

'Ewa 'Āina Education Initiative

Unit Plan: What stories do *limu* tell? A mini unit of 'Ewa limu (link to Unit Plan: <https://cutt.ly/wJmwdbH>)

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'Ewa 'Āina Site: 'Ewa Limu Project

Detailed Lesson-Project Plan #1: 'Ewa Limu

Essential Unit Questions Addressed:

1. What stories do *limu* tell?
2. How does the structure of various *limu* help them to survive?

Educational Standards:

4-LS1: From Molecules to Organisms: Structures & Processes

- LS1.A: Structure and Function - Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.

RI.4.1 Reading: Informational text: Key Ideas and Details

- 1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text

HĀ framework and/or Hawaiian Culture integrated into this lesson

Strengthened sense of Hawaii

- Students will be enriched with traditional mo'olelo of the 'Ewa moku and learn to think in sounds--pronouncing place names of Hawai'i correctly and understanding their stories.
- They will identify native and non native Hawaiian limu and the mo'olelo behind its name. For example, *limu kala* as the "forgiveness limu."
- Protocol: To start each lesson, oli E Hō Mai will be performed. To end each lesson, an oli Mahalo, or wala'au community circle, or quiet minute of mahalo (Teacher and students can choose depending on the energy of the lesson, the group, and the day).

Materials needed:

Videos, Media, Lesson Presentations/Resources

- 'Oli E Hō Mai and 'Oli Mahalo (<https://cutt.ly/OHgziDi>)
 - Students should be familiar and able to perform these chants to begin and end each lesson
- "Hawaiian Alphabet & Pronunciation Guide" (<https://www.youtube.com/watch?v=Lb1hTLMXNHA>)

Pāhana 'Āina Lupalupa Resource Texts:

- Kindergarten reading level texts to use as an attention getter and introduction to the lesson.
- Hawaiian and English versions available to download through their website, or by clicking on the following links to display to the whole class, or individually through digital devices.
- 'Ōlelo Hawai'i books:
 - Attention getter/introduction read aloud:
 - "He Aha ia Mea he Kāheka?" (link: <https://cutt.ly/rJcE0xV>)
 - Texts for lesson activity:
 - "Nā i'a o ke Kāheka" (link: <https://cutt.ly/zJcE6Dy>)
 - "Ai ka I'a i ka Limu" (link: <https://cutt.ly/7JcUzYB>)
 - "He Limu Ko Ke Kāheka" (link: <https://cutt.ly/9JcUQOo>)

- “[Ku’u Wahi I’a Kāheka](https://cutt.ly/bJclh8H)” (link: <https://cutt.ly/bJclh8H>)
 - English books:
 - Attention getter/introduction read aloud:
 - “[What is a Kāheka?](https://cutt.ly/pJcO0DY)” (link: <https://cutt.ly/pJcO0DY>)
 - Texts for lesson activity:
 - “[I’a of the Kāheka](https://cutt.ly/1JcPj93)” (link: <https://cutt.ly/1JcPj93>)
 - “[I’a Eat Limu](https://cutt.ly/0JcPHrf)” (link: <https://cutt.ly/0JcPHrf>)
 - “[Limu Grows in the Kāheka](https://cutt.ly/dJcANW9)” (link: <https://cutt.ly/dJcANW9>)
 - “[My Little I’a of the Kāheka](https://cutt.ly/1JcA65d)” (link: <https://cutt.ly/1JcA65d>)
 - [Field Guide to Hawai‘i’s Coastal Organisms: Algae & Invertebrates](https://cutt.ly/MHglNsF) (<https://cutt.ly/MHglNsF>)
 - Red, Green, and Brown algae cards can be printed, cut, and laminated to create identification flashcards
 - Extra information on invertebrates to connect to “What is a kāheka?” text
 - [Marine Algae of Hawai‘i](https://cutt.ly/WHgl8BR) (<https://cutt.ly/WHgl8BR>)

Student Assessments and Worksheets

- ["What is limu?" Pre assessment](https://cutt.ly/4HgcBVv) (link: <https://cutt.ly/4HgcBVv>) as a Google Form
 - This is a Google Form. If you want to give a paper test to students, please copy/paste questions and images onto a doc of your choice.
- [Reading 2 Column Notes note taking sheet](https://cutt.ly/YJcSaJW) (link: <https://cutt.ly/YJcSaJW>)
 - The Google doc can be printed (edit to create more space for handwriting if needed before printing) for hard copy worksheets
 - Or, assign this digitally through Google Classroom
- [DLIQ reflection](https://cutt.ly/iJnNKJK) (link: <https://cutt.ly/iJnNKJK>)
- [Jamboard](https://cutt.ly/HJnMfUI) (link: <https://cutt.ly/HJnMfUI>) or Chart paper “exit ticket” students add to after each lesson - *What is limu? Limu is...*
 - Student devices if using jamboard
 - Sticky notes, large chart paper or butcher paper, and pens or pencils
- Student devices for [Google Earth ‘Ewa Limu huaka’i](https://shorturl.at/ayCEU) (link: shorturl.at/ayCEU)
 - If student devices are not available, the Teacher can present on their projector/screen for the whole class to view together

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

Protocol: To start each lesson, oli E Hō Mai will be performed. To end each lesson, an oli Mahalo, or wala’au community circle, or quiet minute of mahalo (Teacher and students can choose depending on the energy of the lesson, the group, and the day).

Lesson Introduction:

Give ["What is limu?" Pre assessment](https://cutt.ly/4HgcBVv) (link: <https://cutt.ly/4HgcBVv>) before beginning these lessons

Whole Class Attention Getter/Introduction: 10-15 minutes

Display and read aloud to students, [He Aha ia Mea he Kāheka?](https://cutt.ly/rJcE0xV) (link: <https://cutt.ly/rJcE0xV>) or “[What is a Kāheka?](https://cutt.ly/pJcO0DY)” (link: <https://cutt.ly/pJcO0DY>)

- Ask students if they have visited a kāheka before, or have seen or know about any of the information presented.
- Use text to introduce to students about *limu*, or marine algae.
- Open [Google Earth ‘Ewa Limu huaka’i](https://shorturl.at/ayCEU) (link: shorturl.at/ayCEU) to explain that ‘Ewa was once known for its abundance in *limu* up and down the coastline from *Kualaka’i/Ka’uluokaha’i* (Nimitz Beach area) to *Pu’uloa*. Briefly visit each site by clicking on “PRESENT” on Google Earth ‘Ewa Limu huaka’i. As

you present the different sites, share with students about some of the *limu* such as *manauea*, *kala*, *kohu*, and *wawae'iole*. Share that *limu* was $\frac{1}{3}$ of the ancient Hawaiian diet of fish, poi, and *limu*. *Limu* was used as food, medicine, and habitats to other living things.

- Introduce *limu* units by sharing, "In this unit, you will learn about the importance of *limu* in our ecosystem."

(Students will actively listen and participate in discussion)

Teacher Do	Student Do
<p>Activity: 50 - 60 minutes (~25 - 30 min each station)</p> <p>Explain to students that there will be different stations to rotate through during this work period. "Keep in mind our essential questions: <i>What stories do limu tell?</i> and <i>How do the structures of various limu help them to survive?</i></p> <p>Review how to pronounce Hawaiian vowel sounds and how to read the diacritical marks <i>ʻokina</i> (glottal stop between syllables) and <i>kahakō</i> (macron that lengthens and adds stress to the marked vowel). Use "Hawaiian Alphabet & Pronunciation Guide" (https://www.youtube.com/watch?v=Lb1hTLMXNHA) as needed.</p> <p>Station 1: Reading (This station can be split into smaller station by grouping texts)</p> <ul style="list-style-type: none"> ● "I'a of the Kāheka" ● "I'a Eat Limu" ● "Limu Grows in the Kāheka" ● "My Little I'a of the Kāheka" ● Basic Structures & Functions of Limu <p>Station 2: Limu Exploration</p> <ul style="list-style-type: none"> ● Look, touch, feel the different types of limu to learn its name and story. ● If fresh or live samples are unavailable, use the Field Guide to Hawai'i's Coastal Organisms: Algae & Invertebrates (https://cutt.ly/MHglNsF) and/or Marine Algae of Hawai'i (https://cutt.ly/WHgl8BR) digital resources for students to explore. 	<p>Station 1: Read texts individually or as a small group for the main idea and key information. Set up a notebook, or use the Reading 2 Column Notes note taking sheet (link: https://cutt.ly/YJcSaJW).</p> <p>Station 2: Limu Exploration - look, touch, feel the different types of limu to learn its name and story. Sketch and label external structures of limu.</p> <p>Think about the essential questions: What stories do limu tell? How do the structures of limu help it to survive?</p>

Closing: As a whole group, class discusses thoughts, feelings, new understandings, questions, etc. from the day. This discussion will lead into their “exit ticket” jamboard and DLIQ reflection.

Wala’au (Talk Story) Circle: Bring back all students to whole group instruction. Have students reflect on their learning and share with the group. Instruct students to sit in a circle. Use any of the essential questions and assignment questions to prompt students to share. This activity works once a healthy classroom environment and relationship has been established in order to share and communicate respectfully. A “talking stick” may be used and passed to each student.

Review essential questions: *What stories do limu tell? How do the structures of various limu help it to survive?* Have students share their thoughts and experiences from the readings and exploration activities.

- Arrange themselves to sit in a circle.
- Refer to questions displayed or written on the board as needed.
- Share thoughts on their turn, or respectfully pass (encourage students to share at least 1 thought during wala’au circle and to not “pass” every opportunity to voice their opinion)
- Ask clarifying questions.

Closure

“Exit Tickets”: Instruct students to complete [DLIQ reflection](https://cutt.ly/iJnNKJK) (link: <https://cutt.ly/iJnNKJK>). Remind students to include details from their experience and the readings to support their answers. Edit the doc to have more writing space if you will print copies for students to complete. Or, students can complete the doc by typing, or copying the questions into their notebook and then answering the questions. This can also be assigned as homework.

Finally, have students add to [“What is limu?” jamboard](https://cutt.ly/HJnMfUI) (link: <https://cutt.ly/HJnMfUI>) or chart paper to complete the statement, “Limu is...” and “What stories do limu tell?” and see how their understanding changes as more is learned.

Accommodations for at least 3 types of diverse learners

Virtual Learning:

- Present Jamboard, Google Slides, and Google Earth digitally.
- Use a document camera to share fresh limu. Or, share up close, high pixel photos, for students to learn about the structures of different limu and how to identify them

SpED:

- Print out assignment sheets. The Google Docs can be adjusted to increase size, change font, or present 1 question at a time on each page.
- For the readings, present texts to students 1 at a time each work period, instead of multiple texts in 1 work period.
- You can choose to record yourself reading the story out loud as an audio file using QuickTime or similar application tool. Then, students can listen to the read aloud if they have a difficult time focusing on the reading on their own.

EL:

- Create a 3 column note table where students can write the english, Hawaiian, and their native language about the types of limu or sea creatures they learn about
- Ask students to share about limu stories from their culture

Suggested Formative Assessment Method/s For This Lesson

- [Jamboard](https://cutt.ly/HJnMfUI) (link: <https://cutt.ly/HJnMfUI>)/chart paper as an “exit ticket” or homework assignment at the end of each lesson. Students add to jamboard to answer the question, “What is limu?”
- [DLIQ reflection](https://cutt.ly/iJnNKJK) (link: <https://cutt.ly/iJnNKJK>) “exit ticket” or homework assignment at the end of each lesson.

Explain How This Lesson Relates To the Unit Summative Assessment

This lesson introduces limu to the students through readings about tidepools and sea creatures in Hawai'i. Students learn about the basic structure and function of limu in a marine ecosystem, and its role in the food chain. This all helps students to begin to understand the importance and cultural significance of limu, which leads to the final advocacy project.