

**Ono Fruits & Veggies**  
**Mai e 'ai**  
**(Come and Eat)**

**Sample Lesson Plan**  
**5<sup>th</sup> and 6<sup>th</sup> Grade**

- 1) *Distribute the Hawaiian Kalo, Past and Future handout and instruct students to answer the questions.*
- 2) *Early Hawaiian Energy Foods Handout*
- 3) *Discuss other local foods and what they can do for our health.*
- 4) *Fruit and Veggie Goals Handout*
5. *Crossword Puzzle*

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# **Hawaiian Kalo, Past and Future**

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## **The Hawaiian staff of life.**

The early Hawaiians planted kalo in marshes near the mouths of rivers. Over years of progressive expansion of kalo lo'i (flooded taro patches) up slopes and along rivers, kalo cultivation in Hawai'i reached a unique level of engineering sophistication. As a food crop, kalo played an important role in the diet of the Hawaiian people. In places like Kona, where conditions for its cultivation were not optimal, other crops, including breadfruit in the moist uplands and sweet potato in the drier lowlands, were significant, but taro remained the favored food.

To Hawaiians, growing kalo was not merely an activity of food production but was strongly bound to their culture and beliefs about creation. According to one legend about creation, sexual union between the godbeings Wākea (male) and Papa (female) first formed the islands. Their union produced a child named Hāloanaka, who did not survive and was buried. From the child's body grew the first kalo plant. The next child, named Hāloa, became the first human to live in the islands, and from him the Hawaiian people descended. Thus, some believe that the kalo plant, arising from the prior-born child, is superior to and more sacred than man. The younger Hāloa would respect and care for the elder brother and in return would receive sustenance and nourishment.

Because kalo was a principal food source for most early Hawaiians, it had great social importance. Certain kalo cultivars had ceremonial significance and were used as offerings to the gods; others, such as the red cultivars Lehua and Pi'i ali'i, were reserved to be eaten only by the chiefs (ali'i); and some, including those with low acidity such as Lauoa and Haokea, were used for medicinal purposes in healing. The Hawaiian concept of family, 'ohana, is derived from the word 'ohā, the axillary shoots of kalo that sprout from the main corm, the makua. Huli, cut from the tops of makua and 'ohā, are then used for replanting to regenerate the cycle of kalo production.

## **Nutritional value**

Kalo starch is one of the most nutritious, easily digested foods. Kalo corms are high in carbohydrate in the form of starch and low in fat and protein, similar to many other root crops. The starch is 98.8 percent digestible, a quality attributed to its granule size, which is a tenth that of potato, making it ideal for people with digestive difficulties. The corm is an excellent source of potassium (higher than banana), carbohydrate for energy, and fiber. When eaten regularly, kalo corm provides a good source of calcium and iron. Kalo leaves eaten as a vegetable (called lū'au in Hawaiian) are excellent sources of provitamin A carotenoids, calcium, fiber, and vitamins C and B2 (riboflavin), and they also contain vitamin B1 (thiamin).

Kalo, like other plants in its family, is considered poisonous because its tissues contain an acrid component; thorough steaming or boiling eliminates this and allows it to be eaten.

Answer the Questions below based on the reading section.

1. Because kalo was a principal food source for most early Hawaiians, name some ways in which kalo was used.

2. The kalo is an excellent source of potassium. Higher even than what other fruit?

3. The early Hawaiians planted kalo where?

4. According to one legend about kalo's creation where did kalo come from?

5. What part of the kalo do you use to regenerate the cycle of kalo production?

<p><u>Topic and Background</u></p>	<p><u>Time</u></p>	<p><u>Learning Activity</u></p>	<p><u>Pre-Preparation</u></p>
<p><b>II. The most important Early Hawaiian Energy Food - Kalo (continued)</b></p> <p><i>Kalo</i> was grown in a <i>lo'i kalo</i>. <i>Kalo</i> was pounded as a way of preserving it for voyages. Water (<i>wai</i>) was added to make poi. Hawaiians were the only Polynesians to eat <i>kalo</i> as poi. The early settlers brought about 50 varieties of <i>kalo</i> with them. Over the years, the Hawaiians developed over 300 varieties. Special varieties were developed according to the type of soil and the amount of sun and water available in a particular region.</p> <p>Some parts of the islands were too dry for <i>Kalo</i>; sweet potato (<i>ʻuala</i>) was eaten as the primary energy or staple food.</p> <p>"I am a <i>Kalo</i> group activity" game instructions.</p>	<p>15 min.</p>	<p>B. Kupuna briefly shares story of how <i>kalo</i> represents the <i>ʻohana</i>. Have poster of <i>kalo</i> or actual plant available to discuss individual parts of the plant.</p> <p>C. "I am a <i>Kalo</i> small group activity" In small groups have youth brainstorm and write down the things they know about <i>Kalo</i>. (One secretary and reporter per group. Reporter presents one of the group's ideas to the class).</p> <p>D. Discuss other energy foods eaten in early Hawai'i. Leader places Early Hawaiian energy food models on board. Children add foods to students food wheels and label with names of food groups if needed.</p>	<p><u>Optional</u>: Legend of <i>Kalo</i> "Mo'olelo o <i>Hāloa</i>" <i>Kalo</i> poster</p> <p><i>Kalo</i> plant with all parts; leaf, stem, corn with small hair-like roots, and <i>ma keiki</i></p> <p>"I am a <i>kalo</i> group activity" handout</p> <p><u>Optional</u>: "Kalo activity" can be done as a round robin Other starches may be used.</p>
<p><b>III. Food Activity - Early Hawaiian Energy Foods</b></p> <p>Refer to "Healthy Snacks for Today's Families" handouts on cooking <i>Kalo</i>.</p>	<p>10 min.</p>	<p>A. PA displays early Hawaiian Energy foods: <i>kalo</i>, poi and/or any other Early Hawaiian starches available (sugarcane, breadfruit).</p> <p>B. Youth wash hands (<i>malama i ke ola kino</i>). Youth cut steamed foods, mix poi, etc. to prepare foods for tasting.</p> <p>C. Eat and clean up.</p>	<p>Steamed <i>kalo</i>, poi... Bowl, knife, cutting board, dull knife or shell for peeling and slicing <i>kalo</i>. Bowl, water, spoons and small cups for mixing and serving poi. Napkins Sponge, soap, towel for cleanup</p>

## Mo`olelo O Hāloa

### (Story of Hāloa)

Retold by Mahealani Pescaia

Institute for Hawaiian Culture Studies

Many years ago, when there were only the heavens and the earth, Wakea (skyfather) kept watch over the heavens and his wife, Papa (earthmother) ruled the earth. Wakea fell in love with a beautiful wahine (young maiden), Ho`ohokuiklani. A keiki (child) was soon born to Wakea and this beautiful wahine but the kamaiki (baby) was deformed. The baby died soon after birth and was buried close to the house in the eastern corner.

Soon a strange plant sprouted from the spot where the keiki had been buried. Its broad green leaves grew on long stalks that swayed in the breeze. The plant was supported by a bulbous corm which produced many oha (offshoots). It was the first kalo (taro) plant. They named this first born keiki kane (son) Haloanaka because of its naka (quivering) leaves and haloa (long) stems. The kalo continued to grow producing many keiki (offshoots) called `oha. These keiki were planted and more oha were produced until bountiful amounts of kalo were growing in Hawai`i.

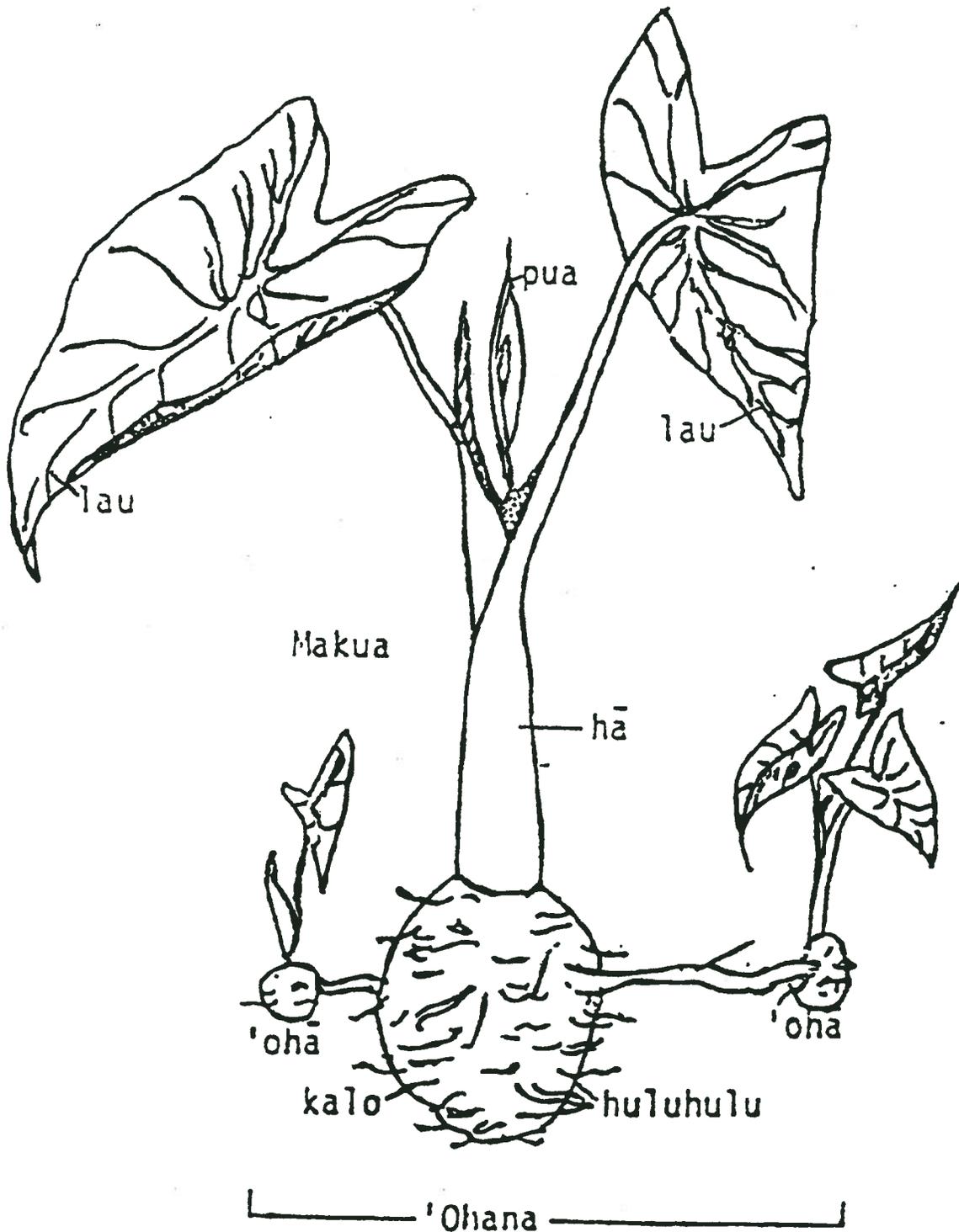
Ho`ohokukikalani and Wakea were soon blessed with another keiki. He was also named Haloa after his older brother. He had many `oha or children and his descendants were the Hawaiian people and their leaders.

A strong bond holds people and the kalo. The old Hawaiians say that it was the will of the gods that Haloanakalaukapalili (long stemmed trembling leaf) was born first for he provided the necessary food for the Hawaiian people who came later.

In reverence to this older brother, the people of Hawai'i considered the kalo as a very sacred plant. Nā wahine (women) were not allowed to handle the kalo at all. When the poi bowl was placed on the table, the people were not allowed to argue or speak any kind of evil while eating.

The kalo plant with its oha is likened to a family with its keiki. Thus the term `ohana was used to include all members of the family clan, nuclear and extended.

# KALO



Source: KA WAI OLA O OHA, Dec. 1988, Vol. 3, No. 2

UH Manoa, CTAHR, CES  
EFNEP, Foods of Hawai'i, Lesson #5  
1991

## I am a Kalo Activity Directions

### Objectives:

1. Participants will acknowledge "kalo" as the Hawaiian word for taro.
2. Participants will share with each other what they know about kalo and learn new things about kalo.

### Preparation:

1. Have one kalo (corm).
2. Review kalo fact sheet.
3. Have food preparation materials ready:  
Soap, water, and paper towels for hand washing.  
Steamed kalo, sweet potato (and/or ulu), knives, cutting boards, napkins, cups, and water for drinking.

### Activity:

1. Participants and leaders sit or stand in a circle.
2. Leader holds the kalo and recalls to the class that kalo was the most important food eaten in early Hawai'i. The participants are told that they will be asked to share something they know about kalo when the corm reaches them as it is passed around the circle to the right.
3. The leader and the group ask "What is kalo?"
4. The leader demonstrates how the game is played by saying: "I am a kalo and I was the most important food eaten in early Hawai'i."
5. The kalo is then passed to the next person and the group asks again, "What is kalo?" Each person responds by saying "I am a kalo and..." (gives a fact about kalo).
6. If a participant can't think of anything, the kalo is passed to the next person. Go around the circle once. Leader can then ask if participants have additional facts to share about kalo. Accept 2-3 more responses.
7. Return to those participants who were unable to give a fact about kalo and ask them to share "I learned that kalo..." (and give one fact they learned about kalo today.)
8. Children then count off into groups, as they count off "1 - 2 - 3" around the circle. (All the "one's" go into one groups, "two's" into another group, etc.)
9. Groups participate in preparing kalo, poi, and sweet potato (and/or ulu for food tasting).

**EARLY HAWAIIAN ENERGY FOODS FACT SHEET**  
**(Foods of Hawaii: Lesson 5)**

**Food**

**Preparation, Cultivation and Storage**

**Yam (Uhi)**

The early Hawaiian planted yams for use during droughts and dry seasons.



Their growth is more seasonal than taro or sweet potato. The vines grow during summer, wither down in December, but the tubers in the ground continue to fill out. When new shoots appeared in the beginning of the rainy season, the tubers were dug up.

Yams were steamed in the imu and eaten while hot.

**Banana (Mai'a)**

Early Hawaiians grew about 70 varieties of bananas. Except in times of famine all but three kinds were reserved as food for men. The fruit was eaten raw or cooked according to the variety.



Banana was more of a delicacy than a staple food.

Each plant bears one stalk of fruit and is cut down or dies. More plants grow from root suckers (pohuli) that come up from around the base of the original plant.

Bananas grow best in moist areas that are protected from the wind. Early Hawaiians planted bananas around dwellings, or on banks between the wet taro ponds (lōi), or in taro ponds no longer flooded and used, and in valleys and gulches. They were not grown on plantations.

**Breadfruit (Ulu)**

There was only one variety of breadfruit in early Hawai'i. It's fruit bearing season was June, July and August. Therefore, breadfruit was not considered of primary importance in the early Hawaiian diet.



The mature fruit was broiled over coals or cooked in the imu. It was eaten in this form or pounded into poi'ulu. Ripe uncooked fruit was mashed, mixed with coconut cream, wrapped in ti leaf bundles and steamed in the imu to make pudding (pepeie'ulu). The pudding was sometimes sliced when cold and dried in the sun until an oily film formed. If sunned occasionally to prevent mildew, this food will last from one breadfruit season to another.

## Sugarcane (Kō)

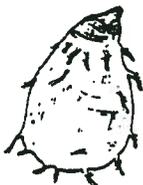


There are Hawaiian names for some 40 varieties of sugarcane. In early Hawaii, stalks or stems were carried on journeys and chewed for quick energy. They were also chewed throughout the year by adults and children as one of the few sweet foods. The fibers cleansed their teeth and strengthened their gums.

The rind or skin was peeled from the stalk; the pulp is crushed, and the juice extracted by squeezing with the hands. The juice was fed to babies and used to sweeten such foods as starch and coconut milk pudding (haupia), and grated taro and coconut milk pudding (kulolo).

Cane was planted in clumps where there was good soil and moisture. It thrived along banks of taro ponds and served as hedges between fields and as a windbreaker when grown in thick clumps.

## Taro (kalo)



Taro was the Hawaiian's most prized starch food.

Kalo (taro corn) was baked or steamed in the underground oven (imu) and peeled while hot with either an opiki shell, cowry shell, or sharp rock. It was eaten like this, called kalo pa'a, or pounded with water to make poi. The Hawaiians preferred poi to the unpounded corn as their primary staple food.

A dessert pudding called kulolo was made by grating the raw taro, mixing it with coconut cream, and baking it in the imu.

Sometimes taro was cut into thin pieces and dried in the sun. This dried taro was called a'o.

Most of the time, taro was made into poi. A man sat in front of a long hallow board. He put cut pieces of taro on the board and pounded the taro with a special stone tool called a poi pounder. The poi pounder was kept wet as the poi was pounded to keep it from sticking to the pounder.

Taro pounded in this way was called pa'i'ai. It could be stored and kept in a wooden bowl for a long time, or wrapped in ti leaves and taken on a long trip. It did not spoil easily but had a long-lasting quality. Pa'i'ai was also dried to be taken on journeys. Pa'i'ai mixed with more water made poi. Some poi had more water than others. A person needed three fingers to eat more watery poi.

Sweet Potato  
(‘Uala)



The root of the ‘uala was second in importance to taro as a staple starch food. Over 200 varieties were known to the Hawaiian planters. This plant matured in three to six months and required less work in planting and cultivation than taro.

‘Uala was eaten after being cooked in the imu. They were mashed, with water being added to make poi‘uala. Harvested roots could be kept in the storehouse for some time. The roots were also cooked, placed in loosely woven baskets in the wind and dried to preserve them.

Raw ‘uala were peeled and grated, mixed with coconut cream, placed in ti leaf bundles to be steamed in the imu to make a pudding known as ko elepalau.

Coconut (niu)



Coconuts did not flourish as well in Hawai‘i as on islands closer to the equator. However, nearly every part of the plant was used in some way by early Hawaiians.

Coconut water (wai niu) was drunk as a beverage, especially on long voyages. The flesh or meat of the coconut was eaten at different stages of ripeness. The flesh of the mature coconut is grated and the cream is expressed for use in cooked foods.

The dishes prepared from coconut cream were all in the nature of special foods. Because of this, it is believed that coconut was not a part of the staple everyday foods in the Hawaiian diet.

To prepare the coconut, the husked coconut was tapped sharply with a stone in one or more places along its circumference to break it into halves. In the early days, the flesh (‘i‘onui) was scraped out with an opihi shell or a grater made from a section of the conch shell.

To cultivate, a sprouted coconut was planted in a hole in which an octopus (he‘e) had been placed. The octopus, it was believed, gave the tree roots a firm grip and spread like its own arms, and the nuts would grow round like the octopus head. Two varieties of coconut were known in old Hawai‘i.



*Ono Fruits & Veggies*

*Mai o 'ai  
(Come and Eat)*

## My Fruit & veggie Goals

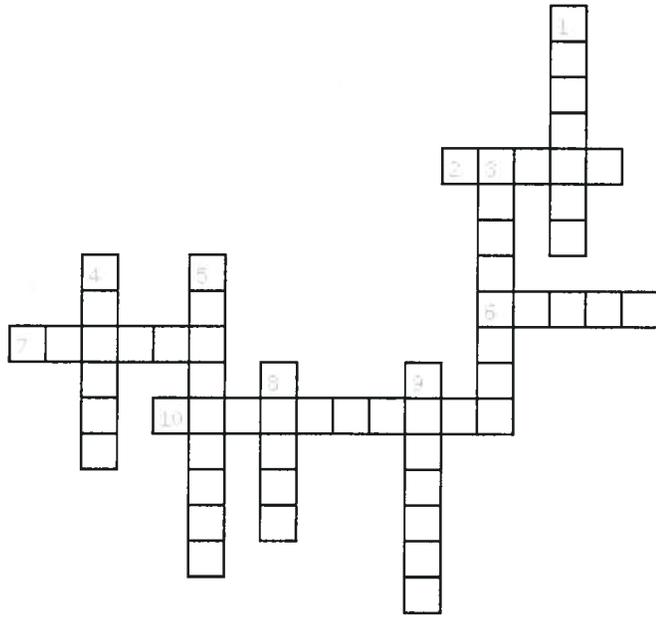
Name \_\_\_\_\_

1. Draw a picture of your favorite fruit.

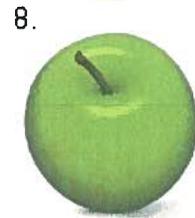
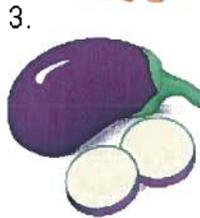
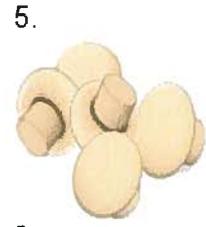
2. Draw a picture of your favorite vegetable.

3. Draw a picture of fruits and vegetables you would like to try.

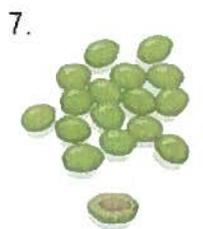
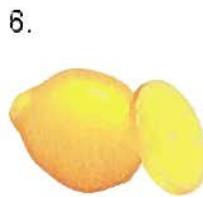
# Crossword



Down



Across



Y K K O L I V E S K F E  
 O S C Z W A C V G K O G  
 M U S H R O O M S S D G  
 U N D O G F G G F N K P  
 C D O G U S J R F O F L  
 D A V X K K Z A Q N O A  
 Y P R N K H U P L I I N  
 E L V R K W E E H O T T  
 M V E V O Z Q F W N A X  
 E R C M G T K R U S E V  
 L W A R O C S U I C N A  
 O C P Q C N Y I C V G U  
 N Y P T G S N T N P J Q  
 K Z L W P U M P K I N J  
 C J E B J C M U T J T W

