTE Standard	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.	4d - Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.	4a - Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.	4a - Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.	
Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.		5c - Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	5c - Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	
Creative Communicator: Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.		6a - Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication. answers and solutions.	6a - Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.	6d - Students publish or present content that customizes the message and medium for their intended audiences.
Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.	7d- Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.	7c - Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	7b - Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	7c - Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

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For more information
visit: www.ecocitizenship.org

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