

'Ewa 'Āina Education Initiative

Unit Plan: The HĀ of Kalaeloa

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'Ewa 'Āina Site: Kalaeloa Heritage Park

Unit Plan Title: The HĀ of Kalaeloa - link to unit plan available via the following URL

<https://cutt.ly/6KlthnC>

Detailed Lesson-Project Plan #1

High School Natural Resources/Science

Lesson Title: Honouliuli Hydrologic Cycle Game

Essential Unit Questions Addressed: What value would you put on water?

Educational Standards that the lesson will help students achieve:

HS - ESS2 - 7 Earth's Systems - Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

HĀ framework and/or Hawaiian Culture integrated into this lesson

Within the context of place (Honouliuli), students will be asked to explore and create a personal understanding that everything works in a cycle. When all parts are working together things can thrive. Students will look at where we currently stand in order to make our future better.

Students will also explore how their personal actions reflect on the 'āina that they live in and these explorations can create a bridge to several aspects of the HĀ framework including: Aloha, Responsibility, Total Well-Being and Sense of Hawai'i.

Materials needed

- (copies for each student or student group) Honouliuli Hydrologic Cycle student worksheet available via the following URL:
https://drive.google.com/file/d/1GR_GIWu-hhIGWOQ9cYLBrgDwhm2GlrA/view?usp=sharing
- (copies for each student or student group) Honouliuli Hydrologic Cycle Game slideshow student handout available via the following URL:
<https://drive.google.com/file/d/17GxORkNE4zKEITn6pJ57Q9rNmFppwf43/view?usp=sharing>
- Honouliuli Hydrologic Cycle Game slideshow to be projected by the teacher available via the following URL:
https://drive.google.com/file/d/1ZhScWQFWUflRraf_I44l3wy8IsLnpAzt/view?usp=sharing

Pedagogy (methods) Used to introduce, teach and close/review lesson

Collaboration and exploration into Honouliuli Hydrologic Cycle to help us understand and place a personal value on water to be able to thrive and sustain.

Lesson Introduction Do we have enough water here in Honouliuli to thrive? In 5 years? 20 years? Explain. Students will be asked to write their response to the introductory question and share their answer in a discussion with a single partner.

Lesson Introduction cont.

Open task: Think why is Honouliuli so brown and dry compared to the other side of the island...why is that? We will review the water/hydrologic cycle process.

Collaboration task: Students will work together (as class) to “move through” our hydrologic cycle game. As they move through the different processes students will compute simple mathematical equations. This game will show them a physical representation on how much water we should/have within Honouliuli.

Individual task: Students complete Honouliuli Hydrologic Cycle with reflection questions with collaborative group support.

Instructional Sequence

Teacher Does	Students Do
Organize students in optimal groups of 4 Set up materials for the game: <ul style="list-style-type: none"> ● each group to receive a bag of dry beans (approx. \$2/each at most grocery stores) ● a large plastic container to represent the Honouliuli Hydrologic bank) ● Each group receives a printed copy of the Honouliuli Hydrologic Cycle Game slideshow student handout ● Each individual receives a copy of the of Honouliuli Hydrologic Cycle student worksheet 	Students can help pass out materials and should review the Hydrologic Cycle Game worksheet
Lead the whole class through slides 6 or 7 depending on observed student progress. When the teacher is confident that students can continue without whole class coaching let groups proceed at their own pace and circulate to offer assistance when needed.	Complete Honouliuli Hydrologic cycle (worksheet) working collaboratively in groups
Lead students with exploring answers to Reflection Questions	Answer reflection questions that relate to our bigger picture.... See closure below

Closure

Reflection Questions: All responses should be in SEEI format and provide a piece of evidence from the game to support your answer.

1. Do we have enough water here in Honouliuli to thrive and be sustainable?
2. Why is it so dry here on the Westside?
3. How do you know if Honouliuli is thriving and/or sustainable?
4. What do you think will happen in the future with our water supply? Explain.
5. What value would you put on water? Explain.

Note to teachers: (details on SEEI format and learning activity available via the following URL:

<https://cutt.ly/wG4VrYe>)

Accommodations for at least 3 types of diverse learners

- **Physical representations** - visual and tactile representations of proportions integrated into the Honouliuli Hydrological cycle came
- **Relevance** - Teacher might have to foster connections with using real life examples
- **Cooperative groups** - Have students work with pairs or a “round table” collaboration to come up with answers and explore what now.

Formative Assessment Method/s For This Lesson

Written answers and discussion associated with the reflection questions in the lesson closure.

Explain How This Lesson Relates To the Unit Summative Assessment

Using real life places/processes within Honouliuli to identify what is working and what is not in relation to a sustainable future. Students will identify problems within our current land stewardship as they relate to water and brainstorm solutions for a sustainable future. Students will identify ways in which they can contribute to the preferred future they envision.