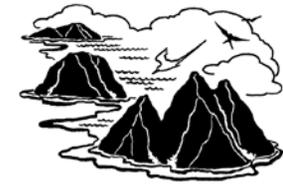




‘Ōhi‘a Project
Humans and the Environment Unit



Exploring the Islands
Grade 4

HCPS Content Standards and Benchmarks	HCPS Performance Indicators
<p>Science: <i>Mālama I ka ‘Āina</i>—Sustainability</p> <ul style="list-style-type: none"> • Sustaining food supply: Explore how agricultural technology affects humans and the environment. • Conservation of resources: Examine and explain why there is a need to conserve natural resources (including fossil fuel). 	<ul style="list-style-type: none"> • Sustaining food supply: Identify agricultural methods used in Hawai‘i to increase food production and their impact on humans and the environment. • Conservation of resources: Examine why there is a need to conserve natural resources (including fossil fuel).
<p>Social Studies: Cultural Systems</p> <ul style="list-style-type: none"> • Explain how language, stories, music, dance, artifacts, traditions, beliefs, values and behaviors are elements of culture and contribute to the preservation of cultures. 	<ul style="list-style-type: none"> • Interpret and/or illustrate how Hawaiian culture is composed of items (arts, artifacts), <u>ideas</u> (beliefs, values) and <u>behaviors</u> (observable practices that may or may not be related to values and beliefs). • Give examples of the items, <u>ideas</u> and <u>behaviors</u>. • Give examples of how the components of Hawaiian culture sustain the culture.
<p>Social Studies: History—Change, Continuity, Causality</p> <ul style="list-style-type: none"> • Place people and events in chronological order to explain causal relationships between and among people and events. • Identify change and continuity in historical eras. 	<ul style="list-style-type: none"> • Select key people, events and/or ideas in an era(s). • Organize the key people, events and/or ideas into a chronology. • Using the chronology, explain cause and effects (between/among the key people, events and/or ideas). • Using the chronology, explain how key people, events and/or ideas changed or stayed the same over time.
<p>Social Studies: Environment and Society</p> <ul style="list-style-type: none"> • Analyze the consequences of human modification of the physical environment in Hawai‘i, the U.S. and other parts of the world and implement a plan of action to address the consequences. 	<ul style="list-style-type: none"> • Identify effects of human activity on the physical environment. • Assess the positive and negative consequences on the environment. • Devise and carry out a plan to address the consequences.

Unit at a Glance

Content Standards	Classroom Activity and ETI Telecast	Essential Questions	Key Concepts	Assessment
Science: <i>Mālama I ka ʻĀina</i> —Sustainability	Let's Go Voyaging Activity: "The Remarkable Journey: ETI Program: "Visions of Voyaging"	What can Polynesian voyaging teach us about voyaging into our future? How do Hawaiian values associated with successful voyaging contribute to living sustainably on islands?	Polynesian voyagers thoughtfully planned and carried out successful voyages that covered the vast Pacific. Rituals associated with preparing and carrying out a voyage are reflected in Hawaiian values and a close relationship to the natural world. A successful voyage depends on the wise use of finite natural resources.	Students create a Hawaiian values grid showing journal entry (from "Aunty Momi's Journal") and the corresponding value(s). Students write their reflections on the importance of values in a culture and the similarities between conserving resources on a canoe and using resources wisely on our islands.
Science: <i>Mālama I ka ʻĀina</i> —Sustainability	OP Activity: "Wai Ola: Water of Life" ETI Program: "Wai Ola: Water of Life"	What can we learn from traditional Hawaiian <i>kalo</i> (taro) farming methods about using natural resources wisely?	Within an <i>ahupuaʻa</i> (traditional Hawaiian land/water management unit) were the resources needed to sustain life and grow the staple Hawaiian crop, <i>kalo</i> . To grow their staple crop, <i>kalo</i> , Hawaiians used agricultural technology, involving an extensive <i>ʻauwai</i> system that diverted water back to the stream. The amount of water given to a <i>kalo</i> farmer within the <i>ahupuaʻa</i> depended upon his cooperation in building and maintaining the <i>ʻauwai</i> (irrigation canals).	Draw a diagram of the <i>ahupuaʻa</i> and on one side of the stream illustrate traditional Hawaiian land use and water management using labels and descriptions. Illustrate and/or describe the process involved in planting, cultivating, harvesting, and preparing <i>kalo</i> . Write a reflective journal entry from one of several prompts.

Content Standards	Classroom Activity and ETI Telecasts	Essential Questions	Key Concepts	Assessment
<p>Social Studies/History: Change, Continuity, Causality</p> <p>Social Studies: Environment and Society</p> <p>Science: <i>Mālama i ka 'Āina</i>—Sustainability</p>	<p>OP Activity: “Water Watchers”</p> <p>ETI Program: “Watershed Watch”</p>	<p>How has land use affected our fresh water supply over time?</p> <p>Why do islands need forested watersheds?</p>	<p>There are many competing demands for fresh water in Hawai‘i. Demands have increased over time, while rainfall has not.</p> <p>The health of watersheds depends on the health of the forests.</p> <p>Water resources may be managed through conservation and watershed protection.</p>	<p>Students create a diagram that: a) summarizes how demands for fresh water use in the Islands changed over time; b) organizes events into a chronology, and c) describes ways to conserve water and protect the watershed.</p> <p>Students fill in the second half of the <i>ahupua‘a</i> diagram started in the previous activity, “Wai Ola: Water of Life”, illustrating and/or describing changes in land use since early Hawai‘i.</p>
<p>Social Studies: Environment and Society</p> <p>Science: <i>Mālama i ka 'Āina</i>—Sustainability</p>	<p>OP Activity: “Where Does the Gutter Go?”</p> <p>ETI Program: “We Can Make a Difference”</p>	<p>How can we make a difference for our environment?</p> <p>How do our activities on land affect our streams and ocean?</p>	<p>Individual actions can have a far-reaching effect on the quality of ground and surface water in Hawai‘i.</p> <p>Protecting our streams is beneficial to people, plants and animals.</p>	<p>Students write a reflective journal containing illustrations and labels and describing the impacts of non-point source pollution and solutions.</p>

Culminating Activity

Students create an educational display and make presentations to other classes in school on water use in their own *ahupua'a* historically, current water use, issues concerning the water supply and solutions to problems. The display should illustrate and/or describe with labels the following:

- Source of fresh water in the *ahupua'a* in old Hawai'i, and the source today. One side of their display could represent old Hawai'i, and the other side could represent present day.
- The path of water from the source to the faucet.
- The users of fresh water in the *ahupua'a* (e.g., farmers, ranchers, business owners, military, home owners, city and county, parks and recreation, schools, etc.), and the impacts of these users on the water supply.
- Problems concerning the water supply in the *ahupua'a* and possible solutions to the problems.

Possible *Ahupua'a* Research Questions:

(from MGF's *Let's Go Voyaging* curriculum, "Our Ahupua'a" lesson)

- What crops were/are grown? (Are old *lo'i* walls and *'auwai* still visible?)
- Are there fishponds? Are they still being used?
- Where did the fresh water come from and how was it used? Where does our fresh water come from today? Why do we no longer drink from our streams?
- Is soil eroding into the stream and onto the reef? What is the cause of the erosion?
- What kinds of food would have been harvested from the sea and the streams? How is this harvest different today?
- Where does most of the food come from today? How does our diet compare to the traditional Hawaiian diet?
- What resources did Hawaiian gather from the forest?
- How is the forest important to us today?
- How could we use the fresh water, land and sea more wisely in our *ahupua'a*?
- How is land use different today from the early 1900s? (From agriculture to plantation to development?)
- How did/do people share with one another within the *ahupua'a*?
- How did/do people nurture the land within the *ahupua'a*?
- What legends can you find about your *ahupua'a*?
- Find a historic map and compare it to a more recent map. Have shoreline features changed? How?