Nā Mea’ai o Hawai‘i
Foods of Hawai‘i

University of Hawai‘i
College of Tropical Agriculture & Human Resources
Cooperative Extension Service
Expanded Food and Nutrition Education Program
and
Department of Education
Hawaiian Studies Program

1991
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Foods of Hawai‘i Youth Program
(Nā Mea‘Ai o Hawai‘i)

I. Introduction to the program:

The Foods of Hawai‘i (FOH) program is a cooperative effort of the U.H. College of Tropical Agriculture and Human Resources, Cooperative Extension Service, Expanded Food and Nutrition Education Program and the Hawai‘i Department of Education, Hawaiian Studies Program. The program was recently piloted at Pope, Pu‘ohala, Waimanalo, Kapunahala, Palolo, Kuhio and Kalihi Elementary Schools. The program is delivered by a Kupuna in the Hawaiian Studies Program and a Program Assistant from the Cooperative Extension Service’s, Expanded Food and Nutrition Education Program. The target group of the program is fifth graders enrolled in public schools, which have the highest percentage of low income youth. The Foods of Hawai‘i Brochure is enclosed in the FOH Introduction Appendix.

EFNEP is a federally-funded outreach program designed to assist low-income families in their food and nutritional practices. Trained para-professionals work with homemakers individually in their homes or in group settings (such as Head Start Parent Groups), and with youth in classroom and community settings. EFNEP is administered by the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, at the University of Hawai‘i, USDA Cooperating.

II. Program Goals, Objective and Lesson Overview

The curriculum consists of 14 lessons, designed to be delivered in a one hour time period by the EFNEP Program Assistant and the Kupuna. Lesson Plans developed for each lesson consists of concepts, objectives and activities including a food activities. Foods wheels based on a three food grouping system (Energy foods, Body Building Foods and Protective Foods) for Early Hawaiian Foods and Foods eaten Today. Pre and Post test evaluations are enclosed to evaluate the impact of the Foods of Hawai‘i Program.

A. Goals:

Primary Goal:

1. To motivate youth to make healthy food and lifestyle choices.

Secondary Goals:

2. To promote positive interpersonal relationships and inter-ethnic harmony.

3. To enhance self-esteem.

4. To develop self-responsibility.
B. Nutrition Education Objectives: (In order by lesson)

Notes:
* indicates that Objectives 4-11 will be evaluated via pre and/or post test questionnaires.
◆ indicates that this objective also supports a Hawaiian Studies Program Objective.

1. Youth will know that the Foods of Hawai‘i program (Nā Mea `ai o Hawai‘i) is a cooperative effort between EFNEP (CES, UH) and the DOE, Hawaiian Studies Program. (Lesson 1 and 14)

2. Youth will know that the goal of the Foods of Hawai‘i program is "To motivate youth to make healthy food and lifestyle choices." (Lesson 1, 13 and 14)

3. Youth will realize that all of Hawaii’s ethnic groups have contributed to the diets of people in Hawai‘i today. (Lesson 2) ◆

4. Youth will name the three food groups: Energy foods, Body-Building foods, and Protective foods. (Food wheels will be completed accordingly/Lessons 4,5).* ◆

5. Youth will understand the three basic functions of foods: a) to provide energy for work and play (Energy Foods/Lesson 5), b) for growth, repair, and to build muscles, bones and blood (Body-Building foods/Lesson 7) and, c) for protection from disease. (Protective foods/Lesson 9) * ◆

6. Youth will name at least two Energy Foods (grains and starchy vegetables) and will state that we need six or more servings of Energy foods each day. (Lesson 5 & 6) (Food wheels will be completed accordingly.* )◆

7. Youth will state that all Body-Building foods (meats, meat alternatives and dairy products) contain protein. Youth will name two Body-Building foods one rich in calcium and one rich in iron. Youth will state that we need at least four servings of Body-Building, two or more rich in calcium, and two rich in iron each day. (Lesson 7 & 8) (Food wheels will be completed accordingly.)* ◆

8. Youth will name two Protective foods (fruits and vegetables) - one rich in Vitamin A and one rich in Vitamin C. Youth will state that we need five or more servings of Protective foods each day, including one food high in Vitamin A and one rich in Vitamin C (Lesson 9 & 10). (Food wheels will be completed accordingly).* ◆

9. Youth will distinguish between healthy and not-so-healthy foods. (Lesson 12)* ◆

10. Youth will identify foods high in fat, one food high in sodium, and one food high in sugar and healthier alternatives. (Lesson 11)* ◆

11. Youth will identify one health concern with eating too much fat (heart disease and obesity), sodium (high blood pressure and water retention), and sugar (dental cavities and obesity). (Lesson 12)* ◆
12. Youth will understand that:

a. Nutrients are chemicals in foods which are used by the body for energy, body-building and protection from disease. (Lesson 3)

b. There are six classes of nutrients: carbohydrates, protein, fat, vitamins and minerals, and water. (Lesson 3)

c. Water is essential to all life; it is the most important nutrient. (Lesson 3)

d. Most foods found in nature provide a variety of nutrients which maintain good health. Some foods are richer in nutrients than others. (Lesson 4)

e. We group foods to help us learn which foods we need to eat and how to make wise choices. (Lesson 4)

f. Energy foods primarily contain complex carbohydrates (including fiber), B-Vitamins, iron and fiber are found in the Energy food group. (Lesson 6)

g. Whole grains are a healthier choice than refined grains because they contain the bran and germ of seeds. (Lesson 6).

h. Protein, iron, and calcium are key nutrients needed for growth, repair and building of our muscles (protein), bones and teeth (calcium), and blood (iron). (Lesson 8)

i. Vitamins, particularly Vitamin A and Vitamin C, help protect our bodies from disease. (Lesson 9)

j. Eating too many foods rich in sugar and fat can displace other foods needed for good health. (Lesson 11, 12)

13. Youth will learn to prepare simple snacks and meals which are rich in nutrients found to be lacking in diets of families in Hawai‘i. (variety of lessons)

14. Youth will learn basic food preparation and food safety procedures. (all lessons)

15. Youth will identify positive dietary and food sanitation changes they have made because of the Foods of Hawai‘i program.
B. Hawaiian Lifestyle and Self-Esteem Objectives:

1. Youth will learn and practice the early Hawaiian concepts of:

<table>
<thead>
<tr>
<th>Hawaiian Concept (●)</th>
<th>English meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. aloha</td>
<td>love, greeting</td>
</tr>
<tr>
<td>b. `ohana*</td>
<td>family unit symbolized by taro</td>
</tr>
<tr>
<td>c. alu like</td>
<td>to pull together</td>
</tr>
<tr>
<td>d. kuleana*</td>
<td>individual rights and responsibilities</td>
</tr>
<tr>
<td>e. kōkua</td>
<td>individual help</td>
</tr>
<tr>
<td>f. laulima*</td>
<td>cooperation of many hands working together</td>
</tr>
<tr>
<td>g. `ike</td>
<td>understanding</td>
</tr>
<tr>
<td>h. lōkahi</td>
<td>unity and harmony</td>
</tr>
<tr>
<td>i. mālama i ke ola kino*</td>
<td>personal sanitation</td>
</tr>
<tr>
<td>j. mālama pono i ka ola kino</td>
<td>to take righteous care of the body's health</td>
</tr>
<tr>
<td>k. aloha and malamaʻāina</td>
<td>to love and take care of the land: conservation</td>
</tr>
<tr>
<td>l. waiwai</td>
<td>wealth</td>
</tr>
<tr>
<td>m. mālama i ke kai</td>
<td>to take care of the ocean</td>
</tr>
<tr>
<td>n. akamai</td>
<td>wise, sharp and smart</td>
</tr>
</tbody>
</table>

2. To create and maintain an atmosphere of open communication and trust, which serves to enhance self-esteem and promote positive inter-personal relationships (Lesson 1) ●

3. Youth will understand that the Early Hawaiian lifestyle of working and playing hard was healthy. (Lesson 1,13) ●

4. Youth will understand the rights and responsibilities of individual members of a group. (Lesson 2) ●

5. Youth will understand that the Early Hawaiian voyagers had the foresight to bring the foods needed to maintain a healthy diet on their voyages. (Lesson 3) ●

6. Youth will appreciate that the Early Hawaiians were able to establish life in these islands because they were akamai, resourceful, and hard-working. (Lesson 3) ●

7. Youth will appreciate that the Early Hawaiians grew, harvested, shared and ate all the foods needed through the Ahupuaʻa system. (Lessons 4, 13) ●

8. Youth will understand that the Early Hawaiians diet (which included foods from the land and sea) provided nutrients needed for good health. (Lesson 4) ●
9. Youth will recognize *kalo* as the most important Energy food eaten in early Hawaiʻi. (Lesson 5)

10. Youth will recognize fish as the most important Early Hawaiian Body-Building food. (Lesson 7)

11. Youth will understand how we can all benefit through adopting the strengths of Early Hawaiian food and lifestyle practices as in the Waianae and Molokaʻi diet studies. (Lessons 12)

12. Youth will appreciate that planning and conservation are important practices in Hawaiʻi: "Your borrow from the future that which we use up today." (Lesson 13)

C. Lesson Outline for the Foods of Hawaiʻi Program

<table>
<thead>
<tr>
<th>Session</th>
<th>Title of Lesson (Focus of Lesson/Recipe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction to the Na MeaʻAi o Hawaiʻi Program (Evaluation #1/Pupule Punch)</td>
</tr>
<tr>
<td>2.</td>
<td>Hawaiʻi's Ethnic Groups (Fruit Salad)</td>
</tr>
<tr>
<td>3.</td>
<td>The Voyagė (Introduction to Nutrients and Water)</td>
</tr>
<tr>
<td>4.</td>
<td>Ahupuaʻa: (Earliest Settlers and Food Groups)</td>
</tr>
<tr>
<td>5.</td>
<td>Energy Foods - Early Hawaiʻi Taro)</td>
</tr>
<tr>
<td>7.</td>
<td>Body Building Foods - Early Hawaiʻi (Steamed Fish)</td>
</tr>
<tr>
<td>8.</td>
<td>Body Building Foods - Today (Tuna Tofu Salad)</td>
</tr>
<tr>
<td>9.</td>
<td>Protective Foods - Early Hawaiʻi (Chicken Laulau)</td>
</tr>
<tr>
<td>10.</td>
<td>Protective Foods - Today (Vegetable Platter and Dip)</td>
</tr>
<tr>
<td>11.</td>
<td>Making Healthy Choices I (Fat, Sugar, Salt)</td>
</tr>
<tr>
<td>12.</td>
<td>Making Healthy Choices II (Gon Lo Mein)</td>
</tr>
<tr>
<td>13.</td>
<td>Optional Field Trip</td>
</tr>
<tr>
<td>14.</td>
<td>Pāʻina: La Hanohano (Graduation Day)</td>
</tr>
</tbody>
</table>

For a more complete picture of lesson activities refer to Appendix B.
II. **Recommended Roles Foods of Hawai‘i Classroom Program**

**Nutrition Program Assistant (U.H. Cooperative Extension Service)**

1. Take the lead in coordinating the 14 week “Foods of Hawai‘i” Program with the kupuna and classroom teacher.
2. Take the lead on all food and nutrition topics and food preparation activities.
3. Build on knowledge and skills youth have acquired through the Hawaiian Studies Program and the Health and Science classroom studies.
4. Maintain an atmosphere of open communication with all cooperators.
5. Evaluate lesson delivery and program management and modify as appropriate.

**Kupuna (DOE Hawaiian Studies Program - 5th Grade)**

1. Take the lead on all “Early Hawai‘i” topics including discussions on the Ahupua‘a, Hawaiian values, language, culture and lifestyle.
2. Provide continuity between “Foods of Hawai‘i” (Na Mea ‘ai o Hawai‘i) and Hawaiian Studies program.
3. Evaluate lessons and overall “Foods of Hawai‘i” Program.
4. Provide input and recommendations for enhancing the program.
5. Help to create a positive learning environment where each individual feels valued, nurtured, and empowered to learn and make positive life choices.
6. Provide a living example (for children and other leaders) of the many positive early Hawaiian values we are trying to introduce and/or reinforce through the “Foods of Hawai‘i” Program.

**Classroom Teacher**

1. Provide ongoing support and enthusiasm for the “Foods of Hawai‘i” Program.
2. Assist in maintaining classroom order and help with leading group activities and establishing routines. Provide Program Assistant with tips on effective classroom management, etc.
3. Maintain an atmosphere of open communication.
4. Introduce and reinforce nutrition education topics covered in “Foods of Hawai‘i” lessons (prior to and/or following each “Foods of Hawai‘i” session).
5. Evaluate lessons and overall program. Make recommendations for enhancing the program.
IV. Appendix

A. Foods of Hawai`i Brochure/Program Flier

B. Foods of Hawai`i Lesson Plan Overview

C. Student Permission Slip
   This is optional, but recommended if pictures of children are to be taken.

D. Contents of Student Folders
   Student folders are recommended but not required. The handouts to be included in student folders are in their perspective lesson folders

E. Additional copy of the Foods of Hawai`i Cover Page/Poster
Please call your local EFNEP offices today!

Moloka`i 567-6833
Hawai`i 959-9155
Maui 244-3254
Kaua`i 241-3471
O`ahu 956-4124
State Office 956-8161

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1991

 Expanded Food & Nutrition Education Program
 Cooperative Extension Service
 College of Tropical Agriculture and Human Resources
 University of Hawai`i at Manoa
 3050 Maile Way, Honolulu, HI 96822
Polynesians came to Hawai`i in big, double-hulled canoes

What did they bring to eat?

Your child will be participating in this exciting program:

With the cooperation and support of the 5th grade teachers, Kupuna, principal and staff of __________ Elementary School, your child will be exploring the nutritional value of foods eaten in early Hawai`i and Hawai`i today.

WHAT:  "Nā Mea `ai o Hawai`i" (Foods of Hawai`i)

WHO:

WHEN:

WHERE:

SESSIONS WILL INCLUDE:

- some "hands-on" cooking experiences.
- possible field trips.
- other creative learning activities

PROGRAM LEADERS:

*Certificates will be awarded to children who participate. Teacher and Kupuna participation is greatly appreciated.
<table>
<thead>
<tr>
<th>Lesson Title</th>
<th>Hawaiian Lifestyle</th>
<th>Learning Activities</th>
<th>Food Activities</th>
<th>Handouts/Supplies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction to the Foods of Hawai‘i Program</td>
<td>mālama i ke ola kino laulima</td>
<td>Friendship Activity</td>
<td>Pupule Punch</td>
<td>&quot;My family came from these places&quot; FOH brochures</td>
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<tr>
<td></td>
<td>'ohana</td>
<td>Student Questionnaire I</td>
<td></td>
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<td></td>
<td></td>
<td>FOH Brochure</td>
<td></td>
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<tr>
<td>2. Hawaii’s Ethnic Groups</td>
<td>lōkahī kuleana</td>
<td>Introduction to Hawaiian Values (kuleana)</td>
<td>Fruit Salad</td>
<td>Folders World Map Rights &amp; Responsibility Poster</td>
</tr>
<tr>
<td></td>
<td>laulima</td>
<td>Identification of countries of origin</td>
<td></td>
<td></td>
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<tr>
<td>3. The Voyage</td>
<td>alu like kuleana</td>
<td>Voyage: Keone’s Voyage</td>
<td>Coconut Dried Banana</td>
<td>Nutrient Poster</td>
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<td></td>
<td></td>
<td>Nutrients/Water</td>
<td></td>
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<tr>
<td>4. The Ahupua’a</td>
<td>malama ʻāina aloha ʻāina wai, wai</td>
<td>Ahupua’a</td>
<td>Coconut Sweet Potato</td>
<td>Ahupua`a Map EH food wheel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduce 3 food groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Energy Foods-Early Hawai‘i (Kalo)</td>
<td>`ohana kalo</td>
<td>Legend: Kalo Moʻolelo ʻo Haloa I am a Kalo activity</td>
<td>Taro Sweet Potato</td>
<td>EH food wheel/energy Kalo</td>
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<tr>
<td></td>
<td></td>
<td>Energy Foods eaten today</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Body Building Foods-Early Hawai‘i</td>
<td>kuleana mālama i ke kai</td>
<td>BB Foods in Early Hawai‘i</td>
<td>Steamed Fish</td>
<td>&quot;Which of the EH BB foods have you eaten&quot; handout</td>
</tr>
<tr>
<td>Lesson Title</td>
<td>Hawaiian Strand</td>
<td>Learning Activities</td>
<td>Food Activities</td>
<td>Handouts/Supplies</td>
</tr>
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<td>------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>laulima</td>
<td></td>
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<tr>
<td></td>
<td>'ike</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Protective Foods Early Hawai'i</td>
<td>mālama i ke ola kino</td>
<td>Protective Foods Function, Laulima story</td>
<td>Chicken laulau</td>
<td>Map of Ahupua'a, Laulima Story</td>
</tr>
<tr>
<td></td>
<td>lōkahi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Protective Foods-Today</td>
<td>kuleana</td>
<td>Tuitty Fruity Activity, Vitamin A &amp; C/Servings, Complete Food Wheels</td>
<td>Vegetable Platter &amp; Happy Healthy Tuna Dip</td>
<td>Today Foods Wheel and models</td>
</tr>
<tr>
<td></td>
<td>laulima</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12. Making Healthy Choices II</td>
<td>laulima</td>
<td>Student Questionnaire II</td>
<td>Gon Lo Mein</td>
<td>Permission slips &amp; photo release, Pā'ina letter</td>
</tr>
<tr>
<td></td>
<td>lōkahi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Field Trip</td>
<td></td>
<td>or Group Stories</td>
<td>Home Lunch</td>
<td>As needed</td>
</tr>
<tr>
<td>14. Pā'ina: La Ho'ohanohano</td>
<td>'Ike</td>
<td>Food Preparation, Graduation Ceremony</td>
<td>Steamed Kalo and Sweet Potato, Musubi, Gon lo Mein, Tuna Tofu Salad, Fruit Salad</td>
<td>Completed folders Graduation Certificates.</td>
</tr>
<tr>
<td></td>
<td>ho'ohanohano</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pā'ina</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Date: ____________________

I give permission for my child ___________________________ to have  
(Child's name)  

his/her photograph taken for public relations purposes in promoting  
the "Nā Mea`Ai o Hawai`i" (Foods of Hawai`i) nutrition education program,  
a cooperative effort between the University of Hawai`i Cooperative  
Extension Service and your child's school.

_________________________________________________________  
(Parent/Guardian Signature)                                     
_________________________________________________________  
(Date)

Date: ____________________

I give permission for my child ___________________________ to have  
(Child's name)  

his/her photograph taken for public relations purposes in promoting  
the "Nā Mea`Ai o Hawai`i" (Foods of Hawai`i) nutrition education program,  
a cooperative effort between the University of Hawai`i Cooperative  
Extension Service and your child's school.

_________________________________________________________  
(Parent/Guardian Signature)                                     
_________________________________________________________  
(Date)
Contents of Student Folders  
(Nā Mea ʻAi o Hawaiʻi)

1. Nā Mea ʻAi o Hawaiʻi cover sheet (Lesson #1)  
2. My ancestors came to Hawaiʻi from these places (Activity: Lesson #1)  
3. Individual rights (Lesson #2)  
4. World map: Where have Hawaii’s families come from? (Lesson #2)  
5. Hawaii’s earliest settlers (Lesson #3)  
6. Classes of nutrients poster (Lesson #3)  
7. Nutrient definition poster (Lesson #3)  
8. What did the early Hawaiians eat (Activity: Lesson #4)  
9. Ahupuaʻa map (Lesson #4)  
10. Blank food wheel (Lesson #4)  
11. Kalo plant (Lesson #5)  
12. Write the things you know about kalo. (Activity: Lesson #5)  
13. Feel the food game (Activity: Lesson #6)  
14. Foods from the ocean (Activity: Lesson #7)  
15. Body-Building foods (Activity: Lesson #8)  
16. Fruity Tooty activity (Activity: Lesson #10)  
17. Making Healthy Choices (Optional Activity: Lesson #11)  
18. My story: What I have learned (Optional Activity: Lesson #13)  
19. Early Hawaiʻi food wheel  
20. Today food wheel

Other Possibilities:  
- Recipes  
- A nutritious snack for today’s families- taro, sweet potato, and musubi
Foods of Hawai‘i
Youth Attendance Sheet and Evaluations

Contents:

1. Youth Attendance Sheet (Optional)

2. Foods of Hawai‘i Student Evaluations:
   a. Directions
   b. Questionnaire #1
   c. Questionnaire #1 Answer Sheet
   d. Questionnaire #2 and back food wheel
   e. Questionnaire #2 Answer Sheet
   f. Foods of Hawaii Tally Forms: Questionnaire #1 and #2

3. Lesson Evaluation (to be used by teachers to evaluate lesson delivery)

4. Mid-Point Evaluation (to be completed by teachers and staff to assess how well the FOH lesson series is going).

5. Final Evaluation

6. Guidelines for EFNEP Youth Evaluations
Foods of Hawai`i Student Evaluations:
(Directions, Questionnaires, Answer Sheets and Tally Sheets)

The Foods of Hawai`i EFNEP curriculum is designed for nutrition education with fifth graders in Public Schools. Evaluation should be completed on all students in the beginning and at the end of the lesson series. It is better not to go over the answers until after youth have taken the “post test”. Results can be compiled on the enclosed “grading sheet”

A variety of activities and objectives are covered in 14 different lessons. The key objectives which should be evaluated are:

1. Youth will name the food groups (Energy/Body-Building/Protective or other food groups).*

2. Youth will name at least two foods from each food group.*

3. Youth will state the minimum recommended servings per day from each food group.**

4. Youth will name the most important nutrient.*

5. Youth will distinguish between healthy and not-so-healthy foods. (Two foods high and low in refined sugar, fat, and sodium.)*

6. Youth will identify one health concern with eating excess refined sugar, fat or salt or sodium.*

7. Youth will learn (and practice) the Early Hawaiian concepts of: kuleana, laulima, malama i ke ola kino, and `ohana.*

8. Youth will identify positive dietary and food preparation changes they have made because of the Foods of Hawai`i Program.**

Notes:

* Will be evaluated on both pre and post tests (Questionnaire #1 and #2)
** Will be evaluated on posttest only.
Directions for Foods of Hawai‘i Evaluations

1. Distribute the blank Questionnaire #1 or #2 to students following the "Guidelines for evaluation of EFNEP youth programs". Questionnaire #2 consists of a the front and a food wheel on the back. Make sure that If you have not already read this please read it now.

2. Use the Answer sheet to grade each pre-test/post-test (if you need to). Use the Foods of Hawaii Tally Sheets to compile or sum Questionnaire #1 and #2.

a. On Tally Sheet #1 you will be entering all pre-test data (Questionnaire #1) and demographic data. On Tally Sheet #2 you will be entering post-test data (Questionnaire #2). To minimize the post test data entry you can attach the right hand side of Tally sheet #1 to the left hand side of Tally Sheet #2. You may use this instead of the "List of Youth", and just estimate the number of youth from Program Families and the appropriate residence category.

On the top of Tally Sheet #1 fill in youth group name, EFNEP PA name and date at entry, and the total number of students and matched cases at exit. You will be able to fill in the number of matched cases after you have completed the tallying.

On the top of Tally Sheet #2 fill in youth name, EFNEP PA name and date, and the total number of contacts and total number of hours after you have completed the youth group. If for some reason you had to skip or combine one or more of the lessons please indicate which lessons were skipped/combined on the bottom of the form.

b. You will be need to match pretests with posttests for each individual. Alphabetize the completed pretests by last name. Put the completed posttests in the same order as pre-tests. Add the names of the students (and scores) who did not complete a pre-test on the bottom of the Tally sheets #1 and #2 or on separate tally sheets. If you do not have enough space because there is more than twenty youth simply attach another tally sheet (or sheets) to the bottom of the first tally sheet.

c. Using a pencil, for each student write in their name (sex, age, and ethnicity are optional), an abbreviation of their favorite food (pre-test only) or the lesson number of their favorite recipe (Post-test only #1-12), their score for each question, and total score. You may want to list and tally favorite foods
separately so you don’t have to abbreviate. Each correct response equals one point.

Questionnaire #1 only contains knowledge gains. Questionnaire #2 contains all knowledge questions, two additional knowledge questions for naming food groups and the recommended number of servings, and two behavioral questions.

d. Use this list as a guide for scoring recalls and completing the tally form:

   Knowledge questions:

<table>
<thead>
<tr>
<th>Question</th>
<th>Codes</th>
<th>Possible Scores</th>
<th>Correct Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Matching ingredient w/ disease</td>
<td>HD</td>
<td>0, 1</td>
<td>Fat</td>
</tr>
<tr>
<td></td>
<td>HTN</td>
<td>0, 1</td>
<td>Salt/Sodium</td>
</tr>
<tr>
<td></td>
<td>CAV</td>
<td>0, 1</td>
<td>Sugar</td>
</tr>
<tr>
<td>2. Name two foods one “high and low” in each ingredient</td>
<td>Sugar</td>
<td>0,1,2</td>
<td>One high, one low</td>
</tr>
<tr>
<td></td>
<td>Fat</td>
<td>0,1,2</td>
<td>One high, one low</td>
</tr>
<tr>
<td></td>
<td>Sodium</td>
<td>0,1,2</td>
<td>One high, one low</td>
</tr>
<tr>
<td>3. Two foods in each food group</td>
<td>EN</td>
<td>0,1,2</td>
<td>Energy foods</td>
</tr>
<tr>
<td></td>
<td>BB</td>
<td>0,1,2</td>
<td>Body building foods</td>
</tr>
<tr>
<td></td>
<td>PR</td>
<td>0,1,2</td>
<td>Protective foods</td>
</tr>
<tr>
<td>4. Most important nutrient</td>
<td>H2O</td>
<td>0,1</td>
<td>Water only</td>
</tr>
<tr>
<td>5. Hawaiian Values</td>
<td>HVa</td>
<td>0,1,</td>
<td>Malama i ke ola kino</td>
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<td></td>
<td>HVb</td>
<td>0,1</td>
<td>Kuleana</td>
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<tr>
<td></td>
<td>HVc</td>
<td>0,1</td>
<td>'Ohana</td>
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<tr>
<td></td>
<td>HVd</td>
<td>0,1</td>
<td>Laulima</td>
</tr>
</tbody>
</table>

Others on Post-test only:

| 1. Name of food groups                                                   | EN    | 0,1            | Energy                      |
|                                                                           | BB    | 0,1            | Body-Building               |
|                                                                           | PR    | 0,1            | Protective                  |
| 2. Number of Recommended Servings/day                                    | EN    | 0,1            | 6+                          |
|                                                                           | BB    | 0,1            | 2+2 or 4+                   |
|                                                                           | PR    | 0,1            | 2+3 or 5+                   |

Total scores (Do not count favorite foods, recipes or behavior changes)

| Pre-test | Total | 0-20 | Maximum = 20 |
| Post-test| Total | 0-26 | Maximum = 26 |
Behavior Changes: (post test only)

1. Eat differently  #5a y=1, n=0 Record elsewhere
2. Prepare food differently #5b y=1, n=0 Record elsewhere

e. Continue this tallying for each student, until you have tallied the data for each student who has completed a test.

f. **Pre/Post-test Totals:** This is optional: for each question sum the all individual scores, total scores. You may want to tally the pre-test totals and means so you have more information for your needs assessment.

g. **Pre/Post-test Means:** This is optional: divide each question total by the total number of students to determine the mean. For example for HD: Pre-test Total=10 Number of students (include all students: matched and unmatched)=20, Mean = 10/20 or 1/2 indicating that 50% of children knew one correct answer to this question.

h. **Total number of students with matched tests (Total Matched)** This is required. Fill in the number of matched cases (the number of students who completed the pre-test and the post-test) at the top of the form. You may want to highlight or put a line through children which are not matched (or are matched if there are only a few).

i. **Matched total/Matched Means:** Using only the data from students with matched data, sum up the individual question scores and total score. Divide the matched totals by the total number of matched students (this must be the same number for matched tests) to get the mean scores.

j. **Post-Pre Changes:** (After post-test only): subtract the pre-test match means from the post test means to determine the positive or negative change for each question. Use pre-test means as a needs assessment (of what children need to learn), and use posttests means and change totals for program evaluation.

3. Congratulations! You have just put a lot of valuable time into this evaluation please make sure you share the results of this evaluation with your Program Assistants (or County Coordinators), Volunteers (if appropriate), teachers, and/or representatives from other programs. Incorporate this evaluation into your summary narrative reports. Please send the tally sheets with your narrative to the State EFNEP Coordinator, 3050 Maile Way, UH, Honolulu Hawaii, 96822. Mahalo.
Nā Mea`Ai o Hawai`i
Questionnaire #1

Name: ______________________ Teacher: ________________________

Date: ________ Age____ Boy or Girl Ethnicity: ________________

Please answer these questions as best you can.

1. What's your most favorite food? ______________________________

2. Match one of these ingredients with the disease it is related to: (Refined sugar, fat and salt or sodium)
   a. Heart Disease ______________________________
   b. High Blood Pressure ____________________________
   c. Cavities ________________________________________

3. Name one food “high” in each ingredient and one food “low or lower” in each ingredient.

   “High” ______________________ “Low” __________________
   a. Refined Sugar
   b. Fat
   c. Salt or sodium

4. Name 2 foods in each of the three food groups:

   Food #1
   a. Energy ____________________________
   b. Body-Building ______________________
   c. Protective _________________________

   Food #2

5. What’s the most important nutrient? ________________________

6. Write the name of the Hawaiian value next to its correct English meaning
   (‘ohana, laulima, kuleana, mālama i ke ola kino)
   a. Personal sanitation ____________________________
   b. Individual rights and responsibilities ________________
   c. Family ______________________________
   d. Working together cooperatively ______________________

MAHALO!

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i Youth Program
Lesson #1: Introduction to the Foods of Hawai‘i Program
1991
Na Mea`Ai o Hawai`i
Questionnaire #1

Name: ___________________________ Teacher: ___________________________

Date: _______________ Age_______ Ethnicity: _____________________________

Please answer these questions as best you can.

1. What's your most favorite food? _____________________________

2. Match one of these ingredients with the disease it is related to: (Refined sugar, fat and salt or sodium)
   a. Heart Disease                      fat
   b. High Blood Pressure            salt
   c. Cavities                        sugar

3. Name one food “high” in each ingredient and one food “low or lower” in each ingredient.

   "High"                          "Low"
   a. Refined Sugar         i.e. candy           fruit/grain
   b. Fat                   i.e. bacon            turkey/fish
   c. Salt or sodium       i.e. seeds          vegetables/others

4. Name 2 foods in each of the three food groups:

   Food #1                      Food #2
   a. Energy                  i.e. rice         bread
   b. Body-Building          i.e. chicken       beef
   c. Protective             i.e. carrot  (fruits & vegetables)
                                       (mango  water

5. What's the most important nutrient? _____________________________

6. Write the name of the Hawaiian value next to its correct English meaning (‘ohana, laulima, kuleana, mālama i ke ola kino)

   a. Personal sanitation        mālama ike ola kino
   b. Individual rights and responsibilities   kuleana
   c. Family                      'ohana
   d. Working together cooperatively   laulima

MAHALO!

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i Youth Program
Lesson #1: Introduction to the Foods of Hawai`i Program
1991
Nā Mea`Ai o Hawai`i
Questionnaire #2

Name: ___________________________  Teacher: ___________________________

Date: _________  Age___  Boy or Girl  Ethnicity: __________________________

Please answer these questions as best you can.

1. What is your most favorite recipe from the Foods of Hawai`i lessons?
   __________________________________________

2. Match one of these ingredients with the disease it is related to: (Refined sugar, fat and salt or sodium)
   a. Heart Disease  __________________________
   b. High Blood Pressure  ______________________
   c. Cavities  ________________________________

3. Name one food “high” in each ingredient and one food “low or lower” in each ingredient.

   “High”  “Low”
   a. Refined Sugar  __________________________  __________________________
   b. Fat  __________________________  __________________________
   c. Salt or sodium  __________________________  __________________________

4. Write the name of the Hawaiian value next to its correct English meaning (‘ohana, laulima, kuleana, mālama i ke ola kino)

   a. Personal sanitation  ______________________
   b. Individual rights and responsibilities  ______________________
   c. Family  _________________________________
   d. Working together cooperatively  _________________________________

5. a. Will you eat differently because of the Nā Mea`Ai o Hawai`i Program?  
   Yes or No  How?________________________________________

   b. Have you been handling and preparing foods differently because of the Nā Mea`Ai o Hawai`i Program?  Yes or No  How?__________
   __________________________________________

MAHALO!

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i Youth Program
Lesson #12: Making Healthy Choices, Part II
1991
Foods for Good Health

--- Servings a day

--- Servings a day

--- + --- = --- Servings a day

UH Manoa, CTAHR, CES
Foods of Hawai‘i Program
1991
Nā Mea`Ai o Hawai`i
Questionnaire #2

Name: ______________________     Teacher: ______________________

Date: _______________ Age____     Ethnicity: ______________________

Please answer these questions as best you can.

1. What is your most favorite recipe from the Foods of Hawai`i lessons?

________________________________________________________________________

2. Match one of these ingredients with the disease it is related to: (Refined sugar, fat and salt or sodium)
   a. Heart Disease ______ fat
   b. High Blood Pressure ______ salt
   c. Cavities ______ sugar

3. Name one food “high” in each ingredient and one food “low or lower” in each ingredient.

   "High"                                                "Low"
   a. Refined Sugar    i.e. candy     fruit/grain
   b. Fat              i.e. bacon      turkey/fish
   c. Salt or sodium   i.e. seeds      vegetables/others

4. Write the name of the Hawaiian value next to its correct English meaning (‘ohana, laulima, kuleana, mālama i ke ola kino)
   a. Personal sanitation ______ mālama ʻike ola kino
   b. Individual rights and responsibilities ______ kuleana
   c. Family ______ ‘ohana
   d. Working together cooperatively ______ Laulima

5. a. Will you eat differently because of the Nā Mea`Ai o Hawai`i Program? (Yes) or No How? i.e. fat
________________________________________________________________________

b. Will you prepare food differently because of the Nā Mea`Ai o Hawai`i Program? (Yes) or No How? i.e. wash hands
________________________________________________________________________

MAHALO!

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i Youth Program
Lesson #12: Making Healthy Choices, Part II
1991
## Foods of Hawaii Tally Sheet #1

| Name/Number | Sex | Age | Race | Fav Food | HD | HTN | CAV | Sugar | Fat | Salt | EN | BB | PR | H20 | HVa | HVb | HVc | HVd | Total |
|-------------|-----|-----|------|----------|----|-----|-----|-------|-----|-----|----|-----|----|-----|-----|-----|-----|-----|-----|------|
| 1.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 2.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 3.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 4.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 5.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 6.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 7.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 8.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 9.          |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 10.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 11.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 12.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 13.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 14.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 15.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 16.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 17.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 18.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 19.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |
| 20.         |     |     |      |          |    |     |     |       |     |     |    |     |    |     |     |     |     |     |      |

**Pre/Post test total:**

**Pre/Post test mean:**

**Matched Total:**

**Matched Mean:**

**Post - Pre Change:**

Date:_________  Total # of Students:_________  Total # of Matched Cases

Youth group:________________________________________  EFNEP PA:________________________________________
**Foods of Hawaii Tally Sheet #2**

**Date:**

**Total # of Contacts:**

**Total # of Hours:**

**EFNEP PA:**

---

**Name/Number**

<table>
<thead>
<tr>
<th>Number</th>
<th>Recipe</th>
<th>HD</th>
<th>HTN</th>
<th>CAV</th>
<th>Sugar</th>
<th>Fat</th>
<th>Salt</th>
<th>EN</th>
<th>BB</th>
<th>PR</th>
<th>H20</th>
<th>HVa</th>
<th>HVb</th>
<th>HVc</th>
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<th>EN</th>
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<th>PR</th>
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</table>
Please review the lesson objectives (as written on the lesson plan).

1. Indicate how well you think the lesson objectives were met. (Please check one.)

   Objectives: Not Adequately Well
     Met Met Met
   Objective #1
   Objective #2
   Objective #3
   Objective #4
   Objective #5

2. Comments:
   a). What worked well?

   b). What could be done different next time?

   c). Any other comments?

3. Overall, I would describe this session as. (Please check one)

   Somewhat Successful
   Successful
   Highly Successful

4. Absent Students (for teacher only): ________________________________
Foods of Hawai‘i
Mid-Point Evaluation

School: __________________________
Evaluator: _______________________
Date: __________________________

1. How do you feel about the flow (or organization) of the lessons?

2. How satisfied are you with the lesson activities and recipes? Is there a good balance of "lecture" and "hands-on" activities?

3. Are the lesson plans easy to review and follow? Are lessons easy to evaluate in terms of objectives being met?

4. Are you able to introduce and/or follow-up with the Foods of Hawai‘i lessons in your classroom?

5. What feedback, if any, have you had from students and/or parents?
6. How effective is our delivery? (voice level, rate of speech, eye contact, positive reinforcement, ability to build positive self-esteem in youth)

7. How do you feel about the overall organization of supplies and materials prior to presentation of the lesson? About the effectiveness and efficiency of clean up?

8. Does the Foods of Hawaiʻi Program build on what the children have learned in the Hawaiian Studies program? Is it compatible with the Hawaiian Studies and other curriculum you teach?

9. How valuable is this program for your children?

10. Additional comments:

EFNEP, CES, UH Manoa
Foods of Hawaiʻi Youth Program
Foods of Hawai‘i Youth Program Final Teacher Evaluation

Teacher: ___________________________ School: ___________________________
Date: ___________________________ P.A.: ___________________________

Please assist us in our program evaluation by responding to the following questions:

1. How likely will your students choose to eat better because of this program?
   - Not Likely  - Somewhat Likely  - Likely  - Very Likely
   Comments?

2. Did participating in this program help to enhance the self-esteem of your students?
   - No  - Not Sure  - Yes
   Comments?

3. Did this program have a positive effect on the inter-personal and inter-ethnic interactions between your students?
   - No  - Not Sure  - Yes
   Comments?

4. Please indicate the interest level of your students:
   - Low  - Moderate  - High
   Comments?

5. Indicate your assessment of the educational value of this program:
   - Low  - Moderate  - High
   Comments?
6. Overall, how successful was this program?

Not Successful  Somewhat Successful  Successful  Highly Successful

Comments?

7. If available, would you request this program for your future classes?

No  Undecided  Yes

Comments?

8. Would you recommend this program to other teachers/schools?

No  Undecided  Yes

Comments?

9. Is this a worthwhile and effective in-school enrichment program?

No  Yes

Comments?

10. Please share any additional comments and/or recommendations:

Please return this evaluation in the attached envelope to your EFNEP Program Assistant or to our State EFNEP Office, at 3050 Maile Way, UH at Manoa, Honolulu, HI 96822. MAHALO!

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i Program
1991
Guidelines for EFNEP Youth Evaluations

The purpose of any type of evaluation is either:
1. To provide an initial assessment (to find out what children know and don’t know or)
2. To evaluate how much children have learned (or positively enhance behaviors, skills or attitudes) because of specific learning or behavioral objectives.

For EFNEP purposes the former is called a pretest and the latter is called the posttest. While a posttest indicates how much a person knows (or their attitudes, skills and behaviors) after they have received a lesson series, it does not indicate how much you have taught them. In order to find out how much a student has gained from your instruction you must conduct both a pretest and a posttest. Comparing matched cases is always best evaluating when the changes between pretest scores and posttest scores. This means that you evaluate pretest and posttest scores only for children who have completed both tests. Also, if a student has missed more than 40% of classes (i.e. 2 out of 5) you may want to “throw out” this case, because the child has not received the same amount of instruction as other students. Ideally, only students who have completed the same number of classes should be compared; however this is not practical in most cases. An evaluation of all pretests and all posttests is also useful, only comparison of matched cases is valid for indicating how much students have learned.

I. Keys to successful test administration:

a. For pretests: Explain that this “quiz” will help you (the leader) find out what student know about foods, nutrition and diet, and what type of foods they currently eat. This “pretest” will be used to help the teacher plan how to teach the class.

   For posttest: Explain that this is actually a test of the teacher. We want to know how well we did our job.

b. Instruct the students to “do the best they can” and not guess if they don’t know. Go over the instructions clearly. Ask students not to copy each other.

c. Assist student who seemed confused, just don’t give them the correct answers. Give the students enough time to complete the test, even if it takes a few students longer than the rest.

d. Do not give the answers back to the children until after they have completed the entire lesson series and have completed the posttest.

e. The pretest should be administered before any lessons are discussed. The post test should be administered as soon as all lessons have been completed (or at least within a week).
II. Tallying results:

Ideally this should be completed in pencil as soon as either the County Coordinator or Program Assistant are able to. The posttest tally sheet can be attached to the pretest tally sheet to facilitate matching of data. Compiling the pretest total is not necessary until students take posttests. However tests scores can be summed on the pretest and then re-summed once you know which students should be "thrown out" on matched pretest counts because they did not take the posttest.

III. Using the scores:

A. Pretest:

The pretest can be used as a needs assessment to decide what topics should be covered in depth, or which foods they do or do not eat. The pretest also gives you a feeling for how "akamai" these students are, and if you have some students who are very bright (any may be bored by covering the basics) while other really need more time on the basics.

B. The Posttest:

Posttest scores reveal two things: what the children know after you have finished the curriculum, and if you have a pretest, also what change or increase in knowledge gains students have made. It is the comparison of the pre and posttest which reveals if our program made a difference, even if the objectives appear to have been met (as assessed through posttest scores). In EFNEP we always strive for changes in behavior as well as gains in knowledge. However, capturing changes in behavior is much more difficult than knowledge gains.

There are several factors which can affect the change in scores:

1. How well students did on the pretest. If students did well on the pretest you may only see small improvements in scores.

2. How well you taught the students (or met your objectives). Large difference is scores are usually attributable to good instruction. Other factors such as external teaching, or cheating can also affect the results.

3. How well students understood the test and how to correctly answer the questions. Proper instruction and assistance is needed to make sure students know how to answer the questions, and answer all the questions.

4. How much students copied or memorized the answers without learning the material. This is difficult to accurately assess, but can be minimized by preventing copying, not giving out the answers on the pretest, and if necessary having a variety of similar quizzes. If you think you need to have different quizzes call the State EFNEP office for assistance.

5. How good or accurate the tool itself is in measuring what is is supposed to measure. Some quizzes may be too easy, too hard, or just too confusing. If this continues to happen call the State EFNEP office.
The Program Assistant and County EFNEP Coordinator should go over the results of the pretest and posttest together. Although this is a bit time consuming you will find that it is very informative and rewarding.

IV. Do we have to evaluate every group?

No, you do not need to evaluate every class but you should evaluate every student when you evaluate a group, and evaluate the data based on matched pairs of pre and posttests. It is a good idea to evaluate a group the first time you are using a new or revised lesson series and every time a volunteer is leading a group.

When the same materials are being used by a proven successful leader, then you really only need to evaluate periodically - perhaps 50% of classes on a random basis. However, the decision to evaluate a class must be done before you start the class. Also if a class is chosen for evaluation you should conduct the pre and posttest even if you don't think you will see a large improvement or any improvement.

V. Any other reasons why we should evaluate?

Of course! Here's a partial list:

1. Evaluation keeps you on your toes, assisting the leader in doing the best they can do.

2. Evaluation validates or provides hard evidence of the positive impact you are making. Program evaluation is a key to continually receiving funding and seeking new sources of funding.

3. Evaluation can be rewarding! Positive evaluations are very satisfying and can help us feel good about what we do. It's a great feeling to really know that you are doing a great job.
Lesson #1 - Introduction to Foods of Hawai'i Program
Na Mea'ai o Hawai'i
Educational Materials and Supply List

Instructional Reference Materials

Recipe: Perky Pineapple Cooler or Pupule punch
Friendship Circle (Ho'olauna) Activity Sheet
Lesson 1: Introduction to the Foods of Hawai'i Program

Visuals

Na Mea'ai o Hawai'i Poster
DOE Hawaiian Studies Program (value) or definition posters: "laulima", "malama i ke ola kino"
Chalkboard & chalk or easel paper, pens and masking tape.
Program Goal Poster

Handouts & Activity Sheets

Na Mea'ai o Hawai'i Program Fliers
“My ancestors came to Hawai'i from” handouts.
Student Questionnaire #1
Student Questionnaire #1 Tally Sheet

Food Demonstration Supplies

Large pitcher or punch bowl and ladle or cooler (to keep fruit juice chilled) & ice
3 oz. cups
1 48 oz. can pineapple juice
1 12 oz. frozen orange juice
1 (24-32 oz.) chilled club soda
1 12 oz. frozen guava juice
9 cups water (or 6 x 12 oz. container)
Can opener
Sponge, detergent, towel for clean-up
Paper towels

Other

Name tags for students/teachers
Attendance Sheet with age, sex, ethnicity for “List of Youth”

Optional

Recipe cards: “Pupule punch” or “Perky Pineapple Cooler”
“My favorite foods” handout
FRIENDSHIP CIRCLE
(Ho`olauna)

Objectives:

1. Youth and leaders begin to get to know each other.

2. To begin to create an atmosphere of open communication and trust among youth and group leaders.

Preparation: Divide the class into 2 or 3 groups, one leader per group, or do as one large group. The larger the group, the longer the activity will take.

How To Do:

1. Form circle(s), with leaders joining in.

2. The first person says his/her name and a favorite food.

3. The next person says their own name and a favorite food, then the previous person's name and favorite food.

4. Continue around the circle ending with the first person saying their name and favorite food and the last person's name and favorite food.

5. If someone gets stuck, they can only ask the person after them to help.

Alternatives:

1. Have each person say the name and favorite food of two people.

2. Instead of just any food, the leader can specify a breakfast food or snack food.

3. To encourage more variety in the foods that are mentioned, add the rule that a food cannot be mentioned more than once.

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #1
1991
FOODS OF HAWAI'I YOUTH PROGRAM

Lesson # 1  Introduction to the Foods of Hawai‘i Program

Concepts:

1. The Foods of Hawai‘i Youth (Na Mea‘ai o Hawai‘i) Program is a cooperative effort between the University of Hawai‘i’s College of Tropical Agriculture and Human Resources, and the Department of Education’s Hawaiian Studies Program.

2. A well acquainted group (where there is mutual understanding and appreciation for each others similarities and differences) will provide an optimal atmosphere for group learning.

3. The Hawaiian people of pre-discovery time were healthy, hardy, and remarkably free from disease.

Objectives:

1. Youth will state that the Foods of Hawai‘i (FOH) program (Na Mea‘ai o Hawai‘i) is a cooperative effort between EFNEP (CES, UH) and the DOE, Hawaiian Studies Program.

2. Youth will state that the goal of the Foods of Hawai‘i (FOH) program is "to motivate youth to make healthy food and lifestyle choices."

3. Youth will learn to practice the Hawaiian value of laulima (cooperation of many hands working together), `ohana (family unit symbolized by taro), malama i ke ola kino (personal sanitation).

4. To create and maintain an atmosphere of open communication and trust, which serves to enhance self-esteem and promote positive inter-personal relationships.

5. Youth will understand that the Early Hawaiian lifestyle of working and playing hard was healthy.

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<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
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<tr>
<td><strong>I. Introduction</strong></td>
<td>20 min.</td>
<td>A. Leaders introduce themselves and the Foods of Hawai‘i (FOH) Youth Program: <em>Na Mea‘ai o Hawai‘i</em> is a cooperative effort between the Hawaiian Studies Program and the U.H., CES. Place poster on board. B. Ask students to complete Student Questionnaire: Point out that this is not a test, we want to know what they know before participating in our program.</td>
<td>Prepare attendance sheet. Na Mea‘ai o Hawai‘i Poster Ask teacher to have children make nametags (large print) Leaders wear nametags and/or write names on board. Student Questionnaire I</td>
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</table>
**Topic and Background**

### II. Introduce FOH Program Goal (Obj. #1, 3)

"Eating Healthy" would include eating breakfast, fruits and vegetables, not too many sugary, salty and fatty foods.

"Healthy lifestyle choices" include being physically active, getting enough rest, being a good citizen and having a well rounded life.

Most of the people living in early Hawai`i were workers (maka`ainana); farmers and fishermen. They were healthy and strong, they worked hard and ate nutritious food. The average height of the maka`ainana was about 5'10".

The royalty (ali`i) were taller and heavier. They always had food even in times of scarcity. They didn't do the physical labor of the maka`ainana.

### III. Friendship Circle (Ho`olauna) Activity (Obj. #2)

#### Learning Activity

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<th>Time</th>
<th>Activity</th>
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| 5 min. | A. **Program Assistant** (PA) Powerfully state the FOH goal: "To motivate youth to make healthy food and lifestyle choices."

B. Ask youth what is meant by healthy lifestyle choices. (2-3 responses). Review other lifestyle choices.

C. Ask youth to raise their hands if they can suggest ways to eat healthy. Get 2-3 responses. Give positive reinforcement for appropriate answers.

D. **Kupuna** describes early Hawaiians as healthy. Gives brief overview of lifestyle (outdoor living, lots of exercise, worked hard and played hard). Highlights values of laulima and `ohana. |

#### Preparation

- Display program goal on board: Either on 27" x 34" easel paper or chalkboard.
- Chalk
- Write `ohana and laulima on board with definitions of each or use Hawaiian Studies Poster.

#### See "Friendship Circle" Activity Sheet for further instructions.

For next class: Make a list of favorite foods.
### Topic and Background

**IV. Food Activity: Pupule Punch**

Explain to youth that there will be food preparation and tasting each session. Recipes will be easy for them to prepare. Personal sanitation (*malama i ke ola kino*) will be practiced every time we prepare foods.

Water is the only ingredient in the "cooler" that was here in the times of the early Hawaiians. Next week youth will learn how the orange, guava and pineapple came to Hawai'i.

*Kupuna and Teacher* assist with preparation and clean-up as needed.

### Time

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<th>10 min.</th>
<th>5 min.</th>
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### Learning Activity

**A. Program Assistant** passes out recipes. Review and show ingredients. Ask youth to raise hands and tell if any of the ingredients were here in Hawai'i in the days of the early Hawaiians. (Water only.)

**B. Prepare recipe:** Point out that foods need to be handled in a clean way (*malama i ke ola kino*). No matter how good the food is, if it is contaminated, it can make you sick. Ask youth to always wash their hands, utensils, and working area before food preparation.

**C. Ask two students to help.** After washing hands, have one read the recipe as the other prepares the "punch". Serve. Clear preparation area quickly. Collect cups.

### Pre-preparation

**Pupule Punch Recipes**

Ingredients, punch w/ice, cups & mixing spoon. Sponge, towels & detergent for clean-up. Punch bowl and ladle.

Table with recipe supplies in front of classroom.

Optional Recipe: Perky Pineapple Cooler

**FOH Brochures**

*UH/EFNEP* will provide folders with cover sheet, table of contents, rights and responsibilities and recipes.

Note: put two holes in all handout materials.

Handout: "My ancestors came from these places".
These lessons have been piloted at the following elementary schools on O‘ahu: Kapunahala, Kuhio, Palolo, Pope, Pu‘ohala and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai‘i at Manoa, USDA Cooperating.

1991
My Favorite Foods

Name or draw pictures of five of your favorite foods. Draw a circle around your most favorite food.

Name: _________________ Date: ____________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i, Lesson #1
1991
PUPULE PUNCH

Ingredients:
1 quart (32 oz.) Club Soda
1 46 oz. can pineapple juice
1 12-oz. can frozen guava juice
1 12 oz. can frozen orange of passion-orange juice
2 or more trays of ice
6 12 oz. cans of water

Optional ingredients: frozen fruit pieces, such as banana, orange, mango or papaya

Method:

1. Mix fruit juices and water together in punch bowl.
2. Add ice about 10 minutes before serving.
3. Add club soda and optional frozen fruit right before serving.
4. Makes 40, 4-oz. (1/2 cup) servings.

Hint: For a smaller group, mix together equal amounts of any frozen fruit juice and club soda. Serve over ice, with or without frozen fruit pieces.

Distributed by:
Cooperative Extension Service
University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating

For more information, call
956-8161

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #1
1991
PERKY PINEAPPLE COOLER

Ingredients:

1 (46 ounce) can unsweetened pineapple juice
2 tablespoons lemon or lime juice, optional
1 (6 ounce) can frozen orange juice concentrate
1 (24-30 ounce) bottle chilled club soda
Ice cubes (lots!!)
Mint sprigs, optional

Method:

1. Mix juices and chill.

2. Just before serving, add chilled club soda and ice.
   Garnish with mint sprigs, optional.

Distributed by:
Cooperative Extension Service
University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
For more information, call
956-8161
My ancestors came to Hawai`i from: ________________________________

_____________________________________________________________

Name or draw pictures of foods eaten in your family homeland(s) that were **not** eaten by early Hawaiians:

Name:_________________________________________ Date:_________
Lesson #2 - Hawai`i's Ethnic Groups
Educational Materials and Supply List

Instructional Reference Materials

_____ History of Some Fruits of Hawai`i
_____ Introduction of Fruits to Hawai`i After 1778
_____ Lesson #2: Hawai`i's Ethnic Groups
_____ Recipe: Fruit Salad

Visuals

_____ Handmade summary of favorite foods on poster or easel paper
   (from Student Questionnaire 1)
_____ Food models: Fruits
_____ World map
_____ Poster of Individual Rights
_____ Hawaiian Studies posters and/or definition of "kuleana", "iōkahi",
   and "mālama i ke ola kino."
_____ Chalkboard & chalk or easel paper & pens

Handouts & Activity Sheets

_____ Student folders and program cover sheets (Na Mea`ai o Hawai`i)
_____ Completed "My Ancestors Came to Hawai`i From These Places"
   activity sheets from youth
_____ World Map: Where have Hawaii's Families Come From?

Food Activity Supplies

_____ 1 - 2 ea. banana, orange, apple, pineapple, papaya or mango
_____ 5 Cutting boards
_____ 5 Knives
_____ 1 Large spoon for mixing and serving
_____ 1 Large salad bowl
_____ Small plates, forks, napkins
_____ Sponge, detergent, towel for clean-up
_____ Paper towels

Other

_____ Name tags & attendance sheet
_____ Scissors
_____ Dots, strings and tape (for map activity)

Optional

_____ EFNEP enrollment cards
_____ Recipe cards: Fruit Salad

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #2
1991
FOODS OF HAWAIʻI YOUTH PROGRAM

Lesson #2 Hawaiʻi's Ethnic Groups

Concepts:

1. Each member of a group contributes to its success. Each individual member has both rights and responsibilities.

2. Families living in Hawaiʻi today have come from far away places.

3. The foods we eat today have been influenced by our many ethnic and cultural groups.

Objectives:

1. Youth will realize that all of Hawaiʻi's ethnic groups have contributed to the diets of people in Hawaiʻi today.

2. Youth will prepare and eat a fruit salad.

3. Youth will learn to practice the Hawaiian concepts and values of ʻōkahi (unity and harmony), kuleana (individual rights and responsibilities within a group), and laulima (cooperation of many hands working together) and mālama i ke ʻōla kino (personal sanitation).

4. Youth will understand the rights and responsibilities of individual members of a group.

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<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
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<tbody>
<tr>
<td>I. Introduction and Review:</td>
<td>5 min.</td>
<td><strong>A. Kupuna</strong> introduces lesson. &quot;We will discuss origins of Hawaiʻi’s people and the food we eat. We will make a fruit salad&quot;.</td>
<td>Pass out prepared folders: put in cover sheet, &quot;My ancestors came from these places&quot;, and map.</td>
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<td><strong>B. Review. Ask &quot;What is (1) Name of our program, (2) Our program goals, (3) a healthy lifestyle, (4) The Hawaiian values of kuleana, ʻohana, laulima? &quot;</strong></td>
<td>Take attendance</td>
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<td><strong>C. Kupuna</strong> explains concept of ʻōkahi (Write on board) or put up poster.</td>
<td>Students wear nametags</td>
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<td>Chalk</td>
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<td><code>ʻōkahi poster</code></td>
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### Lesson #2 Hawai’i’s Ethnic Groups (continued)

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<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
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<tr>
<td>II. Kuleana: Individual Rights and Responsibilities (Obj. #4)</td>
<td>5 min.</td>
<td>A. PA shares &quot;List of Rights and Responsibilities&quot;&lt;br&gt;B. &quot;Individual rights and responsibilities&quot; within a group is kuleana.&lt;br&gt;C. Distribute manila folders, have students write their name and program name on the cover.&lt;br&gt;D. Say, &quot;Your first responsibility is to put your &quot;My ancestors came from&quot; handout in your folder. You are responsible for your folder and doing your own work.&quot;</td>
<td>Poster: &quot;List of Rights and Responsibilities&quot;.&lt;br&gt;Youth and Leaders will:&lt;br&gt;1. Enjoy learning together&lt;br&gt;2. Be prepared and on time.&lt;br&gt;3. Treat others as you would like to be treated&lt;br&gt;4. Focus: Listen and pay attention (Ho'olohe)&lt;br&gt;5. Be prepared&lt;br&gt;6. Enjoy yourself.</td>
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<tr>
<td>III. Foods and People from around the World (Obj. #1)</td>
<td>20 min.</td>
<td>A. PA reviews the classes top five favorite foods from Questionnaire #1. Ask &quot;were any of these foods eaten by early Hawaiians?&quot; Briefly discuss similarities of foods and where foods came from.&lt;br&gt;B. Post map. Say &quot;Let's find out where some of your ancestors came from.&quot; Kupuna points out that the earliest Hawaiian settlers came from the Marquesas and Tahiti. Have volunteers put a mark on the map to indicate where their ancestors came from. Ask youth to name up to three foods their ancestors may have brought to Hawai‘i. Ask if other students also have ancestors from that country.&lt;br&gt;C. State &quot;This map points out that people living in Hawai‘i today came from many different places, so have the foods we eat.&quot;</td>
<td>List of Favorite Foods&lt;br&gt;World map&lt;br&gt;Dots&lt;br&gt;Optional: String and tape&lt;br&gt;Crayons&lt;br&gt;Chalk</td>
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<td>Topic and Background</td>
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<td><strong>IV. Foods Activity: Fruit Salad (Obj. #2, 3)</strong></td>
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<td><strong>Mālama ola kino</strong> (personal sanitation). It is important that we wash hands before touching foods; be sure to wash under finger nails and between fingers where dirt and germs like to hide.</td>
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<td><strong>Teacher and Kupuna</strong> assist youth in cutting fruits.</td>
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<td>Note that the mixing of the fruits make a colorful and tasty combination just as our mixed cultures in Hawai‘i has made our lives richer.</td>
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<tr>
<td>20 min.</td>
<td><strong>A. PA says:</strong> &quot;We know that our foods came from different countries. Today we’re going to make a fruit salad using fruits that came to Hawai‘i from various countries.&quot; Ask if any youth brought fruits (their <em>kuleana</em>).</td>
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<td></td>
<td><strong>B. Discuss fruit and countries of origin.</strong></td>
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<td><strong>C. Review recipe preparation. Demonstrate handling knives. Review hand washing and <em>mālama i ke ola kino</em>.</strong></td>
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<td><strong>D. Divide youth into five groups. (Count off 1-2-3-4-5) and assign fruit to each group. By groups ask youth to wash their hands and the fruits.</strong></td>
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<td></td>
<td><strong>E. As a group, youth read recipe and take turns cutting fruit. Note that each group has their own <em>kuleana</em> (in preparing fruit salad).</strong></td>
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<td><strong>F. When each group is finished, mix and serve. Ask youth to try salad. Kupuna discusses how students practiced <em>laulima</em> (cooperation of many working together), <em>lōkahi</em> (unity) &amp; <em>kuleana</em> (responsibility). Everyone helps clean up.</strong></td>
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<tr>
<th>Pre-Preparation</th>
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<tr>
<td>Fruit Salad Recipes</td>
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<tr>
<td>Spoon for mixing/serving.</td>
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<tr>
<td>One or two of each fruit</td>
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<tr>
<td>Spoon, plates or cups</td>
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<tr>
<td>Clean up supplies</td>
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<tr>
<td>Pictures of fruits (models)</td>
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<tr>
<td>Tape</td>
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<tr>
<td>Fruit Riddles or Fruit Kabob recipes (if time allows).</td>
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<tr>
<td>Topic and Background</td>
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| V. Evaluation and Review/Next Time | 5 min. | A. Leader asks youth to state:  
1. Rights and Responsibilities  
2. Their countries of origin.  
3. Meaning of: *laulima, kuleana, lōkahi and mālama i ke ola kino.*  
B. State "Next time we will be learning about the first Polynesian settlers in Hawai‘i and the foods they ate." | Prior to next class Kupuna or Teacher could review the origins of the Early Hawaiians with the class. |

These lessons have been piloted at the following elementary schools on O‘ahu: Kapunahala, Kuhio, Palolo, Pope, Pū‘ohala and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai‘i at Manoa, USDA Cooperating.

1991
History of Some Fruits of Hawaii

Sources:  
1. Miller, Bazore, and Bates; Fruits of Hawai‘i. University of Hawai‘i Press, Honolulu, Hawaii, 1965  
2. E.S. Craighill Handy and Elizabeth Green Handy, Native Planters in Old Hawai‘i, Their Life, Lore, and Environment, Bernice P. Bishop Museum Bulletin 233, 1972

Acerola - Was probably introduced into Hawaiʻi in 1946 by the Hawaiian Sugar Planters' Experiment Station. The fruit is of Spanish origin and a native of tropical and subtropical America.

Apple - Historians believed that there are archeological evidence that the origin of apples were known to ancient cave dwellers. Apples received its introduction to the western world when seeds were brought over from Europe by the first colonist.

Avocado - All types of avocado are natives of tropical America, where they have been cultivated for centuries. Don Francisco de Paula Marín, the Spanish horticulturist who introduced many valuable plants into Hawaii, is credited with having started the first avocado trees in Hawai‘i before 1825. These first fruits were of poor quality so the avocado did not become popular until later varieties were grown. In 1895, Admiral Beardslee brought three Guatemalan seedlings from which many of the present varieties have been developed.

Banana - is one of the best known fruits throughout the world. The word “banana” seems to have been used originally for only those varieties which were eaten raw, and the term “plantain” for those which were eaten only after cooking.

Most Polynesians brought banana plants with them when they migrated to Hawaii. Most of these bananas were of the cooking variety. The Brazilian and Chinese varieties were not introduced until the 19th century. The Bluefield banana was not introduced until 1903.

Breadfruit - Trees were brought to Hawai‘i from Tahiti by early Polynesians. However, the breadfruit has never been an important article of diet as in Tahiti and other South Pacific islands.

Carambola (Star Fruit) - Believed to be a native to the Malayan archipelago. The history of its introduction into Hawai‘i is not known, but the tree may have been brought from Southern China by early Chinese immigrants or by sandalwood traders.

Cherry - Believed to be domesticated in China 4000 years ago. It was introduced to America from Europe during the establishment of English, French, and Dutch.

Coconut - Was brought to Hawai‘i by early Polynesian settlers. These early varieties were small and of inferior quality by today’s standards. Most varieties of coconuts growing in Hawai‘i at present were introduced within the last century.
Grapes - Were introduced in Hawai‘i at an early date. Captain George Vancouver spoke of leaving grapevine plants in 1792. Don Marin wrote of his vineyard in his diary in 1815. Because grapes were grown largely by the Portuguese in Hawai‘i, they were sometimes called “Portuguese or European grapes.” However this “Portuguese” grape was believed to have been introduced to Hawai‘i from the U.S. Mainland, not Portugal.

Grapefruit - The term pomelo is sometimes used instead of grapefruit. The term “grapefruit” originated because the fruit grows in clusters somewhat like grapes. Pummelo (distinct from pomelo) is the name given the extremely large, coarse, and sometimes almost inedible form of this species (also called shaddock). Grapefruit were introduced into Hawai‘i at an early, unknown date.

Guava (Strawberry) - A native of Brazil, the strawberry guava has been carried to all parts of the world. It was brought to Hawai‘i from England in 1825. It was introduced to Europe by way of China so is sometimes called the “Chinese Guava.”

Guava (Common) - Is the most common wild fruit in the islands today. It grows well under conditions unfavorable for many plants and in some places has become a pest. Though a native of tropical America, it reportedly was brought to Hawai‘i from Australia and was being cultivated here (became wild later) in the 14th century.

Lemon and Lime - Natives of Southern Asia. Introduced in Hawai‘i in the early 19th century. Both flourish in Hawai‘i. The lime, however, seems the most adaptable, of the citrus fruits, to island conditions.

Lychee - Native of Southern China. Brought to Hawai‘i in 1873.

Mango - Indigenous of Southern Asia. Believed brought to Hawai‘i from Manila by Captain John Meek. Other varieties were introduced later including a variety imported from Jamaica in 1885 by Joseph Marsden.

Mountain Apple - Native of the Malayan Archipelago. Brought to Hawai‘i by the early Hawaiians.

‘Ohelo Berry - One of the few truly native fruits of Hawai‘i. Found only on the island of Hawai‘i and on East Maui where it thrives on the less weathered lava flows and bed of volcanic ashes and cinders.

Hawaiian Orange - The Hawai‘i variety of orange has been developed by a long period of cultivation. One of the original orange trees was left in Hawai‘i by Captain George Vancouver in 1792 in the Kona district on the Big Island. The orange was one of the first fruits to be cultivated commercially in Hawai‘i and at one time was the leading export from Kona. The districts of Waialua on Oahu and Waimea on Kauai were also well known for their oranges.
**Papaya** - Believed to have been introduced by Don Marin prior to 1823 from the Marquesas islands. Solo papaya was introduced in 1919 by Hawai‘i Agricultural Experiment Station (CES).

**Passion Fruit** - Native of Brazil. Brought to Hawai‘i from Australia by Eugene Delemar in about 1880. The first seeds (purple variety) were planted in the district of Lili‘okoi on East Maui (thus, the name lilikoi). The yellow passion fruit was introduced by the Hawai‘i Agricultural Experiment Station in 1923.

**Peach** - Believed to be an origin of China. It is known as “The Queen of Fruit” because it is favored wherever they have been produced. The Roman referred to it as “Persian Apple” since it was believed to have received from Persia.

**Pineapple** - A native of South America, the history of the introduction of the pineapple is not known, but it is generally believed that the fruit was brought to Hawai‘i by some Spaniard who had previously touched the coast of South America. Don Marin recorded in his diary in 1813 that he had pineapple growing in his garden. However, it is believed that pineapple were first planted on the island of Hawai‘i where they now grow wild. A pineapple similar to the Wild Kailua pineapple also grows in Guam, Formosa, and the Philippine Islands. The pineapple variety known as *hala kea*, which is plain green when unripe and ripens yellow, and the *hala ʻula*, of which the unripe fruit and the leaves have a reddish tinge, are distinguished from the introduced commercial varieties by having thorns (*kuku*) along the edges of the leaves, and by spreading over the ground like a vine.

**Plum** - Believed to have originated in Western Asia in the region south of the Caucasus Mountain. There are over 2000 varieties. However, Methley plum is one of the variety grown extensively at higher elevation in Hawaii. Methley plum was received by the Experiment Station of the Hawaiian Sugar Planter Association. The first planting was made at Nauchi Gulch on the windward slope of Maunakea at an elevation of 5100 feet.

**Poha** - A native of Brazil, was probably brought to Hawai‘i early in the 19th century.

**Soursop** - Native of the West Indies and probably more popular today in Cuba than in any other place. The history of its introduction into Hawai‘i is unknown.

**Strawberry** - Believed to be a native of North and South America. There are varieties of strawberry native to widely separated section of the world. These vary in size, shape, color, and flavor. Many varieties have been developed under cultivation. A white strawberry indigenous to the Hawaiian Islands was at one time fairly abundant on the island of Hawaii and Kauai.

**Surinam Cherry** - A native of Brazil where it grows wild along the banks of the streams and edges of the forests. It is also an important cultivated fruit of that region. The date of its introduction to Hawai‘i is unknown.

**Tamarind** - Believed to be a native of tropical Africa and perhaps southern Asia. It was earlier introduced to tropical America and from there was probably brought to
Hawai`i. One of the first tamarind trees in Hawai`i was planted in 1797 by Don Marin in Pauoa Valley, Oahu. It was a favorite tree of the early settlers and is found on many of the old homesteads.

**Tangerine** - Is thought to have originated in China. Sometimes called the mandarin orange - so called because of its resemblance in color, shape, and size to the large button worn on the hat of high officials (mandarin's) during the Ching Dynasty. It has also been suggested that the fruit may have been given this name because of its similarity in color to the brilliant yellow or orange of the silk robes those officials wore. The satsuma variety was taken from Japan to the U.S. in 1876. The Hawai`i Agriculture Experiment Station first introduced budded (mandarin) plants of four varieties from California in 1906.

**Watermelon** - Is a native of Africa but has spread throughout the world. Although in Hawai`i a large supply of melons has been grown only during the last few years, some have been grown here continuously since the first seeds were left by Captain James Cook in 1779.
INTRODUCTION OF FRUIT TO HAWAI'I

AFTER 1778

1779 - Watermelon -- Native of Africa
1792 - Grapes from North America
- Orange by Captain George Vancouver from Capetown, South Africa
1797 - Tamarind - Native of Tropical Africa and possibly Southern Asia.

Early 1800's - Poha -- from Brazil
- Grapefruit -- from West Indies
- Starfruit -- possibly by early Chinese immigrants
- Lemon/Lime -- Southern Asia

1813 - Pineapple -- before 1813 from South America
1823 - Papaya -- before 1823 from the Marquesas by Don Marin
1824 - Mango -- by Captain John Meek from Manila
1825 - Strawberry Guava -- from England about 1825
1825 - Avocado - before 1825 from tropical America.
1873 - Lychee from Southern China
1880 - Passion Fruit from Australia -- Native of Brazil
1906 - Tangerine (Mandarin Orange) -- California
Varieties introduced in 1906 -- originally from China

Dates
Unknown - Soursop -- from the West Indies
- Surinam Cherry -- from Brazil
1946 - Acerola -- from Spain
Fruit Salad

Ingredients:

1/2 pineapple
1 orange
1 banana
1 papaya or mango
1 apple

Optional Ingredients: raisins, shredded coconut, chopped nuts, 1 cup plain or flavored yogurt

Method:

1. Peel, core or seed fruit and cut into bite sized pieces. Toss together in a large bowl. Add optional ingredients, if desired.

2. Serve chilled.

Hints:

1. Use two or more fruits to make tasty salads for family meals.

2. For holiday meals, try adding additional ingredients. Yogurt tossed lightly with fruit is tasty and nutritious.

3. Oranges, mango and papaya are good sources of Vitamin C. Mango and papaya are high in Vitamin A, too.

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Cooperative Extension Service
University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
For more information, call
956-8161

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #2
1991
INDIVIDUAL RIGHTS

Youth and Leaders will:

1. Enjoy learning together.

2. Be prepared and on time.

3. Treat others as you would like to be treated.

4. Listen and pay attention (Ho`olohe).
World Map: Where Have Hawai`i's Families Come From?
Lesson #3 - The Voyage
Educational Materials and Supply List

Instructional Reference Materials

Lesson #3 - The Voyage
Nutrient Fact Sheet
Water Fact Sheet (EFNEP)
Story: "Keone's Voyage"

Visuals

Classes of Nutrients Poster & Nutrient Definition Poster.
World or migration map
Nā Mea`ai o Hawai`i Program Poster
Poster of 96 cups of water
Hawaiian studies posters "kuleana", "alu like", and akamai.
Chalkboard & chalk or easel paper, pens and masking tape

Handouts & Activity Sheets

Student folders
Planning the Voyage handout (brainstorming sheet)
Hawaii's Earliest Settlers

Food Activity Supplies:

Dried banana chips
2 husked coconuts
Ice pick, cleaver or hammer (for opening coconut)
Cups, napkins
2 liquid measuring cups
Large plastic bowl (to measure coconut water info)
Newspaper, sponges, etc. (for clean up)

Optional

Pictures of foods needed on voyage
Canoe building instructions & materials
Unhusked Coconut
Bucket, liquid measuring cup, water
Maps of Hawaiian Islands

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #3
1991
FOODS OF HAWAI'I YOUTH PROGRAM
UH Manoa, CTAHR, CES
Expanded Food & Nutrition Education Program

Lesson # 3 The Voyage

Concepts:

1. The natural resources of these islands, combined with the foresight and expertise of the Polynesian settlers enabled the Early Hawaiians to live a healthy and productive life in isolation for hundreds of years.

2. Nutrients are chemicals in foods used by the body for energy, body-building, and protection from disease.

3. There are six classes of essential nutrients: carbohydrates, fats, proteins, vitamins, minerals and water. Of these, water is the most essential to life.

Objectives:

Youth will understand that:

1. Nutrients are chemicals in foods which are used by the body for energy, body-building and protection from disease.

2. There are six classes of nutrients: carbohydrates, protein, fat, vitamins, minerals, and water.

3. Water is essential to all life; it is the most important nutrient.

4. Youth will learn and practice the early Hawaiian concepts of: alu like (pulling together) and kuleana (individual rights and responsibilities within a group).

5. Youth will understand that the Early Hawaiian voyagers had the foresight to bring the foods needed to maintain a healthy diet on their voyages.

6. Youth will appreciate that the Early Hawaiians were able to establish life in these islands because they were akamai, resourceful, and hard-working.
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<tr>
<td><strong>I. Introduction and Review</strong></td>
<td>5 min.</td>
<td>A. <strong>Kupuna:</strong> &quot;Today we will be talking about the Early Hawaiian Voyagers: where they came from, and the foods they brought with them.&quot;</td>
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<td>B. <strong>PA</strong> asks &quot;before we begin let's see what you liked about the last class? What else do you remember? Did anyone make a fruit salad at home?&quot;</td>
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<td><strong>II. The Voyage (Obj. #4, 5, 6)</strong></td>
<td>20 min.</td>
<td>A. <strong>Kupuna</strong> reads Keone's Voyage or tells a migration story. Ask a student to point out the beginning and end points of voyage on a map.</td>
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<td>Voyage Background:</td>
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<td>B. <strong>Planning the Voyage:</strong> In teams (labeled by islands) have youth brainstorm food, water, and supplies needed on a voyage. Ask, &quot;What was the most essential supply?&quot; (water)</td>
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<tr>
<td>1. The Hawaiians of Old., pp. 21-27.</td>
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<td>C. Review brainstorm lists. Emphasize that the voyagers were <strong>akamai</strong> because they had the foresight to bring the things they needed to start life in a new land and survive the voyage. Discuss foods needed for the voyage and to establish life in a new land. Water was most important. <strong>Kupuna</strong> discuss the importance of <strong>alu ike</strong> (pulling together) and <strong>kuleana</strong>.</td>
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<td>2. Foods brought on voyage: taro (kalo), dog ('ilio), pigs (pu'a), breadfruit ('ulu), banana (mai'a), coconuts (niu) and others. Coconuts were also an important source of water. Gourds were also used to catch water.</td>
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<td><strong>Keone's Voyage Story</strong> Map of World. Chalk &quot;Planning the Voyage handout&quot;</td>
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<td><strong>Optional:</strong> Instead of planning the voyage do &quot;Pack the Canoe&quot; in small groups.</td>
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<td>- Pictures of foods needed on voyage</td>
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<td></td>
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<td>- Canoe building</td>
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<td>Ask teacher to leave up list for a week so that they can add more foods</td>
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### Lesson #3  The Voyage (continued)

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<tr>
<td><strong>III. Water: A key nutrient</strong> (Obj. #1,2,3)</td>
<td>10 min.</td>
<td>A. PA defines nutrients as chemicals in foods. List six &quot;essential nutrients&quot; on board or put up nutrient poster.</td>
<td>&quot;Nutrient&quot; poster&lt;br&gt;Chalk&lt;br&gt;Grape and raisin&lt;br&gt;Healthy and wilted plant&lt;br&gt;Picture of 96 cups&lt;br&gt;Measuring cup&lt;br&gt;Optional: Measure 96 cups of water</td>
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<tr>
<td>Fact Sheet on Water</td>
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<td>B. Briefly discuss the functions of water.</td>
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<tr>
<td>Nutrients are chemicals in foods which are used for energy, body building and protection. There are six classes of essential nutrients: carbohydrates, fats, proteins, vitamins, minerals and water.</td>
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<td>C. Asks &quot;How much water do we need to drink every day?&quot; (6-8 cups). PA points out that our bodies are 60-70% water or about 96 cups for a 80 pound person.</td>
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<td><strong>Functions of water:</strong> maintaining body temperature, transportation of nutrients, getting rid of &quot;poisons&quot;. Our bodies are 60-70% water.</td>
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<td><strong>IV. Sampling Coconut and Dried Banana</strong></td>
<td>15 min.</td>
<td>A. <strong>Teacher or Program Assistant</strong> demonstrate how to open coconut. If possible measure water from one coconut.</td>
<td>2 husked coconuts (one already opened)&lt;br&gt;Hammer or Ice pick&lt;br&gt;Cups, napkins&lt;br&gt;6 Measuring cups&lt;br&gt;Water&lt;br&gt; Banana chips&lt;br&gt;Optional: Discuss the functions of coconut. Note that coconut meat and banana are foods which gives us energy. Grate coconuts or refrigerate meat for next time.</td>
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<td>Sources: 1. Water fact sheet&lt;br&gt;2. The Hawaiians of Old pp. 61-24.</td>
<td></td>
<td>B. Each student tries coconut water and samples the dried banana chips (no sugar added). Discuss water as an alternative to soda, and how Hawaiians had to dry food for long voyages. Clean-up.</td>
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<td><strong>Optional:</strong> Ask students to guess how much water is in the coconut. (If possible have each group measure water).</td>
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<td>C. Other Options: Grate coconuts or refrigerate meat for next time.</td>
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### VI. Evaluation/Next Time

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| 5 min. | A. Leader reviews how the voyagers were *akamai*, resourceful, and hard working. Ask what are nutrients; which is the most important?  
B. State next time we'll be talking about the *Ahupua‘a*. | Suggested Review Topics:  
**Teacher:** conservation practices, other early settlements  
**Kupuna:** *Ahupua‘a*, importance of water (*wai - wai*), roles and *kuleana* or working class, *laulima* |
Foods of Hawai‘i Program
Lesson #3 - The Voyage

**Water Fact Sheet**

Water is our most important nutrient. You can live a fairly long time without food (just how long depends in part how fat or thin you are to begin with) but a person would die after only two or three days without water.

The body is about two-thirds (50-75%) water (approximately 96 cups for a 80 pound child). With a loss of 5% of body water, your skin shrinks and muscles become weaker. **The loss of just 20-50% of body water can be fatal.** It is possible to kill yourself from drinking too much water and diluting electrolytes, but this is rare. The more common problem is dehydration, insufficient water intake or excessive water loss. This can be caused by kidney malfunction, large blood loss, repeated vomiting or diarrhea, high fever, extreme physical exertion, or living in a hot, dry climate without enough water to replace what you lose in perspiration.

The average adult consumes and excretes (through breathing, urination, perspiration) about 2 1/2 - 3 quarts (10-12 cups) of water a day. Persons living in hot climates or engaging in strenuous physical activity may consume more than 4 quarts (16 cups) daily. It is likely that only 5-6 glasses are consumed directly as liquids. Most of the rest comes from the solid foods you eat. (Some is derived from metabolic processes within the body.) Milk is 85% water, green beans 89%, and lettuce 95% water. Even meat is 50% water and bread is about 1/3 (33%) water by weight.

It is a good idea to drink 6-8 glasses (8 oz.) of liquids daily. (Coffee, tea and alcoholic beverages do not count, and in fact, are counter productive because they act as diuretics, causing the body to lose more water than it would otherwise.) The more physically active you are at work or play and the hotter the climate, the more liquids you will need.

Drinking large amounts of soda and other artificially sweetened and flavored drinks usually does not support good health. Sugar sweetened drinks, fruit juices and nectars, can add excessive amounts of sugar and calories to your diet and contribute to tooth decay and obesity. We still do not know the long-term effects of artificial sweeteners on the human body. **Drink water or diluted juice to quench your thirst. Drink flavored drinks only occasionally.**
There was plenty of fresh water for drinking and irrigation in early Hawai‘i. On long voyages, early Polynesians carried coconuts as a source of fresh, uncontaminated water. The coconut offers a good source of water today as it did in early Hawai‘i. Coconut water (wai niu) is a refreshing and thirst quenching drink. Puncture the soft eyes in the end (or face) of the husked coconut. Drink and enjoy! Or, tap the coconut sharply in one or more places along its circumference to break it into halves (while holding upright or over a large bowl to prevent spilling). Drink and enjoy!

Early Hawaiians understood the value of water. The word for fresh water is wai. The word for wealth is waiwai. Lots of fresh water gave the people a feeling of wealth. They realized that without water there would be no plant or animal life in these islands. What would life be like in Hawai‘i today without an adequate and safe water supply?
EFNEP - Foods of Hawaii Program
Lesson Three: The Voyage

Keone's Voyage

Keone watched the frantic activities on the beach. The piles and piles of plants and animals grew until it looked like they could not possibly fit everything into the wa`a (the double-hulled canoes). "How long would it take to find this new land?", Keone thought.

Olopana had told him of the voyage that would take many, many days. Keone could not imagine being out of sight of land for that long. But there were several others from their village that had made the voyage before. They told of the deserted islands and the lush forests of the place people were calling Hawai`i.

Keone's daydreaming was interrupted by a call from his father. There were so many things to do before the day of leaving. Even after climbing all those coconut trees, they still needed more nuts for the voyage and for planting once they got to their new home. Olopana had told of finding only a few things to eat in Hawai`i, so the new settlers had to bring the plants and animals they needed to begin their new life. "Imagine," said Keone out loud, "a land without coconuts and kalo. Unbelievable!"

"Stop talking to yourself and daydreaming!" scolded Keone's older brother. "We have work to do. You will have plenty of time for daydreaming after we leave."

The next few days were even busier. There was dried fish to pack, cages to make to carry the young pig, dogs, and chickens. The plants had to be carefully wrapped with wet moss and ti leaves so that they would survive the journey.
The men seemed to spend all their free time planning the trip. Keone's father reminded him that what they didn't take with them, they would have to do without.

When the canoes were finally filled and it was time for the people to leave, Keone sadly said aloha to the home and the island he would probably never see again. Many prayers were chanted, asking Lono to bless their voyage.

The trip seemed to take forever. For a young boy like Keone, it was torture to be unable to run and play. "The canoes looked so BIG before they were filled with people, plants and animals," thought Keone. "Now they seemed too small, as they sailed on the empty ocean."

Keone lost count of the days and nights until he thought that they would never see land again. Olopana was their navigator, and Keone felt better every time he watched Olopana reading the ocean currents by day and the stars by night.

Then one morning, there it was. At first Keone thought it was a dream. As he opened his eyes, he saw a large cloud on the horizon. Floating above it was a mountain peak. When others began to point and shout, Keone knew that he was looking at his new home.

As the Kahunas chanted their prayers of thanksgiving to the gods, Keone began daydreaming of his new life in this place called Hawai‘i.
Question: How may cups of water are in an 80 pound person?

Answer: At least 96!

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i,
Lesson #3, 1991
### Nutrient Fact Sheet

<table>
<thead>
<tr>
<th>NUTRIENT:</th>
<th>SOME BASIC FUNCTIONS:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water</strong></td>
<td>• Chief materials in blood and most body liquids/tissue. (50-75% of body weight)</td>
</tr>
<tr>
<td>(Most important nutrient in maintaining life)</td>
<td>• Carries wastes from the body in urine and sweat.</td>
</tr>
<tr>
<td></td>
<td>• Helps cool the body through perspiration.</td>
</tr>
<tr>
<td><strong>Carbohydrate</strong></td>
<td>• Chief source of body energy.</td>
</tr>
<tr>
<td>(Gives us energy)</td>
<td>• Whole grains, beans, fruits and vegetables also contain fiber which helps with digestion if eaten in sufficient quantities.</td>
</tr>
<tr>
<td></td>
<td>• Excess stored as fat.</td>
</tr>
<tr>
<td><strong>Fat</strong></td>
<td>• Insulates the body from heat loss.</td>
</tr>
<tr>
<td>(Energy)</td>
<td>• A reserve source of energy (in the body)</td>
</tr>
<tr>
<td></td>
<td>• Most concentrated source of energy in foods.</td>
</tr>
<tr>
<td></td>
<td>• Covers and protects the vital organs.</td>
</tr>
<tr>
<td></td>
<td>• Carries fat soluble vitamins.</td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>• Chief body-building material. Makes up most of our muscle, skin, hair and nails.</td>
</tr>
<tr>
<td>(Body Building Growth and Repair)</td>
<td>• Source of fat used for energy if there is not sufficient calorie intake.</td>
</tr>
<tr>
<td><strong>Vitamins:</strong></td>
<td>• Helps form chemicals that aid night vision.</td>
</tr>
<tr>
<td>(Maintenance of good health)</td>
<td>• Helps maintain our muscles and nervous system. Helps in digestion and in maintaining healthy skin, hair and eyes.</td>
</tr>
<tr>
<td></td>
<td>• Helps form collagen which assists in healing wounds and burns. Helps fight infection. Helps gums.</td>
</tr>
<tr>
<td><strong>Minerals:</strong></td>
<td>• Chief material in bones and teeth; helps keep them strong. Helps clot blood and regulate heart beat.</td>
</tr>
<tr>
<td>(Body building and health maintenance)</td>
<td>• Carries oxygen in our body. Helps in use of proteins.</td>
</tr>
</tbody>
</table>

UH Manoa, CTAHR, CES EFNEP, Foods of Hawai’i, Lesson #3 1991
Planning The Voyage

Group Members: ____________________________________________

__________________________________________________________

Group Name: ______________________________________________

List the foods and others supplies needed by the early Polynesians during the long voyage to Hawai`i.

What was the most essential supply? _______________________

How long do you think the voyage took? ___________________
Canoe Building Instructions

Supplies Needed

- A quart-sized milk carton (makes 2 hulls)
- 2 sticks for crosspieces (each 26 cm (10 in.) long
- 2 sticks for pontoons, each 23 cm (9 in.) long
- String to lash sticks together and use for painter (bow rope)

Directions

1. Cut off top of milk carton.
2. Cut carton in half down the opposite seams.
3. Cut off bottom of carton.
4. Trim to sides of carton so hull is 2 in. high.
5. To form bow (front) and stern (back), cut corners off and tape closed with masking tape.
6. Cut two holes in hull - one near the bow and one near the stern, each 1/2 in. from bottom.
7. Take the two crosspieces and put one crosswise to the hull in each hole.
8. Square lash pontoons under the crosspieces, so they are parallel to hull and will keep the outrigger afloat in the water. (see pages 376 and 377 of Worlds to Explore for more information about square lashing.)
9. Make a small hole near the top of the bow. Put string at least 6 in. long through hole and tie a bowline knot. This string may be used as a painter to tie up your outrigger or pull it through the water.
10. If you like, you can decorate or cover the hull with contact paper. You may want to add a mast and sail. For long trips, outriggers equipped with a sail like the vinta pictured are used.

MAPS OF THE ISLANDS

I - 9. NI'IHAU
I - 10. KAUA'I
I - 11. O'AHU
I - 12. MOLOKA'I
I - 13. LĀNA'I
I - 14. MAUI
I - 15. KĀHO'OLOAWE
I - 16. HAWAI'I

The maps of the islands were designed to familiarize the students with the shape of each island, some place names and main mountain peaks, the official color and lei of each island. Each visual has been printed on paper that represents the color of the island except for Hawai'i and Kaua'i. These two were printed on an ivory shade with ink representing the color of each of the islands.

In the lower right corner of each map are two bits of information dealing with the color and lei of the island. For example, on the map of Kaua'i, the waihō'olū'u (color) is poni (purple) and the lei is made of the mokihiwana berry.

It is suggested that the maps be laminated so that other place names and information can be added as the students learn more about the islands. These maps are especially useful in conjunction with instructional activities in the HSCG, Grades 2 and 3.

(Note: The map of Kaua'i from the first printing contains errors in the placement of the towns of Waimea and Kekaha in the southwestern and Kapa'a in the eastern part of the island. These errors have since been corrected on the reprints of Series I. Teachers who received the original prints in the early years of program implementation should be aware that the correct location of the southwestern towns is approximately one inch to the left of the marked spots on the first version of the map. Kapa'a is located approximately one inch above the spot shown on the original map.)
KAUAʻI

HANALEI

KILAUEA

KAPA

LIHUʻE

KEKAHA

WAIMEA

WAIHOʻOLUʻU - PONI LEI MOKIHANA
O'AHU

KAHUKU
LĀʻIE
HAUʻULA
KAʻAʻAWA
HALEʻIWA
WAIALUA
WAHIAWA
MAKAHA
WAʻIANAE
MĀʻILI
NĀNĀKULI
KĀNEʻOHE
KAILUA
NUʻUANU PALI
WAIMĀNALO
HONOLULU

WAIHOʻOLOʻUʻU - MELEMELE LEI ʻILIMA
MOLOKA‘I

MAUNA LOA  KUALAPU‘U  KALAUPAPA

KAUNAKAKAI

WAIHO‘OLU‘U - ‘ŌMA‘OMA‘O LEI KUKUI
LĀNAʻI

LĀNAʻI CITY

LĀNAʻIHALÉ

WAIHOʻOLUʻU - ʻALANI
LEI KAUNAʻOA
Hawaii's Earliest Settlers

The Hawaiian islands were one of the last places on Earth to be inhabited by man.

The ancestors of all people living in Hawaii today came here from some other place, even the early Hawaiians.

It is believed that the first people to settle here came from another island group from the south called the Marquesas. They came around 500 to 750 A.D. Later, other early settlers came from Tahiti. The Polynesians came to Hawaii in big double hulled canoes.
Nutrients are chemicals used by the body for energy, body building, and protection from disease.
Classes of Nutrients

Water (wai)
Carbohydrates
Fats
Proteins
Minerals
Vitamins
Lesson #4 - The Ahupua`a
Educational Materials and Supply List

Instructional Reference Materials

- Lesson 4 - The Ahupua`a
- Waiwai Fact Sheet
- Ahupua`a Fact Sheet
- Map illustrating O`ahu's land divisions/ahupua`a
- Ahupua`a Terms

Visuals

- Ahupua`a Poster
- Waiwai Poster
- Nutrient (definition) poster
- Classes of nutrients poster
- Early Hawaiian Food Wheel Poster
- Hawaiian Studies posters: aloha ʻāina, mālama ʻāina, waiwai

Handouts & Activity Sheets

- Student folders
- Blank "Hawaiʻi Today" Food Wheels
- Early Hawaiʻi Food Wheels

Food Activity Supplies

- Coconut grater and `opihī shells (for grating coconuts)
- 3-5 coconuts, cracked open (or cleaver/hammer to open)
- Timer for managing grating activity, if available
- Sweet Potato (cooked) for sampling
- Cutting board, knives, napkins
- Knives
- Napkins
- Clean up supplies

Optional

- Nutritious Snacks for Today's Families, Sweet Potato
- Waiwai poster
- Early Hawaiian Food Visuals
- What did the Early Hawaiians eat?

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawaiʻi, Lesson #4
1991
FOODS OF HAWAI'I YOUTH PROGRAM

Lesson # 4 The Ahupua‘a

Concepts:

1. Through the Ahupua‘a system of sharing and protecting all the water and food resources, the early Hawaiians were able to acquire the foods needed to maintain their physical well-being. Growing, harvesting, gathering and preparing foods was labor intensive. Their physically demanding lifestyle combined with a nutritious diet enabled the early Hawaiians to maintain their fine physical stature.

2. Early Hawaiians ate a variety of foods from the land and the sea. Some of these foods were better sources of certain nutrients than others. Early Hawaiian foods have been grouped according to their key nutrients and have been arranged in a food wheel to educate youth about foods which are sources of common nutrients and therefore fulfill similar functions in the body.

3. The early Hawaiian foods have been grouped into three food groups: 1) Energy foods foods rich in carbohydrates, fats and B-vitamins, 2) Body-Building foods rich in protein, calcium and iron, and 3) Protective foods rich in vitamins, especially vitamins A and C. By eating a variety of foods from all three of the food groups on the food wheel, the Hawaiians were able to get all the necessary nutrients needed for good health.

Objectives:

1. Youth will name the three food groups: Energy foods, Body-Building foods, and Protective foods. (Food wheels will be completed accordingly).

2. Youth will understand that:
   a. Most foods found in nature provide a variety of nutrients which maintain good health. Some foods are richer in nutrients than others.
   b. We group foods to help us make wise choices.

3. Youth will understand and begin to practice the Hawaiian concepts of aloha ʻāina and mālama ʻāina (loving and taking care of the land: conservation), waiwai (wealth), and will value the Ahupua‘a system.

4. Youth will appreciate that the Early Hawaiians grew, harvested, shared, and ate the foods needed through the Ahupua’a system.

5. Youth will understand that the Early Hawaiian diet (which included foods from the land and sea) provided nutrients needed for good health.
### Lesson #4 The Ahupua‘a

#### Topic and Background

**I. Introduction and Review:**

**Kupuna** could point out that the voyagers first settled on the windward side of the islands because of the availability of water.

Water is essential to establishing and maintaining plant, animal and human life.

**II. The Ahupua‘a (Obj #3,4)**

Fact Sheets: Ahupua‘a
The Ahupua‘a is a land division in early Hawai‘i which literally means pig-alter. These three subdivisions extended from the land to the sea. Some foods found in these three areas of an Ahupua‘a:

- **Mauka:** mountain apple, breadfruit, birds
- **Mawaena:** lo‘i kalo, chicken (moa), pig (pua‘a)
- **Makai:** dryland kalo, sweet potato, sea animals, fish, limu and coconut

Two major roles of the working class:
- Planters (mahi’ai) planted and harvested crops
- Fisherman: (lawai’a) fished in the deep ocean

#### Time

<table>
<thead>
<tr>
<th></th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 min.</td>
<td><strong>A. Kupuna states:</strong> “Let’s review some of the foods brought on a voyage by completing the What did the Early Hawaiians eat handout”. Review.</td>
<td>Handout: What did the Early Hawaiians eat?</td>
</tr>
</tbody>
</table>

15 min.

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<thead>
<tr>
<th></th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Overview of Ahupua‘a:</strong> Leader asks “What is an Ahupua‘a?” Pass out blank Ahupua‘a handout. Summarize and review as needed. Have youth label land divisions, water sources and where foods on the previous handout were grown. Describe how the Early Hawaiians maximized the use of the natural resources (water from the mountains, the ocean, and human resources) through the Ahupua‘a system.</td>
<td>Map of Ahupua‘a</td>
<td></td>
</tr>
<tr>
<td><strong>B.</strong> Re-emphasize the importance of water. It determined land use, wealth (waiwai), and roles of the working class.</td>
<td>Handout: Ahupua‘a</td>
<td></td>
</tr>
<tr>
<td><strong>C. Kupuna</strong> briefly discuss <em>aloha <code>aina* and *malama </code>aina</em>. Point out that the early Hawaiians practiced conservation, fertilization, and shared all resources. Compare the early Hawaiian practices to our practices today.</td>
<td>Optional: Review who remembers the story of Mother Earth and Father Sky?</td>
<td></td>
</tr>
</tbody>
</table>
## Lesson #4 The Ahupua'a

### Topic and Background

#### III. Early Hawaiian Foods (Obj. #1,2,5)

- **Body Building Foods:** are foods which help us grow and make us strong. Ex: chicken (moa), fish (i'a), pig (pua'a).

- **Protective foods:** keep us healthy and protect us from disease. Ex: mountain apples (ʻōhia ai), taro leaves, (lau kalo), seaweed (limu).

- **Energy Foods:** are foods which give us energy to work & play. Ex: kalo, sweet potato (ʻuala), breadfruit (ʻulu), banana (maʻa).

### Time

<table>
<thead>
<tr>
<th>Learning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 min</td>
</tr>
</tbody>
</table>

A. **PA** states: "Today we'll begin to use a food wheel as a way of grouping foods and learning how to make wise choices." Pass out blank food wheels to students.

B. **PA** asks "What was the most important resource in the Ahupua'a?" (Water) Note that water is the center of all life and that because water is essential to all life it is in the center of our food guide. Ask youth to write wai in the middle of the blank food guide.

C. **PA** shows early Hawaiian food wheel poster and states: "By eating a wide variety of foods, and drinking water the early Hawaiian diet was nutritious. Most foods provide a variety of nutrients, some are richer in nutrients than others. We have divided the foods into three food groups (Energy, Body-Building and Protective) because these foods contain similar key nutrients which have similar functions in our bodies. We'll learn more about these 3 food groups in future classes."

D. While explaining the name and function of some foods in each food group ask youth to label the food groups on their blank foods wheels. We will add foods in the next lesson.

### Pre-Preparation

- Early Food Wheel poster
- Blank Student food wheels
- Student folders
- Pencils
- Chalk
- Pictures of early Hawaiian foods
Lesson # 4  The Ahupua'a

<table>
<thead>
<tr>
<th>Topic and Background</th>
<th>Time</th>
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<th>Pre-Preparation</th>
</tr>
</thead>
</table>
| IV. Food Activity: Coconuts and Sweet Potato (Uala) | 20 min. | A. PA: "Remember that last week we tasted water from the coconut. The early Hawaiians had to work hard to also eat the meat of the coconut. Ask what food group a coconut belongs to (Energy). Other students cut sweet potato.  
B. PA explains about 2-3 different types of sweet potato. Have youth taste the different types and tell you which is their favorite type. Pass out handout. | Foods: 3-5 coconuts husked and ready to grate 2-3 pounds of different types of steamed sweet potatoes  
Supplies: Graters, plates, napkins, cleaning utensils, towel, soap, cutting boards and knives.  
Handout: Healthy snacks for Sweet Potato.  
Optional Activity: Parent demonstration of coconut milk, water and cream.  
Optional Recipe: Grate coconuts breadfruit and fresh coconut cream. |
| V. Evaluation/Next time: | 5 min. | A. Leader asks  
1. "What do you remember about wai?  
2. How did the Early Hawaiians take care of the ʻāina?  
3. Was the early Hawaiian diet nutritious?  
4. What are the three food groups?"  
B. "Next time we'll be talking about Energy Foods eaten in Early Hawai‘i." |
**Waiwai:** To be rich/wealthy; treasure, wealth

*(Lesson 4: The Ahupua'a)*

The poster illustrates the Hawaiian concept of wealth which included enough flowing, fresh water to provide for a good crop of *kalo*. The *kanaka mahi'ai* (cultivator) who had a plentiful source of cool fresh water and the no'eau (skills) for planting and caring for the *kalo* was assured of an abundant harvest. The word *waiwai* is a reduplication of the word wai which means fresh water. This image of watery wealth is also found in the Hawaiian word for law, *kanawai*. Some of the earliest laws dealt with control of fresh water resources which would give *mahi'ai* up and down the *ahupua'a* equal access to the most essential wealth-producing element of nature.

The drawing shows Diamond Head in the background which reinforces the *mana'o* (idea) that the great modern-wealth-producing center of tourism was once equally important as a place where *kalo* and then rice grew well because of the many fresh water springs. There is an analogy between the rich green environment of the former *lo'i kalo* and the rich green money currently being harvested in the state's most important economic enterprise, tourism.

Some classroom activities include:

A. Discuss the ways in which the students measure their wealth.
   1. Is it only in terms of *kala* (money)?
   2. Do they see treasure all around them in the beautiful environment in which they live, the support of their families, the love and friendships which they enjoy and the physical, intellectual, artistic and spiritual talents which they possess?

B. Have the students do creative writing or oral presentations on what they consider to be their greatest wealth in their young lives.

---

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i, Lesson #4
1991
Ahupua`a Fact Sheet
(Lesson 4: Ahupua`a)

Ahupua`a: a land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (ahu) of stones surmounted by an image of a pig (pua`a), or because a pig or other tribute was laid on the altar as tax to the chief. (Mary K. Pukui and Samuel H. Elbert, Hawaiian Dictionary (Honolulu: University of Hawaii Press, 1970) pg. 8.

Through the ahupua`a we can show the relationship between man and his environment in Hawai`i more than 200 years ago. We can illustrate how the Hawaiians, utilizing both land (`aina) and sea (kai), were able to procure those basic needs of food, shelter and clothing required to survive or live comfortably on a geographically isolated chain of islands. Using the ocean as a highway, Polynesian voyages were successful in settling and populating these islands. Captain Cook's estimation of 300,000 inhabitants in 1788 gives us an idea as to how well they were able to adjust themselves to an environment which supplied no metal.

An ahupua`a varied in size and shape, consequently, one located on the windward side of an island would differ from one situated on the leeward side. People living within the accepted boundaries of an ahupua`a had the exclusive right to use whatever the `aina and the kai yielded.

Source: The Kamehameha Schools Ahupua`a Kit.

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #4
1991
Ahupua`a Terms

1. mokupuni - island
2. moku - district
3. ahupua`a - land division used in ancient times
4. `āina - land
5. kula - agricultural land
6. uka - upland
7. waena - between
8. kai - sea
9. mauka - towards the upland
10. mawaena - towards the middle
11. makai - towards the sea
12. Mālama ʻāina: take care of the land (conservation)
13. Mālama kai: take care of the sea
What Foods Did the Early Hawaiians Eat?

Banana
Fish
Taro
Taro leaf
Lemon, lime
Pig
Sweet potato
Mountain apple
Bittermelon
Rice
Chicken
Coconut
Mango
Lettuce
Papaya
Dog

Circle all the foods eaten by the early Hawaiians.

Name________________________________________Date__________________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawaii, Lesson Four
1991
Lesson #5 - Energy Food in Early Hawai`i

Instructional Reference Materials

Early Hawai`i Energy Foods Fact Sheet
"Story of Haioa"
"I Am A Kalo" Activity Instructions
Lesson 5: Energy Foods in Early Hawai`i

Visuals

Large "Early Hawai`i" Food Wheel
"Early Hawai`i" Energy Food Models
Energy food samples (whole, fresh foods) or Early Hawai`i food models
Energy Riddles

Handouts and Activity Sheets

Kalo Handout (mini-poster)
A Nutritious Snack for Todays' Families: Kalo Handout
"Write things you know about kalo:" Group Activity Sheet

Supplies

Soap and nail brush for hand washing
Kalo plant (makua/parent plant if possible) or Kalo poster
Cooked kalo food for sampling
Poi (2#)
Ko and banana for food sampling, optional
Bowl for mixing poi
Small cups and spoons for serving poi
Cutting board, knives
Paper plates with ti leaves for serving kalo
Lemon water and cups
Napkins
Clean-up supplies

Optional

Student folders
Pencils

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #5
1991
**FOODS OF HAWAI'II YOUTH PROGRAM**  
**UH Manoa, CTAHR, CES**  
**Expanded Food & Nutrition Education Program**

**Lesson # 5**  
**Energy Foods in Early Hawai'i**

**Concepts:**

1. The Early Hawaiians were healthy because they ate a wide variety of nutritious foods. Foods eaten in Early Hawai'i supplied nutrients needed for good health; the Energy nutrients (carbohydrates, including fiber), fats, and B-vitamins) needed for work and play, Protective nutrients (vitamins A and C, especially) needed to prevent disease, and Body-Building nutrients (calcium, iron and protein) for growth.

2. The most important Energy food eaten in early Hawai'i was *kalo*. Other Energy foods eaten in early Hawai'i were sweet potato (*'uala*), sugar cane (*kāa*), coconut (*niu*), yam (*'uhi*), breadfruit (*'ulu*) and banana (*maīa*). *Kalo* and its offshoots (*'oha*) symbolize the family unit (*'ohana*) in Hawai'i.

**Objectives:**

1. Youth will understand the basic function of Energy foods (grains and starchy fruits and vegetables) are to provide energy for work and play.

2. Youth will name at least two Energy foods (Food wheels will be completed accordingly).

3. Youth will recognize *kalo* as the most important Energy food eaten in early Hawai'i.

4. Youth will recognize that *Kalo* and its offshoots (*'oha*) symbolize the family unit (*'ohana*) in Hawai'i.

<table>
<thead>
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<th>Pre-Preparation</th>
</tr>
</thead>
</table>
| I. Introduction and Review | 20 min. | A. Kupuna reviews water and the *Ahupua'a*; States "Today we'll be talking about Energy foods in Early Hawai'i."  
B. PA reviews "What foods did the Early Hawaiians eat?" handout and/or the completed "Ahupua'a handout". | Title: "Early Hawaiian Energy Foods" on board  
Chalk  
Handout: "What foods did the early Hawaiians eat?"  
Pencils |
### Topic and Background

**I. Review Continued: (Objective #1)**

Three food groups:
- **Energy**: kalo, banana (*mai’a*), coconut (*niu*), sweet potato (*uala*)
- **Protective**: lau kalo, mountain apple (*ʻohiʻa* ʻai), limu
- **Body Building**: chicken (*moa*), pig (*puaʻa*), fish (*iʻa*)

Each food provides a variety of nutrients needed for good health. Some foods are better sources of particular nutrients than others. We refer to these particular nutrients as key on nutrients. For optimal health we need to eat foods containing these nutrients every day.

- **Energy**: Carbohydrates (including fiber), B-vitamins & fat
- **Protective**: Vitamins (A & C)
- **Body-Building**: protein, calcium and iron

**II. The most important Early Hawaiian Energy Food - Kalo: (Obj #2,3,4)**

- *The Hawaiians* (pp. 50-65)
- *The Hawaiians of Old* (pp. 57-75)
- "I Am A Kalo small group activity" Instructions

### Time

**10 min.**

### Learning Activity

**C. PA reviews the early Hawaiian food wheel poster, points out the three food groups and the function of each food group. Briefly mention the key nutrients in each food group.**

**D. PA asks youth to bring out food wheels and has youth label food groups and water if needed.**

### Pre-Preparation

- Early Hawaiian food wheel poster
- Pictures of early Hawaiian foods
- Masking tape
- Student folders with food wheels
- Extra food wheels

**A. PA states “Today we will be learning about early Hawaiian Energy Foods. All people around the world have built their diets around a "staple" energy food. In oriental diets the staple food is rice.” Ask youth to name the most important energy food in the early Hawaiian diet (*kalo*). Leader writes *kalo* on the board.**
## Lesson #5 Early Hawaiian Energy Foods

### Topic and Background

#### II. The most Important Early Hawaiian Energy Food - Kalo (continued)

*Kalo* was grown in a *lo'i kalo*. *Kalo* was pounded as a way of preserving it for voyages. Water (*wai*) was added to make poi. Hawaiians were the only Polynesians to eat *kalo* as poi. The early settlers brought about 50 varieties of *kalo* 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.

Some parts of the islands were too dry for *Kalo*; sweet potato (*'uala*) was eaten as the primary energy or staple food.

*I am a Kalo group activity* game instructions.

#### III. Food Activity - Early Hawaiian Energy Foods

Refer to "Healthy Snacks for Today's Families" handouts on cooking *Kalo*.

### Time

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<td>15 min.</td>
<td><strong>B. Kupuna</strong> briefly shares story of how <em>kalo</em> represents the 'ohana. Have poster of <em>kalo</em> or actual plant available to discuss individual parts of the plant.**&lt;br&gt;<strong>C. &quot;I am a Kalo small group activity&quot; In small groups have youth brainstorm and write down the things they know about <em>Kalo</em>. (One secretary and reporter per group. Reporter presents one of the group's ideas to the class).</strong>&lt;br&gt;<strong>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.</strong></td>
<td><strong>Optional: Legend of <em>Kalo</em> &quot;Mo`olelo o Haloa&quot;</strong>&lt;br&gt;<em>Kalo</em> poster&lt;br&gt;**Kalo plant with all parts; leaf, stem, corn with small hair-like roots, and <em>ma keiki</em>&quot;I am a <em>kalo</em> group activity&quot; handout&lt;br&gt;<strong>Optional: &quot;Kalo activity&quot; can be done as a round robin Other starches may be used.</strong></td>
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<tr>
<td>10 min.</td>
<td><strong>A. PA displays early Hawaiian Energy foods: <em>kalo</em>, poi and/or any other Early Hawaiian starches available (sugarcane, breadfruit).</strong>&lt;br&gt;<strong>B. Youth wash hands (<em>malama i ke ola kino</em>). Youth cut steamed foods, mix poi, etc. to prepare foods for tasting.</strong>&lt;br&gt;<strong>C. Eat and clean up.</strong></td>
<td><strong>Steamed kalo, poi...</strong>&lt;br&gt;Bowl, knife, cutting board, dull knife or shell for peeling and slicing kalo.&lt;br&gt;Bowl, water, spoons and small cups for mixing and serving poi.&lt;br&gt;Napkins&lt;br&gt;Sponge, soap, towel for cleanup</td>
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### Lesson #5  Early Hawaiian Energy Foods

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</table>
| IV. Evaluation/Next Time | 5 min | A. PA review: Ask youth to name:  
1. The three food groups?  
2. What was the most important Early Hawaiian energy food? Name one other Energy food.  
B. PA states: "Next time we'll learn about Energy foods we eat today." | |

These lessons have been piloted at the following elementary schools on O'ahu: Kapunahala, Kuhio, Palolo, Pope, Pū'ōhala and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai‘i at Manoa, USDA Cooperating.

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 group, “two’s” into another group, etc.)
9. Groups participate in preparing kalo, poi, and sweet potato (and/or ulu for food tasting).

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

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #5
1991
Write things you know about kalo:

Group Members: ____________________________

______________________________

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1991
EARLY HAWAIIAN ENERGY FOODS FACT SHEET  
(Foods of Hawaii: Lesson 5)

**Food**

**Yam (Uhi)**

Preparation, Cultivation and Storage

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 (i'oi), or in taro ponds no longer flooded and used, and in valleys and gulches. They were not grown on plantations.

**Breadfruit (ʻUlu)**

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 poiʻulu. Ripe uncooked fruit was mashed, mixed with coconut cream, wrapped in ti leaf bundles and steamed in the imu to make pudding (pepeieʻulu). 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.
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 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.
Moʻolelo 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 wahiine (young maiden), Ho`ohokuiklani. A keiki (child) was soon born to Wakea and this beautiful wahiine 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 hala (long) stems. The kalo continued to grow producing many keiki (offshoots) called `o ha. These keiki were planted and more oha were produced until bountiful amounts of kalo were growing in Hawai`i.

Ho`ohokuikikalani and Wakea were soon blessed with another keiki. He was also named Hāloa after his older brother. He had many `o ha 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.
Write things you know about ________:

Group Members: __________________________

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EFNEP, Foods of Hawai‘i, Lesson #5
1991
Families

A nutritious snack for today's

...potato sweet

FOR INFORMATION ON HOW TO PREPARE SOYBEANS, TARO, PEANUTS AND RICE AS SNACKS, CALL:

COOPERATIVE EXTENSION SERVICE

Oahu County 956-7248
Hawaii County 959-9155
Kauai County 241-3471
Maui County 244-3242
Molokai County 567-6833

NUTRITION BRANCH, DOH

Oahu 548-6552
Hawaii 935-4775
Maui 242-5956

Prepared by: Cooperative Extension Service, University of Hawaii
Hawaii Nutrition Council
Nutrition Branch, State Department of Health

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Noel P. Keford, Director and Dean, Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, Honolulu, Hawaii 96822 An Equal Opportunity Employer providing programs and services to citizens of Hawaii without regard to race, color, national origin or sex.
Orange colored sweet potatoes (sometimes called a yam) are an excellent source of vitamin A.

All sweet potatoes are good sources of carbohydrate for energy.

For snacking:
Wash, cook, slice and eat.

- **Microwave:** Pierce several times with a fork.
  cook 4-6 minutes for one potato
  6-8 minutes for two potatoes
  8-12 minutes for three potatoes

- **Steam:** Cube or slice potatoes. Place
  in steamer over boiling water. Cover
  & simmer for about 10-15 minutes.

- **Boil:** Place potatoes in saucepan an add 1" of water. Bring to boil and simmer covered 20-30 minutes.

- **Bake:** In oven or toaster oven at 425 degrees for 30-45 minutes.

Sweet potatoes are cooked when they can be easily pierced with a fork.
A nutritious snack for today's families...

TARO
TARO

The entire taro plant is edible. The part of the plant used to make poi is the corm. The corm can also be steamed, boiled, or baked and eaten like a potato.

Taro eaten raw or undercooked will cause an uncomfortable stinging or itching in the mouth and throat. Raw taro may also cause an irritation of the skin. Peel after cooking.

Exercise care in handling and eating this food.

The taro corm is a good source of carbohydrate for energy.

**For snacking:**

Scrub well to remove dirt and outer fiber. Cook, peel, slice and eat.

**Microwave:** Pierce several times with a fork. Cook about 15 minutes, turning once. (Cooking time will vary with size of corm.)

**Boil:** Place corm in large pot. Cover with water and bring to a boil. Reduce heat, cover and simmer 1½ hours or until tender. Peel taro with your hands after cooling.

**Steam:** Cube or slice (1" pieces) cleaned corm. Place in steamer over hot water. Cover and simmer about 20 minutes.

**Bake:** Place corm in shallow pan of water and bake at 350° for 1½ hours or until done. Taro is done when it can be pierced with a fork (it will be firmer than a cooked potato) or when the skin splits.
Mai'a
When I am ripe, I am yellow outside.

I grow on trees in moist areas that are protected from the wind.

If you eat me, you will have Energy to peel me.
Bread
I am usually made from grains like wheat or rye. I am processed into a flour and then baked in the oven.

I come in a variety of colors and types: white and brown.

I am often eaten at lunch with a filling inside.
Rice
I am the most important energy food in Oriental diets.

When I am refined my bran and germ is taken off. My color changes from brown to white.

You can wrap me with Nori and eat me as a snack.
Ulu
I am a round energy food which grows on trees.

Although I was not commonly eaten in early Hawai`i. I could be taken on voyages because of my sturdy skin. When I am picked green, my stem drips white sap which is like glue.

I was usually broiled over coals or cooked into the imu.
ʻUala
I too am cooked in an imu.

I am grown in a dry land setting and was an important staple for the early Hawaiians, especially in times of famine.

My inside can be a variety of different colors: white, yellow, orange or even purple. The orange variety is also a good source of vitamin A.
Niu
I provided the early Hawaiians with water and energy.

My husk was used for firewood or to make sennit (rope).

If you eat me you will have energy to climb a tree to pick me.
Uhi
Sometimes I am mistaken for another energy food called ʻuala.

I too can grow well in droughts or dry seasons.

I was usually steamed in the imu. Now I am often eaten at Thanksgiving.
Kalo
I am the Hawaiians most prized starch and represent the ‘ohana.

I am grown in a loi and was often made into a paste.

Sometimes I am mixed with coconut cream into a dessert called kulolo.
Instructional Reference Materials

- Lesson #6: Energy Foods Today
- Energy Foods - Carbohydrates Fact Sheet
- "Feel The Food Game" instructions
- Recipe: Brown Rice Musubi

Visuals

- Hawaiian Studies Visuals: ʻĀkahi and kuleana
- Energy Food Models: Early Hawai‘i and Today
- Food Wheel Posters: Early Hawai‘i and Today
- Grain Poster (Showing endosperm, bran, and germ)
- Trays brown, enriched and unenriched.
- Empty Containers and Energy Foods (Cereals, Breads, etc.)

Handouts and Activity Sheets

- "Hawai‘i Today Food Wheels" (in student folders)
- "Feel The Food Game" activity sheets

Food Activity Supplies

- Soap, paper towels, dish towels, sponges
- 10 cup rice cooker, extension cord, rice paddle
- Warm, steamed brown/white rice 10 cups rice per class.
- Musubi molds, bowls of water, lightly salted (for dipping molds; one per group)
- One package Nori, pre-cut into strips
- Paper plate with ti leaves for serving (one per group)
- Ice water for drinking, cups, napkins

Optional

- Early Energy Foods Riddles
- "Nutritious Snacks for Today’s Families: Musubi"
- Brown rice packets with musubi recipe inside (in baggies)
- "Which foods are whole grains?" activity sheets
- Shrimp Flakes
- Brown Rice Musubi Recipes

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #6
1991
Concepts:

1. Today we eat many Energy foods which were eaten in early Hawai‘i, as well as those introduced by people who have come to Hawai‘i from around the world. Energy foods eaten today include rice, cereals, breads, noodles, coconut and starchy vegetables such as potato and taro (*kalo*). These foods provide carbohydrates, B vitamins, fiber, iron and fats. Fiber is a non-digestible part of grains which helps prevent constipation and certain types of cancer.

2. It is recommended to eat at least six (preferably 6-11) servings of Energy foods each day. Serving sizes are one slice of bread, 1/2 cup brown rice, 1 cup white rice, 1/2 cup starchy vegetables, 1/2-3/4 cup of ready to eat cereals, 1/2 cup noodles, etc.

3. Whole grains are very nutritious because they contain the germ and bran of the seeds of grains. Processed or refined grains are often enriched with B-vitamins (thiamin, riboflavin and niacin) and iron to replace some of the nutrients lost in milling.

Objectives:

1. Youth will name at least two Energy foods and will state that we need six or more servings of grains and starchy vegetables Energy foods each day. (Food wheels will be completed accordingly).

2. Youth will understand that:
   a) Key nutrients in Energy foods are complex carbohydrates (including fiber) and B-vitamins. Iron and fat are also important but will be discussed in other lessons.
   b) Whole grains are a healthier choice than refined grains because they contain the bran and germ of seeds.

3. Youth will prepare and eat brown rice musubi as a healthy snack.

4. Youth will learn and practice the Hawaiian values of *lokahi* (unity and harmony) and *kuleana* (individual rights and responsibilities).
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<th>Learning Activity</th>
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| 5 min. | **A. Kupuna** reviews the three food groups, the early Hawai‘i food wheel and early Energy foods. **Kupuna** fills in blank food wheel, on board.  
 **B. Leader** briefly discusses the function of the Energy foods in the body. Then says, "We'll be talking about Energy Foods eaten today and we'll be making "Brown Rice Musubi."

| 10 min. | **A. Kupuna** states, "Kalo was the most commonly eaten Energy food in Early Hawai‘i". Then ask: "What Energy food do we eat most often today?" (bread and rice).  
 **B. PA** notes that sharing our food and culture is an example of loka‘i. **PA** points out that rice and wheat are grains (the seed of plants). Using rice as an example explain the difference between whole grains, enriched grains and refined grains. Show the different types of rice bags. Note the "enriched" label. Point out that rice should not be rinsed because the B-vitamins can be lost down the drain.  
 **C. Ask if youth can name the key Energy nutrients?** Briefly discuss carbohydrates, B-vitamins and fiber. (We'll talk about iron and fat later). | **Preparation**  
Blank food wheel on board.  
Early Hawai‘i and Today Food Wheel Posters.  
Pictures of "Early" Energy foods, tape  
Optional: riddles  
Hawai‘i Today food wheel handout (blank except for names of nutrients)  
**Preparation**  
Grain poster  
Bags of different rice (enriched, unenriched, brown) cereal boxes, bread bags  
Place trays with sample of rice on each table for youth to see and touch |
### Lesson #6 Energy Foods Today (continued)

#### Topic and Background

**III. Other "Today" Energy Foods:**
* (Obj. #1)

Recommended minimum number of servings needed per day is 6-11 servings

**Serving Sizes:**

1 slice bread, 4 crackers, 1/2 cup starchy vegetable, 1/2 cup brown or enriched rice.

#### Time

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#### Learning Activity

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**A. PA** asks youth to name various other Energy foods eaten today. Put pictures on chalkboard food wheel. Ask youth to take out folders and write in two new Energy foods on Energy section of food wheel.

**B. State:** "We need four or more servings of Energy foods each day." Have youth put a 6 in the number of servings per day blank for Energy foods. In simple terms discuss serving sizes, i.e. one sandwich has 2 pieces of bread - that's 2 servings.

#### Pre-Preparation

"Today" Energy Food Models, tape

Samples of foods to show serving sizes.

---

**IV. Food Activity: Making Brown Rice Musubi**
* (Obj. #3)

This is a simple to make, nutritious snack the children can make at home.

You may want to demo or discuss other ways to "mold" or shape Musubi.

White rice sticks together better than brown rice. Adding brown rice improves the nutritional value of this snack.

**Kupuna and Teacher** can assist as needed.

A variety of different musubis can be made.

**A. PA demonstrates how to make musubi.**

**B. Divide youth into two groups.**

**Group 1:** Brown Rice Musubi
Youth wash their hands. The *kuleana* of each youth is to wash their hands *mālama i ke ʻula kino*, to complete a musubi, try the feel the food game and clean up. Have youth mold rice, wrap with nori, add toppings. Ask students to wait to eat Musubi until all have finished making their Musubi.

**Group 2:** "Feel the Food" Game

1. Ask youth to stand in line to play "Feel the Food Game".
2. Each student "feels" 5 Energy foods in bags and writes what he/she thinks the foods are on the "Feel the Food" handout. Ask youth to wash hands if needed.
3. Serve and eat Musubi, then clean up.

**Preparation**

*Musubi recipe handouts.*

Rice - pre-made (still warm)
(1/2 brown; 1/2 white)
Molds, Nori (precut strips), shrimp flakes, etc.
2-3 bowls with salted water for dipping molds.
Napkins, plastic containers Soap, towels, etc. for clean-up.
1 paper plate for each table/group

"Feel the Food Game": bags with noodles, taro, bread, etc.

Food labels
Wax Paper

Option #1: Reading rice bag labels.
Option #2: "Which foods are whole grains" activity.
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<tr>
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<tbody>
<tr>
<td>V. Evaluation/Next time</td>
<td>5 min.</td>
<td>Review while students are eating if time is short:</td>
<td>Brown Rice samples with musubi recipes.</td>
</tr>
<tr>
<td>A. Leader discusses the answers to &quot;Feel the Food Game&quot; and &quot;Which foods are whole grains?&quot; activity.</td>
<td></td>
<td>Optional: Nutritious snacks for today's families: Musubi.</td>
<td></td>
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<tr>
<td>B. Review function of energy foods, key energy nutrients, number of recommended servings.</td>
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<td></td>
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<tr>
<td>C. Give youth samples of brown rice and Musubi recipes. Note that you have to add more water, cook and cool brown rice longer than white rice. Ask them to share it with their parents, cook and serve at home.</td>
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<tr>
<td>D. Say &quot;Next time we'll be discussing another group of foods: &quot;Body-Building Foods&quot;.</td>
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</table>
Carbohydrate Energy Foods Fact Sheet
Lesson 6: Energy Foods Today

Carbohydrate foods are an important part of a healthy diet. Carbohydrate energy foods provide energy, B-Vitamins (thiamin, niacin, riboflavin), iron and fiber.

People around the world build their diets around carbohydrate energy foods (called staple foods). The primary energy food or staple food eaten in early Hawai‘i was kalo (taro). As new cultural groups arrived in our islands, they introduced new staple foods. The wide variety of carbohydrate energy foods or staple foods eaten in Hawai‘i today is the result of the influence and impact of the many cultural groups who have come from around the world to live here.

The two main types of carbohydrate energy foods are:

1.) **Tubers** - Tubers are often called roots but are really underground stems. Starchy vegetables such as potatoes, yams and taro are tubers. They are frequently prepared by steaming, baking, or boiling and are eaten plain or in combination with other ingredients. They are sometimes dried and ground into flour which is used to make other food products. Simply prepared, tubers are a low-fat, low-calorie addition to the diet. Frying, salting, and the addition of high fat, sugar, and sodium ingredients make these foods a “less healthy” food choice. Sweet potato and kalo were staple foods eaten in early Hawai‘i which are also eaten today.

2.) **Grains** - Grains are seeds. Rice and wheat are two types of grains commonly eaten by people living in Hawai‘i today. They were not eaten in early Hawai‘i. Grains are processed in a variety of ways to produce a wide range of food products. (breakfast cereals such as puffed rice, oatmeal, corn flakes). Grains are most frequently ground into flour and used to make many popularly eaten food products such as breads and noodles.

**Three Types of Grains**

Rice and wheat are commonly available “whole”, “enriched”, or refined and “unenriched”. Understanding the nutritional differences of these three types of grains may influence food choices.

1. **Whole Grains**

Whole grains are grains as they are found in nature. They have three basic parts; bran, germ and endosperm. Most of the fiber and nutrients are found in the bran and the germ of grains.
More and more whole grain products are appearing on the grocers' shelves. If "whole grain flour" is the only flour listed, it is a 100% whole grain product. Many food products labeled "whole wheat" contain only a small amount of whole grain flour. Look for labels which say "100% whole wheat". Labels need to be read carefully when looking for whole grain products. The ingredient listed first is found in the greatest amount (by weight) in the food product.

b. **Unenriched Grains**

Unenriched grains are grains that have been milled or refined to improve shelf life. The bran and the germ have been removed. The remaining part of the grain (the endosperm) is often white and bland in flavor. Because the bran and germ are removed, refined, unenriched grains contain fewer nutrients and fiber than whole grains. Washing rice before cooking is not needed since coatings added today (to give a shiny appearance) are wholesome and safe to eat.

c. **Enriched Grains**

"Enriched" means that some of the nutrients removed from the whole grain during milling or refining have been added back to the grain. The nutrients that are usually added back are the B-vitamins (niacin, riboflavin, thiamin), minerals and iron. Because other nutrients and fiber are not replaced, enriched grains do not provide the well-balanced nutrition of whole grains.

Washing rice before cooking removes many of the nutrients added during the enrichment process. Starchy coatings that are added to rice today are safe to eat. Washing enriched rice is not needed and should be discouraged.

Many states require the selling of only enriched bread and cereal products. Hawai‘i has no law regarding enrichment. So, we find many unenriched refined grain products on our grocers' shelves. Look for "enriched flour" in the ingredient listing on food labels. Many enriched products are boldly labeled "enriched" right on the front of the package.

**Recommended Number of Servings Per Day**

Diets high in complex carbohydrates are recommended to decrease our risk of heart disease and cancer. Ideally 60% or more of our calories should come from foods rich in carbohydrates, primarily complex carbohydrates. It is recommended that we consume between 6-11 servings of "Energy foods" each day. A serving is equal to: 1 slice of bread, 1/2 cup of brown or enriched rice, 3/4 cup of cereal and 1/2 cup of a starchy vegetable like corn, potatoes and taro.

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #6
1991
Feel the Food Game Instructions

Objectives:
1. Children will identify energy foods by feel.
2. Children will be able to name two energy foods.
3. Children will be able to name the country of origin of at least two energy foods.

Preparation:
1. Gather food supplies (select five energy foods). Suggested foods include rice, poi, bread, banana, noodles, potato, breadfruit (ulu), taro (kalo). The game will be more fun for the children if some “squishy” foods like poi and cooked noodles are used.

2. Gather enough paper bags or empty half gallon milk cartons for each of the five foods selected. Label each bag or carton with a number 1-5. Place one food inside each numbered container.

3. Arrange game area so children can reach inside and feel each food without seeing inside. Have paper towels close to containers with “squishy” foods inside.

4. Pass out “Feel the Food Game” activity sheets.

How to play:
1. Have a few children at a time come to the game area.

2. Each child in turn feels inside each container and writes down (on handout) the name of the food s/he feels. Ask the children not to yell out or say the names of the foods out loud.

3. After all have felt inside the containers, have children return to their seats. Open the containers and display the foods. Let children check his/her guesses against what is seen. Be sure to identify each food verbally as some children may not know the names of all of the foods.

4. Discuss probable origin (introduction to Hawai‘i) of each food.
   a. Varieties of kalo, ulu, banana, sweet potato, and yam were Polynesian introduced prior to 1778 A.D. Other ethnic and cultural groups have since introduced different varieties of these same foods. (ex. Samoan, Japanese, and Chinese taro, Chinese banana, etc.)
b. Noodles have been introduced to Hawai‘i by a variety of ethnic and cultural groups. Ex. Pansit (Filipino), Spaghetti (Italian), Chow Fun (Chinese), Saimin (Japanese), etc.

c. A wide variety of breads are eaten in Hawai‘i today. These have been brought to Hawai‘i by a wide range of ethnic and cultural groups.

d. Rice was probably introduced to Hawai‘i by the Chinese, the first immigrant group to come to Hawai‘i to work in the sugar cane industry.

5. If time allows, children can draw the foods on their maps (from Lesson #2, Hawai‘i’s Ethnic Groups) to indicate country of origin to Hawai‘i introduction.
Feel the Food Game

Name the energy foods you discover:

1.

2.

3.

4.

5.

Name: ________________ Date: ____________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #6
1991
The Whole Grain

Mostly starch & small amounts of vitamins and minerals.

Mostly fiber; some vitamins & minerals

Mostly vitamins, minerals & some oil.
Which food products are whole grains?

Instructions:

Read the labels carefully and decide which food products contain only whole grains.

List the food products that contain only whole grains:

Name: ____________________________    Date: ______________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #6
1991
Musubi (Rice Ball)
(Lesson #6)

Ingredients:
1 cup white rice
1 cup brown rice
3 cups water

Method:
1. Cook rice.
2. Let steam for 30 minutes after cooking has stopped. Steaming helps to
   soften brown rice for easier shaping of rice ball.
3. Lightly salt clean, wet hands and scoop a handful of warm rice into
   hands.
4. Shape.
5. You may wrap musubi with strips of nori* for added flavor. Cut or tear
   nori into strips. Dampen hands and wrap nori around rice ball.

*Nori is dried seaweed. It is available in the oriental food section of the super-
market.

About Brown Rice:
Brown rice is higher in nutritional value and fiber than white rice. The bran
and germ have not been removed.

Brown rice needs more water in cooking than white rice. It has a nutty flavor
and a firm texture.

Rice is a good source of carbohydrate for energy.

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College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
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956-8161
A nutritious snack for today's families...

MUSUBI
MUSUBI
(Rice Ball)

Brown rice is higher in nutritional value and fiber than white rice. (The bran and germ have not been removed.)

Brown rice needs more water in cooking than white rice. It has a nutty flavor and a firm texture.

Rice is a good source of carbohydrate for energy.

For snacking:

Ingredients:
1 cup white rice
1 cup brown rice
3 cups water

Method:
1. Cook rice.
2. Let steam for 30 minutes after cooking has stopped. Steaming helps to soften brown rice for easier shaping of rice ball.

3. Lightly salt clean, wet hands and scoop a handful of warm rice into hands.
4. Shape.
5. You may wrap musubi with strips of nori* for added flavor. Cut or tear nori into strips. Dampen hands and wrap nori around rice ball.

*Nori is dried seaweed. It is available in the oriental food section of the supermarket.
Lesson #7 - Body-Building Foods in Early Hawai‘i
Educational Materials and Supply List

Instructional Reference Materials

_____ Lesson #7: Body-Building Foods in Hawai‘i
_____ Early Hawai‘i Body-Building Foods Fact Sheet
_____ List of Early Hawai‘i Body-Building foods on activity sheet (in English & Hawaiian)
_____ Steamed Fish Recipe

Visuals

_____ Grain Poster (Showing endosperm, bran, and germ)
_____ Energy Food Models: Early & Today, masking tape
_____ Food Wheel Poster: Early Hawai‘i
_____ Food Wheel on chalk board
_____ Early Hawaiian Value Posters: kuleana, mālama i ke kai

Handouts & Activity Sheets

_____ “Food From the Ocean” activity sheets

Food Activity Supplies

_____ Hand and dishwashing soaps; paper towels, sponges
_____ Wok and portable electric cook top or large electric skillet
_____ Heavy duty extension cord
_____ 1 cutting board
_____ 2 knives (for slicing fish, etc. and deveining ti leaves)
_____ Platter and spoon for serving
_____ Small plates, napkins, forks for each child
_____ Ingredients for steamed fish: Fish (mullet suggested) ti leaves & Hawaiian salt.
_____ Optional ingredients (for recipe): Soy sauce, oil, green onion, ginger, Chinese parsley, garlic

Optional

_____ Recipe Cards: Steamed Fish
_____ Bone Experiment: cooked chicken bone, vinegar, jar

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #7
1991
Lesson #7  Body-Building Foods in Early Hawai’i

Concepts:

1. Early Hawaiians ate a variety of Body-Building foods from the sea: fish (i’a), lobster (ula), crab (papa’i), sea urchins (wana), and the land: chicken (moa), dog (‘ilio), pig (pu’a’a). Most early Hawaiian Body-Building foods came from the sea.

2. The main function of the Body-Building food group is for the growth and repair of our bodies.

Objectives:

1. Youth will state that the basic function of Body-Building foods (meats, meat alternatives and dairy products) is for growth and repair of our bodies.

2. Youth will state that Body-Building foods are protein-rich foods. Youth will name two Body-Building foods and complete food wheels accordingly.

3. Youth will prepare and eat steamed fish wrapped in ti leaves (Hakui i’a)

4. Youth will learn and practice the Hawaiian values of:
   a) kuleana (individual rights and responsibilities within a group), and
   b) mālama i ke kai (conservation practices; taking care of the ocean).

5. Youth will recognize fish (i’a) as the most important Early Hawaiian Body-Building food.

<table>
<thead>
<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
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</thead>
<tbody>
<tr>
<td>I. Review and Introduction:</td>
<td>10 min.</td>
<td>A. PA reviews function of Energy foods. Ask youth to name two Energy foods that we eat today. Mention the key nutrients and fiber. Ask youth to name the difference between brown and white rice (use grain poster). Ask youth to state the minimum number of Energy foods to be eaten daily.</td>
<td>Blank food wheel on chalkboard, chalk, Energy food models, and tape. (Add in information as discussed). Student folders with food wheels.</td>
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<td>Time</td>
<td>Learning Activity</td>
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<td>10 min.</td>
<td>B. Ask, &quot;Who used the brown rice and who made Musubi?&quot;</td>
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<td></td>
<td>C. Kupuna states, &quot;Today we're going to talk about another food group. Foods from this group come from the land and the sea. What food group am I talking about?&quot; Write &quot;Body-Building&quot; on chalkboard.</td>
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**Pre-Preparation**

PA removes Energy food information and pictures from chalkboard and takes down grain poster. Re-draw a blank wheel if desired.

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<thead>
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<tr>
<td>10 min.</td>
<td>A. PA mentions that (as far as we know) the Body-Building foods eaten in Early Hawaii were &quot;animal&quot; foods. Ask youth to name one BB food that lived on the land; and one that lived in the ocean. Ask, What Body-Building food was probably eaten most often in Early Hawai`i?</td>
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<td></td>
<td>B. Point out that fish (i'a) was the most commonly eaten BB food in early Hawai<code>i. Kupuna brainstorms with youth other BB foods eaten in early Hawai</code>i from the ocean and then the land. Add food models to the board as discussed. After brainstorming say, &quot;I'd like to discuss and prepare fish (i'a) before brainstorming other BB foods.&quot;</td>
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<td></td>
<td>C. PA briefly discusses the function of the BB foods. Write the names of the key nutrients on the board (calcium, protein, iron) Briefly mention the functions of these nutrients.</td>
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II. **Introduction to Early Hawaiian Body-Building Foods** (Obj #1,2,5)

The most commonly eaten Body-Building (BB) foods in early Hawai`i came from the ocean. Pig (pu`a`a) and dog (i`ilo) were feast foods and eaten more frequently by the Ali`i.

Fish (i`a) was probably the most commonly eaten BB food. When the bones were eaten, fish provided calcium as well as protein and some iron.
### Lesson #7  Body-Building Foods in Early Hawaii

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<tbody>
<tr>
<td><strong>Fishbone Experiment:</strong></td>
<td>10 min.</td>
<td><strong>D.</strong> PA says: “Today we are going to start an experiment to see what happens to a bone which does not have enough calcium.” Add vinegar and bone into a glass jar - give to teacher.</td>
<td>Chicken or any type of bones. Vinegar Glass Jar with cover</td>
</tr>
</tbody>
</table>
| **III. Food Activity - Steamed Fish Demonstration (Hakui i’a) (Obj #3)** | | **A.** PA says: “Today we will prepare and taste the BB food” and begins “Steamed Fish demonstration”.

Optional: mention the type, availability, and cost of fish. |
| | | **B.** Begin steaming fish. | Fresh cleaned and scaled fish, knife, cutting board, wok or griddle, ti leaves, tongs for wrapping and serving |
| **IV. Body Building Foods/Food Wheel (Obj. #1, #4)** | 15 min. | **A. Kupuna** discusses *kuleana* and *malama i ke kai*; roles and responsibilities of women, men and children in fishing. (*lawai’a*)

B. Ask youth to complete "Food from the Ocean" handout. |
| | | **B.** Ask youth to complete "Food from the Ocean" handout. |
| | | **C.** Ask youth to add fish (*i’a*) and one other BB food they like to eat to their food wheels. | Recipes for Steamed Fish Activity Sheet: Food from the Ocean. Folders with Student food wheels. |

**Lawai’a** - fisherman
### Topic and Background

#### V. Food Activity (continued):

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10 min.</td>
<td>A. Kupuna and PA serve fish. Youth eat and discuss fishing experiences.</td>
<td>Plates (or ti leaves) forks, napkins and cleaning utensils</td>
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<td></td>
<td>B. Clean up and pass out recipes.</td>
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#### VI. Evaluation and Next time:

<table>
<thead>
<tr>
<th>Time</th>
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<th>Pre-Preparation</th>
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<tbody>
<tr>
<td>5 min.</td>
<td>A. PA ask youth to state:</td>
<td>Early Hawai‘i Food Wheel Poster.</td>
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<td></td>
<td>1. Most commonly eaten BB food in early Hawai‘i (fish) /ʻa),</td>
<td>Mid-point evaluation with teacher(s), Kupuna, assistants and PA.</td>
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<tr>
<td></td>
<td>2. Primary function of BB foods (growth and repair of our bodies)</td>
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<td></td>
<td>3. Two Body-Building foods.</td>
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<td>B. Next time: Ask, “Why do you think fish is in the middle of the Body-Building</td>
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<td>section of the food wheel? We’ll find out why next week.”</td>
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</table>
List of Foods on “Foods From the Ocean” Activity Sheet

seaweed (limu)

conch (pu)

shrimp (ʻōpae)

limpet (ʻōpihi)

octopus (heʻe)

fish (iʻa)

crab (pāpaʻi)

sea urchin (wana)

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EFNEP, Foods of Hawaiʻi, Lesson #7
1991
EARLY HAWAIIAN BODY-BUILDING FOODS  
Foods of Hawai‘i: Lesson Seven

Land Animals

Preparation, Care, Customs, and Historical Facts

Chicken was killed and cleaned, wrapped in ti leaves, and steamed in the imu. It had less flavor than other flesh foods and was less favored by Early Hawaiians than pig and dog. The Polynesian chicken was already domesticated when brought to the islands. However, some chickens were let go to run wild.

Eggs were not eaten “because it would be like eating a hen’s unborn body.”

Pigs were raised in great numbers for food and for religious and ceremonial purposes.

Once the pigs were killed, the entrails were removed, the flesh was salted and the body cavities were filled with hot stones. Small pigs were placed in the imu on ti leaves or banana leaves which had been laid over hot stones.

Large hogs were dressed, salted, and the body cavity filled with hot stones. The hog was wrapped in coarse kapa and mats and left until the stones had cooled, then the wrappings removed. The cooked meat on the inside was cut away and eaten. The outer underdone parts were cut into pieces and placed in the imu for recooking.

Young pigs were free to roam about the village. Mature hogs were penned in stonewall enclosures and fattened. They were fed cooked taro (kalo), sweet potatoes (‘uala), yams (hoi), bananas (ma‘a), and breadfruit (‘ulu). Mature hogs weighed 50 to 60 pounds. They had lean bodies with long heads and small erect ears. The color of the bristles were all black, striped, spotted, and combinations of these.

Taboos in eating (‘ai kapu) required that pork be restricted to men and to boys (eleven years and older) who were old enough to eat in the men’s eating house (hale mua).

Polynesian dogs were raised in great numbers for food. Their flesh was more highly esteemed than pig or chicken. All ranks of people could eat dog, but tenant farmers seldom did. The dogs were taken from them by the chiefs throughout the year for feasts and for animal taxes.
Dogs were prepared and cooked much like pig. They were small animals with long bodies, short legs, upstanding ears, and prominent eyes. They were all black, all white, dark - light or reddish-brown, or matted. Ilio always lived around the villages, often kept in pens where they were fed and fattened on poi, cooked sweet potatoes and broth (kai) made from cooked fish and pig.

Wild Birds
(Manu)

Wild birds such as the nene (goose) and koloa (duck) were considered delicacies. They were often steamed in the imu.

Sea Animals

Food

Preparation, Cultivation, Customs, and Historical Facts

I`a were the major source of protein for all classes of early Hawaiians. Although pigs, dogs, chickens, and wild birds were also consumed, they were in shorter supply and were more of a delicacy, eaten primarily by chiefs.

`Ai kapu forbade women to eat certain seafoods.

Chiefs were privileged to eat certain i`a. They had their own favorites and demanded i`a that were few and difficult to obtain. Some demanded live i`a that were few and difficult to obtain. Some demanded live i`a that could only be found in far away areas.

I`a were eaten raw, cooked or salted and dried. Raw i`a was scaled by scraping with a sharp shell, using a bamboo knife or some could be put into a container of rough pebbles or heavy beach sand and stirred to rub off the scales.

I`a were never served without some type of preparation. They were always salted to some degree depending upon when they were to be eaten.

Large i`a eaten raw were prepared by rubbing the flesh heartily with the fingers, called lomi (massage). This softened the flesh and allowed the salt or other flavors to penetrate. I`a prepared this way was called i`a lomi. If the flesh was not soft enough for lomi, it was called i`a nahu pu (fish to bite into).

Cooking methods included baking, broiling or steaming. Baking, called kalua, was done in the imu (underground oven). Baked i`a in the imu was always wrapped in leaves to retain flavor and to protect it from being crushed. Broiling called koala was done by placing raw or dried i`a directly on the hot coals. Broiling food wrapped in ti leaves was called lawalu. Lawalu was very common. The leaves protected small i`a and pieces of i`a from burning on the hot coals.
Steaming was called hakui or puholo. It was done by layering small red hot stones with the i’a in a closed calabash and adding a little water halfway through the process.

I’a were dried to be eaten when bad weather or kapu prevented fishing. There were two stages of drying: i’a maemae (partly dried), for short storage and i’a malo’o (fully dried), for longer storage.

Offshore reef and along-shore fishing was done by men while the collecting of shellfish, sea urchins, crabs and the like, and seaweed was done by women and children. The early Hawaiian fisherman were very knowledgeable and skillful as the amount of i’a obtained had to be sufficient to feed their large population. They were skilled at making fishing equipment and were adept at various fish catching methods. They knew where specific species of i’a bred. They knew the temperament of the different types of i’a and could anticipate their catching i’a. The method used depended upon the number of people fishing, where the fishing was to take place and what type of i’a was desired. A few of these methods included catching by hand, spear, net, trap or hook and line.

Kapu protected i’a during their spawning season and during their maturation. For example, catching aku during the summer when it was breeding was kapu. This type of conservation insured large numbers of i’a. Perhaps this is one reason why more i’a were reported in Hawaiian waters in the past than now.

Another method of obtaining i’a was with the use of carefully made and protected loko i’a (fish ponds). I’a were stocked and raised in these ponds. The loko i’a supplied food to the ali’i and kahuna.

The fisherman’s catch was distributed throughout the community. The first i’a was reserved for the gods and the best ones caught were given to the fisherman’s ohana (family) and to members of the related community.

Clam/Oyster
(Olepe)

The flesh of this animal is enclosed between two shells that are hinged. The shell is pryed open so the flesh can be removed and eaten (raw or cooked). They are found in soft bottoms of bays.

Conch
(Pu kani)

The flesh of this shell was pried out and eaten. The shell was prized for its trumpet-like capability.
Cowry (Leho)
Cowry flesh was considered a delicacy. Its shell was used as a lure to catch octopus.

Lobster (Ula)
Highly prized and found on the reef at low tides when in season.

Octopus (He`e)
Early Hawaiians killed the octopus by biting it between the eyes or by turning its head inside out. They are found hiding in the rocks and coral. Their soft muscular flesh was eaten raw, cooked, or dried.

Opihi (limpet)
Opihi clings tightly to rocks or coral heads and can be found during low tides. It was prized highly and was usually eaten raw. Its shell was used in food preparation to remove the peelings from cooked taro.

Sea Cucumber (Loli)
Sea cucumbers are found resting on sandy bottoms of shallow areas. They were often gathered by women.

Sea Snail (pipipi, Kupe`e)
A mollusk found at low tide on rocks and coral heads. It was cooked in the shell and the flesh could then be pulled out.

Sea Urchin (Wana)
Small spiny sea animals, wana were dug out of holes in the coral with sticks. They were usually gathered by women. Wana was picked and put into a bag (netted), beaten against a rock (to remove spines), cracked open, and eaten raw.

Shrimp (Opae)
Opae and ula (lobster) were caught in season and considered a prized food. Small shrimp were often salted and dried.

Turtle (Honu)
Turtle was another early Hawaiian delicacy. However, it was a forbidden food for women.
STEAMED FISH
(Lesson 7)

Ingredients:
1-1/2 pounds fresh fish (mullet, uhu, weke), cleaned
Salt
2 tablespoons soy sauce
1/2 stalk green onion, sliced fine
2 thin slices ginger, crush slightly
2 tablespoons oil
1 clove garlic, sliced thin, mash well
Ti leaf
Chinese parsley

Method:
1. Lightly salt fish cavity. Place ginger slices in cavity of fish.
2. Put ti leaf in pot, add water, place fish on leaf and steam for 10-15 minutes.
3. Remove ti leaf and fish to serving platter. Pour soy sauce and sprinkle sliced green onion over fish.
4. Heat oil and garlic in small pan until garlic is light brown in color. Carefully pour over fish evenly. Garnish with Chinese parsley.

Hints:
1. Steaming is a low-fat, low-calorie, healthful cooking method. Choose this method often.
2. Serve this main dish with hot rice, a fruit or vegetable salad, and a glass of milk to complete the meal.

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University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
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956-8161
Food from the Ocean

When the first polynesians landed in these islands, they found food on land and in the sea.

Circle all of these early Hawaiian ocean foods you have eaten.

Name: _______________ Age: ______.
Lesson #8: Body-Building Foods Today

Instructional Reference Materials

Lesson #8: Body-Building Foods Today
Recipe: Tuna Tofu Salad, Chinese Chicken Salad and Sunshine Tuna Salad Mix.

Visuals

Today Body-Building Food Models: Early & Today, tape
Food Wheel Posters: Early Hawai‘i & Today
Food Wheel on chalkboard
Body-Building Riddle (Calcium, Iron, Protein)
3 1/2" circle cut from construction paper, deck of cards, or food model to illustrate protein food (meat) serving size
Liquid measuring cup (8 oz.) and several plastic "glasses" of different sizes (8 oz., 12 oz., 16 oz. for example)

Handouts & Activity Sheets

Body-Building Foods activity sheets
Hawaiian Studies Posters: aloha, laulima, `ike

Food Activity Supplies

Hand and dishwashing soaps; paper towels, sponges
5 cutting boards
5 knives
Platter or bowl for serving salad
Tongs for serving
Grater, if carrots are used
Small plates, napkins, forks for each child
Salad Ingredients: Tofu, tuna, green onion, Chinese parsley, tomatoes or carrots, leafy green vegetables (romaine lettuce, water cress, etc.)
Salad dressing (made ahead of time)

Optional

1/2 pint (1 cup) carton of milk (from school lunch program)
Recipe Cards: Tuna Tofu Salad

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #8
1991
Concepts:

1. Today we still eat some of the Body-Building food which were eaten in early Hawai`i. Many others have been introduced from around the world. We need to eat two servings of Body-Building foods rich in iron, and at least two servings of food rich in calcium each day, for a total of four or more servings of Body-Building foods.

2. All Body-Building foods contain protein (meats, seafoods, bean, nuts and dairy products). Protein is needed for the growth and repair of our bodies, and to build muscle.

3. Iron is needed for healthy blood. Body-Building foods rich in iron are meats, seafoods and beans. Meat is the richest and best absorbed source of iron. Whole and enriched grains and dark green vegetables also contain iron. However, iron from plant sources is not as well absorbed by our bodies as is the iron from meat sources.

4. Calcium is needed to build and maintain strong bones and teeth. Body-Building foods rich in calcium include dairy products, fish and chicken eaten with bones, and tofu processed with calcium. Some leafy green vegetables and a few varieties of edible seaweed limu also contain calcium. Calcium is a nutrient often found lacking in the diet of Hawaii's school children.

Objectives:

1. Youth will state that all Body-Building foods are protein-rich foods. Youth will name two Body-Building foods - one rich in calcium and one rich in iron. Youth will state that we need at least four servings of Body-Building foods, two or more rich in calcium, and two rich in iron each day. (Food wheels will be completed accordingly).

2. Youth will understand that protein, iron and calcium are key nutrients needed for growth, repair and building of our muscles, bones and teeth, and blood.

3. Youth will prepare and eat a tofu salad (a high calcium-protein-iron meal).

4. Youth will learn and begin to practice the Hawaiian values of:
   a. aloha (love, greeting),
   b. laulima, (cooperation of many hands working together, and
   c. 'ike (recognition).
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<tr>
<th><strong>Lesson #8 Body-Building Foods - Today</strong></th>
<th><strong>Time</strong></th>
<th><strong>Learning Activity</strong></th>
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<tr>
<td><strong>Topic and Background</strong></td>
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<tr>
<td><strong>I. Review and Introduction:</strong></td>
<td>5 min.</td>
<td>A. Kupuna asks:</td>
<td>Student Folders</td>
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<tr>
<td></td>
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<td>- What food group did we talk about last week?</td>
<td>Early Hawai’i food wheel poster.</td>
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<td>- What is the function of BB foods?</td>
<td>Food wheel on chalkboard, chalk, BB food models, Masking tape</td>
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<td>- What are the key nutrients in BB foods?</td>
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<td>- What is the most important Early Hawaiian BB food?</td>
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<td>- Why is fish in the middle of the BB section of food wheel poster?</td>
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<td>B. State: &quot;Today we will be talking about BB foods eaten today and we'll prepare a Tuna Tofu Salad. We will be practicing laulima. Who can tell me what laulima is?&quot; Review.</td>
<td></td>
</tr>
<tr>
<td><strong>II. Body-Building Foods Today:</strong></td>
<td>10 min.</td>
<td>A. Kupuna pass out the early Hawai’i BB food handout. Ask youth to complete activity sheet: Circle BB foods eaten in Early Hawaii and star any BB foods they have eaten. PA write diagram on board.</td>
<td>Early Hawaiian BB Food handout</td>
</tr>
<tr>
<td>(Obj #1)</td>
<td></td>
<td>B. Which food did the Early Hawaiians not have?</td>
<td>BB Food models</td>
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<td></td>
<td></td>
<td>C. Point out that many foods we eat today were brought to Hawai’i by people from around the world. PA focus on the Today food wheel or diagram written on the chalkboard. State: &quot;All BB foods are good sources of protein. Some are also rich in calcium, others are rich in iron.&quot;</td>
<td>Today Food wheel on board with BB food group divided into calcium and iron sections (all BB foods contain protein).</td>
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<td></td>
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<td>Diagram written on board:</td>
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<td><strong>Body-Building Foods</strong></td>
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<td><strong>Protein</strong></td>
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<td><strong>Iron</strong></td>
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<td></td>
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<td><strong>Calcium</strong></td>
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Lesson #8  Body-Building Foods - Today

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<tbody>
<tr>
<td>V. Food Activity: Tuna Tofu Salad; (Obj #4)</td>
<td>20 min.</td>
<td>A. <strong>PA</strong> introduces &quot;Tuna Tofu Salad&quot;. In groups of 4-6 have youth cut up tofu and vegetables. Remember to wash hands first (mālama i ke ola kino). Ask which ingredients are BB foods. Which are good sources of: protein, iron, calcium? B. Combine all ingredients per recipe directions. <strong>Leaders</strong> assist as needed. Eat and clean up. Note: 'ike, laulima, aloha.</td>
<td>Tuna tofu salad recipe cards Tuna, tofu, green onion, tomatoes, green leafy vegetables. Cutting boards, knives, small plates, napkins and cleaning supplies. Large bowl, tongs</td>
</tr>
<tr>
<td>VI. Evaluation/Next Time:</td>
<td>5 min.</td>
<td>A. <strong>Leaders</strong> ask youth to name: 1. What are the key nutrients in Body-Building foods, 2. A good source of calcium, 3. A good source of iron, 4. The servings needed each day of iron, calcium and protein rich foods. If time allows ask what will happen if we don't get enough calcium in our diet. B. State &quot;Next week we'll be talking about the last food group - Protective foods&quot;. Point out that the vegetables in the Tuna Tofu salad are Protective foods. Encourage youth to make recipe at home.</td>
<td></td>
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These lessons have been piloted at the following elementary schools on O`ahu: Kapunahala, Kuhio, Palolo, Pope, Pu`o`hala and Waimanalo. Lessons materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai`i at Manoa, USDA Cooperating.
SUNSHINE TUNA SALAD MIX
(Lesson #8)

Ingredients:
1 6-1/2 ounce can tuna, drained
1/2 carrot, grated
1/2 cup milk powder
1/4 cup mayonnaise
Pepper to taste

Optional Ingredients:
Finely chopped onion or celery

Method:
1. Mix all ingredients together.
2. Use as a sandwich spread, cracker topping or as a vegetable dip.

Hints
1. To add more calcium to your family meals, try adding milk powder to other salads and spreads in which mayonnaise is used.
2. To reduce the amount of fat and salt you eat, try mixing plain low-fat yogurt and mayonnaise together for spreads and dressings.

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CHINESE CHICKEN SALAD
(Lesson #8)

Ingredients (salad):
2-3 chicken pieces, cooked and cut or shredded into bite sized pieces
1 small head iceberg lettuce, broken into bite sized pieces
1 head manoa lettuce, in bite sized pieces
2 stalk celery, sliced thin
1 carrot, sliced thin

Optional Ingredients
1 package wonton pi chips, crushed
1-2 green onions, chopped
1 bunch Chinese parsley, chopped fine
1 tablespoon toasted sesame seeds

Dressing:
1-2 tablespoons sugar
1/2 teaspoon salt
1/2 teaspoon pepper
1/4 cup salad oil
3 Tablespoons vinegar
1 Tablespoon sesame oil

Method:
1. Combine all dressing ingredients in a jar. Shake well.
2. Combine all salad ingredients. Toss and pour on dressing just before serving.

Hints
1. The manoa lettuce and carrot add color and Vitamin A to this dish. Add some fresh spinach for more color and Vitamin A.
2. Add more chicken to increase protein for a hearty main-dish salad. Serve with hot bread or muffins and a glass of milk for lunch. Add a dessert for a company meal.

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UH Manoa, CTAHR, CES
EFNEP, Foods of Hawaii, Lesson 8
1991
Body Building Foods

Early Hawaiians are a variety of body-building foods from the land and sea. Today we eat many of these same foods and other body building foods as well.

Circle the body building foods eaten in Early Hawai‘i:

- Milk
- Fish
- Beans
- Pig
- Tofu
- Crab
- Octopus

Place a ★ (star) on the foods you have eaten.

Name: ___________________________ Date: ________________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #8
1991
TUNA TOFU SALAD
(Lesson #8)

Ingredients (salad):
1 block tofu (firm), cut into bite-sized pieces
1 small can tuna (or salmon), drained
1 medium round onion or 1/2 bunch green onion
2 tomatoes, diced or sliced
Chinese parsley, chopped
Spinach, watercress, chinese cabbage, or lettuce, chopped or sliced

Dressing #1
1/4 cup shoyu
3 Tablespoons salad oil
1 teaspoon sesame oil
1 tsp. sugar
Toasted sesame seeds, optional

Dressing #2
1 - 2 Tablespoon Sugar
1/2 tsp. salt
1/2 tsp. pepper
1/4 cup salad oil
3 Tbsp. vinegar
1 Tbsp. sesame oil

Method:
1. Toss together: tofu, onion and parsley
2. Mix dressing ingredients together and pour over tofu mixture. Marinate 30 minutes or overnight.
3. Arrange greens around the edge of a large plate or platter. Place tofu mixture in center. Break up tuna/salmon and sprinkle with tofu.
4. Garnish with tomato and serve with whole wheat bread rolls, or crackers for lunch or a light dinner.

About Soy Beans and Tofu:

Soybeans: Of all legumes, soybeans is the highest in protein. Tofu and lempeh are popular soybean products. The dry soy-bean is a very versatile food and can be used in a wide variety of recipes.

Tofu: (soybean curd) - is a bland cheese-like curd made from soybeans. It comes in white, square cakes and should be kept covered in cold water in the refrigerator. If the water is changed daily, it will keep up to a week. It is especially rich in protein. Tofu can be a good source of calcium if it is processed with a calcium additive. This information is found on the
Body Building

Riddle #1:

I build strong bones and teeth. I'm found mainly in dairy products, but you can also find me in fish bones and tofu.

(Answer: Calcium)
Body Building
Riddle #2:

I help make your blood healthy. Many people don't get enough of me everyday. I am found in meats, fish, poultry and beans - but am not in dairy products.

(Answer: Iron)
Body Building
Riddle #3:

I help build muscles and make you grow. I am found in all body-building foods.

(Answer: Protein)
Lesson #9 - Protective Foods in Early Hawaiʻi

Educational Materials and Supply List

Instructional Reference Materials

Lesson #9: Protective Foods in Early Hawaiʻi
Early Hawaiʻi Protective Foods fact sheet
Instructions on how to de-vein ti leaves and wrap laulau
"Laulima" Story
Recipe: Laulau

Visuals

Early Hawaiʻi & Today Food Wheel Posters
Today Body-Building & Early Hawaiʻi Protective Food Models
Ahupuaʻa poster
Hawaiian Studies posters: mālama i ke ola kino, laulima, lōkahi

Food Activity Supplies

Hand washing soap and towels, nail brush
Ice water
Electric cook-top (hot plate), or wok
Extension cord
Large pot or steamer
Tongs, scissors, pot holders
Knives for de-veining ti leaves and dividing laulau
8-9 cooked laulau (one for every 3-4 children)
Ziploc freezer bag, newspaper
Large kitchen garbage bags
Paper plates, forks, napkins, cups
Clean-up supplies: soap, towels, sponges

Laulau Ingredients: (for 2 classes)

8-10 pounds lau kalo
5 pounds chicken boneless chicken thighs
50 ti'leaves
Hawaiian salt

Optional

Masking tape
Chalk, chalkboard or chart paper and pens
Youth folders with "Today" Food Wheels
Laulau Recipe Cards
Body-Building Riddles

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawaiʻi, Lesson #9
1991
Concepts:

1. Fruits and vegetables are good sources of fiber and vitamins, especially vitamins A and C. We call this group of foods Protective foods because they help protect us from disease, keep us healthy and help our bodies heal.

2. The most important Protective foods important in early Hawai‘i was the lau kalo (taro leaf). Some other protective foods eaten were lau `ualoa (sweet potato leaf), limu (seaweeds), `akala and `ōhelo berries, `ōhīla`ai (mountain apple), and hāpu`u (fern).

Objectives:

1. Youth will understand that the basic function of Protective foods (fruits and vegetables) is for protection from disease.

2. Youth will name two Protective foods - one rich in Vitamin A and one rich in Vitamin C. (Food wheels will be completed accordingly).

3. Youth will help prepare and eat “Chicken laulau.”

4. Youth will learn and practice the Hawaiian concepts of:
   a. laulima (cooperation of many hands working together),
   b. mālama i ke ola kino (personal sanitation),
   c. lōkahi (sharing).

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<tr>
<td>I. Review and Introduction:</td>
<td>5 min.</td>
<td>A. PA reviews BB Foods Today Lesson. Asks youth to name: 3 nutrients found in Body-Building foods, one food rich in each nutrient, and the number of servings needed daily.</td>
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<tr>
<td>Topic and Background</td>
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<tr>
<td><strong>I. Review and Introduction:</strong> (continued)</td>
<td>15 min</td>
<td><strong>A. PA</strong> states &quot;We call these Protective foods because they help protect us from disease, keep us healthy and help our bodies heal. They include all the edible plants (fruits and vegetables) eaten in early Hawai'i. Fruits and vegetables are good sources of fiber and vitamins.&quot; <strong>B. Kupuna</strong> asks &quot;If you lived in an Ahupua'a <em>what</em> early Hawaiian Protective foods would you have eaten? Which part of the Ahupua'a (mauka, mawaena, makai) did these Protective foods come from? Which was the most important protective foods eaten in early Hawai'i (lau kalo)? (Use Ahupua'a handout or map with food models).&quot;</td>
<td>BB food models and riddles Early Hawai'i food wheel</td>
</tr>
<tr>
<td><strong>II. Early Hawaiian Protective Foods found on the Ahupua'a (Obj #1,2)</strong></td>
<td></td>
<td>**B. Ask &quot;What other food group have we studied?&quot; (Energy) **C. Ask youth to name the food group that we have not covered. (Protective) Show early Hawai'i food wheel if needed. Say, &quot;Today we're going to talk about Protective foods eaten in early Hawai'i.&quot;</td>
<td>Map of Ahupua'a Models of Protective foods eaten in early Hawai'i</td>
</tr>
<tr>
<td>Protective Foods introduced by the Early Polynesians include mountain apple ('ōhia 'ai), sweet potato ('uala), lau kalo (taro leaves)</td>
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<td><em>Mauka:</em> 'ōhia 'ai, hāpu'u, ʻākala and ʻōhelo berries <em>Mawaena:</em> lau kalo, lau ʻuala <em>Makai:</em> limu</td>
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### Topic and Background

#### III. Early Hawaiian Values and Laulima Story (Obj. #4)

Values previously discussed:
- *laulima* (cooperation of many hands working together)
- *kuleana* (individual rights and responsibilities)
- *ʻohana* (extended family)

Optional: Kupuna could discuss values or present her own story.

### Time

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| **15 min.**                                                                     | "Laulima story:"
| A. Kupuna asks "What are some of the values which were practiced in the *Ahupuaʻa* that we've talked about in class? Review with definitions on chalkboard if needed." | ʻō pae: fresh water shrimp i kalo: taro patch lau hala (leaves of hala plant) pili grass - grass used for thatching houses kapa: tapa cloth wauke: bark from this tree was used to make tapa |
| B. PA says, "Now I would like to take you back in time and tell you a story about life in early Hawaiʻi to illustrate these values. Imagine that you are the child in this story. Please listen carefully (Hoʻoalohe). PA reads Laulima story slowly with expression. Kupuna defines Hawaiian words if needed." | |
| C. Ask, "How many of you have helped build a house with your families? How many of you have helped prepare meals?" You have practiced laulima. | |

### IV. Food Activity: Chicken Laulau (Obj. #3, #4)

<table>
<thead>
<tr>
<th>Time</th>
<th>A. PA says, &quot;Today we're going to make Chicken Laulau. Which food groups do laulau ingredients come from? We are going to practice laulima by working cooperatively in groups.&quot;</th>
</tr>
</thead>
</table>
| 20 min. | B. Divide youth into groups of 3-4 students. Youth wash hands. (*mālama i ke ola kino*)
| | C. Kupuna and PA demonstrate how to: 1) de-vein the ti leaf (laʻi) and 2) Peel the stem of the lau kalo. Pass out leaves. Assist groups in preparing leaves for their laulau. |

Prepare and steam laulau, (3 per students) before the first class, with about 2-3 ounces of meat in each. (Next class will eat laulau prepared by previous class.)

Laulau ingredients: (for 2 classes)/30 laulau
- 8-10 bags lau kalo (partially frozen)
- 5# box chicken
- 50 ti leaves (laʻi)
- Hawaiian Salt
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<tr>
<td>IV. Food Activity (continued)</td>
<td>5 min.</td>
<td>D. Kupuna and PA demonstrate how to salt pork and chicken, wrap in lau kalo and ti leaves (la‘i). Assist youth in working together to wrap laulau. One student brings up laulau to steam and exchanges for a steamed laulau. Note that this is lōkahi (sharing).</td>
<td>Hawaiian salt, lau kalo and ti leaves. (la‘i)</td>
</tr>
<tr>
<td>Optional: Ask youth to bring taro, poi or sweet potato. Note: Student made laulas should be immediately refrigerated, cooked as soon as possible and refrigerated or frozen. Students can wrap partially frozen chicken.</td>
<td>E. Youth divide laulau and eat with water. Clean up.</td>
<td>Thongs, newspaper, scissors, knives, forks, napkins, paper towels, paper plates, Ziploc bags for freezing laulau, soap, dish towel and water. Steamer (to heat laulau) Hot Plate (or wok), extension cord</td>
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V. Evaluation/Next Time:

A. Leader states "Let's review what we've learned today. Who can name:
1. The most important Protective foods eaten in early Hawai‘i?
2. The function of the Protective food group?
3. Three Hawaiian values practiced today: laulima, mālama i ke ola kino, lōkahi.

B. Leader states “Next time we’ll be talking about Protective foods eaten today”. Return if possible.

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1991
EARLY HAWAIIAN PROTECTIVE FOODS FACT SHEET
(Foods of Hawaii: Lesson 9)

Food

Lau Kalo (Taro leaves)*
The tender young leaves of taro and the peeled stalks of the stem were used in cooking. Leaves were valued for their lu'au according to the amount of calcium oxalate present. Those that developed lesser amounts of calcium oxalate were more desirable for lu'au as they were less likely to make one's throat "itchy" and took less time to cook. The pale colored leaves of the wild taro (those not exposed to direct sunlight) were especially valued. In preparation, pork, fish, or chicken was enveloped inside taro leaves and then wrapped tightly by a ti leaf to form a small package. These "packages" were steamed in the underground oven. The peeled stalks were also steamed and especially favored for pregnant women in their last months of pregnancy.

Taro leaves have more Vitamin A and C than Chinese spinach. One-half (1/2) cup cooked provides 74% of the U.S. RDA for Vitamin A and 47% of the U.S. RDA for Vitamin C.

ʻOhiʻaʻai
(Mountain Apple)
The mountain apple grows wild in moist valleys. It is juicy and crisp and was eaten as is. Two medium fruits gives us 38% of the RDA for Vitamin C.

Seasonal fruit, so not a regular contributor to the diet of early Hawaiians.

ʻOhelo berries*
A branched shrub growing in the mountains on the four largest islands. It is a member of the cranberry family. The small, round berries, yellow, orange, or red, are eaten raw or cooked. The dried leaves are brewed in a tea for a tonic. It is considered sacred to the Goddess Pele.
Akala berries* (Raspberries)

Akala is a large raspberry, 1"-2" in length. The vine is thornless, has pink flowers and bears fruit from April to July. Akala plants were once common to the moist forests throughout Hawai'i but today are rare. Today they can be found only in some forested areas of Kauai, Maui, and Hawai'i. (This is in contrast to the introduced Thimbleberry. The thimbleberry has thorns which act to protect it from livestock and therefore is found in abundance in the forests of Hawaii. It bears fruit year round, has white flowers and smaller fruit. Not found in early Hawaiians.)

The ākala berry is a source of Vitamins A and C. It was eaten when available but not a major food in the diet of early Hawaiians.

Coconut Water

The coconut offered a source of uncontaminated water for early Hawaiian voyagers, and a refreshing and thirst quenching drink for everyone. Puncture the soft eyes in the end (or face) of the coconut and enjoy!

Hāpu'u* (tree fern)

The giant tree ferns of the cool, shady rain forests. The trunks are cooked in the imu or in steam vents at the volcano for the starchy centers. This is food for pigs (pua'a) and for humans in times of famine. The young curled fronds (pepe'e) are fed to pua'a or peeled and cooked for human food.

Limu* (Seaweed)

The Early Hawaiians made extensive use of seaweeds or "limu" in their diets of any known culture. There were probably sixty or so edible seaweeds used by the Hawaiians. Fewer than ten can be commonly found in local fish markets today. (Macrueder and Hunt, 1979). The nutritional value of seaweeds have been misinterpreted, and too often seaweeds are regarded as a complete health food.
The young leaves growing near the ends of the vines were steamed in the underground oven (imu). One-half (1/2) cup of sweet potato leaves, cooked, provides 30% of the U.S. RDA for Vitamin A and 7% of Vitamin C. They are recommended especially for invalids and pregnant women. The vines and foliage make excellent hog feed and have always been used for this purpose.

There were a variety of other plants that were eaten as food or used for medicinal purposes.
Laulima Story
(Foods of Hawai‘i: Lesson 9)

After spending the day walking over the land, a place for the lo‘i was finally chosen. Keone thought that he had never seen a more perfect spot. He and the other boys enjoyed swimming and chasing o‘opus in the stream that ran through the middle of the valley. The water was clean and cool, just perfect to cool them off after the long walk from their village.

The men walked back and forth from one side of the valley to the other, marking the boundaries for the new lo‘i. The hard work would begin tomorrow. Meanwhile, Keone helped to prepare the area where they would be camping until the kalo was planted.

Everyone was excited that night. There would be some hard work tomorrow in order to build up the sides of the lo‘i and to clear out the big rocks and trees that remained in the center. The men and boys in their ‘ohana would help willingly until the work was done. As Keone went to sleep that night, he thought about the events of the past few days.

“Laulima is something very important to our people”, his father told him. “Laulima means that everyone in our ‘ohana shares in the work until it gets done. When we build a hale or fishpond, we all help so that the work is easier and finished faster. By helping each other we enjoy ourselves more and we have more time to play together.”

“I like that idea,” thought Keone. “If my father and brothers and I had to build this lo‘i by ourselves, it would take us forever. We would not see our village for a long, long time.

At home in the village, the women were busy helping Malia prepare for her wedding. Olopana would be marrying Malia as soon as the new lo‘i was built. Keone’s mother had been busy weaving lauhala to cover the floor of their hale, and his sisters were pounding wauke for kapa. The girls were
gathering pilo grass for the walls and the roof of Malia and Olopana’s new hale. There was much laughter and talking as the women and girls hurried about. Keone hated to leave the fun for the trip up the valley.

Before Keone and the other men and boys left the village, they worked together to finish the hale. The work went quickly and the house was strong.

The hale was almost finished when the air became very still. Big, black clouds began to collect overhead. The air was heavy and Keone’s body felt sticky from the heat and the moisture.

“It’s going to be a bad one,” said Olopana, looking up at the clouds.

“A bad what?” asked Keone, looking up too.

“We’re going to have a big storm soon.” said Olopana with a concerned look on his face.

“That’s too bad”, said Keone, as he tried hard to hide the excitement in his voice.

Storms were fun. Keone and the other boys enjoyed playing their games in the rain. It was especially fun when their best mud sliding hill became a water slide. They would climb the hill and slide down on banana leaves for hours.

It wasn’t long before big drops of rain began to fall. The men worked faster to finish the hale, but soon the ground became a big mud puddle and the house developed huge leaks where the thatching was not complete. Then the winds came.

The wind began as a stiff breeze, but it was soon blowing so hard that you couldn’t walk in a straight line. Keone and his friends laughed and shouted as they ran to catch pieces of mats and fish nets that were blowing away.
Just as Keone passed Malia's new house, a large section of thatching tore away from the frame, knocking him over and covering him. Keone was stunned from the fall and decided to rest a while before getting up. The bundles of pili grass protected him from the rain, and he was warm and dry under it.

The storm passed and soon everyone was busy cleaning up their village.

"Keone, Keone, where are you?" called his father. "We all have to help with the clean up."

"Maybe Keone is hiding because he doesn't want to help," suggested Keone's brother. "Maybe I should go look for him to make sure he's not goofing off."

"I don't think Keone would do that. He understands laulima and he never hides from work. But you should make sure that he is not in trouble."

While Keone's brother went in search of him, the men returned to Malia's house to repair the damage and finish the hale.

"We need more pili grass," shouted one of the men.

Suddenly, a large section of thatching began to waddle up to the house. Everyone stared in amazement.

"Don't worry," said the thatching. "I kept this from blowing away, and it's even warm and dry inside!"

How everyone laughed at this little joke. Keone laughed softly again as he waited for sleep to come at the camp near the new lo`i.
“It’s better to help each other. There’s nothing worse than playing a joke with no one to laugh at it. And there’s no better way to do a hard job than with others to help. Many hands really “make a job light.”

As Keone fell asleep, the moon rose. Each night the moon grew bigger and soon it would be round and brilliant. There was lots to finish before the moon began to grow smaller again. Keone felt lucky to be part of an ‘ohana that valued the tradition of laulima.
Instructions for Deveining Ti Leaves  
(Foods of Hawai‘i: Lesson #9)

How to Prepare Ti Leaves for Use (Ki or La‘i)

Ti leaves can be used for many things. Often you need to remove the midrib, or bone, from the center of the leaf before you use it. These directions tell you how to do this.

WHAT YOU NEED:

A fresh, green ti leaf

WHAT TO DO:

1. Turn the leaf so that the shiny side is down, or away from you.

2. Bite the midrib about 5 to 8 inches away from the beginning of the stem. You could also use scissors or a knife to cut into the bone. Do not cut it all the way through. Do not make a hole in the leaf itself.

3. Now hold the leaf in both hands with your thumbs on both sides of the cut. Push up on the broken bone. Pull the top of the leaf down. Push and work the bone toward the stem. Peel this part of the bone away from the stem. Your ti leaf is now ready to use.

Instructions for Wrapping LauLau  
(Foods of Hawaii)

Laulau is a wrapping of La'i or banana leaves, usually to cook meat, or pork, salted fish and Luau (taro tops). This was baked in an imu, steamed or broiled.

This is how we make laulau. First get your ingredients - Pork, meat, or chicken; cut into 2-3“ blocks, raw salted fish (butter fish is often used), Luau (taro tops) with the Ha (stem) cut into 2-3“ pieces. Cleaned and de-boned la'i.

First get the luau leaf and lay it flat on the table. Stack 3-8 more lu'au on top (according to taste and size of luau leaf). Add your meat, fish and cup of Ha to the stack of luau leaf. Use 2-3 pieces of meat and 1-2 pieces of fish and ha to suit. Salt to taste.

Lay down your la'i with the shiny side up. Place the luau and ingredients on the la'i - form a ball with the ingredients, the luau leaf acting like a container to hold the meat.

Fold the la'i over the ball of ingredients. Grasp the stem and top of la'i.

Hold the la'i and ingredients with one hand, squeezing together into a tight ball. Place the second leaf down, shiny side up and place your “package” on top.

Place your leaf so it covers the gap when you fold up.
Grasp firmly the top of the stems and leaf tips, making a tight ball of the ingredients.

With your free hand grab one of the stems and use it to tie the tops together.

Make a knot, tighten it gently. Some people tie string and cut off the stem to make more room when cooking. That's it! Your basic laulau. Put into imu or steam in a pot.
Harvesting and Preparing the Ki (La`i) for Use

To use the la`i most effectively you have to remove the rib or bone so that the stem becomes more pliable for tying. Begin by getting a fresh green leaf. When harvesting La`i we say kahe, or strip the leaf from the bottom first, leaving the top leaves.

Place la`i shiny side down

Make cut about 1/2 to 1/3 way down from stem.

How to de-bone

push bone away from leaf, stripping off bone with one motion

To strip off la`i grasp stem of la`i and pull down sharply holding on to the stalk with the other hand. To debone the la`i turn the leaf with the shiny side down. Cut or bite the bone about 1/3 of the way down from the end of stem. Cut the bone without breaking through. You want to strip off the bone without making a puka in the la`i. To debone hold your hand as illustrated separating the bone away from the surface of the la`i. The idea is to get a flexible stem for tying. The de-boned la`i is the basic for making all the items listed in text.

Source: A manual for doing things Hawaiian style. The ʻŌpelu Project ʻOhana.
Lau kalo
I am the dark green leaves which are a favorite Hawaiian food. Cook me well so your mouth and throat won't itch.

I am steamed with chicken, or pork and made into Laulau at Hawaiian parties.

I am an excellent source of Vitamin A and C.
I am the dark green leaf of an important Early Hawaiian energy food. My orange colored tuber is eaten at luaus.

I provide you with Vitamin A.

I’m steamed or boiled before I’m eaten.
You can find me from May to August in many backyards in Hawai`i.

I am a yellow-orange fruit when I am fully ripe.

I am one of the best sources of Vitamin A and C.

I was probably brought to Hawai`i from the Phillipines.
‘Ākala
I am a wild fruit found in some forests of Kaua`i, Maui and Hawai`i.

I’m bright red in color, one to two inches long, and have no thorns unlike my relative the thimble berry.

I am ripe from April to July.
Guava
I grow on trees in mountains and valleys.

I give you more Vitamin C than other fruits.

I was probably brought from Spain in 1871 by Don Marin.
Hala Kahiki
I am a yellow fruit when I’m ripe and have a crown of green leaves.

I am really juicy and a good source of Vitamin C.

I am a native of Brazil. Dole and Del Monte made me famous all over the world.
I am found on very tall trees in forests near a stream and sometimes in backyards.

I am dark red in color on the outside, and pale, crisp, and juicy on the inside.

I give you Vitamin C when you eat me.
Limu
I am found in the ocean and on the seashore.

When I am mixed with raw fish it tastes better.

Some varieties of me are good sources of vitamins and minerals.

The Early Hawaiians ate me to give variety to their diet.
Lesson #10 - Protective Foods Today
Educational Materials and Supply List

Instructional Reference Materials

- Vitamins A & C Food Lists (with serving sizes)
- Lesson #10: Protective Foods Today
- Recipe: Happy Healthy Tuna dip and Vegetable Relish Tray

Visuials

- Today Food Wheel Poster
- Protective Food Models (Early and Today)
- Protective Food diagram on board (chalk)
- Hawaiian Studies Posters: laulima, kuleana

Handouts & Activity Sheets

- Fruity-Tooty Activity Sheets
- Today Food Wheels (for student folders)

Food Activity Supplies

- Hand and dishwashing soaps; paper towels; sponges
- 5 cutting boards, 5 knives, can opener, grater, colander
- Vegetable peeler or brush (for carrots)
- Serving bowl (dip) and plates (veggies)
- Serving spoon (dip)
- Pitcher, optional (lemon water)
- Small plates, cups, napkins for serving
- 6 oz. can tuna; 16 oz. low-fat cottage cheese, carrot, onion (optional)
- Carrots (cut lengthwise for safer handling)
- celery, broccoli, manoa/romaine lettuce

Optional

- Masking tape, pencils
- Recipe Cards: Tuna dip and Vegetable Relish Tray
- Lemon Water: 1 lemon or lime, ice
- Sunshine Tuna Salad

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i, Lesson #10
1991
Concepts:

1. Vitamins A and C are key nutrients found in Protective Foods. Foods such as papaya, mango, taro leaves (*lau kalo*), broccoli, tomatoes and cantaloupe are excellent sources of Vitamins A and Vitamin C. It is recommended that we consume five or more servings of Protective foods every day. (2 - 4 servings of fruits and 3 - 5 servings of vegetables).

2. Dark green and orange colored fruits and vegetables are excellent sources of Vitamin A. Good sources of Vitamin A include carrots, taro leaves (*lau kalo*), mango, papaya, marungay, spinach, pumpkin, orange sweet potato and sweet potato leaves. It is recommended that we consume at least one serving (~ 1/2 cup cooked or 1 cup raw) of a Vitamin-A rich food every day. Vitamin A is required for normal vision (especially night vision), maintenance of mucous membranes, and may help in decreased risk of lung and gastric cancers.

3. Citrus fruits (ex: orange and grapefruit) and some other Protective foods are excellent sources of Vitamin C (ex: guava, green pepper, pineapple, cauliflower, strawberries, tomatoes, papaya). It is recommended that we consume one or more (1/2 C juice, 1/2 cup cooked, 1 C raw, or one small fruit) servings every day. Taro (*kalo*), potatoes and bananas are Energy foods which also contain some vitamin C. Vitamin C helps produce collagen (hydroxylation of lysine and proline) which is needed for healing, especially the skin. Vitamin C can help protect against cancer (prevents formation of carcinogens/N-nitroso compounds), especially esophageal cancers.

Objectives:

1. Youth will name two Protective foods (fruits and vegetables)- one rich in Vitamin A and one rich in Vitamin C. Youth will state that we need five or more servings of Protective foods each day. (Food wheels will be completed accordingly).

2. Youth will prepare and eat a “Vegetable Platter” with a Happy-Healthy Tuna Dip.

3. Youth will learn and practice the Hawaiian values of:
   a) *laulima* (cooperation of many hands working together) and,
   b) *kuleana* (individual rights and responsibilities within a group).
## Lesson #10: Protective Foods Today

### Topic and Background

#### I. Review

The most important early Hawai‘i Protective foods were lau kalo (taro leaf), Lau‘ula (sweet potato leaf) and limu (seaweed).

Other protective foods included: ōhīlā‘ai (mountain apple), Ḣkala and ōhelo (berries) and hāpu‘u (fern)

**Values:** kuleana, laulima, 'ohana

#### II. Protective Foods Today (Obj #1)

**Sources** of Vitamin C: oranges, grapefruit, guava, green pepper, mountain apple, strawberries, pineapple, papaya, mango.

**Function** of Vitamin C: helps in forming collagen which is needed for healing and in preventing some cancers.

**Sources of Vitamin A:** carrots, spinach, yellow sweet potato and leaves, lau kalo, pumpkin, dark green cabbages/lettuce (swamp cabbage), some types of limu.

**Function of Vitamin A:** helps us see in the night and helps in preventing cancer.

### Time

<table>
<thead>
<tr>
<th></th>
<th>Learning Activity</th>
</tr>
</thead>
</table>
| 5 min. | A. **Kupuna:** "Let's review what we learned last week". Can anyone name:  
1. The most important Protective food eaten in early Hawai‘i?  
2. The function of the Protective food group?  
3. Three Hawaiian values we've learned and practiced?"
| 20-5 min. | A. **Fruity Tuitty Activity:** PA passes out handout and explains. Ask youth to discover one of the nutrients found in Protective foods (Vitamin C). Write Protective food diagram on board. Which of the Protective foods are rich in vitamin C. (Review handout) Put food models under Vitamin C on diagram. Discuss the function of vitamin C.

B. Ask, "What is the other key nutrient found in Protective foods?" (Vitamin A: write on board). Youth name foods and leader moves or lists foods under vitamin A on board. Briefly discuss the function of vitamin A and point out deep yellow, orange and dark green are **colors** which often indicate that a food is a good source of Vitamin A.

### Pre-Preparation

- Optional: riddles or food model, Food Wheel
- Pictures of "Early and Today" Protective foods, tape
- Student Folders, pencils
- "Today" Food wheel poster

**Tuitty Fruity Handouts:**

**Protective Foods (4)**

<table>
<thead>
<tr>
<th>Vitamin C</th>
<th>Vitamin A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 serving</td>
<td>1 serving</td>
</tr>
</tbody>
</table>

**Vitamin A & C**

**Others**
### Lesson #10: Protective Foods Today

#### Topic and Background

II. Protective Foods Today (continued)

Sources rich in Vitamin A and C: mango, papaya, tomato, broccoli, taro leaves and marunggay, etc.

Other protective foods: celery, onions, cabbage, mushroom, apples, pears, etc.

Serving sizes are generally 1/2 cup cooked, one cup raw, 1/2 cup of juice, or one small fruit.

Minimum No. of servings per day:
- One rich in Vitamin A
- One rich in Vitamin C
- Two to four servings of fruit
- Total of at least 3 - 5 servings of vegetables day

### Learning Activity

<table>
<thead>
<tr>
<th>Time</th>
<th>Learning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 min.</td>
<td>C. There are some foods which are good sources of both Vitamin C and Vitamin A. Put these foods in the middle. Ask are there other fruits and vegetables which we have not mentioned? Note that these are not as rich in nutrients but still have some fiber and add flavor or crunch to fruit and vegetable dishes. Add these foods to the &quot;others&quot; section. Note that we have greater variety of fruits and vegetables today than the early Hawaiians had.</td>
</tr>
<tr>
<td></td>
<td>D. Ask youth to write in two Protective foods on their food wheels; one high in vitamin A, one high in vitamin C.</td>
</tr>
<tr>
<td></td>
<td>E. Ask &quot;How many servings of Protective foods should we eat daily?&quot; Briefly discuss the minimum number of servings and the serving sizes of the foods they eat. Have youth write 5 by Protective foods on their food wheels.</td>
</tr>
</tbody>
</table>

### Pre-Preparation

- Add number of servings to diagram of Protective foods on chalkboard.

### III. Food Activity: Vegetable Platter with "Happy Healthy Tuna Dip": (Obj. #2)

A. Vegetable Platter/Dip: PA discuss these crunchy vegetables and dip as a tasty, nutritious snack. Reinforce lesson: Ask youth to identify the major nutrients in each vegetable. Kupuna note that youth will be practicing laulima and kuleana.

Recipe: Tuna dip and Vegetable platter
Pre-prep: lemon water
Dippers: broccoli, carrots (sliced down the middle), celery, green pepper
Dip ingredients: cottage cheese, tuna
**Lesson #10: Protective Foods Today**

<table>
<thead>
<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
</table>
| III. Food Activity: Vegetable Platter with "Happy Healthy Tuna Dip" continued: | 5 min. | B. Divide youth into groups (5-6 per group). 1 group cuts celery, 1 for broccoli, 1 for dip, 1 for carrots and 1 for green pepper. Assist each group as needed.  
C. As each group finishes their task arrange food on serving plates.  
D. Sample with lemon water and enjoy. Pass out recipe cards. Clean up. | Pitcher for lemon water  
Knives, cutting board, peeler, plastic cups for dip (3 oz.), and lemon water (5 oz.)  
Trays or platters, plates, napkins, clean up supplies |

| IV. Review and Next time | | Leader Asks:  
A. What is the name of this food group?  
B. Why do we call it the "Protective" food group?  
C. How many servings of vegetables and fruits are needed daily?  
  - # servings of Vitamin A foods?  
  - # servings of Vitamin C foods?  
  - # servings of other fruits & vegetables? | Optional: Protective Riddles |

These lessons have been piloted at the following elementary schools on O‘ahu: Kapunahala, Kuhio, Palolo, Pope, Pu‘ohala and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai‘i at Manoa, USDA Cooperating.

1991
**Fruit and Vegetable Exchanges:** (Raw unless noted)
(from Directions for Scoring EFNEP 24 hour food recalls, 1991)

<table>
<thead>
<tr>
<th>Food Name</th>
<th>Serving Size</th>
<th>Vit A</th>
<th>Vit C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Vitamin A:</td>
<td>1500 IU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Vitamin C:</td>
<td>23 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acerola (West Indian Berry)</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Apples, Raw</td>
<td>1 item</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>- Juice</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Apricot, Raw</td>
<td>2 items</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Artichokes, Boil,</td>
<td>1 item</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Asparagus, Boiled, Tips</td>
<td>1/2 cup</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>Avocado, Raw, California</td>
<td>1/4 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bananas, Eating type</td>
<td>1 item (3)</td>
<td>0</td>
<td>0 (1)</td>
</tr>
<tr>
<td>- Plantain, cooked</td>
<td>1-1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bamboo Shoots</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beans - all types</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bell Peppers - Sweet, Raw</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bittermelon - Cooked</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>- Leaves Cooked</td>
<td>1/2 cup</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>Blackberries</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Burdock Root - Boiled, Drained</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Breadfruit - Ripe, Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Broccoli - Frozen, Boiled, Drained</td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Brussel Sprouts - Frozen, Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cabbage - Common, raw sliced</td>
<td>1 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>- Common, Raw, Sliced</td>
<td>1/2 cup</td>
<td>0</td>
<td>1/2</td>
</tr>
<tr>
<td>- White Mustard/Swamp cooked</td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Canteloupe, Raw</td>
<td>1 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Carambola/Starfruit</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Carrots - Raw, Whole, Scraped</td>
<td>1 item</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Boiled</td>
<td>1/4 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Casaba</td>
<td>1 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cauliflower - Raw, Boiled,</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cherimoya, Raw</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cherries, Sweet, Raw</td>
<td>10 items</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Corn - Sweet, Canned,</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1 cob</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cucumber - Raw, Slices</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cranapple/berry Juice</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Daikon - Oriental Radish Raw</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dates - Dried, Chopped</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Drinks - fortified with Vitamin C</td>
<td>6 ounces</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Eggplant - Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving Size</td>
<td>Vit A</td>
<td>Vit C</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Figs - Raw</td>
<td>1 item</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fruit Cocktail - Can/Juice</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ginger Root - Raw, Sliced</td>
<td>1 ounce</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Grapes - any type or juice</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Grapefruit, raw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Juice</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Guavas - Common,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Strawberry</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Honeydew melon</td>
<td>1 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Horseradish - Leafy Tips, Cooked</td>
<td>1/2 cup</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Jackfruit</td>
<td>1 serving</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jute (Cooked Saluyot)</td>
<td>1/2 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Kale - Raw, boiled</td>
<td>1/2 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Kwi - Raw</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Lemonade</td>
<td>1 cup</td>
<td>0</td>
<td>1/2</td>
</tr>
<tr>
<td>Lemons</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Lentils - Whole, Cooked</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lettuce - Iceberg, Raw, Leaves</td>
<td>1 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>- Romaine, Raw, Shredded</td>
<td>1 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Limes</td>
<td>1 large</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Lotus Root - Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lychees</td>
<td>4 items</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mangos</td>
<td>1 small-1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Marrungay leaves</td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mountain Apples</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nectarines</td>
<td>1 item</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>Ohelo berries</td>
<td>1 cup</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>Okra - boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Onion</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>- Green</td>
<td>5 stalks</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Orange - Raw, all varieties</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>- Juice</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Pandanuus Fruit - Fresh</td>
<td>1 serving</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Papaya - Ripe</td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>- Green cooked</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Passion Fruit Orange Drink</td>
<td>3/4 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>- Purple</td>
<td>5 items</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Peaches</td>
<td>1 item</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pear - any type</td>
<td>1 piece</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Peas - all types, cooked</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving Size</td>
<td>Vit A</td>
<td>Vit C</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Persimmon (Hachiya)</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Pineapple</strong> Juice, Canned</td>
<td>1/2 cup</td>
<td>0</td>
<td>1/2</td>
</tr>
<tr>
<td>- Raw, Diced</td>
<td>1/2 cup</td>
<td>0</td>
<td>1/2</td>
</tr>
<tr>
<td>Poha</td>
<td>1/2 cup</td>
<td>1+</td>
<td>1+</td>
</tr>
<tr>
<td>Potato - Baked, Flesh &amp; Skin</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Prunes - Dried, Cooked</td>
<td>1/4 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pummelo</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Pumpkin - Canned/Cooked</td>
<td>1/2 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Radish - Daikon</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Raisins - Seedless</td>
<td>1/4 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Raspberries</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rhubarb - Raw, Cooked, Sugar</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sapayote-Green</td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sauerkraut - Canned</td>
<td>1/2 cup</td>
<td>0</td>
<td>1/2</td>
</tr>
<tr>
<td>Seaweed - Most types</td>
<td>1 ounce</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sapodilla</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Sauce - Spaghetti, Canned (tomato)</td>
<td>1/2 cup</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>Soursop</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Soybeans - Green, Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>1/2</td>
</tr>
<tr>
<td><strong>Spinach</strong> Boiled</td>
<td>1/2 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>- Raw, Chopped</td>
<td>1/2 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Squash - Summer, Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Surinam Cherry (Pitanga)</td>
<td>1 item</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Strawberries - Raw, whole</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sweet Potato</strong> root - yellow</td>
<td>1/2 cup</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>- All other types</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>- Leafy tips - Cooked</td>
<td>1/2 cup</td>
<td>1</td>
<td>1/2</td>
</tr>
<tr>
<td>Tamarinds</td>
<td>1/2 item</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tang</td>
<td>1/2 cup</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Tangerines</td>
<td>1 item</td>
<td>1/2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Taro</strong>, cooked</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>- Leaves - Cooked</td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tofu - Soybean Curd</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Tomato</strong></td>
<td>1 item</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>- Juice - Canned</td>
<td>1/2 cup</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>- Canned, Stewed</td>
<td>1/2 cup</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>Turnip Greens - Frozen, Boiled</td>
<td>1/2 cup</td>
<td>1</td>
<td>1/2</td>
</tr>
<tr>
<td><strong>V-8 Vegetable Juice</strong></td>
<td>1/2 cup</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Watercress</td>
<td>1/2 cup</td>
<td>1/2</td>
<td>0</td>
</tr>
<tr>
<td>Water Chesnuts</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Watermelon</td>
<td>1 cup (3 cups)</td>
<td>0 (1)</td>
<td>0.1/2 (1)</td>
</tr>
<tr>
<td><strong>Wi-apple (1-1C)</strong></td>
<td>3 cups</td>
<td>1</td>
<td>1 1/2</td>
</tr>
<tr>
<td>Yams - Boil or bake</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Zucchini - Boiled</td>
<td>1/2 cup</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
**FRUITY TOOTY**

Color only the squares of Hawaii's fruits, to find the vitamin they have in common to make you healthy!

<table>
<thead>
<tr>
<th>Ice Cream</th>
<th>Pineapple</th>
<th>Mango</th>
<th>Guava</th>
<th>Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans</td>
<td>Grapefruit</td>
<td>Steak</td>
<td>Orange</td>
<td>Hot dogs</td>
</tr>
<tr>
<td>Butter</td>
<td>Papaya</td>
<td>Chicken</td>
<td>Bread</td>
<td>Sushi</td>
</tr>
<tr>
<td>Eggs</td>
<td>Tangerine</td>
<td>Soda</td>
<td>Candy</td>
<td>Noodle</td>
</tr>
<tr>
<td>Potato Chips</td>
<td>Lemon</td>
<td>Rice</td>
<td>Guava</td>
<td>Pork</td>
</tr>
<tr>
<td>Nuts</td>
<td>Mango</td>
<td>Orange</td>
<td>Pineapple</td>
<td>Gum</td>
</tr>
</tbody>
</table>

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai’i, Lesson #10
1991

Name: ____________________ Date:__________
HAPPY HEALTHY TUNA DIP

Ingredients:
1 6-1/2 ounce can tuna, drained
1 16-ounce container cottage cheese

Optional Ingredients:
Grated cheese Chopped green onion Grated Carrot

Method:
1. Mix and eat with favorite "dippers".
2. Try cutting carrots into flat strips for scooping dip.

Hint:
Serve tuna-cottage cheese on a "bed" of lettuce or cabbage with tomato slices for a delicious, nutritious snack. Add a glass of milk or ice water and some crispy crackers for an ono lunch.

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University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
For more information call:
956-8161

VEGETABLE RELISH TRAY

Ingredients:
Carrots Cucumber Cauliflower
Broccoli Zucchini Tomatoes
Celery Green Onion Other Vegetables

Method:
1. Select vegetables of your choice. Wash.
2. Cut into bite sized or finger-food sized pieces.
3. Arrange attractively on a plate or platter.
4. Serve plain or with a dip or spread. Enjoy this crunchy snack!

Hints:
1. Prepare ahead and chill vegetables until ready to serve.
2. Store prepared vegetables in snack sized baggies in the refrigerator. Your snack will be ready to eat when you are hungry.

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Lesson #11 - Making Healthy Choices
Educational Materials and Supply List

Instructional Reference Materials

________ Lesson #11: Making Healthy Choices
________ Ono Fruit Smoothie Recipe Cards

Visuals

________ Today Food Wheel poster
________ Food Models; all three food groups (Early & Today)
________ Food Wheel on chalkboard or chart paper
________ "Sometimes foods" on board

Handouts and Activity Sheets

________ Extra Food Wheels
________ Making Healthy Choices Student Handout & Master (Fat, Sugar, Salt)
________ Hawaiian Studies Poster: mālama pono i ke ola kino

Food Activity Supplies

________ Bananas and/or other fruit, fresh or frozen
________ Non-fat or low-fat dry milk powder
________ Yogurt, optional
________ Water and ice
________ 3 oz. cups, napkins
________ Hand soap, dishwashing soap, towels for preparation and clean-up
________ Cooler with ice or freezer to keep banana frozen.

Sugar, Fat, Salt Activity Supplies

________ Sugar, oil, salt
________ Measuring spoons and small clear plastic cups
________ Candy bar, banana, soda, water, rice, tuna, shoyu, frosted and regular
________ Corn flakes, crack seed, canned luncheon meat, kalo food model.

Optional

________ Masking tape, pencils
________ Ono Fruit Smoothie recipe cards
________ Match the Nutrient Activity
________ Choose Food with less fat handout

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i, Lesson #11
1991
Concepts:

1. There are three major functions of foods; (1) to give us energy, (2) to help build strong muscles, bones and blood, (3) to protect us from disease.

2. Eating large amounts of fat, added sugar and salt (sodium) can lead to disease and displace other foods needed for good health. Excess fat can lead to heart disease; excess sodium can lead to high blood pressure and water retention; and excess added sugar can contribute to cavities.

3. If we replace healthy foods with empty foods we may not get enough of the nutrients our bodies need to be healthy.

Objectives:

1. Youth will identify two foods high in fat, two foods high in sodium, and two foods high in sugar.

2. Youth will also understand that eating too many foods rich in sugar and fat can displace other foods needed for good health.

3. Youth will identify health concerns from eating too much fat (heart disease), sodium (high blood pressure and water retention) and added sugar (cavities).

4. Youth will learn and begin to practice the Hawaiian concept of "Mālama pono i ke ola kino" (taking righteous care of the body's health).

<table>
<thead>
<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Review and Introduction (Obj. #1)</td>
<td>10 min.</td>
<td>A. PA states &quot;Today were are going to review the three food groups. Please pull out your food wheels and complete them as needed as we discuss each group. Next week you'll be completing a blank wheel by yourself so please listen carefully.&quot;</td>
<td>Today food wheel. Blank food wheel on board.</td>
</tr>
</tbody>
</table>
### Lesson #11: Making Healthy Choices - Part I

<table>
<thead>
<tr>
<th><strong>Topic and Background</strong></th>
<th><strong>Time</strong></th>
<th><strong>Learning Activity</strong></th>
<th><strong>Pre-Preparation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Review and Introduction Continued</strong></td>
<td><strong>10 min.</strong></td>
<td><strong>B. PA</strong> asks students to raise their hands if they know the names of the three food groups. Youth respond and PA writes down the food group names on board. Youth complete wheels as needed. Ask youth to name the function of each group. <strong>C. Ask students to name two foods in each food group - one eaten in early Hawai'i and one eaten today. Briefly review the nutrients found in each group. Ask youth to name the minimum number of servings needed in each group.</strong></td>
<td><strong>Nutrient Poster</strong>&lt;br&gt;Food models, tape&lt;br&gt;Chalk and Chalkboard</td>
</tr>
<tr>
<td><strong>Kupuna and Teacher assist youth as needed.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>35 min.</strong></td>
<td><strong>A. PA</strong> says, &quot;Today we're going to find out about making healthy choices and &quot;Malama pono i ke ola kino.&quot; Who can name some not-so-healthy ingredients?&quot; List on board. What makes these ingredients &quot;not so healthy&quot;. Discuss, note that we can eat these foods sometimes just not all the time. <strong>B. PA</strong> says &quot;Now let's discover some foods that have large and small amounts of these ingredients.&quot; <strong>Kupuna</strong> or <strong>Leader</strong> passes out &quot;Making Healthy Choices&quot; handout. Walk youth through the activity one section at a time. Ask youth to circle names of foods with the least amount of fat, sugar and sodium. <strong>Leader or student</strong> demonstrates how many teaspoons of each ingredient are in the different foods.</td>
<td><strong>Write on board as mentioned by class: &quot;Not-so-healthy&quot; foods.</strong>&lt;br&gt;<strong>Fat:</strong> Heart Disease&lt;br&gt;<strong>Sodium:</strong> Hypertension and Water Retention&lt;br&gt;<strong>Sugar:</strong> Cavities&lt;br&gt;Food Items: Candy bar, banana, soda, water, rice, tuna, shoyu, frosted and regular corn flakes, crack seed, kalo food model, canned luncheon meat.</td>
</tr>
</tbody>
</table>

**II. Not-so-healthy foods/Making Healthy Choices: (Obj #1-3)**

**Fat:** Excess consumption is a risk factor for heart disease, cancer and obesity. Cutting back on foods rich in fat (<30% of calories), saturated fat (<10%) and cholesterol (300 mg/day) is recommended by leading Health Authorities. Fat also has more calories than carbohydrates or proteins.

**High Fat Foods:** mayonnaise, butter, margarine, fried foods, candies, real ice cream, whole milk, fatty meats: bacon, sausage, spam.

**Lower Fat alternatives:** skim milk products, reduced calorie spreads, lean meats, poultry, fish.
## II. Not-so-healthy foods/Making Health Choices - Continued
(Obj. 1-3):

**For Reference Only**

**Added Sugar:** Excess sugary foods (eaten often, without promptly cleaning one's teeth can cause dental cavities. There is not hard evidence for excess sugar causing hyperactivity. Refined sugar has little nutrient value. Molasses has been removed. Brown sugar has some nutrients added. Fruits and juices usually contain more nutrients than these processed **High sugar foods:** candies, sodas, cookies, other sweets.

**Lower Sugar Alternatives:** fruits and vegetables, enriched or whole grain breads and crackers

**Sodium:** Excess sodium can lead to water retention and high blood pressure in salt-sensitive people. Salt (sodium chloride) is the major food source of sodium. We should consume no more that 2-3 grams per day. For some people excess sodium consumption is linked with hypertension.

**High Sodium Foods:** chips and salty seeds, salted meats, soy and other sauces, most canned meats and other products, fast or processed foods

**Lower Sodium Alternatives:** low sodium or sodium free products, natural products.

<table>
<thead>
<tr>
<th>Time</th>
<th>Learning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.</td>
<td>Youth complete section on fat. PA reviews. PA also points out that 1% lowfat milk has less fat than whole milk. Youth fill in the correct number of teaspoons on handout. It is easy to cut back on fat by eating less fried foods, fatty meats, and using less salad dressing, mayonnaise and butter. Decreasing fat is a good way to lose weight.</td>
</tr>
<tr>
<td>D.</td>
<td>Youth complete section on sugar. Leader or child measures out 9 tsp. sugar to illustrate amount of sugar in soda. Juice has sugar too, but it is more nutritious than soda because it contains vitamins. Sweetened cereals contain a lot of sugar, adding a banana or raisins to unsweetened cereal is a healthier choice than added sugar. Youth fill in tsp. of sugar on handout.</td>
</tr>
<tr>
<td>E.</td>
<td>Youth complete sodium section of handout. PA demonstrates the amount of sodium recommended for us to consume a day. 1 to 1-1/2 tsp of salt or 2-3 grams of sodium. PA measures 2 T of shoyu into cup. Then measures out the 1 tsp. of sodium present in that amount of shoyu. Compares to amount needed daily.</td>
</tr>
<tr>
<td>F.</td>
<td>Point out that foods that are rich in fat and sugar may have a lot of calories with very few nutrients. If we eat too much of these &quot;junk&quot; foods, our bodies may not get enough of the nutrients needed for good health.</td>
</tr>
</tbody>
</table>

### Pre-Preparation

- **Handouts:**
  - Making Healthy Choices: Foods high and low in Fat, Sodium and Sugar
- **"Easy Ways to Cut Back on Fat" handout**

### Supplies:
- Measuring spoons (2 sets)
- Pyrex (or other) cups
- Shoyu
- Oil
- Sugar
- Salt
- Soda Can
- Canned luncheon meat
- Seed Pkg. (1 oz.)
## Lesson #11: Making Healthy Choices: Part I

<table>
<thead>
<tr>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
</table>
| 10 min.| A. PA states "Today's snack is an easy to make healthy alternative to cookies, candy, soda or chips." **Kupuna** points out that "Mālama pono i ke ʻoia kino" means taking righteous care of oneself. Making healthy food choices is an important part of taking care of yourself.  
B. PA demonstrates how to blend bananas with juice and milk. Ask volunteers to help make smoothies. Youth sample smoothie during evaluation and clean up. | Evening before lesson:  
Cut and freeze small slices of bananas. If possible keep frozen until needed.  
Cut small slices of oranges, mangoes or other fruit.  
**Supplies:** 5 oz. cups, napkins, towel, milk powder, water, ice cubes, fruit, Clean-up supplies |
| 5 min. | A. Leaders time foods rich in fat, sodium and refined sugar, and why we shouldn't eat too much of these "junk" foods.  
B. Pass out "My story: What I have Learned..." handout for youth to complete and return for next week.  
C. What Hawaiian value did we learn and practice today? | "My Story: What I have Learned" handouts. |

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These lessons have been piloted at the following elementary schools on O`ahu: Kapunahala, Kuhio, Palolo, Pope, Pūʻōhala and Waimanalo. Lessons materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai`i at Manoa, USDA Cooperating.

February 1991
## Choose Foods With Less Fat

<table>
<thead>
<tr>
<th>2% Milk</th>
<th>Whole Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1 cup - 1 teaspoon fat)</td>
<td>(1 cup - 1 1/2 teaspoons fat)</td>
</tr>
<tr>
<td>![Spoon]</td>
<td>![Spoon]</td>
</tr>
<tr>
<td>![Spoon]</td>
<td>![Spoon]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Banana</th>
<th>Candy Bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Trace of fat)</td>
<td>(1 1/2 ounce Chocolate - 3 teaspoons fat)</td>
</tr>
<tr>
<td>![Spoon]</td>
<td>![Spoon]</td>
</tr>
<tr>
<td>![Spoon]</td>
<td>![Spoon]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tuna</th>
<th>Spam</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3 oz. - 1/3 teaspoon fat)</td>
<td>(3 oz. slice - 5 teaspoons fat)</td>
</tr>
<tr>
<td>![Spoon]</td>
<td>![Spoon]</td>
</tr>
<tr>
<td>![Spoon]</td>
<td>![Spoon]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Baked Potato</th>
<th>Potato Chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Trace of fat)</td>
<td>(1 oz. pkg. - 2 teaspoons fat)</td>
</tr>
<tr>
<td></td>
<td>![Spoon]</td>
</tr>
</tbody>
</table>
**Match the Nutrient Activity**

Name: ____________________________ Date: ______________

Classroom Teacher: ____________________________

Directions: In the blanks fill in the name of the key nutrient next to the correct function and food sources. Use each nutrient only once.


**Function and Food Source**

1. Helps us **see in the night**, helps prevent some types of cancer. ___________________________________

2. Gives us **energy**! (rice, taro, bread) ___________________________________

3. Helps build **muscle**. (meats, beans, and dairy). ___________________________________

4. Helps keep our **blood** healthy (meat, beans not dairy). ___________________________________

5. Helps produce **collagen** which helps our bodies **heal**. (orange & mountain apple) ___________________________________

6. The most **important** nutrient essential for life (wai). ___________________________________

7. Helps build strong **bones** and teeth (dairy products). ___________________________________

---

UH Manoa, CTAHR, CES, EFNEP, Foods of Hawai'i Program
Supplementary Lesson 11
1991
Match the Nutrient Activity

Name: ___________________________ Date: ______________________

Classroom Teacher: _______________________________________

Directions: In the blanks fill in the name of the key nutrient next to the correct function and food sources. Use each nutrient only once.


Function and Food Source

1. Helps us **see in the night**, helps prevent some types of cancer. ________________________ Vitamin A

2. Gives us **energy**! (rice, taro, bread) ________________________ Carbohydrates

3. Helps build **muscle**. (meats, beans, and dairy). ________________________ Protein

4. Helps keep our **blood** healthy (meat, beans not dairy). ________________________ Iron

5. Helps produce **collagen** which helps our bodies **heal**. (orange & mountain apple) ________________________ Vitamin C

6. The most **important** nutrient essential for life (wai). ________________________ Water

7. Helps build strong **bones** and teeth (dairy products). ________________________ Calcium

UH Manoa, CTAHR, CES, EFNEP, Foods of Hawai‘i Program
Supplementary Lesson 11
February 1991
Be a food detective! **Circle** the name of the foods with less fat, sugar and sodium.

After your leader demonstrates the number of teaspoons of fat, sugar, and sodium in these foods fill in the correct number of teaspoons on this handout.

<table>
<thead>
<tr>
<th>Less Fat</th>
<th>Less Sugar</th>
<th>Less Sodium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candy Bar</td>
<td>Soda</td>
<td>Brown Rice</td>
</tr>
<tr>
<td>or Banana</td>
<td>or Water</td>
<td>or Brown Rice with 1T shoyu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuna fish</td>
<td>Frosted Flakes</td>
<td>Salted Crack Seed</td>
</tr>
<tr>
<td>(water pack)</td>
<td>or Corn Flakes</td>
<td>or Taro</td>
</tr>
<tr>
<td>Luncheon Meat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name: ____________________________  Date: ____________________________

UH Manoa, CTAHR, CES,
EFNEP Foods of Hawaii Program, Lesson 11
1991
ONO FRUIT SMOOTHIE
(Lesson #11)

Ingredients: (for 4 servings)

2 cups fruit (mango, banana, guava, papaya, pineapple, peach,
strawberry, apricot, melon, etc.)
2 cups low-fat milk
4-8 ice cubes
1 tsp. vanilla, optional

Method:

1. Place fruit and milk in blender and blend at medium to high speed.
2. Add ice cubes one at a time.
3. Ready to serve!

Hints:

1. Freezing fruit when it is in season can save money and avoid waste. You can also
   enjoy the taste of fruit such a mango, year round.
2. Peel ripe bananas and freeze in plastic bags for up to two months.
3. Add frozen fruit chunks in place of ice cubes to milk.

Distributed by:
Cooperative Extension Service
University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
For more information, call
956-8161
Making Healthy Choices

Be a food detective! **Circle** the name of the foods with less fat, sugar and sodium.

<table>
<thead>
<tr>
<th>Less Fat</th>
<th>Less Sugar</th>
<th>Less Sodium</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ounce</td>
<td>12 ounces</td>
<td></td>
</tr>
<tr>
<td>Candy Bar or Banana</td>
<td>Soda or Water</td>
<td>Brown Rice or Brown Rice with 1T shoyu</td>
</tr>
<tr>
<td>(3t) (trace)</td>
<td>(9t) (trace)</td>
<td>(trace) (1/2t)</td>
</tr>
<tr>
<td>3 ounces</td>
<td>1 ounce-3/4 C</td>
<td></td>
</tr>
<tr>
<td>Tuna fish (water pack) or</td>
<td>Frosted flakes or Corn</td>
<td>Salted Crack Seed or Taro</td>
</tr>
<tr>
<td>3 ounces</td>
<td>flakes</td>
<td></td>
</tr>
<tr>
<td>Canned Luncheon Meat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1/5t) (5t)</td>
<td>(3t) (1/2t)</td>
<td>(2t) (trace)</td>
</tr>
</tbody>
</table>

After your leader demonstrates the number of teaspoons of fat, sugar, and sodium in these foods fill in the correct number of teaspoons on this handout

Name: ___________________________  Date: ___________________________

UH Manoa, CTAHR, CES,
EFNEP Foods of Hawaii Program, Lesson 11
1991
Lesson #12 - Making Healthy Choices #2 (Evaluation)

Instructional Reference Materials
- Lesson #12: Making Healthy Choices #2
- Recipe: Gon Lo Mein (Double Recipe)
- Moloka'i and Wai'anae diet fact sheet.

Visuals
- Early Hawai'i & Today Food Wheel Posters
- Hawaiian Studies Posters: laulima, lōkahi, mālama pono i ke ola kino.

Handouts & Activity Sheets
- Student Questionnaire #2 (one per child)
- Gon Lo Mein Recipe Cards
- EFNEP Questionnaire Tally Sheet #2 (For PA use only)
- Graduation Flyers

Food Activity Supplies
- Cut and pre-measure vegetables and prepare milk
- 2 (10-12 oz.) packages Chow Mein Noodles
- Oyster sauce (3 tablespoons)
- Sesame oil (2 teaspoons)
- Vegetable oil (2 teaspoons)
- Shoyu (2 tablespoons)
- 2 stalks celery, sliced thin, diagonally
- 2 medium carrots, cut into thin strips (julienne)
- 2 onions, cut into thin strips
- 2 cups broccoli flowerettes (cut small)
- Electric wok
- 2 wooden spoons (for stir frying and tossing noodles)
- Measuring spoons
- Large plastic bowl, optional
- Tongs
- Luau trays, napkins, forks
- 3 oz. cups
- 2-3 eggs

Optional
- Blank Food Wheel on board
- Gon Lo Mein Recipe Cards
- My Story: What I have learned

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i, Lesson #12
1991
Concepts:

1. Food guides are nutrition education tools used to help people learn how to eat well and make healthy choices. Categorizing foods into three food groups is one way to help understand what foods we need to eat and why we need to eat them.

2. The Moloka‘i and Wai‘anae diet projects supported more than 30 native Hawaiians in adopting an early Hawaiian diet low in fat and sodium, and high in fiber and complex carbohydrates. The diet helped them to adopt a more nutritious diet and decrease their risk of disease.

3. Preparation of healthy recipes promotes eating healthy foods.

4. Gon Lo Mein is a Chinese dish commonly bought at lunch wagons which costs about a dollar a serving. A homemade recipe is not only less expensive (25-50 cents per 4 oz. serving) but also richer in nutrients - lower in fat, higher in fiber and vitamins and more ono!!

Objectives:

1. Youth will be able to distinguish between healthy and “not so healthy” foods.

2. Youth will identify one health concern with eating too much fat (heart disease), sodium (hypertension and water retention), and sugar (dental cavities and obesity).

3. Youth will work cooperatively in preparing a healthy meal: Gon Lo Mein.

4. Youth will understand how we can all benefit through adopting the strengths of Early Hawaiian food and lifestyle practices as in the Wai‘anae and Moloka‘i diet studies.

5. Youth will learn and practice these Hawaiian values
   a) *laulima* (cooperation of many hands working together,
   b) *ōkahi* (unity and harmony), and
   c) "*Mālama pono i ke ola kino*" (taking righteous care of the body's health).
**Lesson #12 Making Healthy Choices - Part II (continued)**

<table>
<thead>
<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
</table>
| **I. Review:**      | 5 min| A. **My Story:** Leaders ask 3-4 youth to stand and read their stories. Explain that they may be writing "Group Stories" about the FOH program. Collect student folders.  
Laulima (working cooperatively in a group)  
Lökahi (unity & harmony)  
"Mālama pono i ke ola kino " (Taking righteous care of one self) |
|                      |      | B. **PA** say "Today we're asking you to help us evaluate this cooperative effort between the Hawaiian Studies program and EFNEP. Thank you for your participation!" You will also be preparing a Chinese Noodle Dish - Gon Lo Mein and practicing laulima, lökahi and mālama pono i ke ola kino. | **Ask teacher:** if she will assist students in writing a group story on another day. Write stories on poster paper using "Language Experience" method.  
Review folders prior to Lesson 14. |

| **II. Student Questionnaire II (Obj #1)** | 20 min | A. **PA** says, "This is a test to see how well we have done our job in instructing you. Leaders pass out Questionnaire #2.  
Steps to complete Questionnaire #2:  
1. Have youth write in on back of wheel.   
   1. In center: most important nutrient.   
   2. Two foods in each food group minimum.  
**Optional:** Minimum number of servings needed in each food group. |
|                                          |      | B. **PA** says, "Please do your own work - this is your kuleana". Put your name and the date on side one and flip the quiz over to the blank food wheel.  
C. **PA** says "I'll be leading you through one question at a time. Ask youth to raise their hands if they need help. Note that we don't care about spelling and that youth should guess if they don't know.  
  Blank food wheels on board  
  Option: Discuss with teacher how to best deliver test  
  Post Prep: Tally results of Questionnaire #2, compare with Questionnaire #1. | **Questionnaire #2**  
**Blank food wheels on board**  
**Option:** Discuss with teacher how to best deliver test  
**Post Prep:** Tally results of Questionnaire #2, compare with Questionnaire #1. |
### Topic and Background

#### III. Hawaiian Diet Studies:
Ten Molokaʻi and 20 Waiʻanae residents with chronic health problems changed their diet to a diet like what the Early Hawaiians ate (a diet high in carbohydrates and fiber and low in fat; kalo, fish (ʻiʻa), lau kalo and decreased their weight, blood pressure, blood sugar and cholesterol levels).

#### IV. Food Activity (Obj. #3):

<table>
<thead>
<tr>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
</table>
| 10 min. | **A. PA says:** "The early Hawaiian diet and lifestyle was healthy." Use the "Early Hawaiʻi" food wheel to highlight that the diet was high in complex carbohydrate foods and fiber and included a variety of protective foods. Since fish was the most frequently eaten BB food, the diet was also low in fat."
|       | **B. Kupuna** states “Thirty local people participated in the Molokaʻi and Waiʻanae Hawaiian diet projects. They ate the native Hawaiian diet daily for three weeks. They lost weight, lowered their blood pressures and cholesterol. This healthy diet improved their health.” | 1. Chinese Gon Lo Mein recipe cards. |
| 20 min. | **A. PA says:** "Today we will make and eat a healthy noodle dish. Remember to measure the oil and oyster sauce carefully so that you don’t use too much. Pass out recipes and discuss ingredients and the food groups they belong to."
<p>|       | **B. P.A. divides youth into 2-3 groups to prepare vegetables sauce or stir fry noodles. Prepare vegetables, sauce and stir fry w/noodles. Let several students make the recipe, learning how to measure ingredients accurately.” | 2. Prep eggs, broccoli... |
|       | | 3. Foods, sauce, ingredients, cutting board, knives, measuring spoons, tongs, wooden spoons, luau trays. |
|       | | Optional: Prepare vegetables at home if time is short. |
|       | | Oyster sauce can be purchased without MSG. |</p>
<table>
<thead>
<tr>
<th>Topic and Background</th>
<th>Time</th>
<th>Learning Activity</th>
<th>Pre-Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV. Food Activity (Obj. #4): (Continued)</td>
<td></td>
<td>B. Serve and eat. One student summarizes ingredients, another describes preparation. Ask if they like this healthy meal. Ask how many would make this at home.</td>
<td>Extra excursion slips</td>
</tr>
<tr>
<td>Kōkua - assistance, help</td>
<td></td>
<td>C. Clean up.</td>
<td>Optional: Discuss cost of recipe preparation at home.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. Thank youth for their kōkua.</td>
<td></td>
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</tbody>
</table>

| V. Evaluation/Review | 5 min. | A. PA discuss final excursion says, “You’ll need to bring a home lunch, footwear and your permission slips if you haven’t returned them already. Any questions?” Distribute graduation flyers. Ask youth to return next week. | School excursion slips. |
| | | B. PA says “Thank you. See you next week!” | Graduation Flyers |
| | | | Optional: release EFNEP Photo |

These lessons have been piloted at the following elementary schools on O‘ahu: Kapunahala, Kuhio, Palolo, Pope, Pū‘ōhala and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai‘i at Manoa, USDA Cooperating.

1991
An Invitation to Parents and Guardians of 5th Grade Students

____________ Elementary School

Lā Ho`ohanohano
(Feeling a sense of pride)

To honor your child for participating in Nā Mea`Ai o Hawai`i

a nutrition program sponsored by University of Hawai`i
Cooperative Extension Service
Expanded Food & Nutrition Education Program
with the cooperation of the Hawaiian Studies Program

The children will be preparing several recipes learned during the semester and receive certificates of participation. Please come!

------------------------------------------------------------------------------------------------------------------

Please complete and return to your child's teacher by:_________________________

Student: __________________ Teacher: __________________

*Please indicate if you will be able to attend below:

/We will be able to attend: ____ Number of people attending: ____

/We will not be able to attend: ______

Parent/Guardian Signature
Moloka`i and Wai`anae Diet Study Fact Sheet

A team of local and mainland researchers originally studied the cardiovascular risk factors of ethnic Hawaiians. They assessed risks of heart disease for 257 Hawaiians who lived on Hawaiian Homestead Lands on Moloka`i. They found that more than 60% were overweight and 42% were smokers. Most of the study population had much higher levels of blood pressure and risk of diabetes than other ethnic groups.

To assist these local folks in decreasing their risk of heart and other disease, the research team had them eat a very low fat, low sugar, low salt, and high complex-carbohydrate diet - a diet very similar to what the Early Hawaiians ate. Instead of eating hamburgers, hotdogs, shoyu, soda and other “local foods” they ate taro, lau kalo, fish and other early Hawaiian foods which are low in fat, sugar, and salt, and rich in nutrients. When the research team reassessed the cardiovascular risk factors (blood cholesterol, blood pressure, weight, and blood sugar) they were significantly lower.

A second study called the Wai`anae Diet Program duplicated the Moloka`i diet study with 20 native Hawaiians. Participants were put on a very low fat (7% of calories) for 21 days. Because the diet was rich in complex carbohydrates from taro poi and other starches the participants could eat until they were full and still lost an average of 17 pounds. The also lowered their cholesterol levels and blood pressure levels. One man lost a total of 150 pounds following this healthy, early Hawaiian diet. He went from spend almost $500 a month on medicine to only taking medication for asthma.


UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai’i, Lesson 12
1991
GON LO MEIN (Chinese Noodles)
(Lesson #12)

Ingredients (for six servings):
1 (12 ounce) package chow mein noodles
1 1/2 tablespoons oyster sauce
1 tsp. sesame oil
1 stalk celery, sliced
1 medium carrot, cut into strips
1/2 onion, sliced
1 cup broccoli, string beans, watercress, bean sprouts, cabbage or other green vegetables.
1 tablespoon shoyu
1 egg, beaten, cooked and cut into strips, optional

Method:
1. Sprinkle noodles with sesame oil and oyster sauce. Toss till well coated and marinate for about 30 minutes.
3. Mix noodles with vegetables. Place on serving platter and garnish with egg.

Hints:
1. Add cooked chicken, pork, ham or turkey when serving as a main dish.
2. Use oil and high sodium sauces sparingly for good health.
3. Shoyu and oyster sauce are high in sodium.
4. Each serving of this recipe contains approximately 378 mg. of sodium. The estimated safe and adequate daily intake for adults is 1,100 - 3,300 mg.

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Cooperative Extension Service
University of Hawaii at Manoa
College of Tropical Agriculture and Human Resources
United States Department of Agriculture Cooperating
For more information, call
956-8161
My Story
Nā Mea `ai o Hawai`i

What I have Learned:

Name: __________________________ Date: ____________________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #12
1991
Lesson #13 - Field Trip
Educational Materials and Supply List

Visuals: as needed

Food Activity Supplies

[Checkmarks for items]

- Water/Ice
- Paper Towels
- Garbage Bags
- Home Lunches
- Cooler
- Cups

Optional:

[Checkmarks for items]

- Camera
- Rain gear
- My Story: What we have learned
- Our story: Activity Directions

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #13
1991
FOODS OF HAWAIʻI YOUTH PROGRAM
Lesson #13 Field Trip
UH Manoa, CTAHR, CES,
Expanded Food & Nutrition Education Program

This is an optional lesson which should support one or more of the suggested objectives. Field trips can be completed around lesson four (Ahupuaʻa), lesson six (kalo) or lesson twelve. Multiple field trips can be coordinated at the discretion of the School staff and EFNEP County Coordinator depending on time and resources available.

As an alternative to a field trip; children can spend the day in class completing “Our story - What we have learned” or work in small groups to make group stories. Food preparation is optional.

Concepts:

1. Field trips can reinforce and bring to life class room experiences.

2. There are many sites throughout the State of Hawaiʻi which illustrate agricultural and conservation practices of an Ahupuaʻa or the cultural heritage of Hawaiʻi.

3. Youth can demonstrate their ability to make healthy choices by bringing a healthy lunch, one which includes all the food groups and is moderately low in fat, sugar and salt.

Suggested Objectives to reinforce:

1. Youth will appreciate that the Early Hawaiians grew, harvested, shared and ate all the foods needed through the Ahupuaʻa system.

2. Youth will appreciate that planning and conservation are important practices in Hawaiʻi: “You borrow from the future that which we use up today”.

3. Youth will realize that all of Hawaii’s ethnic groups have contributed to the diets of people in Hawaiʻi today.

4. Youth will demonstrate that they can make healthy choices by bringing a lunch which contains all of the food groups and is moderately low in fat, sugar and salt.

5. Youth will understand that the Early Hawaiian lifestyle of working and playing hard (exercise) was healthy.
Lesson #13 - Field Trip

I. Possible Sites:
   
   A. Ahupua’a or Lo‘i: Hanohano Farm, Makaha Farms, Opelu Project, Kanewai Lo‘i.
   
   B. Fishponds: He‘eia, Kualoa.
   
   
   D. Taro or poi factories.
   
   E. Nature parks: Hawai‘i Nature Center.

II. To Set up a field trip:

   A. If you have not been to the site recently, visit the site and discuss potential youth activities with Site Coordinator. (If needed make tentative reservations).

   B. Early in the semester (preferable a year ahead) approach Teacher, Principal and Kupuna, etc. to discuss potential field trips and funding (usually the school manages bus transportation and site fees).

   C. Ask classroom teacher to coordinate youth permission slips, bus arrangements, healthy lunches, appropriate clothes, footware, parent volunteers, etc.

III. One Week Before:

   Reconfirm details with teacher, Site Coordinator and youth especially in regards to timing. Discuss cancellation possibilities for rainy weather. Have optional activity (perhaps group story) ready.

IV. Day of Trip:

   A. Discuss with youth

      1. Safety: Review Kuleana and the buddy system.
      2. ‘Opala (garbage) and mālama i ke ola ʻāina (conservation)
      3. Ahupua‘a land divisions (if needed).
      4. Courtesy to Site Coordinator.

   B. Discuss with teacher & Kupuna - Pā‘ina (La Ho‘ohanohano) for Lesson 14, or coordinate another time to discuss this.
These lessons have been piloted at the following elementary schools on O‘ahu: Kapunahala, Kuhio, Palolo, Pope, Pū‘ohala and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

For more information please contact the Expanded Food and Nutrition Education Program (EFNEP) at 956-8161. EFNEP is a part of the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawai‘i at Manoa, USDA Cooperating.

1991
Our Story
(What we have learned)
Activity and Directions

Supplies

Large Blank Poster Paper
Color pens/crayons/pencils

Directions:

1. Introduce activity: By discussing what children have learned. Have a few children share “My stories” or what they have learned.

2. Group story titles (write on top of posters)

___ What the early Hawaiians ate
___ Ahupua`a/Voyage
___ Today Foods
___ Making Healthy Choices
___ Others:

3. Break into groups: Student work on posters by themselves; writing stories and adding art work.

4. If time allows discuss.
   Post on Graduation Day (Pā`ina)

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #13
1991
Lesson #14: Pā'ina Lā Hoʻohanohano

Educational Materials and Supply List

*Recruit Volunteer and/or Staff Assistance

**Instructional Reference Materials**

|   | Lesson #14: Pā'ina Lā Hoʻohanohano |

**Visuals**

|   | Food Wheel Posters |
|   | Hawaiʻi Studies Posters, Ahupuaʻa |
|   | Group Stories (if available) |
|   | Na Mea Ai o Hawaiʻi Program Poster |

**Handouts & Forms**

|   | Recipe Cards |
|   | FOH Teach Evaluation |
|   | Questionnaire #2: Class Tally Form |
|   | Graduation Certificates |
|   | Volunteer Certificates |
|   | Pāina: Lā Hoʻohanohano programs |

**Food Activity Supplies (as needed)**

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**Optional**

| Camera |
| Leis |
| Decorations |
| Recipe Cards |
| FOH Brochure |

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawaiʻi, Lesson #14
1991
Foods of Hawaii Youth Program

Lā Hoʻohanohano: A day to feel a sense of pride.

Pāʻina: Feast

Concepts:

1. Knowing how to prepare healthy meals and snacks enhances the likelihood of youth making healthy food choices.

2. The FOH (Nā Meaʻai o Hawaiʻi Program) is a cooperative effort between the Hawaiian Studies Program (DOE) and the Expanded Food & Nutrition Education Program (CTAHR, CES, UH).

3. Self-esteem is developed as one realizes ones accomplishments.

Objectives:

1. Youth will know that the Foods of Hawaii program (Nā Meaʻai o Hawaiʻi) is a cooperative effort between EFNEP (CES,UH) and the DOE, Hawaiian Studies Program.

2. Youth will know that the goal of the Foods of Hawaiʻi program is "To motivate youth to make healthy food and lifestyle choices."

3. Youth will prepare and eat a variety of healthy foods.

4. Youth will practice these Hawaiian values:
   a. laulima (cooperation of many hands working together),
   b. kuleana (individual rights and responsibilities).
   c. `ohana (family unit symbolized by taro),
   d. kōkua (individual help),
   e. ʻokahi (unity and harmony),
   f. aloha (love, greeting) and ,
   g. receive ʻike (recognition) for their accomplishments.

I. Preparation:

   A. Two Weeks Before:

      1. Discuss place and time of Pāʻina with Teacher, Principal and Kupuna.
      2. Check out site. Discuss supplies and lay out with cafeteria or site manager and janitor.
      3. Solicit volunteers and photographer if possible.
      4. Decide recipes, make sure you have sufficient recipe cards.
5. Complete reviewing of youth folders.
6. Optional: make invitation poster and distribute to youth to give to parents (and then return)
7. Complete Graduation certificates and volunteer certificates.

B. One Week Before:

1. Make grocery list, supply list and material lists.
2. Plan agenda: type specifics in the “Foods of Hawai‘i: Pā‘ina program”
3. Ask youth to bring specific food items.

C. One-Two days Before:

1. Reconfirm details with teacher, Site Coordinator, Kupuna, volunteers, etc. Get estimation of number of people who will be there.
2. Do food shopping and food preparation.
3. Organize all supplies and materials needed to bring to school.
4. Finish certificates and program (Kupuna’s signature needed).

II. Pā‘ina: Lā Ho‘ohanohano

A. Before Pā‘ina:

a. On site: organize supplies, work places, decorations, etc.
b. Discuss program with school staff one more time

B. Pā‘ina: Possible 2 hour scenario

a. Overview of day with youth and parents.
b. Food preparation in groups.
c. Eating.
d. Graduation ceremony: return folders, give certificates, thank volunteers and staff
e. Clean up.

These lessons have been piloted at the following elementary schools on O‘ahu: Kapunahala, Kuhio, Palolo, Pope, Pū‘olu‘alo and Waimanalo. Lesson materials have been revised with the cooperation of the Department of Education, Windward Hawaiian Studies Program.

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1991
Possible Food purchasing and preparation for Pā'ina.

1. **Taro:** 15 pounds at 2 school classes + parents/visitors, pre steamed  
   **Sweet Potato:** 10 pounds  
   Luau Trays and Haupia (optional)  
   PA steam kalo and sweet potato (ʻuala). Youth cut up.

2. **Brown Rice Musubi** (5 cups Brown/White Rice and 6 C water) cooked per class in 10  
   Cup rice cooker for approximately 10 cups of rice:  
   Small molds (6 sets), 1 package of shrimp (ebi) (each), 3-4 packages of nori (cut into  
   strips), sesame seeds: one package (optional)  
   Youth mold musubi.  
   **Optional:**  
   Sushi rice with grating vegetables. (Carrots, cucumber, green onion, parsley,  
   watercress). Tuna can replace ebi.

3. **Gon Lo Mein:** 4-5 packages of noodles, 4 carrots, 2 large stalks broccoli, 2 onions, 4  
   stalks celery, six eggs (optional), oyster sauce, oil, shoyu, sesame seed oil, wok, napkins  
   and luau trays.  
   PA partially pre-cut vegetables. With assistance, youth make Gon Lo Mein.

4. **Crackers or vegetables and "Happy Healthy Tuna Dip":**  
   16 oz of cottage cheese, 2 cans tuna.  
   **Optional:** grated carrots, chopped green onion, and grated cheese, 2-3 boxes of whole  
   wheat low fat crackers, or cut vegetables or Rye Crackers or WASA (crackerbread).  
   Youth mix dip, and cut vegetables if needed.

5. **Fruit Salad:** 6 different kinds of fruit.  
   Youth cut and mix.

6. **Citrus Water:** lemon or lime slices, ice, cold water, cups, cooler.

7. **Pupule Punch**
Expanded Food & Nutrition Education Program

Cooperative Extension Service
College of Tropical Agriculture and Human Resources
University of Hawaiʻi at Manoa
In cooperation with
Department of Education Hawaiian Studies Program

Presents this Certificate to

for participation in

Nā MeaʻAi o Hawaiʻi - Foods of Hawaiʻi
Youth Program

Nutrition Program Assistant
Expanded Food & Nutrition Education Program

Kupuna
Hawaiian Studies Program

---

Expanded Food & Nutrition Education Program

Cooperative Extension Service
College of Tropical Agriculture and Human Resources
University of Hawaiʻi at Manoa
In cooperation with
Department of Education Hawaiian Studies Program

Presents this Certificate to

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Nā MeaʻAi o Hawaiʻi - Foods of Hawaiʻi
Youth Program

Nutrition Program Assistant
Expanded Food & Nutrition Education Program

Kupuna
Hawaiian Studies Program
The Goals of our program are:

1. Motivate youth to make healthy food and lifestyle choices.

2. To promote positive interpersonal relationships and inter-ethnic harmony.

3. To enhance self-esteem

4. To develop self-responsibility.

Welcome to:

Pā`ina:
Lā Ho'ohanohano

And a special thanks to:

UH, CES, EFNEP
Foods of Hawai‘i Program
1991
Today we will be honoring your child for participation in:

"Nā Mea `Ai o Hawai`i"

or

Foods of Hawai`i Program

Sponsored by:

The Department of Education's Hawaiian Studies Program
and
The Expanded Food & Nutrition Education Program, a Cooperative Extension Service program from the University of Hawai`i at Manoa

Lā Ho`ohanohano

School: __________________________

Location: _________________________

Date/Time: _______________________

Teacher: _________________________

Kupuna: _________________________
Expanded Food & Nutrition Education Program

Cooperative Extension Service
College of Tropical Agriculture and Human Resources
University of Hawai`i at Manoa
in cooperation with
Department of Education Hawaiian Studies Program

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Nā Mea`Ai o Hawai`i - Foods of Hawai`i
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Nutrition Program Assistant
Expanded Food & Nutrition Education Program

Kupuna
Hawaiian Studies Program

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for participation in

Nā Mea`Ai o Hawai`i - Foods of Hawai`i
Youth Program

Nutrition Program Assistant
Expanded Food & Nutrition Education Program

Kupuna
Hawaiian Studies Program
Foods for Good Health

5+ Servings a Day

6+ Servings a day

PROTECTIVE vitamin A carbohydrates

ENERGY B vitamins

vitamin C calcium

BODY BUILDING protein & iron

2 + 2 = 4+ servings a day
Foods for Good Health

___ Servings a day

___ Servings a day

___ + ____ = ____ Servings a day

UH Manoa, CTAHR, CES
Foods of Hawaii Program
1991
Foods for Good Health

5+ Servings a day

PROTECTIVE
vitamin A

vitamin C

ENERGY
carbohydrates

B vitamins

BODY-BUILDING
protein

calcium

iron

fiber

water

2 + 2 = 4 Servings a day

UH Manoa, CTAHR, CES
Foods of Hawai'i Program
1991
Round Steak
FOODS OF HAWAI'I (EFNEP) YOUTH LESSON VISUALS

A color set of Visuals may be available on loan from your Cooperative Extension State Office

I. **Energy foods**

<table>
<thead>
<tr>
<th>Early Hawai‘i</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana</td>
<td>Mai‘a</td>
</tr>
<tr>
<td>Breadfruit</td>
<td>‘Ulu</td>
</tr>
<tr>
<td>Coconut</td>
<td>Niu</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>Kō</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>‘Uala</td>
</tr>
<tr>
<td>Taro</td>
<td>Kalo</td>
</tr>
<tr>
<td>Yam</td>
<td>‘Uhi</td>
</tr>
<tr>
<td>Bread</td>
<td>Crackers</td>
</tr>
<tr>
<td>Crackers</td>
<td>Macaroni</td>
</tr>
<tr>
<td>Noodles</td>
<td>Potato</td>
</tr>
<tr>
<td>Potato</td>
<td>Rice</td>
</tr>
<tr>
<td>Rice</td>
<td>Oatmeal</td>
</tr>
</tbody>
</table>

II. **Body-Building Foods**

<table>
<thead>
<tr>
<th>Early Hawai‘i</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken</td>
<td>Moa</td>
</tr>
<tr>
<td>Crab</td>
<td>Pāpa‘i</td>
</tr>
<tr>
<td>Dog</td>
<td>‘Ilio</td>
</tr>
<tr>
<td>Fish</td>
<td>‘a</td>
</tr>
<tr>
<td>Nene</td>
<td>Heʻe</td>
</tr>
<tr>
<td>Octopus</td>
<td>‘Opihi</td>
</tr>
<tr>
<td>Pig</td>
<td>Puaʻa</td>
</tr>
<tr>
<td>Sea Cucumber</td>
<td>Loli</td>
</tr>
<tr>
<td>Turtle</td>
<td>Honu</td>
</tr>
<tr>
<td>Sea Urchin</td>
<td>Wana</td>
</tr>
<tr>
<td></td>
<td>Beans</td>
</tr>
<tr>
<td></td>
<td>Beef</td>
</tr>
<tr>
<td></td>
<td>Cheese</td>
</tr>
<tr>
<td></td>
<td>Cottage Cheese</td>
</tr>
<tr>
<td></td>
<td>Eggs</td>
</tr>
<tr>
<td></td>
<td>Milk</td>
</tr>
<tr>
<td></td>
<td>Peanut Butter</td>
</tr>
<tr>
<td></td>
<td>Tofu</td>
</tr>
<tr>
<td></td>
<td>Yogurt</td>
</tr>
</tbody>
</table>

III. **Protective Foods**

<table>
<thead>
<tr>
<th>Early Hawai‘i</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Ākala</td>
<td>Broccoli</td>
</tr>
<tr>
<td>Hāpu‘u</td>
<td>Pineapple</td>
</tr>
<tr>
<td>Taro Leaf</td>
<td>Carrots</td>
</tr>
<tr>
<td>Lau kalo</td>
<td>Pumpkin</td>
</tr>
<tr>
<td>Mountain Apple</td>
<td>Guava</td>
</tr>
<tr>
<td>‘Ōhi‘a ʻai</td>
<td>Spinach</td>
</tr>
<tr>
<td>‘Ohelo</td>
<td>Mango</td>
</tr>
<tr>
<td>Sweet Potato</td>
<td>Tomato</td>
</tr>
<tr>
<td>Lau ʻuala</td>
<td>Marung-gay</td>
</tr>
<tr>
<td>Sea Weed</td>
<td>Orange</td>
</tr>
<tr>
<td>Limu</td>
<td>Papaya</td>
</tr>
</tbody>
</table>

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i
1991
KALO LIMU
LAU KALO
ʻŌHELO
MANAKO
HALA KAHIKI
ʻĀKALA
ʻŌHIʻA ʻAI
CHICKEN
CHEESE
MANGO ʻULU
GUAVA MAIʻA
SEAWEED
ʻUALA KŌ
NIU  UHI
LOBSTER
TURTLE  PIG
DOG   FISH
LIMPET
EGGS   BEEF
SEA URCHIN
OCTOPUS
LAU UALA
HĀPU‘U
RICE BREAD
MACARONI
NOODLES
CRACKERS
POTATO
BANANA
BREADFRUIT
SUGARCANE
COCONUT
TOMATO
PINEAPPLE
PAPAYA
CARROTS
PUMPKIN
BROCCOLI
SPINACH
ORANGE
YAM
HAWAIIAN VALUE POSTERS
ALOHA

Love,
Greeting

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1991
WAI/WAI

Wealth

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i
1991
LOKAHI

Unity and harmony

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1991
Cooperation of many hands working together
IKE

Understanding

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1991
AKAMAI

Wise, sharp and smart

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i
1991
KULEANA

Individual rights and responsibilities

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EFNEP, Foods of Hawai‘i
1991
Personal sanitation (Washing hands)
ALU LIKE

To pull together

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1991
ALOHA 'ĀINA

To love the land

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai‘i
1991
Kōkua

Individual help

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EFNEP, Foods of Hawai‘i
1991
MĀLAMA 'ĀINA

To take care of the land

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EFNEP, Foods of Hawai‘i
1991
MĀLAMA
PONO I KE OLA
KINO

To take righteous care of the body's health.
MĀLAMA
IKE KAI

To take care of
the ocean

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EFNEP, Foods of Hawai`i
1991
Nā Mea’ai o Hawai‘i
Foods of Hawai‘i

University of Hawai‘i
College of Tropical Agriculture & Human Resources
Cooperative Extension Service
Expanded Food and Nutrition Education Program
and
Department of Education
Hawaiian Studies Program

1991
My ancestors came to Hawai`i from: ____________________________

__________________________

__________________________

Name or draw pictures of foods eaten in your family homeland(s) that were not eaten by early Hawaiians:

Name: ____________________________ Date: ________
INDIVIDUAL RIGHTS

Youth and Leaders will:

1. Enjoy learning together.

2. Be prepared and on time.

3. Treat others as you would like to be treated.

4. Listen and pay attention (*Ho`olohe*).
Hawaii's Earliest Settlers

The Hawaiian islands were one of the last places on Earth to be inhabited by man.

The ancestors of all people living in Hawai`i today came here from some other place, even the early Hawaiians.

It is believed that the first people to settle here came from another island group from the south called the Marquesas. They came around 500 to 750 A.D. Later, other early settlers came from Tahiti. The Polynesians came to Hawai`i in big double hulled canoes.
Nutrients are chemicals used by the body for energy, body building, and protection from disease.
Classes of Nutrients

Water (wai)
Carbohydrates
Fats
Proteins
Minerals
Vitamins
What Foods Did the Early Hawaiians Eat?

- Banana
- Taro leaf
- Fish
- Taro
- Lemon, lime
- Pig
- Rice
- Sweet potato
- Mountain apple
- Bittermelon
- Lettuce
- Chicken
- Coconut
- Mango
- Papaya
- Dog

Circle all the foods eaten by the early Hawaiians.

Name__________________________ Date____________________

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EFNEP, Foods of Hawaii, Lesson Four
1991
Ahupea`a

Mauka

Mawaena

Makai

UH Manoa, CTAHR, CES
Foods of Hawai`i Program, Lesson #4
1991

Name: ____________________________ Date: ____________________________
Contents of Student Folders
(Nā Mea `Ai o Hawai`i)

1. Nā Mea `Ai o Hawai`i cover sheet (Lesson #1)
2. My ancestors came to Hawai`i from these places (Activity: Lesson #1)
3. Individual rights (Lesson #2)
4. World map: Where have Hawaii’s families come from? (Lesson #2)
5. Hawaii’s earliest settlers (Lesson #3)
6. Classes of nutrients poster (Lesson #3)
7. Nutrient definition poster (Lesson #3)
8. What did the early Hawaiians eat (Activity: Lesson #4)
9. Ahupua`a map (Lesson #4)
10. Blank food wheel (Lesson #4)
11. Kalo plant (Lesson #5)
12. Write the things you know about kalo. (Activity: Lesson #5)
13. Feel the food game (Activity: Lesson #6)
14. Foods from the ocean (Activity: Lesson #7)
15. Body-Building foods (Activity: Lesson #8)
16. Fruitty Tooty activity (Activity: Lesson #10)
17. Making Healthy Choices (Optional Activity: Lesson #11)
18. My story: What I have learned (Optional Activity: Lesson #13)
19. Early Hawai`i food wheel
20. Today food wheel

Other Possibilities:
- Recipes
- A nutritious snack for today’s families- taro, sweet potato, and musubi
Foods for Good Health

___ Servings a day

___ Servings a day

___ + ___ = ___ Servings a day

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Foods of Hawai'i Program
1991
KALO

pua
lau

Makua

ha

'oha
kalo
huluhulu

'Ohana

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai'i, Lesson #5
1991
Write things you know about kalo:

Group Members: __________________________

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EFNEP, Foods of Hawai'i, Lesson #5
1991
Feel the Food Game

Name the energy foods you discover:

1.

2.

3.

4.

5.

Name: ___________________  Date: ___________
Food from the Ocean

When the first polynesians landed in these islands, they found food on land and in the sea.

Circle all of these early Hawaiian ocean foods you have eaten.

Name: ____________________ Age:______.

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EFNEP, Foods of Hawaii Lesson Seven
1991
Body Building Foods

Early Hawaiians are a variety of body-building foods from the land and sea. Today we eat many of these same foods and other body building foods as well.

Circle the body building foods eaten in Early Hawai‘i:

Place a ★ (star) on the foods you have eaten.

Name: ___________________________ Date: ___________________
COLOR ONLY THE SQUARES OF HAWAII'S FRUITS, TO FIND THE VITAMIN THEY HAVE IN COMMON TO MAKE YOU HEALTHY!

<table>
<thead>
<tr>
<th>ICE CREAM</th>
<th>PINEAPPLE</th>
<th>MANGO</th>
<th>GUAVA</th>
<th>MILK</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEANS</td>
<td>GRAPEFRUIT</td>
<td>STEAK</td>
<td>ORANGE</td>
<td>HOTDOGS</td>
</tr>
<tr>
<td>BUTTER</td>
<td>PAPAYA</td>
<td>CHICKEN</td>
<td>BREAD</td>
<td>SUSHI</td>
</tr>
<tr>
<td>EGGS</td>
<td>TANGERINE</td>
<td>SODA</td>
<td>CANDY</td>
<td>NOODLE</td>
</tr>
<tr>
<td>POTATOCHIPS</td>
<td>LEMON</td>
<td>RICE</td>
<td>GUAVA</td>
<td>PORK</td>
</tr>
<tr>
<td>NUTS</td>
<td>MANGO</td>
<td>ORANGE</td>
<td>PINEAPPLE</td>
<td>GUM</td>
</tr>
</tbody>
</table>

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EFNEP, Foods of Hawaii, Lesson #10
1991

Name: ___________________ Date: __________
Making Healthy Choices

Be a food detective! Circle the name of the foods with less fat, sugar and sodium.

After your leader demonstrates the number of teaspoons of fat, sugar, and sodium in these foods fill in the correct number of teaspoons on this handout.

<table>
<thead>
<tr>
<th>Less Fat</th>
<th>Less Sugar</th>
<th>Less Sodium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candy Bar</td>
<td>Soda</td>
<td>Brown Rice</td>
</tr>
<tr>
<td>or Banana</td>
<td>or Water</td>
<td>or Brown Rice with 1T shoyu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuna fish</td>
<td>Frosted Flakes</td>
<td>Salted Crack Seed</td>
</tr>
<tr>
<td>(water pack)</td>
<td>or Corn Flakes</td>
<td>or Taro</td>
</tr>
<tr>
<td>or Luncheon Meat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name: _________________________________ Date: _________________________________

UH Manoa, CTAHR, CES,
EFNEP Foods of Hawaii Program, Lesson 11
1991
My Story

Nā Mea `ai o Hawai`i

What I have Learned:

Name: _____________________________ Date: ________________________

UH Manoa, CTAHR, CES
EFNEP, Foods of Hawai`i, Lesson #12
1991
Foods for Good Health

5+ Servings a day

ENERGY
- carbohydrates
- B vitamins

BODY-BUILDING
- protein
- iron
- calcium
- vitamin C

PROTECTIVE
- vitamin A
- fiber

UH Manoa, CTAHR, CES
Foods of Hawaii Program
1991

2 + 2 = 4 Servings a day
### Foods of Early Hawai‘i - Prior to 1778

**Energy Foods**
- *Banana (mai’a)
- *Breadfruit (ulu)
- *Coconut (niu and
  - *Coconut Cream (wai oka niu)
- *Sugar Cane (ko)
- *Sweet Potato (uala)
- *Taro (kalo)
- *Yam (uhi)

**Protective Foods**
- Akala Berries
- *Coconut Water (wai niu)
- *Mountain Apple (ohi’ai ai)
  - ‘Ohelo Berries
  - Seaweed (limu)
- *Sweet Potato Leaves (palula)
- *Taro Leaves (lauau)
- Tree Fern (hapu‘u)

**Body Building Foods**

#### Land Animals
- *Chicken (moa)
- *Dog (‘illio)
  - Land Snail (pupu)
- *Pig (pua’a)
  - Wild Bird (manu)

#### Sea Animals
- Clam/Oyster (olepe)
- Conch (ku kani)
- Cowry (leho)
- Crab (papa‘i)
- Fish (l‘a)
- Lobster (ula)
- Octopus (he’e)
- Opihi (limpet)
- Sea Cucumber (lolii)
- Sea Snail (pipipi, kupe‘e)
- Sea Urchin (wana)
- Shrimp (opae)
- Turtle (honu)

*Polynesian introduced -- between 500-1200 A.D.*

---

COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF HAWAII AT MANOA
COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESOURCES
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING
1420 LOWER CAMPUS ROAD
HONOLULU, HAWAII 96822
PHONE: 956-4124
Food of Early Hawai'i - Prior to 1778

Protective Foods

Akala Berries
*Coconut Water (wai niu)
*Mountain Apple (ohi'ai ai)
*Oheio Berries
Seaweed (limu)
*Sweet Potato Leaves (paluia)
*Taro Leaves (luau)
Tree Fern (hapu'u)

Energy Foods

*Banana (mai'a)
*Breadfruit (ulu)
*Coconut (niu)
*Coconut Cream (wai oka niu)
*Sugar Cane (ko)
*Sweet Potato (uaia)
*Taro (kalo)
*Yam (uni)

Body Building Foods

*Chicken (moa)
*Dog ('ilio)
Land Snail (pupu)
*Pig (pua'a)
Wild Bird (manu)

Clam/Oyster (olepe)
Conch (ku kenl)
Cowry (leho)
Crab (papa'i)
Fish ('a)
Lobster (ula)
Octopus (he'e)
Ophihi (limpet)

Sea Cucumber (loil)
Sea Snail (pipipi, kupe'e)
Sea Urchin (wana)
Shrimp (opae)
Turtle (honu)

*Polynesian introduced -- between 500-1200 A.D.

Food of Hawai'i Today - Introduced Since 1778

Energy Foods

Bread
Crackers
Macaroni
Noodles
Oatmeal
Potato
Rice

Protective Foods

Broccoli
Carrots
Guava
Mango
Marungay
Orange
Papaya
Pineapple
Pumpkin
Tomato

Body Building Foods

Beans
Beef
Cheese
Cottage Cheese
Eggs
Milk
Peanut Butter
Tofu
Yogurt

Foods of Early Hawai'i - Commonly Eaten Today

Energy Foods

Breadfruit
Sweet Potato
Taro
Yam

Protective Foods

Mountain Apple
Seaweed
Sweet Potato Leaves
Taro Leaves

Body Building Foods

Chicken
Fish
Pork

COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF HAWAII AT MANOA
COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESOURCES
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING
1420 LOWER CAMPUS ROAD
HONOLULU, HAWAII 96822
PHONE: 956-4124
Foods for Good Health

5+ Servings a Day

6+ Servings a day

2 + 2 = 4+ servings a day

EFNEP, CES, CTAHR
Foods of Hawai‘i Program
1991