EVERY ACTION MATTERS
CLASSROOMS TAKE CHARGE

# Service-Learning Lesson Plan

**Project:** Sustainability Fair
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**Project Overview:** Our students organized, promoted, and hosted a Sustainability Fair during school hours. Students presented projects that encouraged others to take action to reduce carbon emissions. Before the Fair, each student committed to actions that reduced their carbon footprint on the Take Charge website. At the Fair, students displayed their actions as well as art projects and research about living in a more sustainable way. The Fair was open to everyone, and hundreds of students and people attended as well as local businesses and professionals involved in sustainability. The event was a big success and popular with the students.

**Subject Areas**: Biology, Ecology

**Grade Levels:** 10th

**Materials Needed:**
- Poster supplies, project supplies depending on student work, computer access for research and recruitment

**Key Partners:**
- Students invited local businesses to come and table at the fair.
- Our school newspaper wrote an article about the fair.
- Our custodian and administrators cleared space for us and found the required furniture.

**Time Required to Complete Project:**
- 2-3 planning months

## Learning Objectives

Students will learn about sustainability and what sustainability means, how to make behavior choices that contribute to sustainability, learn about sustainability happening in our community, and how to do outreach to promote sustainability.

**How were the learning objectives evaluated?**
Grading rubrics were developed for each part of the Sustainability Fair.

## Service Objectives

Students teach other students how to live in a more sustainable way. Students set up, promote, and organize the event and outreach. Students interact with the community and public and gather

**Photo:** Roosevelt High School students at the sustainability fair they organized. In this photo they are registering fellow students on the Take Charge website.

participant feedback, Take Charge data, and self reflections.

**How were the service objectives evaluated?**
We did a self reflection as part of their grade and an in-class debrief and discussion.

## Human Energy Systems Units Used
### (For lesson plans visit: carbontime.bscs.org)

**Activity 1.1** Human Energy Systems Unit Pretest
**Activity 3.1** Millions of Flasks of Air
**Activity 3.2** The $CO_2$ Trend: Your Ideas about the Keeling Curve
**Activity 3.3** Why We Care About the Keeling Curve
**Activity 4.1** Finding the Carbon
**Activity 4.2** The Organic/Inorganic Swap
**Activity 4.3** The Seasonal Cycle
**Activity 4.4** Zooming Into Fossil Fuels
**Activity 4.5** Follow the Carbon
**Activity 5.1** Carbon Emissions Jigsaw
**Activity 5.2** Energy Scenarios
**Activity 5.3** The Upward Trend
**Activity 6.1** How We Use Organic Carbon
**Activity 6.2** Extreme Makeover: Lifestyle Edition
**Activity 6.3** Secrets Revealed

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## Lessons & Activities (See below.)

- RHS Sustainability Fair Project
- RHS Sustainability Fair Project Sign-Up
- Sustainability Fair Progress Report
- Sustainability Fair Reflection
- Sustainability Fair Scoring Rubric

## Celebrating Student Accomplishments

We had a day of reflection and celebration after the Sutainability Fair. Students reported being proud of their work and excited that adults wanted to talk to them about their projects.

## Project Milestones

- Teach Carbon TIME units. (Sep - Nov)
- Teach Human Energy Systems unit. (Nov)
- Do Take Charge project. (Nov - Jan)
- Sign up for jobs in organizing, promoting, set up and display for the sustainability fair when assigned.
- Check in on progress along the way. (Weekly until Sustainability Fair)
- Projects due. (Day before rehearsal - grade them.)
- Practice set up and rehearsal. Students see each other's work. (Day before Fair)
- Sustainability Fair. (Mar/Apr)
- Re-cap, debrief, send thank yous, etc. (One period after the Fair)

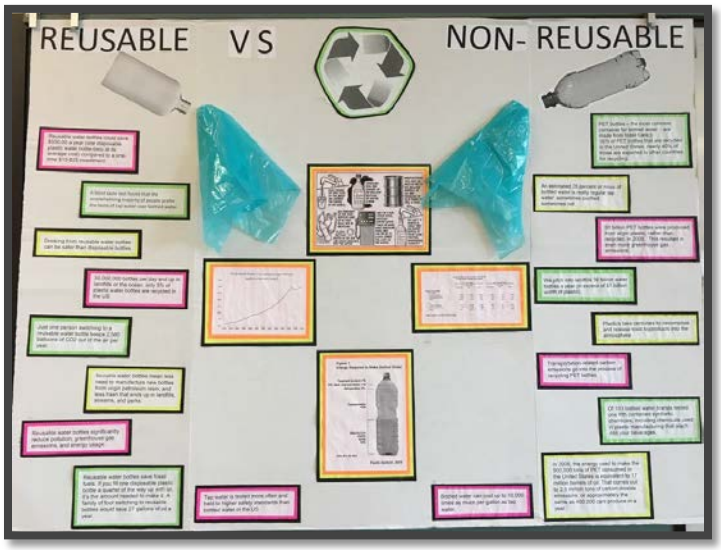


**Photo:** One example of an educational poster that students designed for the Sustainability Fair.

# RHS Sustainability Fair Project

**Due Dates:**

**Project Proposal Due – Wednesday, April 6**

**Progress Report Due – Wednesday, April 27**

**Project Final Draft – Monday, May 16**

**Fair Rehearsal – Tuesday, May 17**

**Sustainability Fair (Final project due) – Wednesday, May 18**

**Project Overview**

Biology students from each class will set up and organize a day long sustainability fair at school that will be attended by all 9th grade science students as well as any other RHS students and classes that decide to attend. It will be open to the general community as well. Students will be working in self-selected teams on promotion, set up, organization and displays and activities for the fair.

**Project Descriptions**

1. Event Coordination (3 students per class)
   a. Students analyze and schedule different activities and displays, locate necessary tables, chairs and equipment needed for each participating group.
   b. Set up on day of the fair

2. Event Promotion (both within the school and the local community including social media promotion) (2 students)
   a. Invite other students/teachers to visit booths (make posters, announcements, present to other classes, try to get in the newspaper/blog)
   b. Outreach to local media

3. Donations and Presenters (2 students)
   a. Identify local businesses interested in helping with the fair by donating food, drinks, and sustainable products
   b. Identify local groups interested in presenting information at the fair (hosting a table) and coordinate with these groups

4. Recruitment / Take Charge sign-up – Students to plan and recruit visitors to sign up for Take Charge (2 students)
   a. Explain the Take Charge program using visuals and information at the Sustainability Fair
   b. Help visitors to the fair register on the Take Charge website
   c. Help visitors to complete the Take Charge Consent Form

5. Educational Activity – Students to plan an educational activity and/or survey for 9th grade students visiting the Sustainability Fair to complete (2 students)
    a. Make a survey, scavenger hunt, exit ticket, etc. for students to complete while visiting the fair
    b. Distribute the activity at the event

6. Displays – Students team up to present their action items and projects at the Sustainability Fair (10-20+ students in teams of 1-3)
    a. Complete an action or plan for an action related to Take Charge/sustainability
    b. Making posters, PowerPoints, videos, performances, etc. to explain their actions and connections to sustainability.

    <u>Sustainability Project Ideas</u>:
    - **Alternative energy sources**: what is possible, pros/cons, carbon emission reduction, local uses
    - **Transportation**: biggest sources of carbon emissions, alternatives, personal changes
    - **Housing**: carbon emission sources, ways to reduce emissions, living buildings (Bullitt Center)
    - **Diet**: eating lower on the food chain, carbon emission reduction, personal experience
    - **Ocean**: fishing and shell fish industries, threats, sustainable harvests
    - **Agriculture**: how does food production produce carbon, methods to reduce emissions
    - **Electronics**: how many necessary, upgrade how often, what happens to discarded devices
    - **Clothing**: carbon emissions from manufacturing/shipping, ways to decrease consumption
    - **Treaty/Tribe Rights**: Ebey Slough and Elwha river restorations, fishery management
    - **Climate Justice**: disproportionate impact, unequal responsibility, green affordable housing
    - **Career pathways**: engineering (alt. energy, transportation, buildings), biotech (green fuels)

| RHS Sustainability Fair Project Sign-Up | | |
|---|---|---|
| | | |
| **Event Projects** | **# of students** | **Student Names** |
| Event coordination (+set-up/take down) | 3 | |
| Donations/Presenters | 2 | |
| Event promotion (school and media) | 2 | |
| Recruitment/Take Charge sign-ups | 2 | |
| Educational Survey/Activity | 2 | |
| | | |
| **Research/Performances/Service Project (link to action) Possible topics: Alternative energy, Transportation, Housing, Diet, Ocean, Agriculture, Electronics, Clothing, Treaty/Tribal Rights, Climate/Environmental Justice, Climate change/video contest, Career pathways** | 14-25 | |
| **Name(s) - *1 to 3 students per project*** | | **Action/Topic** |
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# Sustainability Fair

**Progress Report Due – Wednesday, April 27**

**Team Members:**

**Project Title:**

**Progress Report:**
How is your team doing in accomplishing the tasks outlined in your time line? Are you on track? If not, what are the issues?

Exactly what have you accomplished? (include extra pages as necessary)

Exactly what do you have left to do? (include extra pages as necessary)

**Progress Report Points**

Complete report on progress……._____/5 points
Thorough plan for the future……._____/10 points

Name: _____ Period: _____

# Sustainability Fair Reflection

1. Reflect on and describe what you have learned by completing and presenting your sustainability fair project.

2. This was our first year putting on a Sustainability Fair and we would like to improve it for next year.
   a) What information would you have liked to have had at the beginning of planning?

   b) What advice would you give to next year's sophomores about this project?

3. Did your group work well together? Why or why not?

4. How would you rate each group member's participation and contribution?

Self:

1 2 3 4 5 6 7 8 9 10

was not involved very involved

Comments on what was done:

Name of lab member:

1 2 3 4 5 6 7 8 9 10

was not involved very involved

Comments on what was done:

Name of lab member:

1 2 3 4 5 6 7 8 9 10

was not involved very involved

Comments on what was done:

# Sustainability Fair Scoring Rubric

Period_____

Team members_____

_____

| | *Barley meets expectations in terms of making an informative contribution (60-69%)* | *Approaching expectations in terms of having made a basic contribution (70-79%)* | *Meets expectations in terms of having a well-informed contribution (80-89%)* | *Exceeded expectations in terms of thoroughness and creativity (90-100%)* |
|---|---|---|---|---|
| Evidence of having prepared for the sustainability fair (per group report) | ___/7 | ___/8 | ___/9 | ___/10 |
| Having a completed project or organizational role by Tuesday May 17 | ___/7 | ___/8 | ___/9 | ___/10 |
| Information or outreach efforts meet the goal of promoting sustainable lifestyles* | ___/21 | ___/24 | ___/27 | ___/30 |
| Maximum Possible Points | ___/35 | ___/40 | ___/45 | ___/50 |

**TOTAL: _____ / 50**

**Adjustments for group members:**

*** If your project references sustainable actions include exactly how the actions reduce CO2 emissions with calculations if appropriate.**

**If your project involves research, modeling, or art it must include a connection to personal sustainability choices.**

**If your project involves organization or promotion provide a list and evidence of the completed work.**