

San Mateo Outdoor Education Solutionary PBL Unit

Solutionary Phase	Solutions and Reflections
Lesson # and title	Lesson Six: SMOE Environmental Solutions
Duration	45 minutes

Lesson Overview

During lessons one through five, students learned about how the earth's spheres are connected, performed audits of the energy, water, waste, and land systems at their school, and reflected on their relationship with nature. Then, students attended San Mateo's Outdoor Education (SMOE) program. During this lesson, the first of the "Solutions and Reflections" segment of this Solutionary Project-Based Learning unit, students will reflect on their SMOE experience, focusing specifically on the environmental solutions that exist at Camp Jones Gulch, and how those solutions might be similar or different than those at their school or on their school campus.

Learning Objectives

1. Students will understand how the processes, protocols, and infrastructure at Camp Jones Gulch are designed as solutions to the energy, water, waste, and land ecosystem problems they experience at school.
2. Students will begin to become more knowledgeable about one of those solutions, and begin to reflect on how to bring that solution to their school community.

Content Standard(s)

- Standards may vary depending on the time of year that a teacher is implementing this lesson, and the types of connections being made to the broader curriculum. Standards that teachers will likely connect to are outlined in the [Example CA Standards Connections for Environmental Literacy](#).
- All lessons connect directly back to multiple [Environmental Principles and Concepts](#) (EP&Cs), which are now required to be integrated into multiple subject areas

The Lesson

Teacher Preparation

- Watch "[Advocacy Campaign video](#)"
- Select Solutionary books from the [Environmental and Solutionary Book](#)

Lesson Procedure

Activity/Task	Description	Time (min)
Reflection on Students' SMOE Experience	<p>During this segment of the lesson, students share their experiences at SMOE, with SMOE staff, and with their friends and schoolmates, and reflect upon the experience of spending that much time in nature. *** Teachers should be mindful of the student(s) who were not able to attend SMOE.</p> <p><u>Suggested Questions:</u></p> <ol style="list-style-type: none"> 1. What are some words to describe how you felt while you were at Camp Jones Gulch? What are some words to describe how you feel now that we are back at school? 2. What part of being at Camp Jones Gulch was most impactful for you? What do you think you will remember most about that experience? 3. Think back to Camp Jones Gulch or a time you felt connected to nature and the environment. What was different about that experience than a normal day of school? 	15
Reflection on SMOE Energy, Water, Waste, and Land/Biodiversity Solutions	<p>1) Prior to SMOE, students audited various systems integrated into the school building and found on the school campus. The purpose of this lesson segment is to refresh students' memories about those systems and their findings after performing audits, and begin to help students reflect on the <i>similarities and differences between their school and SMOE</i>, in terms of those systems. <u>Suggested Questions for Reflection:</u>*</p> <ul style="list-style-type: none"> • <u>Energy</u> <ul style="list-style-type: none"> ○ Think back to the <i>Energy Audit</i> and what we learned about electricity and energy efficiency. Did you notice any ways that Camp Jones Gulch was energy efficient? Describe what you observed. • <u>Water</u> <ul style="list-style-type: none"> ○ Think back to the <i>Water Audit</i> and what we learned about using water use and water efficiently. Did you notice any ways that Camp Jones Gulch conserved water? Describe what you observed. • <u>Waste</u> <ul style="list-style-type: none"> ○ Think back to the <i>Waste Audit</i> and what we learned about waste and waste management at our 	15

	<p>school. Did you notice any ways that Camp Jones Gulch reduced waste? Describe what you observed.</p> <ul style="list-style-type: none"> ● <u>Land Ecosystem and Biodiversity</u> <ul style="list-style-type: none"> ○ Think back to the <i>Land Ecosystems Audit</i> and what we learned about the natural and the built environments. Did you notice any ways that Camp Jones Gulch protects biodiversity and the natural environment, and how they used nature for learning experiences? Describe what you observed. <p><i>*Note: The teacher should organize students' observations about the similarities and differences between SMOE/Camp Jones Gulch on the whiteboard.</i></p> <p>2) The teacher and students review the major similarities and differences between the Camp Jones Gulch (CJG) campus and their school campus (as written on the board) - Examples responses may include but are not limited to:</p> <ul style="list-style-type: none"> ● At CJG they used solar panels to generate their electricity, but our campus does not have solar panels. ● At CGJ they compost organic food waste and have compost bins, but on our campus there are no compost bins. ● At CJG they have water catchment systems, but on our campus we don't collect rainwater. ● At CJG there were gardens, but on our campus we don't have a garden. 	
<p>Introduction to Solutionary Thinking and School Community Impact Design Challenge</p>	<p>1) The teacher will introduce the idea of being a "Solutionary" by using one or more of the following methods:</p> <ul style="list-style-type: none"> ● Term Definition: Solutionary ● Solutionary Video: https://www.youtube.com/watch?v=2mogJFNux8I ● Solutionary Books: Choose a book from the Environmental and Solutionary Book List (or from your own library) and read about a solutionary. Explore what the solutionary person did in the story, and the outcomes of their efforts. A highly recommended book are, <i>Old Enough to Save the Planet</i> by Loll Kirby (Read Aloud with Loll Kirby), or Kobi Yamada Books - <i>What Do You Do With a Chance</i>, <i>What do You do with a Problem</i>, <i>What do You do with an Idea</i> <p>2) The teacher will explain that the students in this class are going to be solutionaries, and that we are going to use solutionary thinking to bring things we did at Outdoor Ed back to our school community. The teacher can read or paraphrase these paragraphs:</p> <p><i>"The problems we face today need solutions that create both physical and/or behavior changes. Solutions that have both a physical change and a behavior change are most likely to be long-lasting and make real change in our community.</i></p> <p><i>For the next three lessons, you and your classmates will complete a "School Community Impact Design Challenge". You will be working on a small team. You and your team will either design an advocacy campaign or an action campaign that seeks to make a physical or behavioral change in your school. Your design challenge</i></p>	<p>15</p>

will include several steps including: forming a group, brainstorming, deciding on a type of campaign, and designing the campaign. This campaign will relate to one of the areas we've been looking at from our school and outdoor education (Camp Jones Gulch) related to energy, water, waste, or land use."

3) Teacher introduces the idea of advocacy and action with the following guiding questions:

- "What does it mean to be an *advocate*?" and "What do you think an advocacy campaign is?"
 - *For the purpose of this design challenge, the advocacy campaign will involve advocating for a **physical** change at the school.*
 - *Suggested:* Teacher plays this [Advocacy Campaign video](#) for students.
- "What does it mean to 'take action'?", "What are ways that we can get other people to take action?", and "What do you think an action campaign is?"
 - *For the purpose of this design challenge, the action campaign will involve trying to convince teachers and students to change their **behavior** at school.*
 - *Suggested:* Teacher select a book from the [Environmental and Solutionary Book Resource Guide](#)