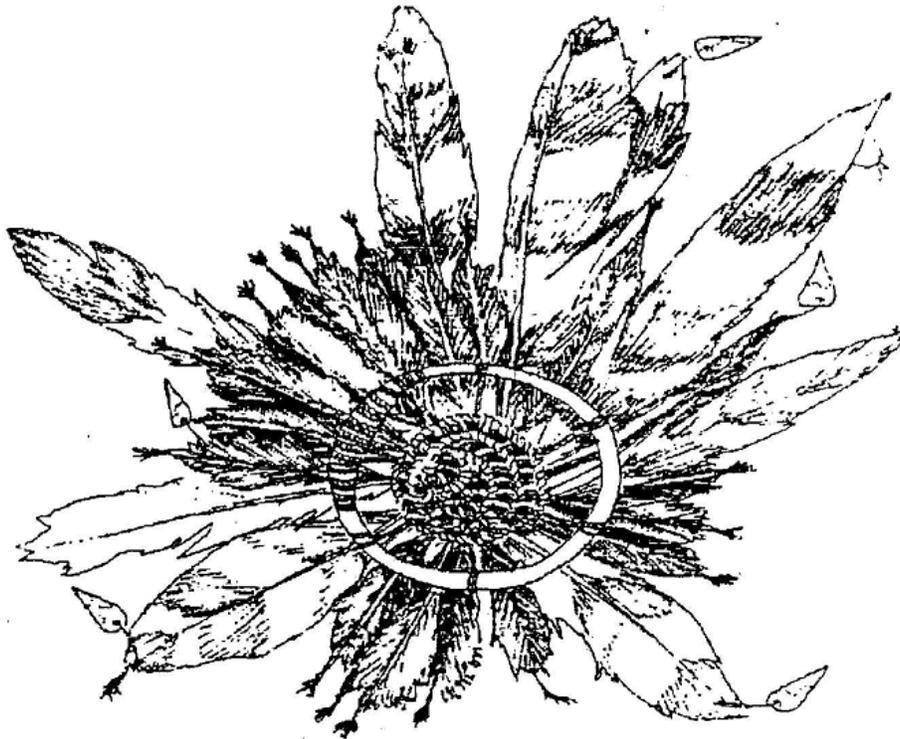


Teacher's Resource Handbook

Environmental Living Program



Miwok feathered headdress

Tomales Bay State Park



California State Parks - Marin District

Danita Rodriguez, District Superintendent

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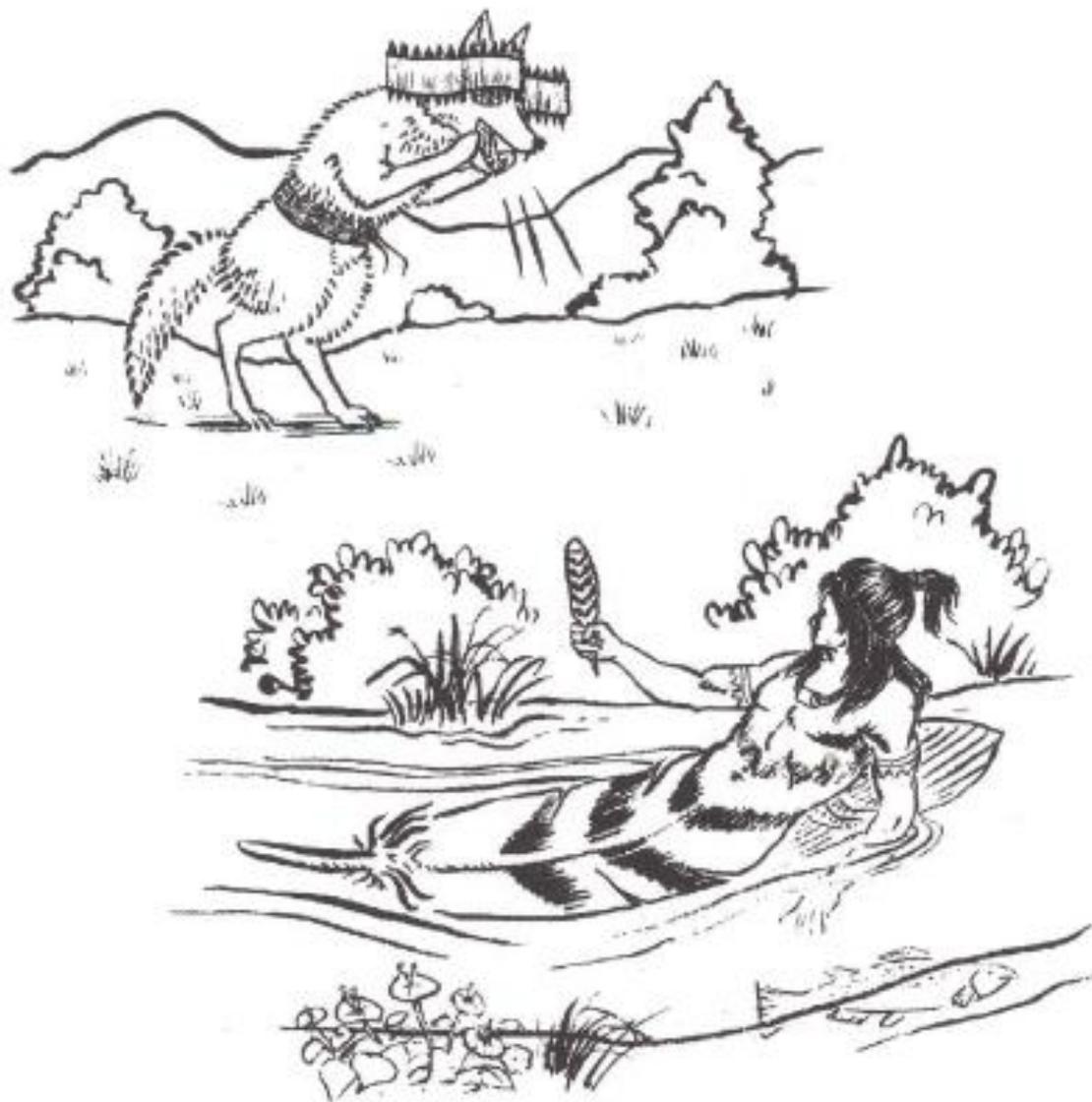
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Grandfather Coyote creating People from Feathers

Introduction to ELP: Environmental Living Program

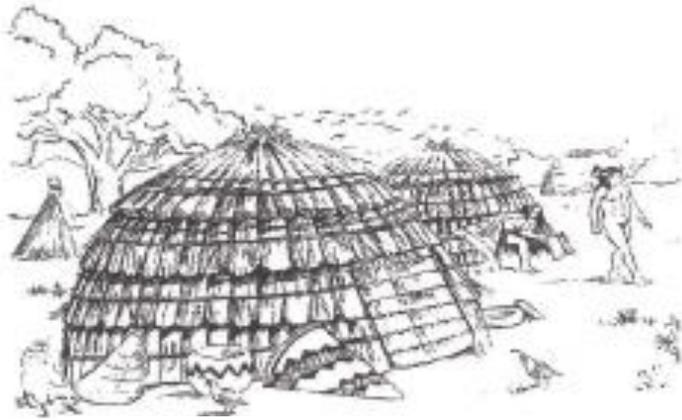
Environmental Living at Tomales Bay State Park

"Environmental Living" is an actual living, overnight experience for children that takes place at any cultural, historic, pre-historic, or natural site where the interdependency of people and their environment is represented. The enriching Environmental Living Program (ELP) allows students to learn about California's cultural and ecological heritage through interactions with a site's history, culture and nature. ELPs are found at parks across the state including Ft. Ross, Angel Island and Petaluma Adobe.

The ELP at Tomales Bay State Park provides the opportunity for 4th and 5th grade students to explore the values, technologies and skills of the Coast Miwok in the millennia before European contact. Traditional Coast Miwok life was dependent on sophisticated knowledge of the natural environment. Deep knowledge and respect of their land forms the basis for traditional and contemporary Coast Miwok culture. Participation in the Tomales Bay ELP helps students to gain greater appreciation of California native culture; ultimately, it may also lead students to discover and understand their own relationship to their environment.

Tomales Bay's ELP relies heavily on pre-site exploration and preparations, role playing and problem solving. In the classroom, teachers work with students to research Coast Miwok culture in preparation for their overnight at the park. Math combines with health, history and the language arts as students research multiple aspects of native culture including language, foods, dress, games and education.

At the park, classroom communities of students, teacher and parent/guardian aides spend 24 hours working, eating, sleeping and playing as the Coast Miwok people did for thousands of years. The responsibility of choosing roles and deciding how to complete a series of tasks builds collaborative problem-solving skills and a sense of accomplishment in addition to a more profound understanding of native traditions. The emphasis of the program is on self-learning.



Typical village scene



Gathering with a seed beater



Acorn storage

Specific Program Information

ELP at Tomales Bay State Park

- ❖ It is the intent of the California State Parks to make this program equally available to as many children as good resource management and staffing levels will allow.
- ❖ The Tomales Bay ELP will be available for 4th and 5th grade classes for K YX#H\fg: UbX' H\fg#: f] **overnights** in the fall and spring: **September-October** and **March-June**.
- ❖ The **program fee is \$2&).00 per class**. There is a fee for all Teacher Training Workshop participants that is used to cover food and ELP supply costs. **This fee is \$50.00 per teacher and ~ &).00 per parent/aide**.
- ❖ In past years, selection to this program was by lottery. For the 2014-2015 school year, however, we anticipate being able to accommodate all teachers.
- ❖ Selected teachers will be assigned a program date for one class. **A class is defined as one school class of a minimum of 10 and a maximum of 32 students**. Teachers who team-teach will have to split their class into groups of less than 30 students. The total number of people (including students, teachers and aides) attending the overnight session at Tomales Bay State Park shall not exceed 40 due to safety regulations and sensitivity of the site's natural resources.
- ❖ **Each class must arrange for a minimum of five and a maximum of ten parents/aides to accompany the class on its overnight program. Please note that all aides are expected to attend the Teacher Training Workshop.**
- ❖ **Completion of the Teacher Training Workshop is a prerequisite to obtaining a final reservation for your class.** The weekend workshop is about 30 hours in duration. It begins at 8:30 am on Saturday and continues until noon on Sunday. At the workshop, teachers and aides will be trained in Miwok cultural skills and technologies such as flintknapping and basket weaving. **The class must have a current Workshop-trained teacher present at all times when the class is at the park. Teachers may not send a substitute to the workshop.**
- ❖ Teachers must maintain a level of class order commensurate with safety, resource protection and a good learning environment. For overnight programs, a **night watch** must be maintained for the safety and protection of the class and park resources.

Program Request Forms are available by writing to:
ELP Coordinator, P.O. Box 251, Lagunitas, CA 94938

Coast Miwok People at Tomales Bay

The Indians that inhabited the Tomales Bay area have become known as the Coast Miwok. It is not known for certain if the Coast and Lake Miwok were immigrants from the Miwok of the Central Sierra or are remnants of a once wider distribution of the group. Most evidence seems to show that the Coast Miwok is a remnant of a once larger group.

Before the coming of the earliest European explorers, the Coast Miwok Indians had occupied all of Marin and Southern Sonoma Counties for at least 8,000 years (see Figure 1).

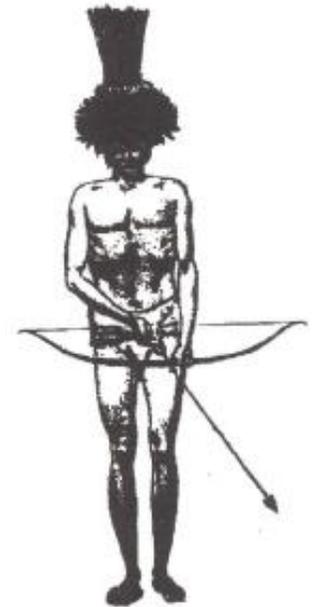
The total Miwok population is estimated from 1500 to 2000 people. Within Tomales Bay State Park there were eight village sites: one ten-family site, two five-family sites, and five smaller sites. Estimating seven people per family with all sites occupied, the total maximum population would be about two hundred. However, all sites were probably not fully occupied at the same time.

Like other central California Indians, the Miwok had no real tribal organization or chiefs. There were small village communities in

which each village had its influential people. Several small villages generally identified themselves with a larger, more important cultural hub or tribelet.

Many Coast Miwok tribelets were small groups including several settlements with average population of about one hundred. The smaller settlements were not permanently occupied. Their territory was usually defined by stream drainage basins. Each tribelet acted as a unit in matters of land ownership, trespass, and major ceremonies.

The tribelet that included the present Tomales Bay State Park covered both sides of



A Miwok man from Tomales Bay, as drawn by Russian artist M. Tikhanov in 1818



Figure 1: INDIAN TRIBES AT TIME OF CONTACT, 1776 (Based on maps by Randall Milliken, 1995 and 2006.)

Tomales Bay, from White Gulch to the southern end of Tomales Bay and included the ocean beaches from McClure's Beach to Kehoe Beach. This tribelet had a much larger than average population due to the very extensive resources available to the group.

The tribelet groups ordered the lives of Central California Indians during the late prehistoric periods. A headman was elected for every family and these men elected another headman who became the political figure in the tribelet. The headman's power was limited by the decisions of the heads of families. The tribelet headman was chosen because he exhibited traits of patience and good will



Hairpin

and endeavored to find the best solution for the greatest good of the community. His rulings were seldom arbitrary. He was always attentive to the desires of the heads of families for through them he received and maintained his power. The headman was required to entertain guests and visitors, and was responsible for the general well-being of the tribelet. He was afforded extra essentials and luxuries so that he could carry out his duties with dignity. The position could be, and often was, inherited.

Areas of economic importance were either family, or privately claimed for a specific resource (high yield, acorn-producing trees, for example). It is doubtful that land itself was privately claimed.

The people of the Miwok community had been taught the art of living together in harmony. There was little or no warfare among these people.

Daily life was oriented around the collecting of wild food plants, fishing, and hunting. The Miwok had the advantage of living in California's mild climate surrounded by edible plants and animals.

Acorns were the staple food of the Coast Miwok as they were for many California Indians. Acorns were collected in the fall and stored in granaries for year-round use. Shellfish, fish, deer, other animals, and a variety of plants provided a rotating menu of varied and nutritious foods.

Bow and arrow were used for killing deer and small game. Arrows were tipped with obsidian from the St. Helena region for hunting game. Arrows were merely pointed wood shafts for use on small game or birds. Both sling and bolas were used to kill small game.

Jackrabbits, cottontail and quail were caught in basket traps. Rats, gray squirrels and ducks were hunted with bow and arrow. Salmon, eel and sturgeon were caught in nets. Clams of several species were collected. Plant foods included wild onion, clover, brodiaea, wild oats and acorns of black oak, valley oak and tanbark oak. Blackberries, strawberries, thimbleberries, gooseberries and elderberries were gathered in great quantities. Manzanita and toyon berries were also eaten. Honey was gathered from the hives of ground-dwelling bees.

Two types of individual family houses called *kotchas* were common (see *Figure 2*). Where redwood was available, split bark or wood was stacked into a conical shape, the interior dug out, and dirt piled around the outside of the kotcha. Another type of house was built of pliable willow poles, bent over and interwoven as a framework. This was then covered with bundles of tule formed into overlapping layers like shingles.



Figure 2: Redwood bark kotcha

Fires were maintained inside structures for warmth. All cooking was done outside. An earth-covered house functioned as a sweat house or dance house, and was communally owned. Woven and thatched houses were owned by male members of the community and were burned when the owner died. A special menstrual hut was provided for women. It was occupied by women during their menstrual cycle, and was erected close to their family residences.

Sweat houses were used for sleeping by adult males and were used for varying lengths of time by all males during ritual purification before hunting.

For many ceremonial activities, the Coast Miwok used an earth-covered structure especially during inclement weather. In smaller communities it probably served a dual function as a dance house, and sweat house. Coast Miwok dance houses and sweat houses were indistinguishable except for size and function. Dance house floors were dug about one and a half foot deep. The house was round with a central pole and a circle of eight poles around the central one. Stringers were run across the posts and covered with brush and earth.

The men generally went naked. The women wore a skirt-like garment made of bulrushes. Sometimes skins were draped over the shoulder and used as garments. When the weather was cold or if some ceremonial occasion called for it, men did wear clothing. When a man went into brush or difficult terrain, he wore a loin cloth of deer skin.

To women, hairdressing was probably more a matter of feminine concern than was body clothing.

Boats were made by binding bundles of dry tules together to form a bulky, but navigable craft. A double bladed paddle was used to propel the boats.

Beads made by the Coast Miwok from Washington clams were used for exchange or money by most local Indians. Items purchased with these beads included obsidian, magnesite beads (which were also used for money), roots, and yellow paint from clay found near Calistoga.

Baskets were made in remarkable variety and were produced and used for every possible occasion. These baskets served every use in which pots might serve in other cultures (pottery was not part of the Coast Miwok tradition). Most of the baskets, which held everything from shellfish to finely ground acorn meal, were woven by women. Among the types of containers made were storage baskets, seed beaters, flat sifters for acorn meal, small mush bowls for individual servings, seed



Figure 3: Coast Miwok basket, St. Petersburg

parching trays and large burden baskets used for carrying bulky loads. These burden baskets were used with a net and a tumpline worn across the forehead.

*Some baskets were made by men. These included baby baskets called *uute saka* or "baby boats" and heavy hazel or willow carrying baskets and containers for hunting gear. Of exceptional beauty were baskets covered with feathers, beads and abalone, which we know only from descriptions and from the few examples in European museums.*

Although baskets of the neighboring Pomo people are similar, no Coast Miwok baskets are in American museums today. Experts believe that large beaded and feathered baskets in an ethnographic museum in St. Petersburg, Russia, are of Coast Miwok origin (seen in *Figure 3*). Coast Miwok baskets were taken to Russia, along with other objects of California Indian origin, by early nineteenth-century Russian travelers. These spectacular baskets probably represented the most impressive types seen by Russian visitors, but they only represented a few of the kinds of baskets made here. The fact that so few baskets have survived today is due partly to the early decimation by disease and displacement of people with the skills to make them. Additionally, baskets were frequently burned after the death of the maker.

The Site: ELP at Tomales Bay State Park

The program site at Tomales Bay is somewhat unique by necessity. Other State Park environmental living sites have many observable historical components and abundant recorded history of the cultures is available. At Indian Beach the history is more elusive.

Although park staff has built two kotchas (traditional Coast Miwok redwood bark dwellings) at the site to facilitate the program, viewing modern structures along the east side of the bay and at the site cannot be avoided. It requires a good deal of invention and imagination from all participants to live on the site as it was done in the past.

Written accounts of pre-contact Coast Miwok culture are few. Most of the information is limited to archaeological research, journals of early explorers and settlers, and ethnographic records. Furthermore, much knowledge of traditional ceremonies, skills and language has been lost due to the devastating effects of the Mission Period, Gold Rush Era and a number of U.S. policies designed to force assimilation of native people.

Today, native people themselves struggle to preserve and rediscover their cultural heritage, and have taken the lead in this task which was once the purview of anthropologists and hobbyists. It is important to be aware that many traditional Indian practices may appear to be mundane, but have a vital religious function. For example, dancing in traditional Coast Miwok communities was always performed as part of a religious ceremony, not for mere entertainment. Similarly, red face paint and feather costumes or adornments were only used in this ceremonial context. Just as it may be considered irreverent to assume the habit of a priest or rabbi, assuming certain roles may be perceived as disrespectful.

While it is impossible (or, inappropriate as noted above) to perfectly recreate life as it was lived for thousands of years by the native peoples of Tomales Bay, it is possible to approximate it with the help of some excellent resources. Please see the *Selected Resources* appendix for a list of research materials on Coast Miwok and other native Californian cultures.

Teachers are encouraged to design curriculum that is specific to Indian culture of our ecological region, including Marin County and nearby environs. The Environmental Living Program at Tomales Bay offers a rare opportunity for

students to have intimate, meaningful interactions with the natural environment. An appreciation for the unique ecology and topography of the Tomales Bay area inevitably flows from the ELP experience. This will hopefully lead to heightened awareness of the "power of place" - that each distinct location is characterized by a unique constellation of living and abiotic features that both influences and is influenced by the humans living within that place. Living in harmony with the land may be achieved when the power of a place and its relationship to human societies is fully recognized. It is intended for the Tomales Bay ELP to help students begin this endeavor.



Grinding acorn meal

ELP: Learning Philosophies and Academic Standards

Experiential Education

The Environmental Living Program at Tomales Bay is based on principals of experiential education in which learners are encouraged to become “actively engaged in posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, and constructing meaning”. The hands-on learning that occurs within the context of ELP facilitates students of multiple learning styles to engage physically, emotionally, socially and intellectually with the curriculum.

Project-Based Learning

The classroom and on-site activities associated with ELP are easily incorporated into a project-based learning curricular design. Most fundamentally, students are charged with planning for their overnight excursion and accomplishing certain tasks at the park. The planning of menus, creation of maps and establishment of social norms places responsibility for learning and problem-solving on the students themselves. Learning can be extended with a variety of projects including a wax museum performance, designing a field guide, producing a newsletter or engineering an environmentally-friendly energy capture system. The real-life application of academic content challenges individuals to develop personal skills in addition to engendering authentic collaborative learning.

Academic Content Standards

Teachers have great flexibility in designing lessons to accompany the overnight ELP experience at Tomales Bay. Opportunities abound for designing lessons that are rich in crosscutting concepts - core intellectual tools that are found across disciplines: English language arts, math, social sciences, science and the visual arts. The charts on the following pages titled *ELP Academic Standards Alignment* illustrate the multi-disciplinary applications of example lessons that teachers may choose to use.

Essential Questions

The California state standards do not specify what exactly a student should learn about the influence of climate on a people or what values underpinned folklore traditions - this is for the student to discover. A small set of **essential questions** aides in guiding students' learning so that they are able to draw cohesive and meaningful conclusions from curricular activities rather than simply learning rote facts (as the state standards may suggest). An essential question offers an entry point into higher-order thinking and emotional engagement. An effective essential

question does not have a single, "right" answer, but invites reflection on several possible interpretations.

Traditional Coast Miwok people had an intimate relationship with their natural surroundings. Their well-being depended on a deep knowledge and reverence of the environment that provided abundance, but must not be taken for granted. Respect for the natural world remains at the heart of Coast Miwok society today. Learning about Coast Miwok culture means learning how to appreciate the kindred, living spirit in all components of the natural world, even those that non-native people may consider "inanimate."

As your class enjoys learning about the beauty and ingenuity of traditional Coast Miwok material artifacts including everything from stone points to tattoos, consider the values reflected within these objects and practices. Invite your students to imagine what the material culture reveals about the belief system that both informs and is influenced by the objects. Consider, especially, how practices fit into the larger context of kinship with and reverence for the natural world.

Please consider using one or some of the following essential questions as a framework for your ELP curriculum (you will note that they are somewhat repetitive). In this handbook you will find suggested activities and resource materials to help students reflect on these questions:

- **What technologies, skills and daily living practices helped Coast Miwoks to pursue prosperous lives in the Tomales Bay region for thousands of years?**
- **It has been stated that native Californians had a close relationship to the natural world. A relationship is the condition of being interrelated or connected. In what ways were traditional Coast Miwok people connected to their environment?**
- **As a Coast Miwok person living on Tomales Bay, I depend upon this land for my survival and happiness. How does my dependence on my environment influence my thoughts, feelings and actions?**
- **What rules, social structures and beliefs did traditional Coast Miwoks establish for the purpose of maintaining balance within the social order as well as the environment?**



ELP Academic Standards Alignment: Grade 4

	CCSS ELA	Reading: Literature	Reading: Informational Text	Reading: Foundational Skills	Writing	Speaking & Listening	Language	CCSS MATH	Number and Operations in Base 10	Number & Operations: Fractions	Measurement & Data	NG Science	Life Science: Structures and Processes	Earth's Systems	Earth and Human Activity	Engineering Design	CA Stds: Social Science	4.1 Geography	4.2 Contact	4.3 Statehood	CA Stds: Visual Arts	Creative Expression	Historical / Cultural Context	Aesthetic Valuing	Applications
Classroom Activities																									
Establish rules and regulations					✓	✓																			
Miwok language acquisition				✓	✓	✓	✓																		
Research: History and culture		✓		✓	✓	✓	✓											✓	✓	✓			✓	✓	
Writing and sharing a Miwok tale	✓			✓	✓	✓	✓																		✓
Reading and creating maps		✓			✓	✓	✓							✓				✓							✓
Measuring distance											✓														
Avergaing temperature								✓																	
Climate of Tomales Bay								✓										✓							
Cooking and firewood math								✓			✓														
Tracking		✓																							
Sew a pouch									✓	✓												✓			
Energy Flows		✓	✓	✓	✓	✓	✓	✓		✓				✓	✓			✓							
Tomales Bay On-site Activities																									
Family Council decision making						✓																			
Native skill acquisition						✓																✓	✓	✓	
Nature Observation: listen to a tree													✓												
Identify native plants													✓									✓			
Charting nature's changes											✓							✓							
Animal signs													✓												
Bird watching													✓												
Catalogue shells													✓									✓			
Reflection Activities																									
Wax museum					✓	✓	✓															✓	✓	✓	
Essays: persuasive, compare/contrast					✓		✓											✓							
Write a news article, poem, narrative with illustration					✓		✓											✓				✓			✓

ELP Academic Standards Alignment: Grade 5

	CCSS ELA	Reading: Literature	Reading: informational Text	Reading: Foundational Skills	Writing	Speaking & Listening	Language	CCSS MATH	Number and Operations in Base 10	Number & Operations: Fractions	Measurement & Data	NG Science	Life Science: Structures and Processes	Earth's Systems	Earth and Human Activity	Engineering: Design	CA Stds: Social Science	5.1 Pre-Columbian Settlement	5.2 Early Exploration	5.3 Cooperation and Conflict	5.8 Colonization and	CA Stds: Visual Arts	Creative Expression	Historical / Cultural Context	Aesthetic Valuing	Applications
Classroom Activities																										
Establish rules and regulations					✓	✓																				
Miwok language acquisition			✓				✓																			
Research: History and culture		✓		✓	✓	✓	✓										✓	✓	✓	✓				✓	✓	
Writing and sharing a Miwok tale	✓		✓	✓	✓	✓	✓																			✓
Reading and creating maps		✓		✓			✓							✓			✓									✓
Measuring distance											✓															
Avergaing temperature								✓																		
Climate of Tomales Bay																										
Cooking and firewood math								✓			✓															
Tracking		✓																								
Sew a pouch									✓	✓	✓												✓			
Energy Flows		✓	✓	✓	✓	✓	✓	✓		✓					✓	✓										
Tomales Bay On-site Activities																										
Family Council decision making						✓																				
Native skill acquisition						✓																	✓	✓	✓	
Nature Observation: listen to a tree													✓													
Identify native plants													✓										✓			
Charting nature's changes											✓															
Animal signs													✓													
Bird watching													✓													
Catalogue shells													✓										✓			
Reflection Activities																										
Wax museum				✓	✓	✓											✓						✓	✓	✓	
Essays: persuasive, compare/contrast				✓		✓											✓	✓	✓	✓						
Write a news article, poem, narrative with illustration				✓		✓											✓	✓	✓	✓		✓				✓

The Recommended ELP Five-Part Program

1. Teacher/Leader Workshop
2. Initial Visit
3. Classroom Preparation
4. The On-Site Program
5. Evaluation and Follow-up

1. Teacher/Leader Workshop

This 24 hour on-site workshop is designed to acquaint teachers and aides with the site and mechanics of the Environmental Living Program at Tomales Bay State Park. The workshop allows teachers to define their role and to develop a framework for their students' experience. The emphasis is on experience—gaining both knowledge and developing a sense of place.

The teacher workshop is usually held in the fall of the year just after school starts. Teachers who are new to the program must attend a workshop in order to participate in the program. Returning teachers and aides are encouraged to participate in workshops and to share their experience with new participants.

Whenever possible, teachers should invite parents or aides to attend the workshop. A minimum of five parents or aides are needed to assist the students in their various tasks. (Networking with high schools or student teacher programs may yield additional assistance in conducting the program.)

Workshop participants will need to bring the same equipment that students are asked to bring (see appendix for a sample equipment checklist).



Quercus kelloggii acorns

2. Initial Visit

This second phase of the program is a brief, one or two hour visit to the site during which time students get familiarized with the area and deal with basic, practical questions of available facilities.



Stone Point

This visit ideally should take a couple of weeks prior to the overnight. It is meant to whet the interests and curiosities of the students. If the visit is not possible, teacher workshop participants can provide the class with the site information. Slides, photos, or a video of the site are effective tools to enhance the presentation. Usually, student awareness of the site will lead to questions that individuals and the class as a whole can use to guide its exploration of Coast Miwok culture. As students' interests focus on various aspects of the site and its past, they should be encouraged to follow up with research that will naturally lead into Phase 3 "Classroom Preparation".

There are several good resource facilities that the class may choose to visit. One of these is the Kule Loklo Miwok village at Point Reyes National Seashore. It is a reproduction of a Coast Miwok village and offers students an opportunity to explore the structures and way of life of the inhabitants. It is necessary to make tour reservations well in advance. To schedule a tour of the Miwok Village, please contact:

*Bear Valley Visitor Center, Point Reyes National Seashore
Point Reyes, California 94956
(415) 663-1092*

Another excellent resource facility is the Marin Miwok Museum. In addition to a diverse array of Indian artifacts and ethnographic materials, the Museum offers an educational program both at their facility and on location, as requested. To find out more about the Museum or to schedule a tour or a slide show, please contact:

*Marin Museum of the American Indian
2200 Novato Blvd., P.O. Box 864
Novato, CA 94947
(415) 897-4064*

What Native American resources are in your area that might be advantageous for your students to visit? There are excellent exhibits of hunter-gatherer cultures at:

*The Oakland Museum
Santa Rosa Junior College
California Academy of Sciences (San Francisco)
State Indian Museum (Sacramento)*

3. Classroom Preparation – Planning Your Overnight

This is the time for all participants to explore their feelings and thoughts about the site and research its natural and cultural history. This classroom time is perhaps the most important aspect of the program. At this point, all classroom lessons can be integrated and used to prepare for the overnight. Math combines with health, history, and language arts as students research eating habits, plan appropriate menus and determine food costs.

As much as possible, students should plan their program. This is their program. The teacher should serve as mentor, pointing the way ahead. It is this period of class preparation that makes or breaks the program. Students should be encouraged to use every available resource to expand their knowledge of Coast Miwok culture and the site at Tomales Bay.

Teachers will need to enlist the assistance of parents. There is a sample of a letter to parents by a Mill Valley teacher in the appendices of this handbook, along with a sample permission slip and an equipment list.

Teachers will need to decide what things to bring. We suggest developing a detailed checklist. The sample equipment list found in the Appendix may be helpful.

At least two weeks prior to the overnight visit, the teacher will be required to submit a schedule of activities to park staff. This enables staff to provide appropriate assistance and to insure that nothing has been planned by the students which cannot be carried out at the site.

This schedule should include the activities planned and a list of the materials the group wishes the park to supply, a list of the rules and regulations drawn up by the students and an overview of their plan of organization. See Appendix for examples.

Your schedule of activities should be mailed to:

*ELP Coordinator
Tomales Bay State Park
1208 Pierce Point Road
Inverness, CA 94937*

3. Classroom Preparation: Role-Playing Tasks

Task 1: Establish Rules and Regulations

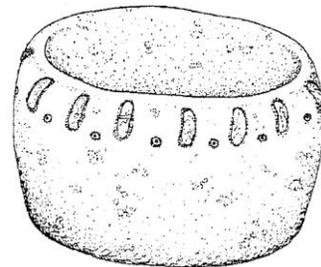
All societies need some rules so that everyone can live in harmony. It will be necessary for your group to formulate some rules to live by during the overnight experience. Keep in mind that you are in a State Park and there are certain rules and regulations that must be followed, but don't over-restrict yourselves.

Your task is to formulate rules and regulations for the overnight period and to enforce them when necessary. Make up a list of rules and regulations and let your teacher examine them. Remember that the teacher will act only as a guide; YOU make up the rules of conduct. Involve the entire class. That way, everyone will know the rules before the overnight.

Other areas to look at when formulating your rules and regulations are conservation of resources, ecology, and welfare of the villagers.

Task 2: Planning Meals

Food is probably the most important part of the overnight. Native Americans spent a great deal of their time seeking food for immediate use as well as for the winter.



The task of planning meals will take place in the classroom as well as the overnight at Tomales Bay. Students will need to research what wild foods may be available at the site. Efforts should be made to gather some wild foods while at the park (please check with park staff before doing so), but you will need to bring much of your own food. Remember - your task is to feed the villagers so they won't be hungry!

Research what plants and animals were available at Tomales Bay during the time of year when you will be having your overnight. The Phoebe A. Hearst Museum of Anthropology has put together an excellent guide titled *California Indian Food and Culture* that is available on the museum's website. Plan a menu and decide what you can use for substitutes.

Suggested Foods to Try

- Pemmican
- Salmon jerky
- Clams, mussels, oysters (be sure to check rules regarding size, seasons and quarantine)
- Acorn bread, mush, pancakes - cornmeal can be substituted (see Appendix)
- Wild greens and berries (check with park staff before gathering wild foods in the park)
- Nuts, seeds and grains
- Rabbit
- Venison
- Fish
- Quail - game hens can be substituted



Suggested Kitchen Tools to Make

- Soap root brush (see Appendix)
- Mush stirrer
- Mat to eat on
- Fire-starting kit

Task 3: Entertainment

Because of the abundance provided by the natural environment, traditional Coast Miwok people did not have to spend all of their time gathering and preparing resources. They had much time for education, entertainment and socializing.

You will want to learn songs, stories, and games to teach others in the village. You may decide to make beads for money or jewelry. Decide what materials and tools you will need. You may have to bring some materials to supplement what you gather onsite. You may have to prepare some of the materials beforehand as well. See Selected Resources in this handbook for resources on California Indian games and stories.

All natural forms in our world, the plants, the animals, the air, water, rocks, etc. are considered by ancient Coast Miwok and Southern Pomo to be of equal value and importance. Our world was a multitude of spiritual forces that must remain in balance if the world is to continue on its constructive and creative path. When the world began, it was in balance; but in the human era, it has deteriorated in various ways—due to natural disasters and human misbehavior. In order to stay on a constructive path, conducive to human ends, the world's balance had to be restored annually through the rituals practiced by Tribal members.

The humans were created to live in harmony and with mutual understanding and respect with all things. There was no clear distinction between the spiritual and physical. All elements of the world expressed some portion of the original power of creation; therefore is spiritual and requires special attention. Native Americans needing a fish to eat or a plant to heal them would leave an offering or say a prayer to give thanks for their sacrifice to us. Their cooking and hunting tools (obsidian points) and baskets had this spiritual component that are required attention, treatment and respect. These so called artifacts are a part of us today and are due the same respect we feel for ourselves.

Nick Tipon
Sacred Sites Protection Committee
Graton Rancheria

4. Onsite Program

To the students, this fourth part of the program is usually seen as the most important part. It is the culmination of their weeks of planning. They have chosen roles to play and tasks to accomplish within the parameters suggested by the site itself.

The overnight experience resembles a camping trip, but in another time and another culture. The role-playing potential at the site, enhanced by wearing appropriate Coast Miwok clothing, allows the students to acquire an understanding of the past, of other cultures, of themselves and of their relationship with the world. In addition, it provokes other questions.

Indian Nature Trail - Set the mood

As you can see on the map of Tomales Bay State Park (see Appendix), you will begin your overnight experience at Heart's Desire Beach parking lot. You will leave your cars at that location and hike in to the actual program site, Indian Beach.

This hike provides you with a unique opportunity to accomplish several things:

- Start the process of leaving the present civilization behind (school, cars, paved parking lot) and traveling into the past (at 5 years back in time with every step of your walk).
- Learn about some of the plants, shrubs and trees that the Coast Miwok Indians at Tomales Bay used for food, medicinal purposes, etc.

Note: At the beginning of the Indian Nature Trail, you will note small bits of shell in dark soil. You are standing upon a Miwok midden. A midden is a pile of old Miwok discards, such as common sea shells, bones and other materials. To an archaeologist, this pile will tell many things about the Indians, for example, how long ago they came, how long they were here and what they ate. Therefore, we do not want to disturb such mounds.



Obsidian point

4. Onsite Program *cont.*

Before you head out on the Indian Trail, make sure that you have taken care of three small details:

(1) All heavy bags of food, equipment, etc. have been handed over to the Park Ranger for transportation by vehicle to Indian Beach (as imaginative as you might be, it's very hard to think of yourself going back into time while carrying a 20-pound bag of groceries!).

(2) A long vehicle ride and the excitement of the trip will build a lot of energy. Let the children take a break to run and stretch at Heart's Desire Beach, instead of running down the trail.

(3) The trail starts along the east side of the restroom building at Heart's Desire Beach. Make sure that those that have a need for the restroom use it now. The walk to Indian Beach is a half mile and should take about 20 minutes.



4. Onsite Program: *Role-Playing Tasks*

You are a member of a family group containing 4-7 members. Your family is part of a tribe consisting of 20-30 people divided into several smaller family groups like yours.

Your tribe plans to remain at this site overnight. In order to accomplish this task, you have various responsibilities to your family and your tribe. Complete the three tasks that follow:



Task 1: Family Council Decision-Making

In your family, choose an elder to represent you in the Council of tribal elders. As a family, decide how you feel about the questions below. Your elder will make final decisions, taking each family's decisions into account.

Family and tribal problems requiring elder Council action:

1. Food - How will food be shared and prepared? Will the elders parcel out equal shares to individual families to be cooked separately by the families? Or will the elders appoint one family to prepare food for everyone? Or???



2. Shelter - Where will you sleep? Who will build shelters? Will each family choose its own site and build shelters? Or will the elders appoint a family to select sites and build shelters for the whole tribe? Or???

3. Entertainment - During the long evening, you will want to relax and have some kind of entertainment. Will each family provide some sort of "around the campfire" entertainment? Or will the elders appoint a family to be in charge of entertainment for the entire tribe? Or???

4. Cleanup - Who will wash dishes and clean up the tribe's mess? Will each family clean up after itself? Or will one family clean up after the entire tribe? Or???

5. Taboos - The group will need rules or guidelines for social interaction. Each family should offer at least 3 suggestions of taboos to the elders. Elders will also establish watches, time schedules and emergency plans in case of intrusion.

Task 2: Elders Council

Elders meet together to share family decisions on (see Task 1):

- Food
- Shelter
- Entertainment
- Cleanup
- Taboos

As Elders, you will further need to establish the following:

1. Watches to protect the camp throughout the night (2-hour watches are standard)
2. Time schedule - especially evening and morning activities
3. Emergency plans - what if inclement weather threatens?

*You will need to post or in some way communicate to the tribe your schedules, taboo, watches, etc. Remaining family members complete site preparation tasks.



Program site - Indian Beach



Task 3: Native Technologies

In addition to the task assigned by the tribal elders during this time, each family will employ some or all of the following technologies used by traditional Coast Miwok people at Tomales Bay:

1. Fashion an eating and/or cooking utensil from nature's discards.
2. Make a fishing outfit from nature's discards.
3. Make a hunting weapon from nature's discards.
4. Make an ornament or jewelry from nature's discards.
5. Figure out some way to keep perishables cool.

**Be prepared to return all these items back when you leave!*



Developing Ecological Knowledge

Task: Sharpen your senses

Coast Miwoks were successful in living in a single area - Marin and Sonoma counties - for millennia because they had highly developed **traditional ecological knowledge** (TEK). TEK is a sophisticated system of beliefs, awareness and knowledge about all the interconnected natural elements and events - *ecology* - in one's immediate environment. The knowledge about weather patterns, medicinal properties of plants, and animal tracking are just a few of the components of TEK.

Application of TEK allows a people to thrive in one location without exhausting the resources upon which they depend. TEK is refined over many, many generations and cannot be acquired easily or quickly. Non-native people would do well, however, to cultivate some of the skills that are necessary to develop TEK: heightened sensory perception and application of ecological science in analyzing what is perceived.

For this onsite task, we will focus on sharpening our abilities to "tune-in" to the natural world. This is the data-gathering phase of ecological research. Back in the classroom, you may choose to conduct research about what you observed at Tomales Bay.

Observing natural phenomena requires time, patience and attention to detail. You may not have these skills and find that your mind wanders if you are just sitting and looking at something for 15-20 minutes. Using a journal to record your observations may help you to stay focused.

The Indian Nature trail (between Heart's Desire Beach and Indian Beach) and the fire road that leads from Indian Beach to the main road are ideal sites for many of these activities. These activities are best done in pairs or solo; larger groups may distract from the task.

Possible activities to develop your senses:

"Listen" to a tree: The most fundamental TEK practice is to simply sit quietly in a single spot and make note of your sensory observations. This is best done alone, if possible, and should ideally be practiced at home or school before the overnight at Tomales Bay. Try sitting for a minimum of 15 minutes and take note of what you see, smell, hear. Also pay close attention to thoughts that enter your mind: is the

tree (or any other part of the environment) communicating with you? Does it tell you:

- A story?
- A secret?
- Advice?
- New ideas?

Identify specific native plants and describe:

- Where they are found: in shade or sun? Close to fresh water?
- What they look like: make a sketch or write a description.
- What plants live close to this one? Do you observe animals using the plant?
- What phase of life (phenology) is the plant in - flowering, dormancy, etc. ?

Throughout your time at Tomales Bay, you may want to **chart the changes** in the:

- Sun
- Moon
- Tide
- Clouds/wind/weather

Look for animal signs. Describe or sketch what you observe. Consider making a map. Animal signs may take the form of:

- Tracks
- Skat
- Digging/scratching
- Eaten leaves
- Paths and holes
- Nests, cocoons, fur and skin

Birdwatching: Describe and identify how many different birds you observe.

Look/listen for:

- Birds
- Feathers
- Bird calls

Catalogue the different types of shells found on the beach. Describe and/or sketch them. What patterns do you notice? Can you place them into functional or taxonomical groups?



Cooking

Task: Food gathering, preparation and cooking

Food is probably the most important part of the overnight. Native Americans spent a great deal of their time seeking food for immediate use as well as for the winter.

This task includes gathering, preparing and cooking wild foods (or substitutes that you have brought). You will want to explore all the possibilities for your meals at the overnight. In addition, you must build a proper fire.

Since wild foods are hard to find during certain times of the year, decide what you can use for substitutes. Learn to make your own tools for cooking (you may want to work together to make these tools). Try to use only what you need and to avoid waste.

See the Selected Resources section and appendices in this handbook for information on food preparation.

Suggested Activities

1. Collect and leach acorns.
2. Identify edible and non-edible plants.
3. Discuss fire safety rules and practice building a proper fire.
4. Develop other ideas you want to try.

Suggested Kitchen Tools to Make

1. Soap root brush
2. Mush stirrer
3. Mat to eat on
4. Fire kit



Food preparation

Entertainment

Task: Gather materials for tools, games and jewelry

This task includes gathering materials for the games, tool making, and crafts the group chooses to participate in during the overnight. You will want to learn songs, stories, and games to teach others in the village. You may make beads for money or jewelry. Remember - you are supplying entertainment for the villagers and this will be a primary concern.

Suggested Things to Do

1. Make dice and counting sticks (Staves)
2. Learn songs and music.
3. Learn running games.
4. Make tools for other activities.
5. Learn Indian stories to tell at the campfire (see *Dawn of the World*, by Bonnie J. Peterson).
6. Research and create clothing to wear during the overnight.
7. Any other activities you want to do.



Maintenance

Task: Safety, shelter, fuel and sanitation

Maintenance is important in the Environmental Living Program. You are charged with maintaining a clean site that will be safe for everyone. You will also maintain the kotchas and make frequent check of the restroom. You will want to provide firewood for the evening campfire. You will make sure all litter is disposed of properly, leaving a clean site when the overnight is finished.

Suggested Things to Do

1. Gather tules or cattails for mat making and house covering.
2. Make sure restroom has paper and is clean.
3. Make sure that there is wood for the fire.
4. Make mats for sleeping.



Health and Safety

Nightwatch

You will need to establish watches at night to direct other students to restrooms, keep the campfire burning, and protect your food supplies from small animals. Have regular shifts, encourage the entire class to participate, and include one adult leader with each shift.



Story telling

Remember - you are maintaining a safe and clean site for everyone in the village and future generations!

The Campfire

When building a fire, there are several things to remember. The fire must be built in the BBQ stand provided. It is meant for that purpose and all burnable materials have been cleared away to a radius of 10 feet. As much as possible, the fire area should be sheltered from the wind, and the fire should be no larger than is necessary for cooking and keeping warm.

Ground fires are strictly prohibited!

Use of an Axe or Hatchet

An axe or hatchet is made for chopping or splitting wood and should be used for that purpose only. Before using the tool, it should be checked carefully to be sure the head of the tool is securely fastened to the handle and is firm and sound with no cracks or splits. While chopping wood, maintain an 8 ft. circle in which no other person may stand.

Washing Dishes

When washing dishes, it will be necessary to have 3 large washtubs: one for soapy water: one for a sterilizing rinse and one for a clear water rinse. The first washtub should contain hot water and dish soap. The sterilizing solution should contain warm water with 1 tablespoon of 5% chlorine bleach to each 2 gallons of water. The utensils should be soaked for 30 seconds or more, and then rinsed in the third tub of hot, clear water.

5. Follow Up and Evaluation

Now that your class has worked and lived together, you can build on a common experience. Your students should reflect upon the ELP essential questions found on page 14 of this handbook. Some additional reflection questions include:

- How does the culture of Coast Miwok people compare to that of a California tribe living in a different ecological region such as the desert or the Sierra Nevada?
- How is the daily life of traditional Coast Miwok different than mine? How is it similar?
- How do the values and belief systems of native peoples compare to my own?
- How might application of the values and native technologies of Coast Miwok people enhance my life and society in general?
- How can we integrate the values and skills acquired from the Tomales Bay ELP into our daily lives?

Some suggested follow-up activities include:

1. Present a play, program or exhibit to the school, parents, or PTA about your Environmental Living Program experience.
2. Make a magazine with student- written articles and photos.
3. Write stories for school or local newspapers.
4. Write poems relating to their role.
5. Create pictures of the site and of historic activities.
6. Build a model or create a map of the site.
7. Write an evaluation of the Tomales Bay ELP.



Cooking in a basket using fire heated stones

Close evaluation will show that as people, we all have certain basic needs and desires. How these needs and desires are met can be seen as a link, rather than a gulf, between different cultures.

Cultural Sensitivity and ELP

Non-native U.S. culture has a long and troubling history of cultural appropriation: using native ideas in order to define one's own ethnic identity or social status. In some cases, borrowing from another culture may be a neutral act or argued to be celebratory. In many cases, however, appropriation has had the effect of trivializing Native American religious objects and practices or promoting stereotypes that Indians are savages, warriors, "natural," or perpetually frozen in the past. The naturalization of stereotypical Indian images and cultural appropriation in our society is all around us, as seen in these images.



Disney's Pocahontas: in the tradition of the noble savage image

It may be difficult or even painful to acknowledge that many Indian people do not approve of the appropriation of symbols that are an integral part of U.S. culture. The prevalence of beloved Indian mascots or movie characters is testament to the way in which culturally appropriated artifacts hold positive cultural meaning for non-natives.

While it is impossible to avoid offense to all people at all times, it is crucial that educators in the culturally diverse California classroom have a high degree of cultural awareness and humility. Educating yourself on both the history and contemporary issues concerning non-native/Indian relations will help in this task. Please see some of the websites and books listed in this handbook's Selected Resources. On the following pages you will find two articles that summarize some of the issues presented here.



Challenging old views of the American Indian Duality: Images accepted for 500 years are in question. A new Smithsonian museum could supply some answers.

By Michael Hill, August 29, 2004, *The Baltimore Sun*

CLOSE YOUR EYES and conjure up what comes to mind when you hear the words "American Indian." No matter your political correctness, the dominant image is probably one of feathers and war paint, bows and arrows, buffalo and teepees, beads and skins, wisdom and warfare.

It is an image derived from adventure movies and childhood books, from sepia-tinged photographs and museum exhibitions, from exploitative television shows and earnest documentaries. Even recent publicity about Indian casinos cannot blemish its iconic power.

Whether the Indian in your image is villain or victim, it is likely some exotic "other," a more primal being somehow in touch with elemental nature which can be a source of savagery and spirituality.

Next month, the Smithsonian Institution - which had as much to do with cementing the image of the Indian in the American mind as any institution - opens its Museum of the American Indian, probably the last great museum to be built on the Mall in Washington. This \$200 million facility, decades in the making, could go a long way toward challenging views of the American Indian developed since Europeans encountered these people in the 15th century.

"There really is a duality in the many, many images of the Native American over the last 500 years," says Rennard Strickland, an expert on Indian law at the University of Oregon. "It goes between what I call the 'savage sinner' and the 'red-skinned redeemer.' We tend to use the Indian as a mirror on which we reflect a lot of our own particular neuroses."

The duality can be seen in some of the earliest accounts: the noble friend who sat down for the first Thanksgiving dinner, the fool who sold Manhattan for \$24 in beads, the enemy who kidnapped white women and raised them in savage ways.

"I think there has been a schizophrenia in the American perception of the Indian from the very beginning," says Orin Starn, an anthropologist at Duke University. "From very early on, there is this dual desire to, at the same time, on the one hand, exterminate them - either kill or remove them to make way for the United States - and to romanticize them, to admire them, to be like them.

"Go back to the Revolutionary War and the Boston Tea Party," he says. "Colonists there dressed up as Indians. There was this identification with being proud and wild and savage in rebelling against the British."

This continued, Starn says, in the 1800s, when U.S. troops were fighting Indians in the West. , "You are fighting to defeat these people but at the same time you are fascinated by these

people who ride bareback with eagle feather headdresses, who know how to hunt with a bow and arrow," he says.

Akim Reinhardt, a historian at Towson University, points out that Indians had a different role in the life of early colonists. "Indians, from the initial settlements in the colonial period up through the 1700s and the beginning of the nation, represented something scary to the colonists," he says. "It now seems preordained that those 13 Colonies would persist, but it was not clear at the time. The Iroquois confederacy in the North, the Cherokee and Creek confederacy in the South were, in fact, much stronger than the early European colonies. So they had a very different perception of Indians than we do now."

Narratives - some fraudulent, some true - of people taken by Indians and later returned to white society, as evidence of the fear and fascination Indians represented to early settlers. From the beginning, the settlers' attitudes toward the Indian were a mixture of avarice and altruism. Moving them out of the way to reservations was a way to get their land for expansion of the new country. But many also saw it as a way to protect these innocent people until they could be educated and brought up to the standards of Western civilization.

A change in the nation's view came about a century ago. Geronimo was captured in Mexico. The Battle of Wounded Knee ended the last Indian threat. Most thought their culture was on the verge of extinction. The romanticization began.

Buffalo Bill Cody had earlier put Indians on display in his Wild West Show. Others were seen in exhibitions at turn-of-the-century World's Fairs. Edward Curtis began his photographic odyssey to document the cultures. Anthropologists and amateurs went about preserving a way of life that was seen as disappearing, a tragic, but inevitable byproduct of civilization. Many objects in the collection of the new museum were collected at this time.

Portrayal in movies

For the most part, this is the Indian culture that was put under glass in museums and declared "authentic." This is the one portrayed in movies, even if it meant - as Strickland says in his 1997 book *Tonto's Revenge* - putting Seminoles from Florida in headdresses from the Plains. Or in the case of many Curtis photographs - as Reinhardt notes - dressing subjects in inappropriate attire to make them more photogenic.

Ignored was the fact that the culture being documented and preserved was far from that of a pure indigenous people. The horse came from the Spanish. Beads came from Europeans. Roger Nichols, a historian at the University of Arizona, says that these cultural transitions are rarely examined from the Indians' point of view.

"We tend to think they were ripped off in the fur trade, but they thought they were ripping off the traders," he says. "They were getting glass pots that were a lot better than the clay ones that would break every time you dropped one. ... "People tend to think of everything their ancestors did with the Europeans as negative, but the Indians didn't see it that way."

Starn examined one aspect of this era in *Ishi's Brain: In Search of America's Last "Wild" Indian*. The book documents the story of the last survivor of the Yahi tribe who was captured in California in 1911, handed over to an anthropologist and put on display in a museum until his death five years later. Starn tells of finding Ishi's brain preserved in the Smithsonian and eventually repatriating it to a California tribe.

"In the 1860s and '70s, Ishi's tribe was described as bloodthirsty redskins and killers," Starn says. "By the time he was captured, the Indians had been defeated on the battlefield and America was moving much more toward a frame of imperialist nostalgia.

"In the 1910s, the Indian tends to be viewed as a noble, primitive man in touch with nature, a master of the arts of hunting and fishing and making arrowheads, who knows the myths of his people," he says. "This was all disappearing. Ishi was viewed as the last of his kind, the last real Indian." There was a problem with this romanticization of a disappearing culture: It failed to disappear.

"I think it was 100 years ago almost exactly that Edward Curtis took one of his most famous photographs," says Peter Iverson, a professor of history at Arizona State University. "It was of a group of Navahos riding into the distance. It was called "The Vanishing Race."

"Today, there are more Navahos than there were Indians 100 years go. There's more Indian land. It has not turned out as many people anticipated."

The reservation system, which was supposed to protect Indians while getting them ready for civilization, became places where culture could be protected and, despite poverty and other social ills, preserved. The schools that were to raise Indians into whites, often served similar consciousness-raising functions. The Indian had refused to be preserved under museum glass, smoking peace pipes, riding horses and signing treaties that would be ignored by greedy white men. Instead, the Indian smoked cigarettes, drove pickup trucks and, in some cases, opened casinos visited by greedy white men.

Words Can Hurt: Native American Stereotypes

Taken from papers by the Miwok Archaeological Preserve of Marin, 2255 Las Gallinas, San Rafael, CA 94903. Originally printed in August, 1994.

Parents, teachers and interpreters who discuss Native Americans, past and present, need to be aware of the words they use. Our American vocabulary is full of stereotypes of Indians - we may not even be aware of many of them; thus erroneous images and prejudicial biases may be unintentionally implanted in non-Indian children,

Partly as a result of this backlog of unthinking language, Indian children may have a tough time in and out of the classroom. We can help by being aware of our own use of stereotypes - and by avoiding those words and phrases which carry them on.

Sitting Indian-style and walking Indian-file: Present day Indians sit in chairs and walk with their friends and family just as everyone else does. Children often don't make the distinction between past and present. We don't describe people as sitting or walking in African-American style.

Running around like Wild Indians: There are better ways to describe inappropriate behavior.

Indian-giver (meaning someone who gives and then takes back): There are better descriptions than this negative stereotype, no matter what its origins.

In teaching about Indians:

Native Americans, Indians, or what we shall we call them'? Some people prefer to be called Native Americans since the term "Indians" came from the early belief that explorers had reached India. Some people don't care. Find out what the tribal name is and use that. Or call them "people."

There never was a tribe, by the way, called Diggers, no matter what your grandmother said. Digger is a pejorative term and should never be used.

Braves and Warriors: These terms continue the concept of Indians as being fierce and dangerous.

Squaw is inappropriate in all circumstances; the word has sexual connotations in some cultures.

Papoose: This word means child in only one language; why not say baby *or* child?

Half-breed: People of mixed blood dislike this term. If you have to mention it, you could say-his mother was white and his father Cherokee.

Indian princess and son of chief: A disproportionate number of Indians are described this way in stories (and youth organizations). That's like characterizing present day people as daughters of the governor and sons of the mayor-very few of us are. By the way, people sing and say prayers, they don't chant.

Tee pees, wickiups, wigwams and hogans: These words mean specific kinds of houses in specific languages, and they aren't interchangeable. Take the trouble to find out the appropriate word in the language of the people you are studying, or just say house. (Not hut.)

War-whooping: Please flatly discourage this activity. If it was used, it was in war like situations. We tell kids-do you know what kind of Indians make that noise?? No-what kind??? Indians who watched too much television!

Myths and legends. If you prefer to call the creation of morality stories of your own religion myths and legends, go ahead! It's not appropriate to have them making up Bible stories or stories from the Torah and Koran. Indian stories were not all charming little animal tales for children. They were told for adult as well as children, often to pass on values or as cautionary tales. Some of them are very bawdy.

Indian superstitions: It's always the other person who is superstitious. Don't call individual beliefs "superstitions" even if you don't believe them yourself.

Language: Some people think all Indians speak "Indian." There were six major Indian language groups in the United States and all six are represented in California. More than a hundred languages were spoken in California. Neighboring

groups might speak languages as different as Chinese and English. Many people were bi-and tri-lingual.

Smoke signals and sign language: These were used by some tribes but there seems to be no evidence of them in California.

Wandering and roaming (through the forest): These terms suggest what animals do. Human beings travel to see relatives, go hunting, go to get food (as to the grocery store) or go to admire the scenery.

War bonnets and war paint: Feathered head dresses which were worn under some circumstances by some Plains Indians are called in the American vernacular "war bonnets." Many other feather head dresses had ceremonial significance and were very different. *Face paint* was used by many people for dance ornamentation and for other reasons. Patterns were specific to the activity. No one went around all the time with a painted face.

Tomahawks and spears, bows and arrows: The tomahawk is a particularly vicious weapon that was introduced by whites to Indians in New England. There is no excuse for incorporating it in any study on Native Americans, except as an historical horror. Spears were used for animal hunting and perhaps warfare before the bow and arrow was invented, about 500 A.D. in California. Styles of bow and arrows were very different in different places. Making bows and arrows was time consuming and demanding. Children didn't make their own bows, an adult relative made them. Boys hunted small game when they were old enough, usually with wood-tipped arrows.

Selected Resources for Teaching about California's Native Peoples

This particular selection of books and websites chosen to assist ELP teachers and students in developing their understanding of Coast Miwok culture is by no means exhaustive. You will note that some of the resources are not specific to the indigenous culture of Marin County, but provide vital historical and cultural context to the study of native people in the United States. Care was taken to select resources that are historically accurate, culturally appropriate and do not reinforce anti-Indian bias or stereotypes.

Web Resources

Federated Indians of Graton Rancheria: <http://www.gratonrancheria.com/>

The tribe's web site contains historical information as well as matters of contemporary interest for tribal members. Be sure to explore the Gallery for some wonderful old photographs.

Oyate: www.oyate.org

Oyate is a Native American/American Indian advocacy and education organization that reviews children's literature and advocates for Native Americans/American Indians. Oyate's web site provides a list of high-quality books and educational materials for all grade levels.

Phoebe A. Hearst Museum of Anthropology: <http://hearstmuseum.berkeley.edu/>

The Phoebe A. Hearst Museum has made available an incredible catalogue of its collections. You may browse the site (use this URL: <http://pahma.berkeley.edu/delphi>) to find California Indian artifacts, including photographs. Try using the search keyword "Marin" or "Coast Miwok," but note that some of the returned items may be Sierra or Lake Miwok. Also look for some of the "sets" titled *Basket Making in California* and *The Girl Who Married a Rattlesnake*. On the main web page for the museum under the tab Education, you will find an outstanding teaching guide titled *California Indian Food and Culture*.

Miwok Archeological Preserve of Marin (MAPOM): <http://www.mapom.org>
MAPOM seeks to promote accurate knowledge of Coast Miwok Indian culture through a diverse range of programs. MAPOM offers excellent classes in native technologies such as basket making and flintknapping. You can find copies MAPOM's newsletter, *The Acorn*, and order books.

California Indian Basketweavers Association: <http://www.ciba.org>
The purpose of the California Indian Basketweavers Association is to preserve, promote and perpetuate California Indian basketweaving traditions. CIBA posts their newsletter, *Roots and Shoots* on their website. The articles, interviews and photographs in *Roots and Shoots* are testament to the fact that native arts and culture are thriving in California.

Smithsonian's National Museum of the American Indian: <http://nmai.si.edu/home/>
The National Museum of the American Indian (NMAI) is committed to advancing knowledge and understanding of the Native cultures of the Western Hemisphere—past, present, and future—through partnership with Native people and others. The museum works to support the continuance of culture, traditional values, and transitions in contemporary Native life. The NMAI website has many cool interactive educational features. The website is also a good place for acquiring basic information about historical and contemporary Indian peoples. For example, you can find the answer to the question, “What is the correct terminology: American Indian, Indian, Native American, or Native?”

Books

Interviews With Tom Smith and Maria Copa: Isabel Kelly's Ethnographic Notes on the Coast Miwok Indians of Marin and Southern Sonoma Counties, California. Collier, M.E.T. and Thalman, S.B. (eds.). 1996. Miwok Archeological Preserve of Marin (MAPOM). San Rafael, CA.

Ethnographic notes from UC Berkeley anthropologist's work in 1931-32. This is the best primary source document available on the historical Coast Miwok culture. Some of the material is cryptic, but it is a treasure trove of information that is experiencing renewal and reinterpretation from contemporary tribal members.

The Coast Miwok Indians of the Point Reyes Area
Sylvia Barker Thalman. 2009. Miwok Archeological Preserve of Marin (MAPOM). Novato, CA.

A small, but essential book that answers the question, “Who were these people who lived so comfortably with the abundance of this land?” Includes sections on many

aspects of traditional coast Miwok life including history, dwellings, food, religious beliefs and a glossary with Miwok language words. An appropriate source for elementary school students. Available from MAPOM: www.mapom.org

Dawn of the World: Stories Told by the Coast Miwok Indians

Edited by Bonnie Peterson. 2000. Miwok Archeological Preserve of Marin (MAPOM). Novato, CA.

Excerpts from the classic 1910 collection of Coast Miwok stories as told by the Hookoeko of Marin and the Olamentko of Bodega Bay. The best source for Coast Miwok first people stories and traditional spiritual beliefs.

California Indians and their Environment: An Introduction

Kent G. Lightfoot and Otis Parrish. 2009. University of Calif. Press. Berkeley, CA.

An introduction to the historical California Indian uses of natural resources from the different provinces of the state. This engaging book represents current scholarly perspectives on native methods for "tending the wild" such as the systematic use of fire. The authors' focus on the uniqueness of California Indian cultures provides good context for all other studies. The description of native uses of specific resources (plants, animals) is useful.

Tending the Wild: Native American Knowledge and the Management of California's Natural Resources

M. Kat Anderson. 2005. University of California Press. Berkeley, CA

"M. Kat Anderson presents a wealth of information on native land management practices gleaned in part from interviews and correspondence with Native Americans who recall what their grandparents told them about how and when areas were burned, which plants were eaten and which were used for basketry, and how plants were tended. The complex picture that emerges from this and other historical source material dispels the hunter-gatherer stereotype long perpetuated in anthropological and historical literature. We come to see California's indigenous people as active agents of environmental change and stewardship. *Tending the Wild* persuasively argues that this traditional ecological knowledge is essential if we are to successfully meet the challenge of living sustainably." - Publisher

It Will Live Forever: Traditional Yosemite Indian Acorn Preparation.

Beverly Ortiz and Julia F. Parker. 1991. Heyday Books. Berkeley, CA.

An invaluable step-by-step guide to the traditional Yosemite Miwok preparation of acorn as well as an informal biography of Julia F Parker, a Kasia Pomo woman and tribal member of the Federated Indians of Graton Rancheria. Julia Parker is a living master of native arts including basketry and acorn preparation who overcame a difficult childhood spent in foster homes and an Indian boarding school to reconnect with the ways of her grandmother. Reading about Parker's enjoyment of cooking acorns is a pleasure.

Seaweed, Salmon, and Manzanita Cider: A California Indian Feast.

Margaret Dubin and Sara-Larus Tolley. 2008. Heydey Books. Berkeley, CA

Photographs, essays, reminiscences and recipes of California native cuisine.

Native Ways: California Indian Stories and Memories.

Malcolm Margolin and Yolanda Montijo. 1995. Heydey Books. Berkeley, Ca.

This text is written at fourth and fifth grade reading level and is an outstanding research source for students. Traditional cultural skills and practices are explored, but the contemporary photographs and accounts serve to combat the popular notion that Indians belong to the past.

Playing Indian

Philip J. Deloria. 1998. Yale University Press. New Haven, CT.

Non-native appropriation of Indian dress and customs, what the author terms "playing Indian," has a long and problematic history. Deloria argues that non-Indian Americans have used Indian symbols for their own purposes of personal identity-building. Furthermore, he argues that the long tradition of playing Indian - from the Boston Tea Party to Boy Scouts to the New Age and environmental movements - has served to reinforce power structures in which Indians are bound into the role of conquered, savage or disappeared peoples. Essential reading for the ELP teacher.

Chief Marin: Leader, Rebel and Legend. A History of the County's namesake and His People.

Betty Goerke. 2007. Heyday Books. Berkeley, CA.

A gripping account of Coast Miwok loss of life, lands and culture under California's mission system.

Essential Art: Native Basketry from the California Indian Heritage Center.

Brian Bibby. 2012. California State Parks and California Indian Heritage Center. Heydey Books. Berkeley, CA.

Indian Baskets of Central California: Arts, Culture and History.

Ralph Shanks and Lisa Woo Shanks.

Two gorgeous books with information on the material and spiritual uses of different kinds of baskets with description of regional styles.

Grass Games & Moon Races: California Indian Games and Toys.

Jeannine Gendar. 1995. Heydey Books. Berkeley, CA.

This invaluable book provides instructions, illustrations and photographs describing native California games and toys. Teachers and students both could use this text as a guide for choosing the ELP overnight activities.

Survival Skills of Native California.

Paul Campbell. 2009. Gibbs-Smith. Layton, UT.

Included are sections on basic skills, the tools for gathering and preparing food, implements for household and personal necessity, as well as the arts of hunting and fishing.

Indians, Missionaries, and Merchants: The Legacy of Colonial Encounters on the California Frontiers

Kent G. Lightfoot. 2006. University of California Press. Berkeley, CA

"California's earliest European colonists—Russian merchants and Spanish missionaries—depended heavily on Native Americans for labor to build and maintain their colonies, but they did so in very different ways. This richly detailed book brings together disparate skeins of the past—including little-known oral histories, native texts, ethnohistory, and archaeological excavations—to present a vivid new view of how native cultures fared under these two colonial systems. Kent Lightfoot's innovative work, which incorporates the holistic methods of historical anthropology, explores the surprising ramifications of these long-ago encounters for the present-day political status of native people in California." - Publisher

Classic California Indian Texts

Heizer, Robert F and Alan F. Almquist. 1971. *The Other Californians*. University of California Press. Berkeley, CA.

Heizer, Robert F., editor. 1978. *Handbook of North American Indians, Vol. 8: California*. Smithsonian Institution.

Kroeber, A.L., 1923. *Handbook of the California Indians*. Smithsonian Institution, Bureau of American Ethnology, Bulletin No. 78.

Kroeber, Theodora. 1969. *Ishi in Two Worlds*. University of California Press. Berkeley, CA.

Margolin, Malcolm. 1978. *The Ohlone Way: Indian Life in the San Francisco-Monterey Bay Area*. Heydey Books, Berkeley, CA.

Margolin, Malcolm. 1992. *The Way We Lived: California Indian Stories, Songs & Reminiscences*. Heydey Books, Berkeley, CA.

Room 14 Miwok Tale

Name _____

Date _____

Ideas to Consider for Planning and Writing Your Tale

Setting: Northern California Coast: Pacific Ocean, Tomales Bay, hills, forests, beaches, grasslands. Consider what the Miwoks eat, acorns from oak trees, wild game meat, berries, roots of plants, to help you describe the setting of your story.

What kind of environment (place) do they live in and find their food?

Characters: Animal people were the first beings to inhabit the earth according to Miwok tradition.

What type of personalities did these animal people have?

(Think of Coyote, Eagle, Sun, Measuring Worm, etc.)

How did their personalities or characters help them solve problems or cause trouble for others?

Voice: The animal people can speak as we do. They communicate to each other by conversations, commands, or traditional Indian symbols.

Your stories should include real conversations between these characters.

Think of the different ways you speak to your friends, your parents, or me and use these types of tones and expressions as a model for yourself in developing your conversations between your characters.

A Problem: In each of the myths we have read, a character, or several characters face a problem that exists because of a need they have or a problem caused by another character in the story. The main character or characters are determined to face the problem and committed to finding a solution. Often there is also a lesson to learn from the resolution of the problem.

Events: The events that occur in the story are the experiences the character goes through while trying to find a solution to the problem they face.

Nature Explanation : Many tales explain a fact or event in nature. Example: why yellow jacket has black stripes; why the sun rises from the hole in the east and sets in the hole in the west; why the willow branch holds fire, etc.

Consider these questions and weave these ideas through the events of your story:

Put yourself "in the shoes" of an animal character.
How would you feel about a challenging problem?
What would you do to try to solve the problem? Why?
Describe why it is important to solve the problem?
Is anybody going to help you solve the problem? How? Why would they want to help you? Do they have special strengths or powers to help?
What strengths do you have to solve the problem?
Will solving the problem help the other members of your community?
How or why?

Tale Web: Plan the outline of your tale. Web it on paper and hand it in.
Due: Monday, September 29

Tale Writing : Write your tale on a computer. You may use the school's computers. If you have a compatible computer, at home, you can store your information on a disk and work on it at home as well as at school. If your computer is not compatible with ours at school. Make a paper copy of your tale from school and take that home to work on further.

The majority of your tale should be written at school, so you should always have it at school to work on.

First Draft from the Computer Due: Wednesday, October 8

Final Draft Due : Monday, October 13

Bind Tale into Journal Due: Tuesday, October 14

Math Measurement Tasks

Name _____

1. Review the San Francisco Bay Map. Find Palo Alto and Tomales Bay State Park. Our cars will park at the lot at Heart's Desire Beach. Looking at all the different routes there are, what is the route you would recommend? Why? Find the total number miles it is to the parking lot at Heart's Desire Beach. Please show your work and explain your reasoning.

2. If your car is traveling at an average of 45 miles per hour, how long will it take you to drive from Palo Alto to Tomales Bay State Park? Show your work when calculating your thinking.

3. Looking at the the weather page from the newspaper, record the day and night temperatures from Palo Alto and the area of Point Reyes Peninsula/Tomales Bay.

	Palo Alto		Point Reyes/Tomales Bay	
	Daytime High	Nighttime Low	Daytime High	Nighttime Low
10/21	_____			
10/22	_____			
10/23	_____			
10/24	_____			
10/25	_____			

What is the average daytime high in Palo Alto? Please show your work.

What is the average daytime high in Point Reyes/Tomales Bay? Please show your work.

What is the average nighttime low in Palo Alto? Please show your work.

What is the average nighttime low in Point Reyes/Tomales Bay? Please show your work.

What are the factors that contribute to the differences in temperature between these to places?

Name: _____

Date: _____

More Miwok Math – Travel & Measurement

- 5280 feet = 1 mile
 - An average adult takes 2000 steps to walk one mile
 - Average walking speed is about 3 miles per hour
 - From Tomales Bay to Walker Creek (site of another Miwok village) is about seven miles
-

Using the measurement facts listed above, find out how long it would take a Miwok person living at Tomales Bay to visit people living in other places. Show all of your work and explain your thinking. You may attach additional pages as needed.

1. How many hours would it take to walk from Tomales Bay to Walker Creek?
2. How many steps would it take if you walked from Tomales Bay to Walker Creek?

Using information from the problems above along with maps and other tools in the classroom can you figure out the distance from our school to Tomales Bay?

3. How many miles from Ohlone to Tomales Bay?
Hint: don't forget to check the **scale** on each map and adjust your calculations as needed. It may also help to break up the journey into smaller segments that you can add together.
4. How many steps would that be from Ohone School to Tomales Bay?
5. How many hours of walking?

Name: _____

Date: _____

6. How many hours could you reasonably walk in one day? _____

7. How many miles could you reasonably walk in one day? _____

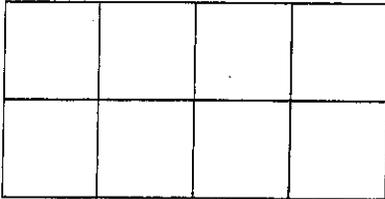
8. If a member of the Ohlone tribe living in what is now Palo Alto wanted to visit or trade with the Coast Miwok at Tomales Bay - how many days would it take to get there? Use your common sense along with the information you found in earlier problems to plan your journey. Show your work. Explain your thinking. Include any items you would need to carry with you.

Name: _____

Tomales Bay Cooking Math

1. How many students are going on our trip? _____
2. How many adults are going with us? _____
3. Do children eat as much as adults? _____
Why or why not? Explain your thinking.

Do you remember how to figure out area and Perimeter?



4. What is the length of the grid? $L =$ _____
5. What is the width of the grid? $W =$ _____
6. What is the area of the grid? _____
7. What is the perimeter of the grid? _____
8. If we make two 9" x 13" pans of pumpkin pie squares, how could you divide those pans to serve everyone on our trip? How big would each piece be? Would there be any extra? How much extra?

Attach a piece of graph paper showing your answers.

9. Using the recipes on your table, and the information about how many people will go on our trip, can you figure out how much Flour, Sugar, Butter, and Salt will we need?

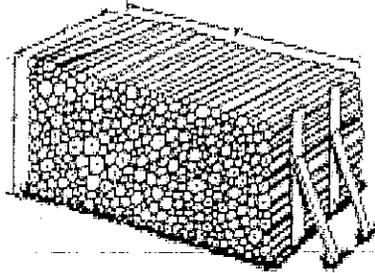
Number of pans of Pumpkin Squares we should make: _____

Number of batches of Cookies we should make: _____

Flour: _____ Sugar: _____ Butter: _____ Salt: _____

Tomales Bay Firewood Math

What is a cord?



The official measurement of firewood is a "cord." A **full cord** is a large amount of wood. It measures 4 feet high by 4 feet wide by eight feet long (4' x 4' x 8') and has a volume of 128 cubic feet. The logs have to be stacked in an orderly manner with all logs facing the same direction.

1. If each "log" was a one foot by one foot by four feet (1' x 1' x 4'), how many different ways could you stack a cord of firewood (into rectangular prisms)?

2. How much is $\frac{1}{4}$ of a cord of wood (in cubic feet)? _____

How do you know? Use words or pictures to show your thinking.

3. If we wanted to bring $\frac{1}{4}$ of a cord of wood to Tomales Bay, how much wood would that be? How many different ways could we stack it?

Name: _____

4. Most people want logs to be about 16 inches long for firewood. Can you think of some good reasons why?

If you stacked 16-inch logs in a stack four feet high and eight feet long it would be called a 16-inch **face** cord or a 16-inch **rick** of wood.

5. What would be the dimensions (measurement) of a 16-inch rick?

_____ X _____ X _____

6. How many cubic feet of wood is in a rick? _____ Show your thinking.

7. What are the dimensions of the trunk or storage area of your Mom or Dad's car?

Height = _____ inches, Width = _____ inches, Depth = _____ inches

Would a 16-inch rick fit? _____ Would a $\frac{1}{4}$ cord fit? _____

8. What is the total storage space in Mom or Dad's car (expressed in cubic inches)? Show your work.

9. Working in your clan group, how many of your parent's cars would it take to carry a 16-inch rick of wood to Tomales Bay? Explain how you figured this out.

DESCRIPTION: TRACKING

American Indians were great hunters. For most of them, this was an essential skill, for it provided them with their daily food. A few animals were prized for their plumage or for their fur, but essentially, the Indian hunted for food. He looked for signs that would tell him which way the particular animal he was looking for had gone. By using his natural instincts and skills, he could track small animals as well as great herds of larger animals. The skill involved in reading tracks left by an animal is a form of reading and it is important for children to know that there is as much reading involved in this skill as there is in decoding graphic symbols.

In this activity, children will identify individual animals and familiarize themselves with the tracks of the animals. The "true test" comes when all the tracks must be decoded and identified. Skills reinforced through this activity include spatial awareness, visual discrimination, sequencing, writing, spelling, categorization, following directions, classifying and fine motor control.

MATERIALS:

- Animal tracking book pages
- Pencil
- Crayons
- Stapler

INSTRUCTIONS:

For each animal, the child:

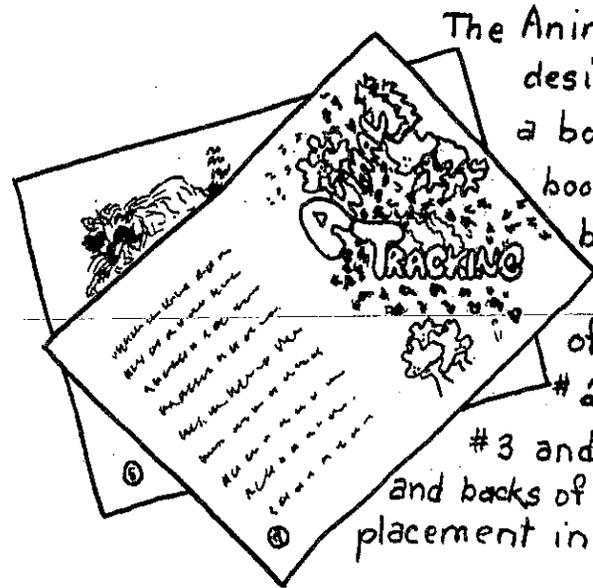
- a. places the pages of the Animal Tracking Book in numerical sequence, folds in the center and staples along folded edge.
- b. looks at each animal, identifies it and writes the name of the animal on the blank lines.
- c. is introduced to the language structure and pattern so that he/she can read it.
- d. carefully observes the animal's tracks.

On each sheet, the child follows the pattern of one particular set of tracks to the place in the picture where the animal would live. The animal pictures can then be colored.

ADDITIONAL ACTIVITIES:

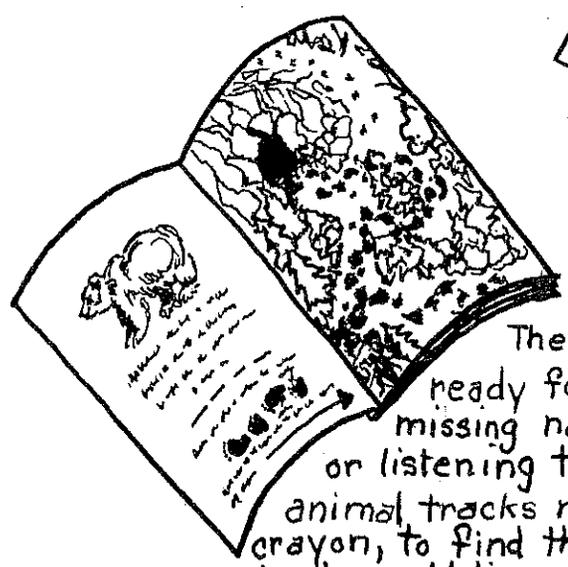
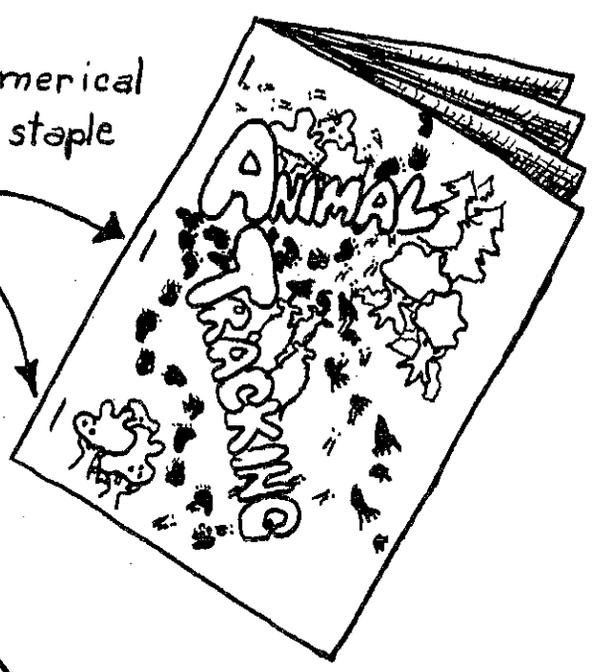
Tracks of other animals can be presented along with some clues so that children can expand their knowledge of animal tracks. Look for animal tracks outdoors. Deep prints may be filled with plaster of paris and allowed to harden. Look for E.S.S. kits to tie in with this Tracking Book. (Elem. Science

Animal Tracking :



The Animal Tracking pages have been designed to be put together as a book. The four pages of the book are to be dittoed back-to-back on two pieces of paper. Run pages #1 & #6 on the back of the cover page and #7, run #2 and #5 on the back of pages #3 and #4. Be sure to center the fronts and backs of the pages by adjusting the ditto placement in the ditto machine...

Place pages in numerical sequence, fold in half, and staple on the folded edge



The Animal Tracking Book is now ready for the child to fill in the missing names of the animals after reading, or listening to, the facts about each animal. The animal tracks may then be traced, with a colorful crayon, to find the place in the picture where the animal would live... the child may also wish to color the pictures...

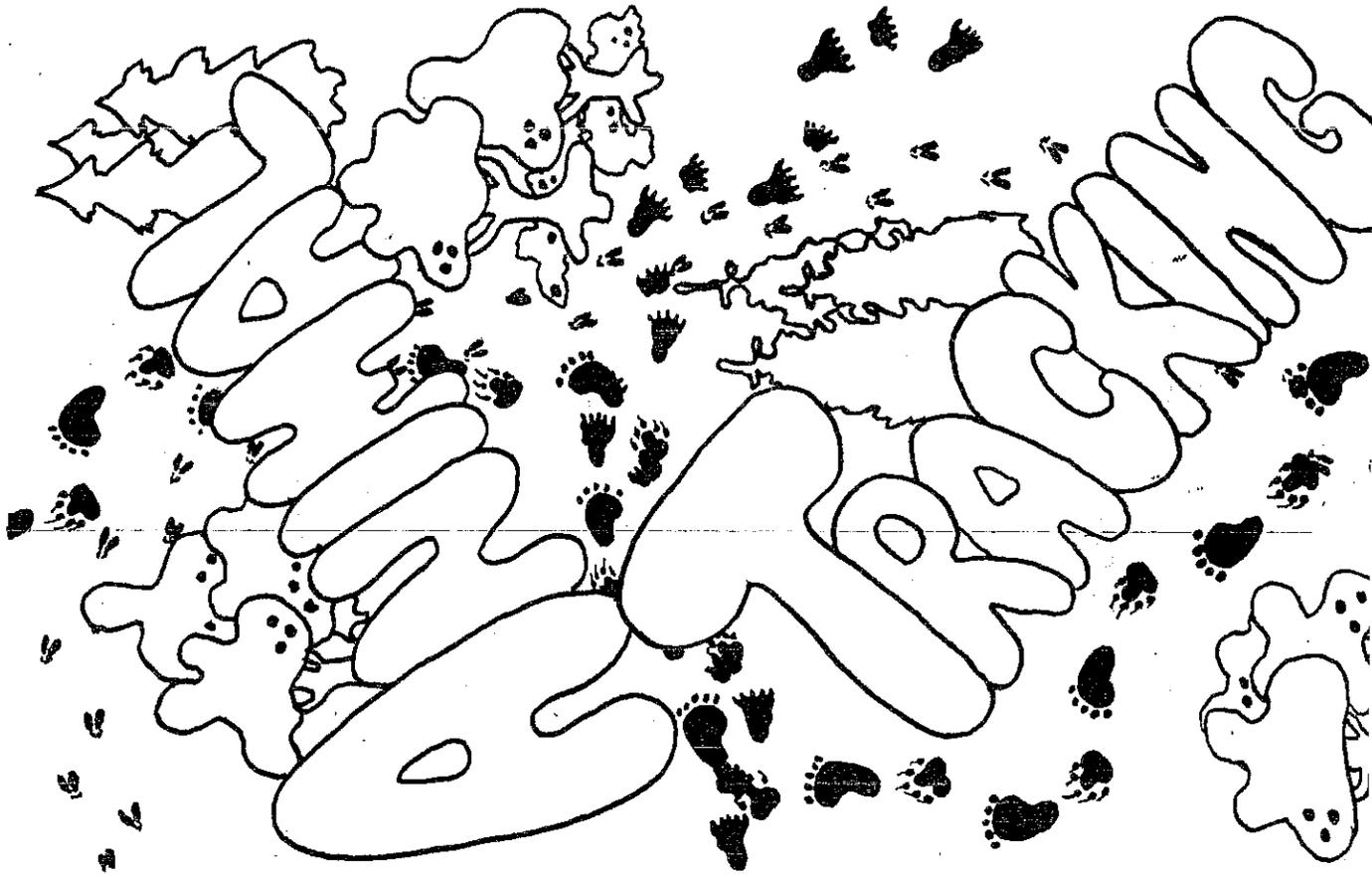
Indians were skilled hunters. Hunting was a way of life for most Indian tribes. To be a good hunter, it was important to be able to "read" animal tracks. The Indians had to familiarize themselves with the eating habits and the habitats of the different species they hunted.

Animals were an essential part of Indian life. Animals provided meat for food, furs and skins for warm clothing, and coverings for different kinds of homes. No part of the animals was wasted--even the bones were used to make simple farming tools, weapons and even games.

Venison, which is deer meat, was often dried in the sun or over a campfire. This type of drying, called "jerking", made the meat light in weight. Large amounts of meat could then be carried and stored easily for later use.

How well did you do "reading" the tracks of the different animals?

Draw a picture of the kind of tracks YOU make when you walk on soft ground.



Bear



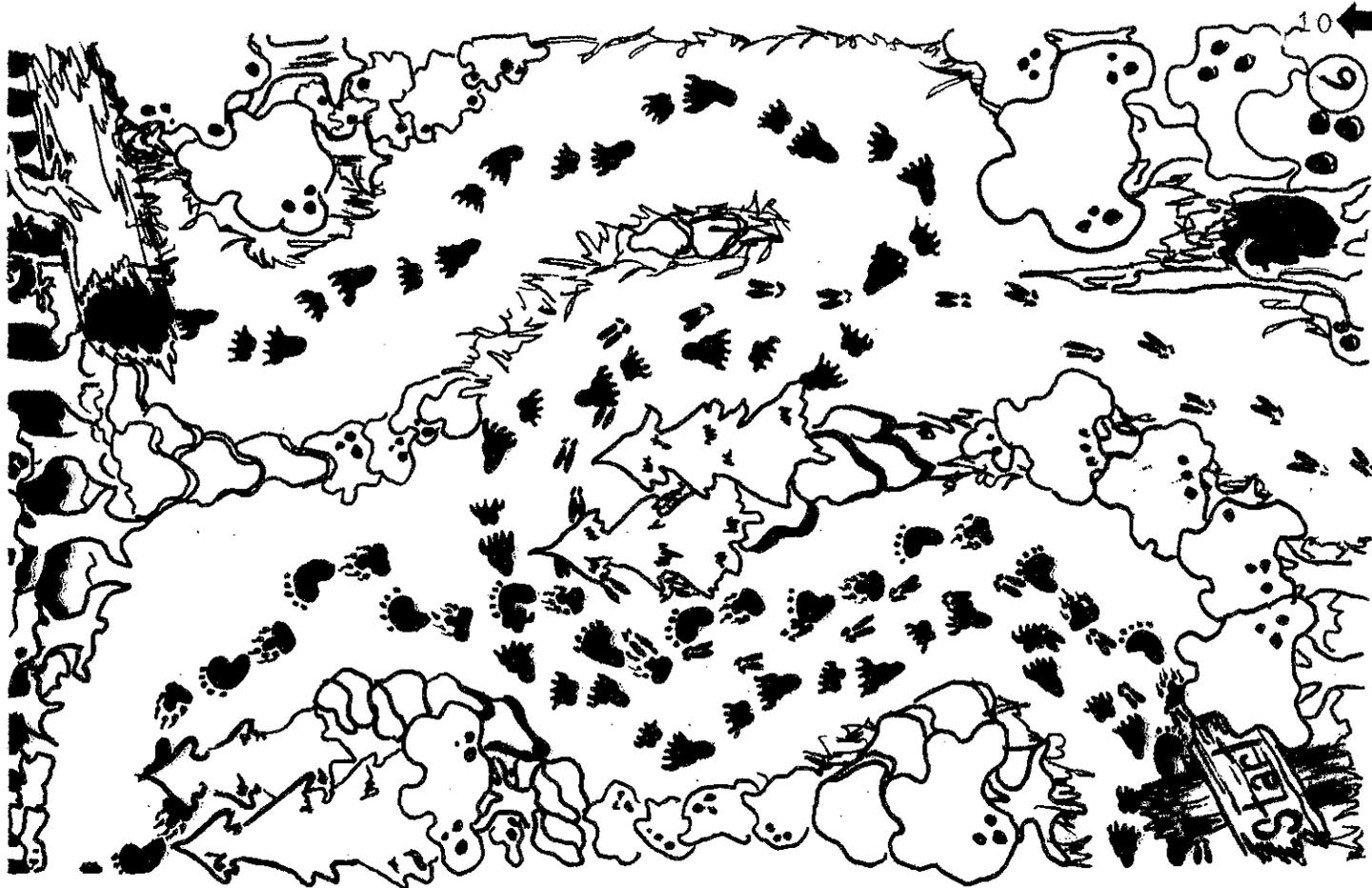
I am very large and very strong.
I have thick, shaggy fur.
Some of the things I like to eat are
meat, fish, berries, fruit and honey.
I sleep in caves. BEWARE!!!

I am a _____.

My feet make tracks like this....



Can you follow my tracks along the trail
to where I live?

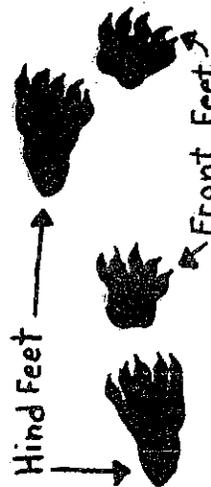




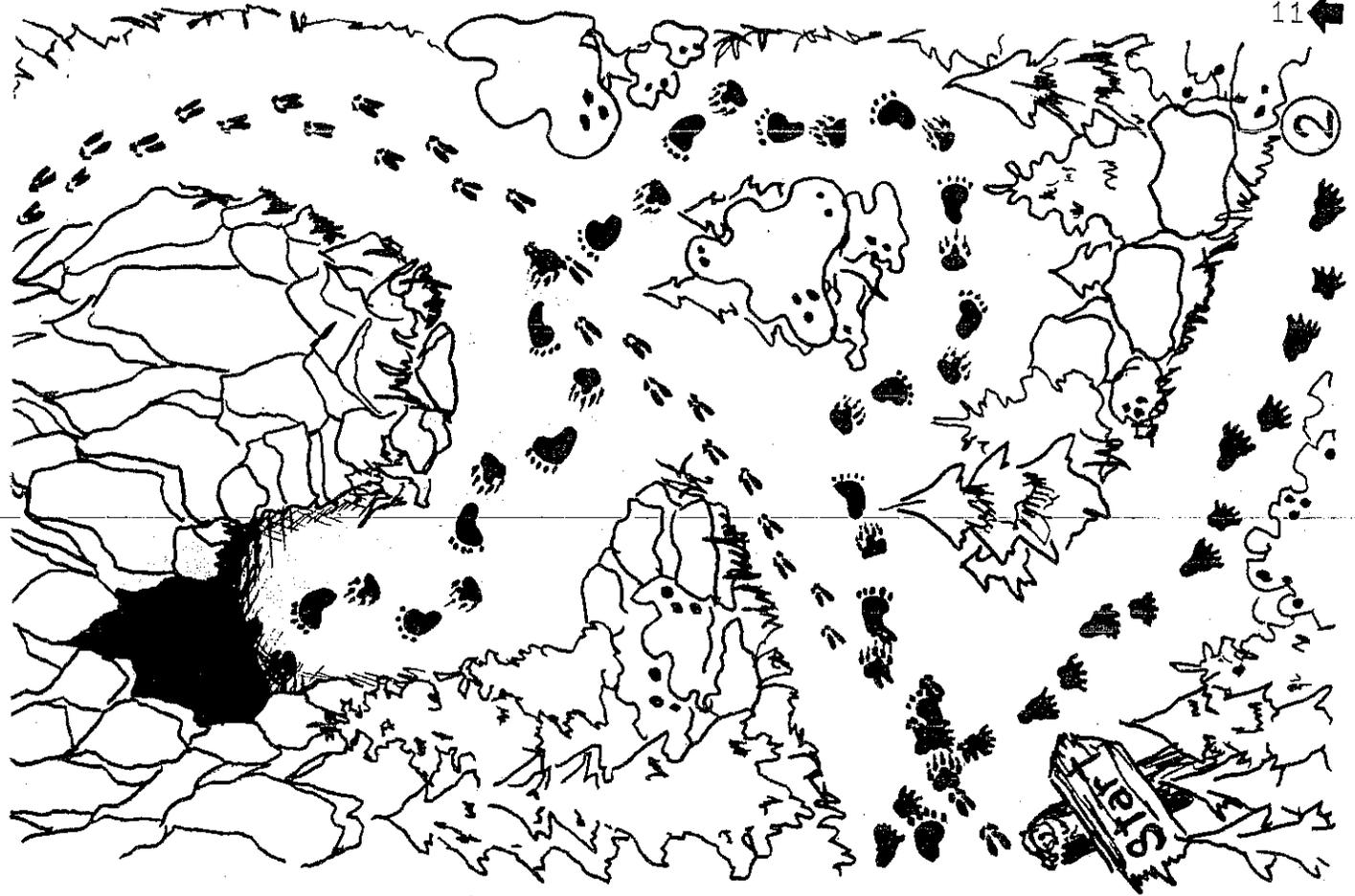
I am a furry animal.
 I have a bushy tail with rings on it.
 I have black hair around my eyes that
 looks like a mask.
 I like to eat fish, frogs, acorns, eggs,
 fruit and seeds.
 I make my den in a hollow log.

I am a _____

My feet make tracks like this.....



Can you follow my tracks along the trail to where I live?



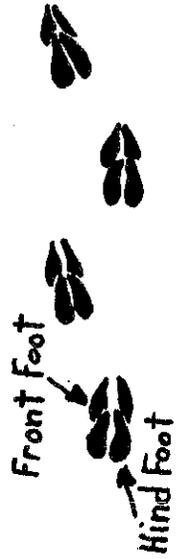
Deer



I have long, slender legs and I can
 run very fast.
 I have bones growing from my head called
 antlers.
 I like to eat grass, leaves, bark, twigs
 and plants.
 I live on the edge of forests.

I am a _____.

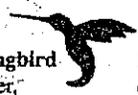
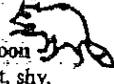
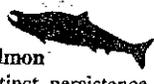
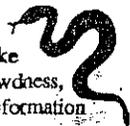
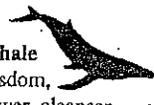
My feet make tracks like this....



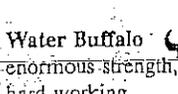
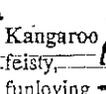
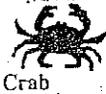
Can you follow my tracks along the





 Alligator aggression, survival, adaptability	 Ant team player, worker	 Armadillo active, nocturnal, protection	 Bat guardian of the night, cleaner	 Bear power, adaptability	 Bear Paw strength, mobility	 Beaver builder, gatherer	
 Buffalo sacredness, life builder	 Butterfly metamorphosis, carefree, transformer	 Cougar leadership, courage	 Coyote prankster, insight, playful	 Crane solitude, independence	 Deer love, gentleness, kindness	 Dolphin kindness, play, bridge man to ocean	
 Dragonfly flighty, carefree	 Eagle divine spirit, connection to creator	 Elk strength, agility, freedom	 Fox cunning, provider, intelligence	 Frog connection w/water element	 Goose faithful, communicative, traveler	 Grizzly Bear hunter, nature's pharmacist	
 Hawk messenger, stopper of time	 Horse stamina, mobility, strength	 Hummingbird messenger, stopper of time	 Lizard conservation, agility	 Loon solitude, song, romance	 Moose headstrong, unstoppable, longevity	 Mouse timid, secretive, sneaky	
 Otter laughter, curiosity, truth, patience	 Owl wisdom, perseverance	 Pheasant confidence, attraction, perseverance	 Quail sacred spiral, ceremonial, Holy	 Rabbit alertness, resourceful	 Raccoon bandit, shy, determination	 Ram new beginning, teacher, hoarder	 Raven trickster mischievous
 Road Runner speed, agility cleverness	 Salmon instinct, persistence, determination	 Seahorse confidence, grace	 Shark hunter, survival	 Skunk wary, conspicuous, intense	 Snake shrewdness, transformation	 Spider creative, pattern of life	
 Squirrel trusting, innocence	 Swan grace, balance festive	 Turkey smart, elusive,	 Turtle self-contained creative source	 Whale wisdom, power, cleanser	 Wolf loyalty, success, perseverance	 Wolf Paw freedom, success guidance	



 Bull strength, warning	 Cow patience, stoicism	 Pig intelligence, hunger	 Goat stubborn, omnivorous	 Dog loyalty, protection	 Cat independence, grace, healing	 Rhino durability, strength	 Elephant long life, self-preservation	 Zebra family-oriented, alert
 Polar Bear fearlessness, power	 Giraffe watchfulness, mobility	 Gorilla brute strength adaptability	 Hippo linking water, and earth, survival	 Lion power, strength, respect	 Monkey playfulness, agility	 Bobcat fierce, loner intensity	 Penguin playful, loving	
 Panda playful, kindness	 Orca focus, power	 Manatee peaceable, unassuming	 Water Buffalo enormous strength, hard working	 Camel weary, enduring	 Kangaroo feisty, funloving	 Ostrich fickle, fast moving	 Pelican ever-watchful, grace	
 Flamingo grace, awareness	 Snail steadiness, deliberate	 Sail Fish elusive, quickness	 Seal dreams, creativity	 Crab commitment, tenacity	 Hammerhead restless, movement	 Stingray mystery, rhythm		
 Seagull grace, adaptability	 Lobster travel, determination	 Octopus privacy, shyness	 Starfish rebirth, transmutation	 Dove love, peace, gentleness	 Clam Shell relaxation, tranquility	 Conch Shell communication, safety	 Zuni Bear good health	



Bull
strength,
warning



Cow
patience,
stoicism



Pig
intelligence,
hunger



Goat
stubborn,
omnivorous



Dog
loyalty,
protection



Cat
independence,
grace, healing



Rhino
durability,
strength



Elephant
long life,
self-preservation



Zebra
family-oriented,
alert



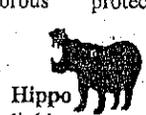
Polar Bear
fearlessness,
power



Giraffe
watchfulness,
mobility



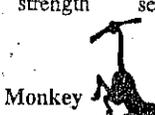
Gorilla
brute strength,
adaptability



Hippo
linking water,
and earth, survival



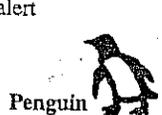
Lion
power,
strength, respect



Monkey
playfulness,
agility



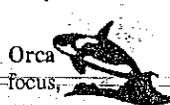
Bobcat
fierce, loner,
intensity



Penguin
playful,
loving



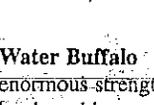
Panda
playful,
kindness



Orca
focus,
power



Manatee
peaceable,
unassuming



Water Buffalo
enormous strength,
hard working



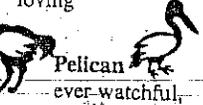
Camel
weary,
enduring



Kangaroo
feisty,
fun-loving



Ostrich
fickle,
fast moving



Pelican
ever-watchful,
grace



Flamingo
grace,
awareness



Snail
steadiness,
deliberate



Sail Fish
elusive,
quickness



Seal
dreams,
creativity



Crab
commitment,
tenacity



Hammerhead
restless,
movement



Stingray
mystery,
rhythm



Seagull
grace,
adaptability



Lobster
travel,
determination



Octopus
privacy,
shyness



Starfish
rebirth,
transmutation



Dove
love, peace,
gentleness



Clam Shell
relaxation,
tranquility



Conch Shell
communication,
safety



Zuni Bear
good health



Steer Skull
silent testimony



Kokopeli
fertility,
joy, music



Thunderbird
caller of rain



Scorpion
defense,
self-protection



Buffalo Skull
sacredness,
reverence for life



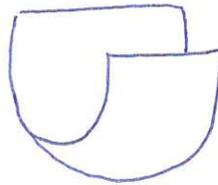
Making a Pouch

Materials:

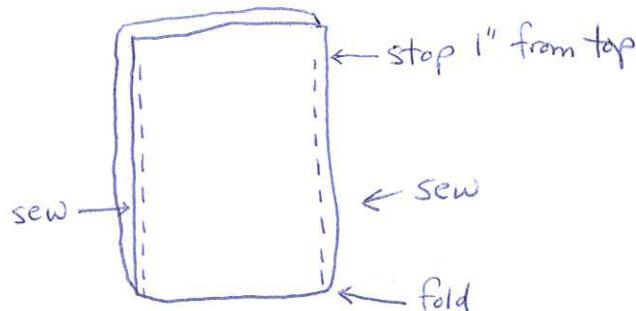
- Leather-colored felt: 22" x 7" (one per student)
- Natural-colored crochet yarn/hemp cord/string: 20" x 3 pieces
- Heavy brown or black yarn: 30" x 1 piece
40" x 1 piece
- Paper clip

Procedure:

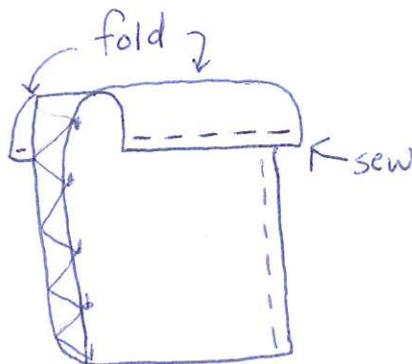
1) Fold the felt in half.



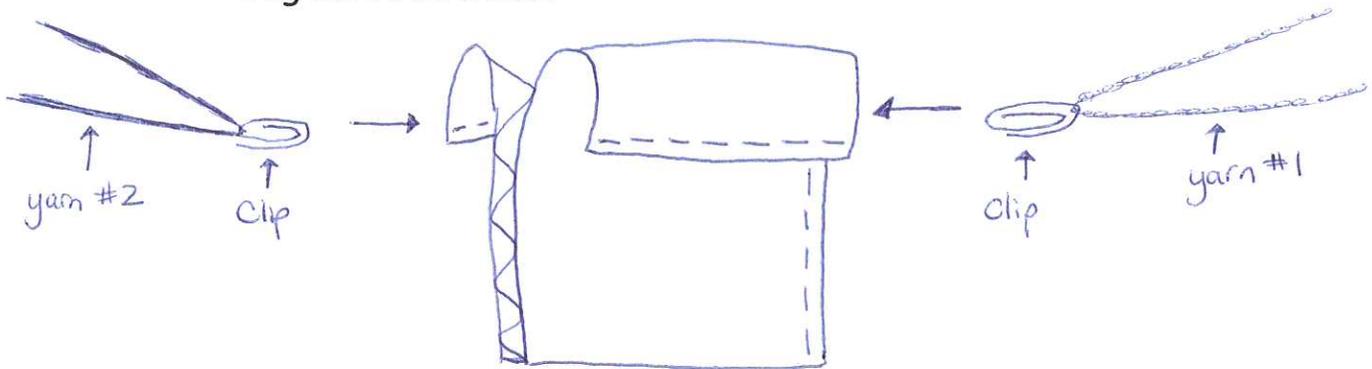
2) Use natural-colored string to sew up both sides. Stop one inch from the top, leaving the top open.



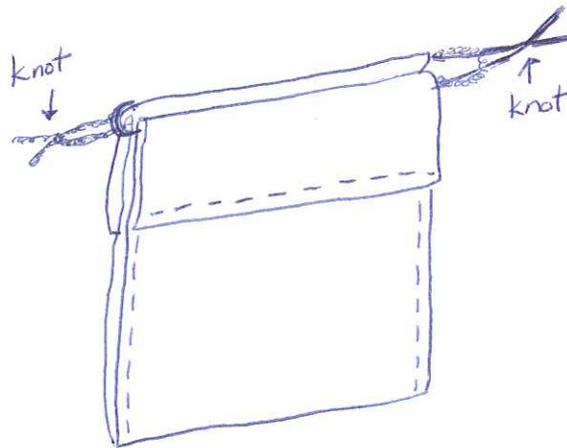
3) Fold the top outward one inch and sew around.



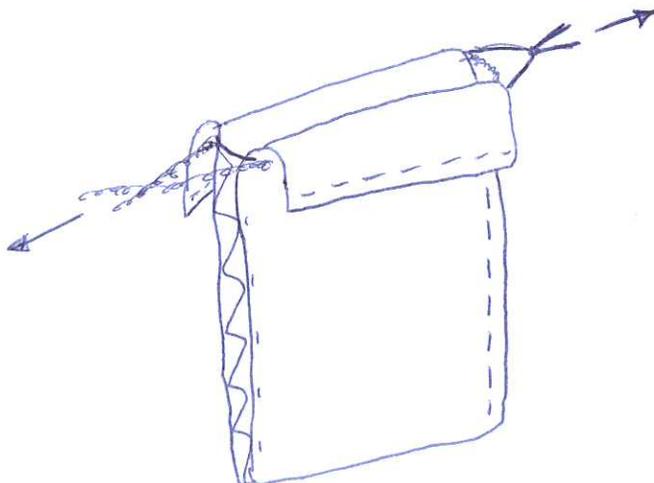
4) Use paperclip to thread two heavy yarn pieces through the top of bag on both sides.



5) Tie the ends of the yarn to itself.



6) Pull yarn on each side to close bag.



Energy Flows

Integrating STEM Curricula: Energy and Shelter in Native California

The Tomales Bay ELP offers an excellent opportunity to integrate science, technology, engineering and math (STEM) concepts and hands-on practice into your curriculum. Common Core and Next Generation Science Standards (NGSS) both emphasize a multi-disciplinary and inquiry-based curricular approach in which students directly engage with practices instead of learning about them second-hand. The “real-world” interconnections fostered by such an approach also constitute the pedagogical foundation of ELP in which the consideration of culturally diverse perspectives and first-hand acquisition of historical knowledges are used to cooperatively develop solutions to contemporary societal tasks.

The greatest of these tasks - energy capture, pollution, waste, equity of access to resources - requires STEM skills as well as truly innovative, culturally-competent thinking. Technology is, after all, an expression of culture. How and why we create the tools used to secure resources and who has control of them reflects our society's values, needs and relationship to the environment. Exploring resource management practiced by indigenous peoples in pre-Columbian California allows contemporary students to envision new, more sustainable ways to address society's most urgent concerns.

Listed on the next page is a sampling of curricular resources that may be helpful to you when planning a STEM-based ELP study unit comparing traditional indigenous and contemporary energy use and shelter designs. As you will see, there are myriad opportunities for students to collect and analyze data. Conclusions they draw may then be applied to a STEM project such as designing and building a model “green” building. Although these resources are focused on energy usage and shelter construction, the possibilities for extension are nearly limitless. For example, you may wish to develop projects related to indigenous:

- Water usage
- Pollution generation
- Waste disposal, reuse
- Food security
- Resource distribution



Integrating STEM Curricula: Lesson-Planning Resources

Next Generation Science Standards (NGSS):

<http://www.nextgenscience.org/next-generation-science-standards>

These standards reflect a new approach to science and engineering education in which applied practice is emphasized, as opposed to the memorization of abstracted facts.

Listed below are the core science and engineering practices found woven throughout the standards at all grade levels:

1. Asking questions and defining problems
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations and designing solutions
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

The Universal House: Energy, Shelter and the California Indian

http://www.energyquest.ca.gov/teachers_resources/documents/180-99-001_UNIVERSAL_HOUSE.PDF

An outstanding unit for grades 3-6 developed through a grant from the U.S. Department of Energy. The lessons presented here are truly multi-disciplinary, incorporating science, social studies, art, math and language arts. The curriculum facilitates study of California from pre-Columbian times to present with particular emphasis on how early people of California used natural settings without significantly modifying the environment.

Energy Audit

<http://www.calacademy.org/teachers/resources/lessons/energy-audit/>

The California Academy of Sciences in San Francisco has made available a comprehensive household energy audit lesson, complete with multi-lingual worksheets and answer keys.

The Energy Coalition's PEAK program offers a classroom energy audit as part of a comprehensive energy education program. See their website at:

<http://www.peakstudents.org/>.

Energy Hog

<https://www.ase.org/projects/energy-hog>

The Student Energy Hog Workbook produced by Energy Outreach Colorado and the Ad Council contains several activities such graphing household energy costs, a daily energy journal and an energy hog scavenger hunt.

Project: Build an Energy-Efficient Home

Renewable energy basics from the U.S. Department of Energy's National Renewable Energy Laboratory:

http://www.nrel.gov/learning/re_basics.html

Design a green roof:

- From the American Association for the Advancement of Science (AAAS): This lesson is for older students, but provides good information.
<http://sciencenetlinks.com/lessons/green-roof-design/>
- Build a model green roof lesson from Canada's Ecolkids initiative:
http://www.ecokids.ca/pub/teachers/resources/lesson_plans/storm-water-management-green-roofs/stormwater-managment-green-roofs.pdf

Design a building using passive solar design principles:

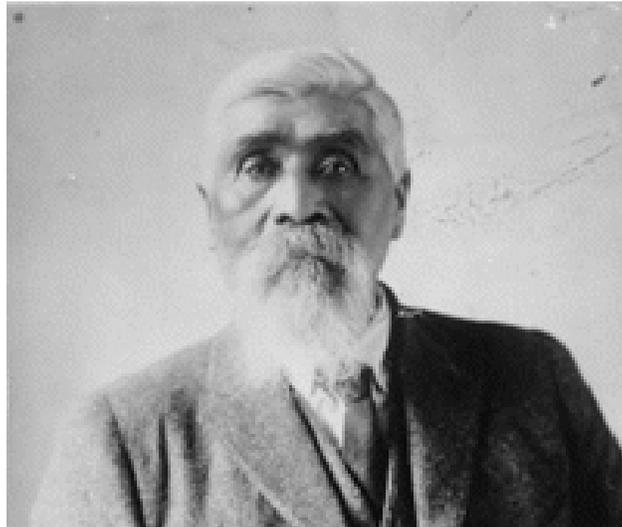
- General concepts from the Green Affordable Housing Coalition
<http://www.builditgreen.org/attachments/wysiwyg/22/Passive-Solar-P2.pdf>
- From Teachers Try Science, a passive solar home design activity geared towards 8th graders, but could possibly be modified for younger grades:
<http://www.teacherstryscience.org/lp/passive-solar-design-zero-energy-housing>

Interviews with Tom Smith and Maria Copa

The first set of materials in the appendix is an excerpt from the invaluable primary source document, *Interviews With Tom Smith and Maria Copa: Isabel Kelly's Ethnographic Notes on the Coast Miwok Indians of Marin and Southern Sonoma Counties, California*. (Please see the Selected Resources section for publishing info.)

This book is comprised of ethnographic notes from UC Berkeley anthropologist's work in 1931-32. This is the best primary source document available on the historical Coast Miwok culture. Some of the material is cryptic, but it is a treasure trove of information that is experiencing renewal and reinterpretation from contemporary tribal members.

Please consider using this book as your main source for information on traditional Coast Miwok life.



Tom Smith

136 FAUNA

[In the items below drawn from Merriam's Field Check Lists (1905-1929), "Tomales" terms were collected at Tomales in 1905-6 and 1927-9 and represent the Marin dialect of Coast Miwok; "Bodega" terms, collected in the Bodega area at about the same time, represent the Bodega dialect. Unfortunately the dialect distinctions are not always clear in the manuscript. Page references are to the manuscript copy used by Kelly. Latin names are as given by Merriam; currently accepted forms, in brackets, have been supplied by Dwight Simons.—Ed.]

ah'-we

COAST MIWOK, Tomales
Merriam, *Field Check Lists* p. 7
Crow (*Corvus americanus*) [*C. brachyrhynchus*]

ah'-wēch

COAST MIWOK, Bodega
Merriam, *Field Check Lists* p. 7
Crow (*Corvus americanus*) [*C. brachyrhynchus*]

a-ka-yah

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6
Turkey buzzard (*Cathartes*)

ale

COAST MIWOK, Tomales
Merriam, *Field Check Lists* p. 13
[For this, Merriam gives ahl'-lē and identifies it with the great blue heron.]

Bald eagle

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6
lo-po'-koi
[Note that hopa, which I thought was bald eagle, is identified by Merriam as fishhawk. Could he be mistaken?]

Barn swallow

COAST MIWOK, Tomales and Bodega
Merriam *Field Check Lists*, p. 9
Hirundo
Tomales: ke'-chah-o-chō'
Bodega: ke'-chah-wo'-chah

Bat

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2
n'yow-wā-we'-ni
g'naw-wā-we'-ni Tomales
choo-kā ti'-ek Bodega (?)

Bear (black)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Ursus americanus
Tomales: moo-loo'-tah koo-lēh'
Bodega: lo-ko'-tah koo'-le

Bear (generic)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Ursus
Tomales: koo'-lēh
Bodega: koo'-lē

Bear (grizzly)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Ursus horribilis [*U. arctos*]
Tomales: kah-to'-tah koo-lēh
Bodega: po-to'-tah koo-le

Bear chases MC's grandmother

Once a bear chased my grandmother.
She had left my grandfather and was coming from San Rafael toward San Lucas.
She heard a bear.
They said that if a person went in under the trees, the bear wouldn't bother him.
My grandmother did this.
But later she went back to her husband.

MC 10:24 May 10

Black brant

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 12
Branta nigricans [*B. bemicla*]
Tomales: o-lum' lō-ahk'
Bodega: lo-ahk'
[But this is my olom-lo'ok of TS, hence Bodega dialect.]

Bobcat

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Lynx fasciatus [*L. rufus*]
to-lo'-mah' (Tomales and Bodega)

Brewer blackbird

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

Euphagus cyanocephalus
chah'-pil' (Tomales and Bodega)

Brown pelican

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 12

Pelecanus californicus [*P. occidentalis*]
o'-mi': Tomales
sep' poo'-loo: Bodega

California jay

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Aphelocoma
si'-etch (Tomales and Bodega)

California woodpecker [acorn woodpecker]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

Melanerpes formicivorus bairdi
Tomales: pal'-lā'-chahk
Bodega: pan'-nak

chah'-pil'

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

Brewer blackbird (*Euphagus cyanocephalus*)

Cliff swallow

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 9

Petrochelidon [*Hirundo*]
pā-ak: Tomales
pā'-ahk: Bodega

Condor

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

California condor (*Gymnogyps*)
mol'-luk
[This is my mó·lük.]

Condor(?) (mólük)

mólük did not stay in this country much; he came
around here once.

He flies here in summer time; he doesn't want to
get wet. TS 8:52 Apr. 27

Cooper hawk

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6

Accipiter cooperii
wal'-len-ap'-pe
[My walinapi; is Cooper hawk the same as chicken
hawk?]

[Cottontail]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4

Brush rabbit (*Lepus bachmani*) [*Sylvilagus
bachmani*]
no'-mēh'

Coyote

Sometimes Land, sometimes Water [does this refer
to habitat? Or to moiety affiliation?]

Goes around watching rabbit, cottontail, and quail
(not mountain quail). TS 5:21 Feb. 4

Crested jay

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Cyanocitta
wet'-te'-lah (Tomales and Bodega)
[This must be my wesila.]

Crow

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Corvus americanus [*C. brachyrhynchus*]
Tomales: ah'-we
Bodega: ah'-wēch

Crow: confusion

Several black birds are involved: auwitc, kakalis,
oloki. [All have been translated as crow.]

Deer (blacktail)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Odocoileus columbianus [*O. hemionus*]
Tomales: kā-shum
Tomales Bay: goo'-ke
Bodega Bay: choi-yek'-ke

Deer

Eat acorns; are worse than goats. TS 4:38 Feb. 2

Duck hawk

COAST MIWOK, Tomales and Bodega
See Prairie falcon.

Elk

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Cervus
tahn'-tā: Tomales
tahn-tē: Bodega

Fish hawk

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Pandion
haw'-pah [Presumably my hopa, which I thought
was bald eagle.]

Flicker

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Colaptes

Tomales: wol'-lo'-lok
Bodega: oyā-wol-lo'-lok

Flicker

COAST MIWOK

Foster 1944:190

Yellow hammer (red-shafted flicker)

Fox (gray)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1

Urocyon

Tomales: ah-wah'-ke
Bodega: ah-wah'-kā

Golden eagle

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Aquila

[lile-mele] le'-lem-mel'-le

Gopher (pocket)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4

Thomomys

soo'-wūt

Great horned owl

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Bubo

Tomales: too-koo'-lis

Bodega: too-koo'-le

Ground squirrel (gray)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 3

Citellus beecheyi [*Otospermophilus beecheyi*] group
che'-tēh (Tomales and Bodega)

None "here."

Gull

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 11

Larus

Tomales: o'-e-yuk

?: o'-yuk

Bodega: o'-o

hek-ek'-ki

COAST MIWOK, Bodega

Merriam, *Field Check Lists*, p. 7

Valley quail (*Lophortyx*) [*Callipepla*]

hek-ek'-ki

COAST MIWOK, Tomales

Merriam, *Field Check Lists*, p. 7

Valley quail (*Lophortyx*) [*Callipepla*]

hoo'-loo'-mah

COAST MIWOK, Tomales and Bodega

Merriam, *Field Check Lists*, p. 8

Meadowlark (*Sturnella*)

hoo-yu'-ke

COAST MIWOK, Bodega

Merriam, *Field Check Lists*, p. 2

Shrew (*Sorex*)

[hopa]

COAST MIWOK, Tomales and Bodega

Merriam, *Field Check Lists*, p. 6

haw'-pah

Fish hawk (*Pandion*)

[Presumably my hopa, which I thought was bald eagle.]

hopa (eagle, bald eagle)

TS 5:33 Feb. 15

[Merriam, *Field Check Lists*, gives haw'-pah as fish hawk. Seems unlikely there would be a "fish hawk mother" when young birds are released.]

Horse

COAST MIWOK, Tomales and Bodega

Merriam, *Field Check Lists*, p. 5

chah'-lah (presumably Tomales and Bodega)

hótca

Unidentified bird, caught exclusively for feathers.

TS 2:35 Jan. 22

About the same size as the flicker (oye-wololok)

and color of feathers about the same. TS 7:83 Mar. 13

Red on the wings but not on the tail. TS 2:46 Jan. 22

hótca

At puberty, girl dances, wearing a headband of hótca feathers.

TS 3:2 Jan. 23

Might be a generic term for feather (?) TS 8:34 Apr. 27

[Term does not appear in Merriam's *Field Check Lists*. Description of color as same as that of flicker, makes yellowhammer identification unlikely.]

[The yellow-shafted flicker of the east, whose wing and tail feathers are lined with yellow, is aptly called "yellowhammer." Apparently the name was also used loosely here for the western flicker, whose wing-linings are not yellow but salmon-red; see reference to Foster under Flicker, above. This may well be a source of confusion for Kelly. The yellow-shafted flicker, while occasionally seen on the Pacific coast, does not breed here.—Ed.]

kah-kah'-le

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 7
Raven (*Corvus corax*)

kah-kah'-lis

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 7
Raven (*Corvus corax*)

kah'-look

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2
Big skunk (*Mephitis*)

kah-to'-tah koo-léh

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 1
Bear (grizzly) (*Ursus horribilis*) [*U. arctos*]

kaw'-tah

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 1
Sea lion (*Eumetopias* or *Zalophus*)

ke'-chah-wo'-chaht

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 9
Barn swallow (*Hirundo*)

ke'-chah-o-chō'

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 9
Barn swallow (*Hirundo*)

ko'-tah

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 1
Sea lion (*Eumetopias* or *Zalophus*)
Tomales: kaw'-tah

ko-too'-yu

COAST MIWOK, (Tomales?, Tomales and
Bodega?)
Merriam, *Field Check Lists*, p. 12
Widgeon

[lile-mele]

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 6
le'-lem-mel'-le
Golden eagle (*Aquila*)

Lion (mountain)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Felis hipolestes [*F. concolor*]
o-pook'-so (Tomales and Bodega)

lo'-kōn chah'-pil

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8
Red-shouldered blackbird (*Agelaius*)

lo-ko'-tah koo'-le

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 1
Black bear (*Ursus americanus*)

lo-po'-koi

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6
Bald eagle (*Haliaeetus*)
[Note that hopa, which I thought was bald eagle, is
identified by Merriam as fishhawk. Could he be
mistaken?]

Mallard

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Anas boschas [*Anas platyrhynchos*]
Tomales: wal'-lek
Bodega: wahn'-mahl

Marsh hawk

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6
Circus hudsonius [*Circus cyaneus*]
pi'-yah

Meadowlark

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8
Sturnella
hoo'-loo'-mah (Tomales and Bodega)

Meadow mouse [vole]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4
Microtus californicus
yes'-se (Tomales); pi'-ye yes'-se (Bodega).
This is my yūse.

[mó-lük]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6
mol'-luk
California condor (*Gymnogyps*)

moo-loo'-tah koo-léh'

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 1
Black bear (*Ursus americanus*)

Mountain lion

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
Felis hippelestes [*Felix concolor*]
o-pook'-so (Tomales and Bodega)

Mudhen

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 13
Fulica
tos'-koi (Tomales and Bodega)

o'-e-yuk

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 11
(o'-yuk also Tomales?)
Gull (*Larus*)

o'-mi

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 12
Brown pelican (*Pelecanus californicus*) [*Pelecanus occidentalis*]

o'-o

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 11
Gull (*Larus*)

Oriole

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8
Icterus
sā'-koo-sā'-koo (Tomales and Bodega)

o'-tan'

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 12
Teal, green wing (*Nettion carolinensis*) [*Anas crecca*]

o'-yā-kā'-ah

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 6
Turkey buzzard (*Cathartes*)

o'-yā ol-lo'-lok

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 7
(o-ya, coyote)
Flicker (*Colaptes*)

[oye-wololok]

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 7
Merriam records this as o'-yā wol-lo'-lok and identifies it with flicker (*Colaptes*).

pā'-ahk

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 9
Cliff swallow (*Petrochelidon*) [*Hirundo*]

pā-ak

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 9
Cliff swallow (*Petrochelidon*) [*Hirundo*]

pal'-lā-chahk

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 8
California woodpecker (*Melanerpes formicivorus bairdi*)

pan'-nak

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 8
California woodpecker (*Melanerpes formicivorus bairdi*)

[Pigeon]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7
Band-tail pigeon (*Columba fasciata*)
oo-moo'-me: Tomales
oo-mul-ah'-we: Bodega

pi'-yah

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6
Marsh hawk (*Circus hudsonius*) [*Circus cyaneus*]

Pocket gopher

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4
Thomomys
soo'-wūt
[My tsuwuth.]

po-to'-tah koo-le

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 1
Bear (grizzly) (*Ursus horribilis*) [*U. arctos*]

Prairie falcon

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6
Or Duck hawk.
Falco anatum [*Falco peregrinus*] or *Falco mexicanus*
wek'-wek'

Rabbit (black-tail jack)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4
Lepus texianus [*Lepus californicus*]
Tomales: owl-le, owl'-yēh
Bodega: chah'-me

Raven

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Corvus corax

Tomales: kah-kah'-lis

Bodega: kah-kah'-le

Red shouldered blackbird

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

Agelaius

lo'-kōn chah'-pil (Tomales and Bodega)

Red-tailed hawk

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Buteo borealis [*Buteo jamaicensis*]

soo'-ē-yu

Red-tailed hawk (suyu)

A common bird.

No good for anything.

MC 10:29 May 10

Robin

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 10

Merula [*Turdus*]

Tomales: sah-pah'-pe

Bodega: sahp'-sahp'

sah-pah'-pe

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 10

Robin (*Merula*) [*Turdus*]

sahp'-sahp'

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 10

Robin (*Merula*) [*Turdus*]

sā'-koo

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

Oriole (*Icterus*)

Screech-owl

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Megascops [*Otus*]

wah-te

Seal (hair seal)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1

Phoca

Tomales: moi'-yu

Bodega: cheet-chik

Sea lion

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1

Eumetopias or *Zalophus*

Tomales: kaw'-tah

Bodega: ko'-tah

Common in Tomales Bay in winter.

Sea otter

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Latax [*Enhydra*]

paw''

sep' poo-loo

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 12

Brown pelican (*Pelecanus californicus*) [*Pelecanus occidentalis*]

Shrew

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Sorex

Tomales: too'-pe

Bodega: hoo-yu'-ke

si'-ēтч

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

California jay (*Aphelocoma*)

Skunk (big)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Mephitis

kah'-look (Tomales and Bodega)

Skunk (little spotted)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Spilogale

tah-wi'-yēh

so-ko'-tuk

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 7

See Valley quail.

soo'-peeч

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 8

Yellowbird (goldfinch) (*Astragalinus*) [*Carduelis*]

Spotted owl

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Syrnium [*Strix*]

Tomales: we'-chik'-kas
Bodega: we-chik'-ke

Squirrel (gray tree)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 3

Sciurus fossor [*Sciurus griseus*]

sam'-kow': Tomales
sak'-muk: Bodega

[suyu, tsuyu]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Red-tailed hawk (*Buteo borealis*) [*Buteo jamaicensis*]

soo'-ē-yu

tah-wī'-yēh

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Skunk (little spotted) (*Spilogale*)

Teal, green wing

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 12

Nettion carolinensis [*Anas crecca*]

to-lo'-mah'

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1

Bob-cat (*Lynx fasciatus*) [*L. rufus*]

too-koo'-le

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 6

Great horned owl (*Bubo*)

too-koo'-lis

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6

Great horned owl (*Bubo*)

too'-pe

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 2

Shrew (*Sorex*)

too-peech

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 10

Yellowbird (goldfinch) (*Astragalinus*) [*Carduelis*]

tos'-koi

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 13

Mudhen (*Fulica*)

Tree squirrel (gray)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 3

Sciurus fossor [*Sciurus griseus*]

Tomales: sam'-kow'
Bodega: sak'-muk

tsolol

COAST MIWOK, Bodega

[Presumably white pelican; Merriam's *Field Check Lists* has no entry under this heading, p. 11.]

[tsuwuth]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4

Pocket gopher (*Thomomys*)

soo'-wüt

Turkey buzzard

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Cathartes

ā-kā'-yah (Tomales); o'-yā-kā-ah (Bodega)

Valley quail

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Lophortyx [*Callipepla*]

Tomales: hek'-hek'-ki

Bodega: hek'-ek'-ki, so-ko'-tuk (?)

wah-te

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 6

Screech owl (*Megascops*) [*Otus*]

[walinapi]

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6

wal'-len-ap'-pe

Cooper hawk (*Accipiter cooperii*)

Weasel

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 2

Putorius [*Mustela*]

Tomales: lok'-kum

Bodega: chah'-te

we'-chik'-kas

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 6

Spotted owl (*Syrnium*) [*Strix*]

we-chik'-ke

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 6
Spotted owl (*Syrnium*) [*Strix*]

wek'-wek

Merriam, *Field Check Lists*, p. 6
Duck hawk or Prairie falcon
Falco anatum [*Falco peregrinus*] or *Falco mexicanus*
[This seems to be a Southern Maidu term; Gifford
1927:241.]

wet'-te'-lah

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7
Crested jay (*Cyanocitta*)
[This must be my wesila.]

Whale

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 1
poo'-soo

Widgeon (duck)

COAST MIWOK, (Tomales? and Bodega?)
Merriam, *Field Check Lists*, p. 12
ko-too'-yu

Wolf

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check List*, p. 1
Canis
Tomales: o'-mah-o'-lā
Bodega: o-maw'-lo (?)

wol'-lo'-lok

COAST MIWOK, Tomales
Merriam, *Field Check Lists*, p. 7
[Same as oye-wololok, Bodega.]
Identified by Merriam as flicker (*Colaptes*).

Wood rat

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4
Neotoma
yu'-loo (Tomales); yoo'-loo' (Bodega)

Yellowbird (goldfinch)

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8
Astragalinus [*Carduelis*]
Tomales: too-peeche
Bodega: soo'-peeche

[yulu]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4
Wood rat (*Neotoma*)
yu'-loo (Tomales); yoo'-loo' (Bodega)

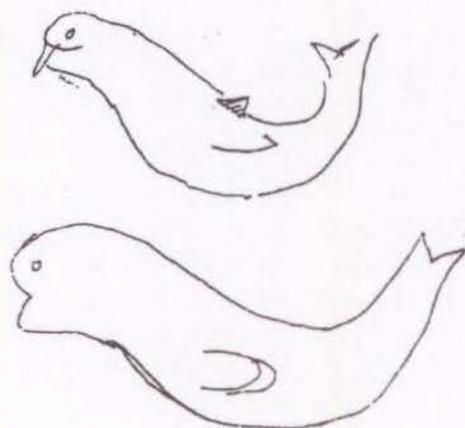
[yüse]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 4
Meadow mouse [vole] (*Microtus californicus*)
yes'-se (Tomales); pi'-ye yes'-se (Bodega)

Red insect (?)

There is a little bug, red like blood.
Is called hin-é?ai (sun child).
Like a spider, very tiny.
Can find a few in summer.

MC 11:1 May 10



IK Fantastic Fauna Doodles

291 REGULAR CLOTHING

Material

Clothing was of deerskin. MC 9:7 May 2

Men: tule cloaks

Men wore tule "coats," like a blanket. TS 1:29 Dec 22

Man (?): deerskin shirt (?)

Speaks of some sort of deerskin "jacket" or "shirt."
Apparently sleeveless. TS 8:39 Apr. 27

Woman's skirt: tules

Called kule?e lawa (woman-skirt).
Made of small, thin tules gathered at Ocean View.
Split with hand. Made by the woman herself.
Essentially a double apron. TS 1:29 Dec 22

Woman's skirt: skin

Sometimes of fringed deerskin. Ends of skirt
decorated "so as to look good." TS 1:29 Dec 22

Skirt

Double apron (?) called lawa [term used now for
dress]. Never heard of a tule skirt.
Deerskin, hair side out, was used; not fringed.
Open on one side only [hence not a double apron].
They said it showed your leg. MC 9:7 May 2

Men: loin cloth

Called hu·li. Rope [string], like a "buckle."
[Apparently tied on; in front?]
String each side [double apron?] TS 1:29 Dec 22

Men: loin cloth (?)

Called tcoyake-lawa.
Tied on; holes punched in skin.
Claims it sometimes reached to ankles.
Worn by old people.
Length of a long step measured.
Not sewn up; long, like a blanket. TS 8:39 Apr. 27

Breechclout

(taplapo; sic, Spanish taparabo) MC 9:7 May 2

Rabbit skin blankets

Not worn as a cape.
Used only as bedding. TS 8:39 Apr. 27

Blankets

Used to have rabbit skin blankets. Also blankets of
rat skin. Rat (huli): [she doesn't know how they
were made].
[Has heard of duck robes, but knows nothing
more.]
Blanket worn on the back. MC 9:7 May 2

Blankets

Skin of rat (yulu [presumably wood rat])
sometimes made into blankets. MC 9:42 May 2
Also of the skins of field mice (yuse).
[Doesn't know the technique, but thinks the skins
of the mice were sewn together.] MC 9:42 May 2

yüse

Merriam, *Field Check Lists*, p. 4
[Corresponds to Merriam's meadow mouse, and
my yulu to the wood rat.]

huli

[No mention of huli in Merriam's *Field Check
Lists*.]

Belt

Called kala. MC 9:7 May 2

Footgear

No footgear. MC 9:7 May 2



Necklace or Headband of Clam Disc Beads and Abalone Pendants

Length 36 cm, width of clam disk chain 1.5 cm; clamshell beads 5 mm in diameter. Collected at Bodega Bay by Georg von Langsdorf in 1806. #570-23. Museum of Anthropology and Ethnography, St. Petersburg

Clamshell necklaces

The 8 dancers who dance with the boy [who is being initiated into the secret society] are either 6 men and 2 women, or 6 women and 2 men... They wear clamshell beads around the neck. TS 3:35 Jan. 27

Clamshell beads worn by male waiyigo dancers

Men dancers [in the waiyigo Dance] used no abalone shell. Wore clamshell beads around the neck. TS 4:18 Jan. 30

Feathers, shell worn by female waiyigo dancers

Wore feathers on each shoulder. Abalone shells [fragments?] hung down on the chest, like a scarf. TS 4:18 Jan. 30

Shell necklaces

puskúlu shells [Specimen C] strung and worn as necklace. Pretty scarce; found at Horseshoe Bend. TS 5:23 Feb. 11

Shell necklaces

Worn by widow and widower, as sign of civil status. Any shell not too heavy. Selected, smoothed, bored. Worn a long time. TS 8:45 Apr. 27

Other Ornaments

Feathered wristlet (tome)

Men and some young woman wore feathered wristlets. Structure different from that of belt. A foundation of root [presumably string], with pának and quail tips worked in. Young women made their own wristlets. TS 8:33 Apr. 27

Bead wristlets (tome)

None of feathers. Made of beads and were called tome. MC 10:10 May 6

Shell earrings for chief tiwila dancer

puskúlu shell hung from ears. TS 7:46 Mar. 7

Earrings

No earrings of abalone shell; wore beads of Washington clam in the ear—when they went to a dance. MC 10:31 May 10

Feather rope

Called súkuti. A long boa of feathers worn about the head. All held the feather rope during wúnüp (the entrance into the dance house or sweat house). [MC thinks this was used only during the soto Dance, which on another occasion she claims not to know.] Feathers were kind of brown—maybe of duck. MC 10:30 May 10

Quail sticks (tsokotok-tumai)

Quail tips are good. People used to save those. Put them on the end of a stick of wood about 6 inches long. Abalone on the end to shine good, too. Two or 3 tips combined with other feathers.

Called this tsokotok-tumai (quail stick). Women wore them in the hair [on what occasion?] Never carried in the hand. TS 8:24 Apr. 24

Identification of Birds and Shellfish Used

Black feathers for headdress

[Identification on basis of Merriam's *Field Check Lists*, p. 7: auwite is the crow; kakali, the raven.]



Necklace or Headband of Abalone Pendants and Glass Beads

Length 30.5 cm. Tribe not identified, but most like necklaces described for Patwin, Nisenan and Coast Miwok people. #570-21. Museum of Anthropology and Ethnography, St. Petersburg

[Birds with black feathers]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

Merriam gives ah'-we (Tomales) and ah'-wēch (Bodega) as crow (*Corvus americanus*).

And he gives kah-kah'lik (Tomales) and kah-kah'le (Bodega) as raven (*Corvus corax*).

[tcapil feathers]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

chah'-pil (Tomales and Bodega) identified with Brewer blackbird (*Euphagus cyanocephalus*). And auwitic (Merriam: ah'-wēch) is crow [p.7].

For feathered belt, wristlets

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 8

pan'-nak (Bodega) and pal'-lā'-chahk (Tomales). Identified by him with California woodpecker.

[My pānak, presumably.]

For feathered belt

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 10

[My tsupitc: Merriam's too-peech (Tomales), soo-peeche (Bodega). Identified by him with Yellowbird (*Astragalinus*).

[oye-wololok]

COAST MIWOK, Bodega
Merriam, *Field Check Lists*, p. 7

Flicker.

[Flicker headbands]

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

oye-wololok corresponds to Merriam's o'-yā wollo'-lok (Bodega) and wol'-lo'-lok (Tomales). Identified with flicker (*Colaptes*).

For tauwá-ka headdress

COAST MIWOK, Tomales and Bodega
Merriam, *Field Check Lists*, p. 7

ah'-we (Tomales), ah'-wēch (Bodega)

[My auwitic: identified by Merriam with crow.]

For net cap, flicker-quill headband

COAST MIWOK?

Heizer 1947:263, 309

The net cap on the king... was different from that of others, and it is not improbable that it was one of the flicker-quill headbands so well known from the area... [The flicker band could be associated with a hair net. And although there is one statement to the effect that flicker feathers belonged to the headman, there is no special association of the headband with him; the headband was a common bit of dance regalia.]

For wilina (?)

Heizer 1947:269

The single feathers resembling "horns" are an ethnographic feature of the costume of the ghost dancer among the Pomo, and although there is no documentary evidence that the Coast Miwok wore feathers in such a manner, it seems likely...

[Although not a "single" feather, TS repeatedly referred to the wilina headdress as "horned." But one either side of head.]

For clamshell beads

Beardsley 1954(24):44

Twenty-four occurrences [San Rafael] (1,773 beads) are divided between nine burials and fifteen cremations. The three species of shell used (*Saxidomus nuttalli*, *S. giganteus*, and *Tivela stultorum*) show no significant seriation in occurrence, although *Tivela*, which is almost unknown to conchologists north of Half Moon Bay below San Francisco, is the least frequent type.

The beads are generally in strings near the neck of burials, and occur in groups of 5 to 590; very few burials have more than 100 beads, a circumstance which, compared with the incidence of up to fifteen feet of strung beads for single burials in the Sacramento Valley, bespeaks a striking contrast in the wealth of the two areas [belong to Late Horizon].

Mica ornaments

Beardsley 1954(24):46

[Irregularly cut, centrally perforated; set as sequins on apron, cap, or overall cape, belong to the Middle era.]

Haliotis shell

Beardsley 1954(24):53

[Unworked shell fragments common, but few well-worked ornaments. Most, but not all, Late Horizon.]



Plain Hair Net

Length 91 cm. Tribe not identified, but like headnets decorated with clamshell disc beads collected from the Pomo.

#370-67 Museum of Anthropology and Ethnography, St. Petersburg

302 TOILETTE

Women

Wore the hair long, central part. Three braids; 1 in back and 1 over each shoulder. *TS 1:29 Dec. 22*

Hairdress

Women come and brush the hair [apparently of the men]. If good weather, stand outside and fix the hair. Women brushed each other's hair, too. You can do it yourself, but it won't look "good."

TS 1:30 Dec. 22

Men's hair net

Men wore a plain hair net, no feathers [habitually? only at dances?] *TS 1:30 Dec. 22*

Men's hair net

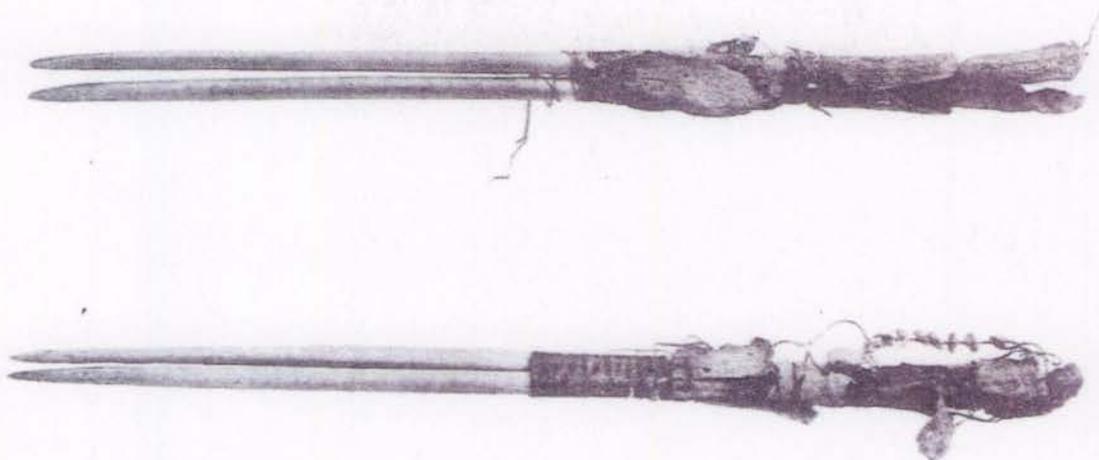
Wore a hair net; made by men. When you go some place, wind the hair on top of the head. Hair net called *mütui*. Some plain. Some had small shell beads (not clam, not abalone; something light) [affixed]. Women did not use hair net. *TS 2:2 Jan. 16*

Hair net

Both sexes wore the hair net (*motcu*). *MC 9:7 May 2*

Men's hairpins

Wore bone hairpins (*mütci*). Sometimes plain, sometimes fancy—never with feathers on ends. *TS 1:31 Dec. 22*



Hairpins

Length 30 cm. Tribe not identified. #570-29. Museum of Anthropology and Ethnography, St. Petersburg

Comb (eʔtchéa)

A serrated bone; some large, some fine. Made by men. *TS 1:30 Dec. 22*

Hairbrush

Called mulu-wútcea (hair-brush). Of something like tule, but different; tied together. About 16-18 inches long. *TS 1:30 Dec. 22*

Hairbrush

Soaproot might be used for hairbrush or mealing brush. *MC 9:11 May 2*

Hairbrush (tsonek)

Looks like a shaving brush. Made of the roots of saʔla (Specimen MC-34, *Carum kelloggii*); roots gathered in winter. Brush used for hair, for pinole, and for cleaning baskets. *MC 10:19 May 10*

Beard

Let it grow. Hung around the face. Warm, like your hair. *TS 1:31 Dec. 22*

Hair dressing: pepperwood nuts

Nuts from the pepperwood cooked by the fire. Black from the nuts [soot?] rubbed on the hands and applied to the hair to make it shiny. *TS 2:22 Jan. 17*

Hair dressing: skunk grease

Grease used as hair dressing. I used it once, no, twice. My hair is too white now; no use. *TS 6:27 Feb. 24*

Hair dressing

Never hear of using pepperwood nuts as hair dressing. *MC 9:31 May 2*

Old style hairdress

They [the Raven sisters, turned to stone] had the old style hairdress, called hopin, with the hair wrapped around the head. *MC 9:2 May 2*
[See 773 Maria Copa's Tales: Stone Girls.]

Hairdress

Women's hairdress called hopin [?] Hair wrapped around the head; not worn down. *MC 9:12 May 2*
I never saw the old hairdress. Hair was bundled up in the back; not twisted, but flat. Tied with a string. Some people—men and women—wore the net (mutui) over it. Both sexes combed the hair the same style. *MC 10:52 May 10*

Black paint

Black is men's paint. *TS 2:38 Jan. 22*
[However, girl initiates to the dance house have horizontal bands of black, white, and green, and red paint on cheeks.] *TS 3:41 Jan. 28*

Black paint (lokota hotcaiya)

Comes from ocean side by naiotci [see 103 Names of places: nai-utci]. A kind of ocean grass like tules. Oily. Grows tall, like tules. Rubbed between the hands; two or three men fix it. Put it in a small basket. Not cooked. That's for everybody. *TS 4:12 Jan. 28*

Blue (green) paint (lutcuta hotcaiya)

A bright green grass that comes up on the shore from the ocean. Pounded, like acorns. Not cooked. Can be kept a long time in a dry place. Stored in the dance house. *TS 4:12 Jan. 29*
Grass for green paint grows in the hills; is not a sea plant. *TS 4:17 Jan. 30*



Face Paint: Girl Initiates to Dance House

Four horizontal stripes on each cheek, from top to bottom, successively: black, white, green, red. TS 3:41 Jan. 28

White paint (potota hotcaiya)

Comes from below tokau [see 162 Settlements], on bay side, at mouth of bay. Looks like mud. Clean the sand off the top and dig out. Put it in a basket and let it dry a little; pretty white when it dries. After a while, mix a little water with it. Rub in the palm of the hand and apply to the face. Used for dances and otherwise.

Women sometimes used it "when they liked it." Not used in menstrual hut or at puberty. Men don't use white paint much. Another woman supervised the application. Sometimes, when dry, white paint used to dust a baby. TS 4:12 Jan. 29

Yellow paint (kaka hotcaiya)

Comes from Calistoga geysers. Bought with clam-shell money. Only one place to get this stuff; none in this country. Put in a basket and hot stones added; stored in a little basket. Used chiefly by hoipu kulele. TS 4:17 Jan 30

Red paint (kitculu-hotcaiya)

Belongs to kilak and to moluk. Comes from spring this side of awatci [see 103 Names of places]. Only dancers get it; keep it to themselves. Used only at dances. Red paint boiled until it gets thick; is kept kind of soft. Cooked outside, not in the dance house. Taken there when once prepared. Some too lazy to get it themselves. They ask you, "Can we use some of that?" TS 4:12 Jan. 29

Paint

Called tsike; red paint (awa); gray paint, in lieu of white (walanas). Red paint had to be mixed with water in order to use it. My grandmother said that gray paint came from some kind of spring. Black paint was pounded charcoal. MC 10:11 May 6

Rouge

This was the girls' rouge; flower mashed and rubbed on the cheeks.

[Specimen MC-22, *Calandrinia ciliata* var. *menziesii*; no native name given.] MC 9:26 May 2

Bone hairpin

Beardsley 1954(24):46

Slender, pointed shafts from the proximal end of deer cannonbone, the butts partly trimmed or completely cut away...occur in clusters of three to forty with each of the nine McClure B burials.

Their name is predicated on their occurrence near the skull and the binding marks noted on many, possibly from feather bunches attached to the bones, which served as skewers fastened in the hair...linked exclusively with McClure B burials [Middle Horizon].

304 MUTILATION

Pierced Ears

Earrings

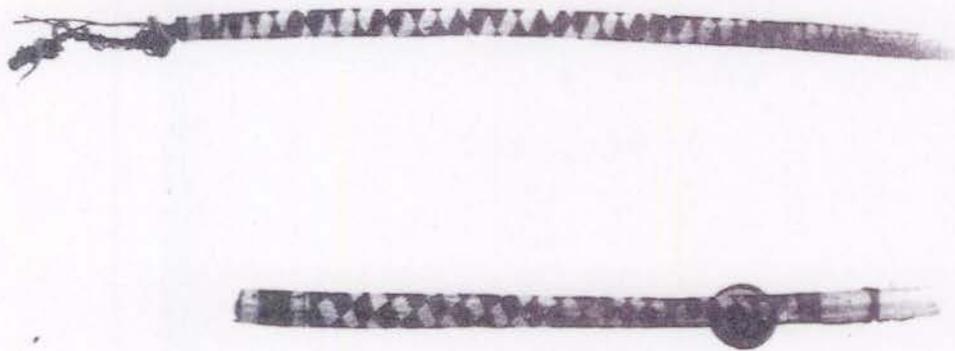
Wore just a stick in the ear. Some with feathers (green, from duck) around the end of the stick. TS 1:31 Dec. 22

Longevity

Some said it [piercing the ears] made them live to be old. But I got no hole in my ear. TS 1:31 Dec. 22

Boys and girls

Some punched the ear and put in a stick of wood. Done to some boys and some girls. Some boys were no good; they pulled out the stick and cried around for 3 or 4 days; they were babies; they didn't know nothing. Then it hurt them. TS 1:31 Dec. 22



Incised Bird Bone Ear Ornaments

Length 20 cm. Ends may have been plugged with wood. Sinew strands connect red and white (2 mm) beads, and a strand of clam disc beads, sewn with chain stitch. Tribe not identified.

8570-42. Museum of Anthropology and Ethnography, St. Petersburg

Men and women

Both men and women pierced the nose. Liked to put something in it when dancing. Nose stick called huk-mutci (nose-bone). [TS thinks a girl's nose was pierced before she was tattooed, when she was young and the cartilage soft.] Do it early, about 5 or 6 years old.

TS 8:7 Mar. 16

Bird bone, abalone ring

An old woman is there [at the koyane-ká-ul, a dance]. She wants to put something in her [pierced] nose. She has a bird bone in it, but wants an abalone ring. [No evident relationship to the dance, but was mentioned in connection with it.]

TS 8:7 Mar. 16

Tattoo, hotca

hotca-oni

Called hotca-oni (oni, face).

Means tattooed-face.

TS 8:7 Mar. 16

Grandmother's role

Grandmother tattooed the girl. [Later]: mother did not tattoo the girl; usually it was the grandmother who did it. Tattooed at the first menstruation.

TS 8:7 Mar. 16

Design

Central horizontal line passes through septum.

TS 1:32 Dec. 22

Design

The maien at laküm had 3 [tattooed] marks. One, a vertical chin line. Others, a diagonal from the corner of the mouth.

TS 8:33 Apr. 27

Process

Women tattooed at puberty. Used a sharp bone and charcoal; it will stay. All women the same. Some girls awful high toned, but have to be tattooed anyway. Apparently done on alternate days. Five [days of tattooing] all together [presumably spread over ten days].

TS 1:36 Dec. 22

Process

Poison oak burned and made into charcoal. Rubbed between the palms. Mixed with water to make a thick paste. Rubbed on skin, then latter punctured with something sharp. Some paid a good deal to get it [tattoo mark] so it would not wash off.

TS 8:33 Apr. 27

On face

Women tattooed the face. Boys sometimes had the arm decorated. I started to have my arm tattooed, but it hurt too much. My older sister was going to do it for me. No pay.

TS 8:33 Apr. 27

On chest

A few old men and some old women had tattooing on the chest.

TS 8:33 Apr. 27

Poison oak charcoal used

Charcoal of poison oak (itüm) used. [MC does not remember what was used to puncture.]

MC 9:23 May 2

Big girl

When a girl was big she was tattooed. Apparently nothing to do with adolescence. Done by a friend—for nothing.

MC 9:23 May 2

Tattoo (hotca)

Men sometimes were tattooed, but I never saw one around here. Usually on the arms. Women had tattoo on the face. Maria Austina [Faustina?] had vertical mark on chin and diagonal zigzag lines running [downward?] from each corner of the mouth. [But Maria Austina is MC: is this my observation?]

MC 9:23 May 2



Maria Austina's Tattoos MC 9:23 May 2

322 WOODWORK**Drum**

Young black oak good for a drum; pine too greasy. Drum about 4 feet long. Burned down the tree and hollowed the log by burning; have to watch

closely; burn until it is about 2 inches thick. One man is the headman for the drum; he supervises to see the log is burned evenly. (He is not the drummer.)

TS 8:63 May 2

323 CERAMICS**Mud figures used for dance**

[Effigies, male and female, prepared for use in boys' initiation ceremony. See 881 Puberty and Initiation: uti-kon-ka-ul, clay figures.]

[Use them for any kind of dance.] TS 5:41 Feb. 16

[But tule effigies used in Pelican and Condor Dances.]

Clay figures

Beardsley 1954(24):52

[Fragments, apparently without head and without appendages. Photos in *Antiquity* 9:199-207. Seem to belong to Middle Horizon. No evident tie with clay figures for uti-kon-ka-ul.]

324 LITHIC INDUSTRIES**Stone for drill point**

[Specimen of the green stone used has been identified by engineer Adolfo Langenscheidt as chalcedony.]

Charmstones (tcilas)

Old people didn't make them. They found them. Just as with the pestle (paia). [Note: she does not mention the tcita, obsidian blade.] MC 10:42 May 10

513 SLEEP

Men slept in sweathouse

Men slept in the sweathouse.

Stayed all night where it was warm. *TS 1:33 Dec. 22*

Pillows: of grass

No wooden pillow. Grass pillow (hawi) made of beach grass tied in a bunch. Everybody had one; kept in the house. *TS 6:6 Feb. 19*

Rabbit-skin blankets

Not worn as capes.

Used only as bedding. *TS 8:39 Apr. 27*

Sleeping

At night, slept tangent to the fire, not with feet or head toward fire. *MC 9:41 May 2*

515 PERSONAL HYGIENE

Teeth cleaned

Fresh oak gall (polo) chewed to clean teeth. *MC 10:19 May 10*

"Soap"

Soaproot used; root pounded and pounded.

[Specimen MC-25, *Chlorogalum pomeridianum*.] *MC 9:11 May 2*

Sweating

[Data re sweating filed under 343 Nonresidential buildings: Sweathouse.]

516 POSTURES

Cross-legged

Both men and women sat cross-legged. *MC 10:12 May 6*

521 CONVERSATION

Greeting

One said, "opūn towis" (you all right?).
Answer, "ka towis" (all right). *MC 11:16 May 10*

Farewell

ka opia ta hena (I am going away).
But Bodega people say: ka na uti hena (I am going away). *MC 11:16 May 10*

524 GAMES

Little play for boys

Boys didn't play much. *TS 8:40 Apr. 27*

Boys didn't do much [work]. Played around; hunted small birds with bow and arrow. Old people made the weapons for them.

When they killed a bird, they gave it to their old grandfather to eat. *TS 8:40 Apr. 27*

Dolls

No dolls. Sometimes tried to make dolls out of mud; pretty bad. No grass dolls. Sometimes made a stick man on top of a bunch of grass. Three or 4 [what? bunches?].

Other people watched. Tied a rope about the neck of the effigy and pulled it around. [Supposedly a man on horseback?] *TS 8:40 Apr. 27*

Mud dolls

Children used to play with mud dolls. *MC 9:41 May 2*

Acorn buzz

I seen them make those. Called ūmba-polo (acorn-ball). Pull it and it will go. Two holes in the acorn. I played with one myself. *TS 8:66 May 2*

386 PAINTS AND DYES

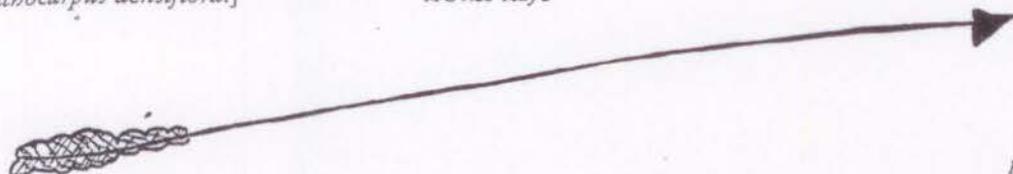
Nets dyed

[Nowadays, boil nets with *sá?ata* (MC-28),
Quercus agrifolia.] MC 9:5 May 2

But later MC says that katami oak [sic] provides
the bark used for boiling nets. [For katami, see 137
Flora: Plant Specimens Collected, MC-27
Lithocarpus densiflora.] MC 9:26 May 2

Paint

[Many references; see Index, under Paint.—Ed.]



IK Doodle

411 WEAPONS

Bow

Bow making

Might be 5 feet long.

Take a limb and split it with a stone at one end.
Some don't split straight. Split it a short way, then
you can pull it off with your hand. TS 1:10 Dec. 18

Bow making

Wood for the bow grows up in the hills.

That's strong wood.

Make string for bow out of bean [bane] bush that
grows on the sand hill. Use the root to make two-
ply cord. Sinew not used as bow string. Bow
string called *la-tik* [but latter seems to be word for
sinew; cf. Callaghan 1965:265]. TS 1:10 Dec. 18

Bow backing

Backing? Kind of skinlike stuff from the salt
water. Put it along the back; it stays right there.
Dries.

Bow is narrow in the middle, so you can hold it. Is
small at the end so the string can be tied. Make one
end [of the string] tight [fixed] and the other is tied
on [see miniature model]. TS 1:10 Dec. 18

Bow

Took a long time to make a good bow.
Painted on convex and concave sides [?].

TS 2:6 Jan. 16

Bow making

Hazel used for bow. Shaved. Have to go up the
coast to get this other (?) kind of wood for a bow.

Bend a new bow with the string when it is still
green. If it is all right, let it dry.

Four or five days of good weather needed for the
sinew to dry. TS 8:16 Mar. 16

Bow (and arrow): smoothing

[Plant called] horsetail (*lanta-hokaiya*, arrow-
smoother) is like sandpaper.

Used to rub bow and arrow. TS 5:37 Feb. 16

Sinew backed bow

Bow backed with sinew (*látik*) from the wing of a
bird—one called *tsepulu*, he thinks.

Wing washed, sinew pulled out with fingers.

Stuck on with something like pitch; some obtained
from a tree and some made from a small brush.

The brush was skinned [peeled?] and boiled.

Bow had constricted grip.

Wrapped with skin from just above the feet of the
deer. Hide from two feet used for the bow. Glued
on. TS 7:8 Feb. 24

Bow string

Bow string of *tsopogo* fiber. Sometimes of dried
sinew from back of deer. Two-ply, in either case.

Man made the bow string. TS 2:6 Jan. 16

Bow string

A bow string of sinew (*latik*) probably is better
than one of *tsopogo*. Two ply. TS 8:32 Apr. 27

Bow (*lanta*), string and backing

Bow string made of some kind of brush twine—the
same they used for the net.

Backed with deer sinew (*latik*). MC 9:7 May 2

Position

Bow held vertically.

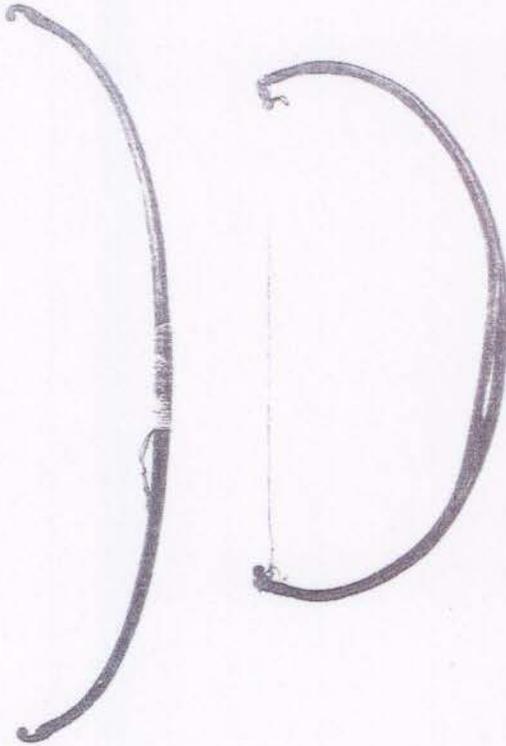
Hazel for bow; pretty strong.

Pick up a piece, clean it with a green stone, sharp,
like a knife.

Find this way up the coast, this side of Russian
river. All go to one place for it. TS 1:2 Dec. 17

Position

Sometimes held horizontally, when shooting from brush. TS 4:38 Feb. 2



Sinew-backed Bows

Length, 116 cm and 122 cm. Identical to bows collected from the Sierra Miwok, which were traded to southern Sacramento and San Joaquin Valley peoples. When these bows are strung they are recurved, meaning turned back to form a double, lyre-like curve for extra power.

#570-128. Museum of Anthropology and Ethnography, St. Petersburg

Bow variation

About 3 feet long; no set measure. Sometimes held horizontally; when held vertically, noose end was upward. If this end was down, the string might slip off. TS 8:16 Mar. 16

Arrow

Arrows (lánta)

Two kinds, one short, one long. tonúgu-lánta (short-arrow) goes farther than the long arrow; goes strong, too. About 18 inches long.

This arrow for fight. Man shot can't pull out the stone point.

kawi-lánta (long-arrow) for deer, bear. Too long; don't go straight. TS 1:10 Dec. 19

Arrow (kono)

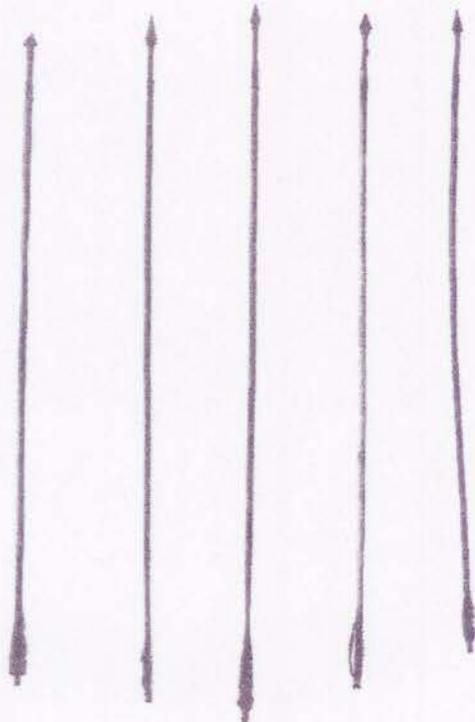
Sinew (latik) used to tie on the 3 feathers and for attaching the point (tcitca).

Arrows of hazel; 3 feathers. MC 10:52 May 10

Materials

Hazel good for arrows.

Specimen B-23 called lanta (arrow). With foreshaft, used for arrows. Elder used the same [that is, with foreshaft?]. TS 8:20 Apr. 24



Arrows

Five of a group of 12 arrows of which the main shafts were 82-96 cm long and 1 cm in diameter; foreshafts 5-7 cm long, .8 cm in diameter; fletching 9 cm long; projectile tips 5.4 by 2.1 cm; nock .7 cm deep by .2 cm wide. Tribe not identified.

#570-203. Museum of Anthropology and Ethnography, St. Petersburg

Materials

The arrow of lanta [Specimen B-23, *Physocarpus capitatus*] had a manzanita point 4 or 5 inches long. Point was hardened in the fire.

There used to be manzanita up Coleman Valley; but it is chopped out now.

Wooden-pointed arrow can be used for deer; will go through all right, if you are close; will even penetrate a bear. TS 8:32 Apr. 27

For birds

Use a sharp stick dried in the fire as an arrow.
Sometimes with special wooden point.

All arrows were feathered. *TS 2:21 Jan. 17*

For small game

Boy used to hunt rat with small bow, and with arrows of wood sharpened on the end and hardened in the fire. These for all kinds of small game.

TS 6:2 Feb. 18

Arrow shaft

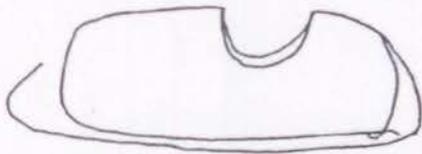
1. Specimen B-23, lanta (arrow), *Physocarpus capitatus*, used for arrow [with foreshaft added].
2. Elder, according to TS, not used for arrow shaft [this apparently contradicts earlier datum].

TS 8:20 Apr. 24

How made

Some had a black stone to work arrow shaft. Obsidian called logota-lupu (black-rock). tcita is another kind [apparently applied only to the charm].

Arrow shaft heated near the fire; take care not to get it too dry. Straightened in hands, over knee, and between teeth. No arrow wrench. *TS 6:17 Feb. 23*



Arrow Shaft Working Stone *TS 6:17 Feb. 23*

Without stone point

Arrows without stone point (but with wooden one?) used for small game, such as birds, rabbits. Sharpened, but no stone point.

Arrow for an owl was one sharp stick dried in the fire. (Apparently sometimes with wooden point inserted.)

TS 2:12 Jan. 17

Without stone point

For small game—birds, rabbits, gophers—arrow did not have stone point.

MC 10:52 May 10

Nocking and marking

Were nocked. Not painted; every man knew his own. But marked at point and at feathers. Ownership mark scratched just above the point. TS' mark a longitudinal bar with a cross bar at each end; like a capital I.

Not the same mark that was used on trees.

Feathers on the same arrow also cut to indicate ownership.

TS 6:17 Feb. 23

Making points

Points made of black stone [obsidian] got way up the coast, this side of Russian River.

Worked in the hand; no skin protector. *TS 5:37 Feb. 16*

Points of obsidian

Obsidian not found here; comes from Lake County. Go up there and trade for it, giving clamshell money for obsidian.

Latter used for arrow points.

Obsidian broken there and small pieces brought back, to be manufactured here. *TS 3:31 Jan. 25*

Red stone point

[TS shown a red stone point found archeologically; University of California Museum no. 28365.]

Never saw this kind of stone around here. If an arrow point, not made very well.

Would be called [presumably the stone, not the point] kículu-títca (red-tcítca). *TS 4:44 Feb. 3*

Point attached

To attach the point put pine pitch in the slit in the arrow and tie the point with stuff like thread—made by women, from some kind of "root" got from the sea. Women made this thread.

Heat it with fire. *TS 1:10 Dec. 18*

Point secured

Secured with pine pitch [source?] and deer sinew [although latter apparently not used for bow].

TS 6:17 Feb. 23

[Point] secured with pine pitch. Let it dry 2 days.

Tie with sinew (latik) from the back of the deer.

Arrow had 3 feathers, fastened on with pine pitch and sinew.

TS 8:32 Apr. 27

Feathering

Feathers of arrow cut to show ownership. Small feathers best; duck feathers good. No featherless arrows; fish never shot. *TS 5:37 Feb. 16*

Feathers about 4 inches long.

Arrows had 3 feathers, of oyewololok were good. This is a bird with red breast, red front; some kind of woodpecker (?). Feathers attached with pine pitch; stuck all along [sic]. Tied with string, no sinew. Arrow stuck in the ground to let the glue dry in the sun. *TS 6:17 Feb. 23*

Feathers used

[Feathers of the suyú, an unidentified bird (some kind of hawk?) sometimes used for arrows. But not for dancing.] *TS 8:40 Apr. 27*

Poisoned arrows

TS has heard of having a rattlesnake bite the point of an arrow but knows little about it. Some roots "not very good poison either." Poisoned arrow used just for men, not for game. *TS 7:8 Feb. 29*

Poisoned arrow

Poisoned arrow not used for deer. *TS 8:28 Apr. 24*

Arrows readied for hunting or war

When a man was going hunting or to war, he got out his quiver. Built a fire early in the morning—in the house, not in the hills. Heated his arrows and straightened them. Sang, too. *MC 10:52 May 10*

Arrow release

Arrow held between thumb and first finger. [Presumably primary release?] ["Yes" hand written.—Ed.] *TS 6:17 Feb. 23*

Quiver**Quiver of roots (lanta-miscuk, arrow-sack)**

Made of roots [of what?]. Made by man. Slung over left arm. *TS 1:18 Dec. 19*

Quiver of grass roots

Roots of grass called hapul used to make a quiver. This grass grows in the creek.

Quiver called hapul-miscuk (miscuk, sack). Fire stick [drill] not carried in quiver. *TS 7:28 Mar. 5*

Grass quiver

[A quiver of grass is made in wrapped stitch. TS gave demonstration with a piece of string.] *TS 6:16 Feb. 23*

Making a grass quiver

Grass for quiver got down the coast close to salt water. Break off and let wilt in the sun; then mash the stalks, taking the skin off. Put some pitch on the bottom of the sack [presumably now woven]. Let it dry. Sew it up. *TS 8:33 Apr. 27*

miscuk

The miscuk found at Tomales and Santa Rosa was not the same as that [in Bay area]. *TS 8:33 Apr. 27*

Bear cub skin quiver

Sometimes used skin of bear cub. Cut up back. Dried in sun; when a little dry sew up the back. Two men work that [why two?]. Head thrown away. Resulting sack used as quiver. *TS 6:16 Feb. 23*

Making a fox skin quiver

Sometimes made of fox (awáge) skin. All the animal thrown away except the skin. Head cut off; paws left on. Slit up inside of legs. Animal hung up by one leg. No ventral incision; skin removed [sacklike]. Let dry in the sun. When finished, has a seam across the bottom but not up the side. *TS 6:16 Feb. 23*

Skin quiver (tsomik; sumek)

Of skin—perhaps deer or bear. *MC 9:7 May 2*
Of coyote skin; made by men. *MC 10:52 May 10*

Various Weapons**Bola (hitcila)**

Heavy bone on each end of a string. Used for ducks. *MC 10:52 May 10*

Bone dagger

In the hand, [werebear] carried a sharp stick or bone dagger. *TS 7:97 Mar. 14*

Shield, armor

TS has heard of a shield but never saw one; does not know the shape. Has a faint recollection of a skin frontlet reaching the knees, or shorter. Was thick and tied behind with a string. Someone else tied it on for you. *TS 2:8 Jan. 16*

Sling (lawik)

Stones used as "bullets." Some Lake County people used a yellow mud; let it dry in front of the fire. Sling used at Bodega. Was a pocket of deer skin, each end tied with a string of tsoyogo. Used "for anything you could hit." Boys used it once in a while, but apparently not primarily a toy. *TS 2:8 Jan. 16*

Sling (lawik)

A string with a rock inside it. Used for rabbits, ducks, anything you like. [MC doesn't know if it was good for war.] *MC 10:52 May 10*

Spear (for salmon)

Had a point of deer bone. Attached with pitch "to make smooth." [Presumably not detachable.] Pine pitch used to stick [bone] point to spear. *TS 1:17 Dec. 19*

Spear (for salmon)

Spear about 2 yards long [extending both arms]. Point attached with pine pitch; wound with "string." Point from leg bone of deer. Sometimes two points. Not three; two were plenty. Spear not cast, but held in hand and fish recovered with it. No need to get feet wet. Spear called mútci [isn't this bone?] *TS 2:6 Jan. 16*

Spear (for salmon)

Spear called yasū'm. Tomales people called it hotci. Bone point sharpened on a stone. Tied with sinew. When cast, spear did not leave hand. *TS 6:4 Feb. 18*

Spear (hotci)

Had an obsidian point.
People used to go to Lake County to buy obsidian.
Even the San Jose people [Costanoan] went to the
kai'inamago [Healdsburg people] for it.
Spear was used for war, not hunting. *MC 9:19 May 2*

Spear

A two-pronged spear used for fish, after the
Spaniards came. *MC 10:52 May 10*

War weapons

They had the bow and arrow for fight.
Also the spear (hotci) [which she now says was
pre-Spanish].
No hide armor, but they fought naked, except for a
few beads across the chest. *MC 10:25 May 10*

412 GENERAL TOOLS

Digging stick (káok)

Used for digging wild onion.
Sharpened on end; no handle. *TS 2:33 Jan. 21*

Knife of green stone

[For the bow] pick up a piece [of hazel].
Clean with a kind of green stone, sharp like a knife.
[Chalcedony; see 324 Lithic Industries.—Ed.]
Find this green stone way up the coast, this side of
Russian River. All go to one place for it.
TS 1:2 Dec. 17

Knife of green stone

Made of a green stone called me. *TS 5:43 Feb. 17*

Knife of green stone

Three poles [for duck net] are sharpened...with
green stone knife. *TS 5:43 Feb. 17*

Knife of obsidian

Butchering knife was of obsidian, with wooden
handle. Carried in a small basket, together with
hunting amulets.

This basket made by men, of small willows;
different from baskets made by women.

[Same as quiver?] *TS 4:41 Feb. 3*

Knives (hulaiya)

Made knives of obsidian.

Also had a green-stone knife. Green stone called
me. Good for arrow point, too. *MC 10:19 May 10*

Motor habits: left handedness

A left-handed person called tsetoko [which simply
means "left"].

I knew one old man called Salvador who was left
handed. *MC 10:15 May 6*

413 SPECIAL TOOLS

Club for seals

[Seals] hit with club of hard wood, got from the
woods. Used only for seals. About 1.5 feet long.
Called wū'pa. *TS 1:18 Dec. 19*

Pump drill

For making clam shell beads. Use blue stone
(which comes from up the coast, this side of
Russian River).
This is for the drill [for clam shell beads].
Pump drill goes back as far as TS can remember.
TS 1:24 Dec. 21

Pump drill for beads

Green (blue) stone for the drill comes from two
places: one up the river and one at Tomales, this
side of the bar. *TS 3:31 Jan. 25*

Pump drill for beads

The drill (tcidak) had a stone point; a straight shaft
of any kind of wood. Just one kind of stone was
good for the point; found up the coast, this side of
tala-lupu (see 103 Names of places) and down by
Valley Ford Creek. *TS 2:30 Jan. 21*

Stick for prying off mussels, abalone

Called hoyén. Pretty sharp stick.
Sharpen it good and put it by the fire to dry, but
don't burn it too much.
Make it sharp by rubbing it on a rock. *TS 2:15 Jan. 17*

Stick for digging halati clams

Had special stick for halati clams.
Sharp, but not very sharp.
Called kulule. *TS 2:31 Jan. 21*

415 UTENSILS

Containers

No wooden dishes; only baskets. *TS 8:14 Mar. 16*

Spoons

Eat mush with mussel-shell spoons.
Same [kind of] spoon for both sexes. *TS 1:1 Dec. 17*

Mealing brush

Made of soaproot (haka). Specimen MC-25,
Chlorogalum pomeridianum. *MC 9:11 May 2*

Cleaning brush (tsonek)

Looks like a shaving brush.
Made of the roots of sa³la (Specimen MC-34,
Perideridium kelloggii); roots gathered in winter.
Brush used for hair, for pinole, and for cleaning
baskets. *MC 10:19 May 10*

Looped stick for hot rocks

Hot rocks for cooking mush picked up with a
looped hazel stick. Get wood a little green.
TS 6:19 Feb. 23

Mush paddle (wenaiya)

Flat paddle that looks like an oar.
Round handle.
Two men worked it, rubbing with a rock.
About 3 feet long.
Those used every day were not very fancy.
TS 8:31 Apr. 24

Mush paddle

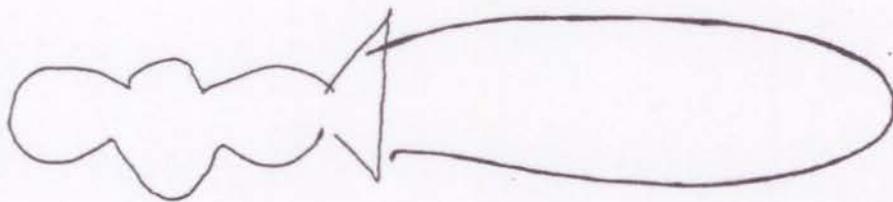
Latest word: TS now says a smooth stick was used
as a stirrer, not one flat like an oar.
Did not recognize mush paddles in Kroeber (1925)
as such. *TS 8:33 Apr. 27*

Mortar (othóti)

Made by men. Stone found on the beach.
Used for seeds, acorns, anything. *TS 2:16 Jan. 17*

Mortar

When people moved [seasonal movements] they
buried the mortar. *MC 9:41 May 2*



Mush Paddle *TS 8:32 Apr. 27*

Mush paddle

Get a paddle to stir the mush. One of hard wood.
Two men work this for [preparing] dance food.
Use any kind of wood—oak, for example.

Measure the tika [close-twined burden basket] to
see how long to make it. If too long, you can't
work it. Paddle wider at the bottom than at the
handle. Made fancy.

It was the maien's work to split the wood—about
as long as a man's arm.

Paddle blade and handle about equal length.

Maien gives someone the job of making this.

The maien had 4 mush paddles. Called ülki-
wenáiya, acorn mush-stir.

Other people had small paddles. *TS 6:19 Feb. 23*

Mortar

Acorns (and other products) ground [pounded]
within a small brush enclosure, slightly taller than
sitting height. No cooking done there. Just one
woman and a small mortar in the enclosure.

No bed-rock mortar around here. *TS 8:12 Mar. 16*

Mortar

Called ototi.

Had the slab mortar with the basket hopper, kawi,
but MC can't remember the name. This is old
style, certainly not post-Spanish. *MC 9:6 May 2*

Pestle (pa)

Some pestles (pa) were long. *TS 2:16 Jan. 17*

Pestle (tónu³u-pa; short rock)

A short pestle used when you don't want to pound
too heavy. *TS 2:16 Jan. 17*

820 ETHNOASTRONOMY

Sun, moon and stars

hi	sun	
poluluk	moon	
eme	new moon	
hitic	star	MC 9:5 May 2
awe-tculu	morning star, dawn (awe, tomorrow)	MC 9:35 May 2

Sun and moon

No relation [and very definite about it]. TS 4:8 Jan. 29

Sometimes prayed to the sun (hi) and moon (pululuk) for favors.

Prayed for any kind of dance; for luck in hunting and fishing (for lots of deer and salmon). Prayed in the sweathouse after sweating. TS 4:8 Jan. 29

Sun and length of day

When the sun comes up to the north, the days are long. kawai-hi means long sun, or long day (hi, sun, day). [TS does not know the months of the solstice: the old people never paid any attention; it was in summer time.]

Short day called tonugu-hi. TS 6:11 Feb. 19

Moon

The new moon is éme; [does not know the name for the full moon]. Moon called pululuk.

Man in the moon: pululuk-mitca. TS 8:38 Apr. 27

New moon (éme)

See him over in the west.

In the old days, watched for a new moon. Boys watched and told the old people. These patted the boys on the back and said, "Good boy."

All the children had a race to see who would win.

No notion of luck involved. TS 8:38 Apr. 27

Wish made at new moon

Sometimes boys made a wish at the new moon.

The old folks laughed. TS 8:42 Apr. 27

Moon

Didn't run at the time of the new moon.

Ran when the moon was big. TS 8:40 Apr. 27

Lunar eclipse

Called pululuk-yo. Did not say anything was eating the moon. MC 10:4 May 2

Solar eclipse

TS saw one once, when he was up the coast. He could see the stars. He stopped his team [which] would go no farther.

Does not know name of eclipse. TS 6:11 Feb. 19

Solar eclipse

They say a bear is eating the sun. [When the eclipse occurred, TS looked for the bear but could see nothing. Not sure about the truth of the traditional explanation.] TS 6:11 Feb. 19

[Another occasion; has not heard that an animal is eating the moon.] TS 8:38 Apr. 27

Solar eclipse

Called hin-muke (sun-gone).

Old people believed that a bear ate the sun. They used to holler, "You see the blood," to frighten the bear. I used to hear my mother holler this way.

Once it got so dark I saw the stars. MC 10:4 May 2

Eclipse caused by bear.

EASTERN POMO

Loeb 1926:228

...the bear walked across the sky and met the sun. The sun would not get out of the way of the bear, and the two had a fight. This made an eclipse of the sun.

Eclipse

KATO

Loeb 1932:22

The belief was that a bear had caught hold of the sun...could hear the sun crying for help when it was seized by the bear... After the eclipse blood could be seen dripping from the sun.

Constellations: Big Dipper

Called tceno (hooked; name of hooked staff for gathering berries and fruit). MC 9:35 May 2

Constellations: Big Dipper

POMO (unspecified)

Loeb 1926:228

...This was the name of a big stick with a hook which was used for the purpose of pulling down withered limbs from the trees.

Headman

There is a star called hoipu (headman or chief), but I don't know which it is. TS 7:78 May 12

Constellations: Orion

Called kolako (girls).

MC 9:35 May 2

Orion (?)

Called maienko. A woman, I think [name itself indicates that].

Three stars together—possible Orion, but might be any other cluster of three. TS 7:78 May 12

Constellations: Orion
Called kolako (girls).

MC 9:35 May 2

Morning star

Called auwiti (auwa-hiti, morning-star).
Is a man.

TS 7:78 Mar. 12

Evening star

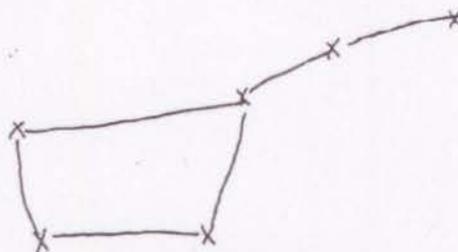
Called kehayani; literal translation of evening star
would be ume-hiti.
Watch in the evening for this man.

TS 7:78 Mar. 12

Milky Way

There is a name for Santiago's road, but I can't
remember it.

MC 9:35 May 2



IK Doodle: Big Dipper

Comet

There is a name for comet, but I don't remember.

MC 9:35 May 2

821 ETHNOMETEOROLOGY

Wind

North wind is kauti; kauti-opu means north wind-
coast [sic].

honon is south wind.

TS 5:47 Feb. 17

helwa-kiwil is west wind.

TS 7:50 Mar. 8

Winds

BILL SMITH:

North wind kauti

South wind holon

East wind ala-kiwil

West wind I don't know TS (Bill Smith) 7:50 Mar. 8

Winds

[hena, plus the indicated direction. Thus:

kanwin-hena (north-wind)

olüm-hena (south-wind), etc. MC 11:2 May 10

Cloudy

Called mukulu.

MC 9:35 May 2

Rainy and dry weather foretold

When it is bright red in the east in the
morning—like blood—than it is going to rain.

But if it gets red in the west, in the evening, they
say the utekos are burning seeds and that it will not
rain.

MC 10:32 May 10

Thunder

Sometimes Coyote makes thunder.

TS 1:33 Dec. 22

Thunder

Called tal'awa.

MC 10:43 May 10

Lightning (takip)

MC 10:43 May 10

Rainbow

Called katcaíya (tule) [highly dubious].

Said to mean "ring around" [not intelligible].

No story about it.

TS 1:20 Dec. 21

No notion of good or bad luck.

TS 7:54 Mar. 8

822 ETHNOPHYSICS

Echo

Called sa'akati. They answer it.

[Name confirmed by Bill Smith.]

TS 7:54 Mar. 8

823 ETHNOGEOGRAPHY

Cardinal directions

North á'la

South olon?

West kólin

East yóle

Above líle

Below- hóime

TS 2:34 Jan. 21

Cardinal directions

[Later, greatly confused about directions; gives new
equivalents:

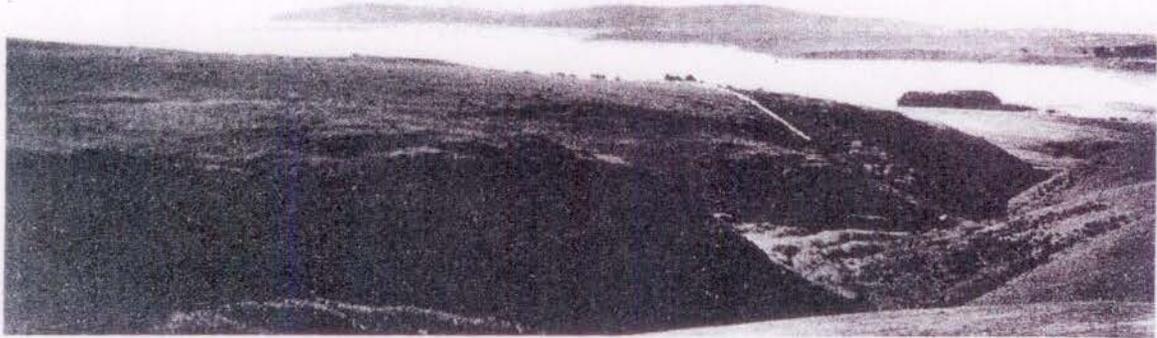
East ala

North kalin

South holon

West helwa

Callaghan 1955:219 reports uncertainty concerning
meaning of direction terms.] TS 5:47 Feb. 17



View South across Bodega Harbor toward Bodega Head

Photo courtesy Isabel T. Kelly Archive, SMU, Dallas

Cardinal directions

BILL SMITH

South is the first direction to be named:

South	olom
East	ala
North	kanin
West	helwa
Up	lile (air, sky)
Down	hoime

If necessary to indicate an intermediate direction, combine two terms, such as helwa-olom (southwest). *TS (Bill Smith) 7:50 Mar. 8*

Cardinal directions

Watched over by one man:

olom (south)	olomko
kanin	kanínko
helwa	helwa-yomigo (helwako)
ala	ala-yomigo

Might ask them (?) for a favor if you needed it. [But evidently would be unusual gesture.]

Watch holes in the sky.

[Unfortunately, most of this is unintelligible. Is the second column the name of a being or person?

More than one? Original notes say: "Just one man watches." The datum about "holes in the sky" not even copied, for the statement was incomplete. But agrees with notions about lile, who watches the hole in the sky. But how many holes were there?] *TS 7:78 Mar. 12*

Cardinal directions

East	ala
South	olüm
West	helwa
North	kanwin

MC 9:49 May 2

World above

There is a hole up above; I know that. But I don't know about other holes, to the north or south. *TS 2:34 Jan. 21*

Underworld people

They say people live below us. No name for them. *TS 2:34 Jan. 21*

Earthquake (yowan-owits, ground-shake)

Fellow lying under the ground, face down, arms outstretched before him. Moves his fingers and makes earth move. He's a man.

We give him money, beads, silver; throw in big fire. Do this after an earthquake. [At time of 1906 quake, TS threw \$.30 (3 dimes) to this man.] *TS 6:15 Feb. 23*

Earthquake (yowa-ünówits, ground shake)

Say somebody lying under the ground moves self a little and makes ground shake. *TS 7:54 Mar. 8*

Earthquake (wéa-no?it)

pololo-hi [this *must* refer to the pololo Dance] is the time that a man has to stand on top of the sweathouse and yell four times.

Everybody said, "Listen."

That is the day that helwa-tului [the fish in the west, whose movements cause earthquake] moves and makes a sound like thunder. This happened every time that man was there (?). *MC 10:4 May 2*

The old people believed that over in Coyote's (oye's) home in the west there was a big fish called helwu tului (helwa, west). This fish moves around and makes the earth shake. *MC 10:4 May 2*

MARIA COPA'S TALES

COYOTE AND THE FEATHER

The land was covered with water, and Coyote shook his walik (something like a blanket, made of tule) to the south, east, north and to the west. The water dried and the land appeared. Coyote came from the west where the sun sets. The old people think that the dead go to the west because Coyote went back there.

Coyote came alone and Chicken Hawk followed him—he was like one feather on top of the water. Coyote was living on the top of a rock.

Coyote spoke, "Father!..."

"Mother!..." No answer.

"Sister!" No answer.

"Brother!" No answer.

"Uncle!" No answer.

"Aunt!" No answer.

"Cousin!" No answer.

"Nephew!" No answer.

"Niece!" No answer.

"Father!" No answer.

"Grandfather!" No answer.

"Grandchild!"

Then Chicken Hawk answered, "haihaihai!"

Then Coyote said, "I did not call you grandchild."

"Oh yes, you did; you are my grandfather."

Then Coyote (oyeoyis) said, "tuitui."

Then he said, "All right, you are my grandchild!"

Typescript, p. 519, MC 9:43 May 2

Second Version:

It was at wotoke, a place near Petaluma, that Coyote and walinapi talked first. There is a hill shaped like a balsa there.

Coyote was living on a rock on the top of that hill. When Coyote saw the feather he said, "hinte mi (what is that); mante me (who is that)? No answer.

Then Coyote said, "api?" (father) No answer.

"ünü?" (mother)

"hama?" (grandmother)

"papa?" (grandfather)

"ata?" (brother)

"woko?" (older sister)

"kata?" (uncle)

"amoko?" (aunt)

"eneni?"

"tata?"

"towe?" (nephew)

"elai?" (niece)

"ola?" (stepfather)

"memoyis?" (father-in-law)

"mempotcis?" (mother-in-law)

"olatci?" (mother's sister)
 "eai?" (child)
 "tune?" (daughter; tunye is doll)
 "tcatco?" [grandchild?]
 "hai hai hai, hai hai hai!" said walinapi.
 "tüt tüt," Coyote spat.

Then the feather got up, a man, from the water.
 Coyote didn't want a grandchild.

Typescript, p. 524; MC 11:16 May 10

[See also 601 Kinship: Coyote's Kinship Terms, for additional notations.—Ed.]

CHICKEN HAWK'S BABY

Chicken Hawk (walinapi) stayed with his grandfather. He got sick. His belly ached.
 "What's the matter?" Coyote asked him.
 "I am sick; my belly is swelling."

Then he had a baby, born from his navel. It was a boy. Coyote took care of the child.
 When it was born, it had a very small bundle under its arm.

Typescript, p. 519; MC 9:43-44 May 2

CHICKEN HAWK SHOOTS FROG WOMAN

Then Frog Woman (kotola) came out from under the house, out of the water, I think.
 She was old Coyote's wife. She went to the river to pick silai (mallow) and to bathe in the river. She said, "What's the matter with this?" Then she turned into a deer.

Chicken Hawk saw the deer and said, "papoyes, I want a kono."

"What do you mean? I have never heard that word."

"You know what it is; something to kill game with. I want to go hunting."

"But you don't know anything about hunting." Then his grandfather said, "All right."

That old man would do anything. He made that bow, too, with an obsidian point on the arrow.

Chicken Hawk went after the deer and shot it. The deer ran into the creek. Chicken Hawk followed and followed it. He came to the old Frog Woman bathing in the stream. He asked her, "Have you seen a deer? I killed one."

She said, "I didn't see anything. But there may be one around here."

Chicken Hawk went home.

The old woman got sick. Coyote knew everything. She had a child that night. When the baby was born it rattled like glass. Chicken Hawk heard the baby crying. He called to his grandfather, "papoyis, a baby is born." No answer. Then he said, "If it is a boy, save him for me. It will be my partner in hunting."

The old man said, "You keep still. Go to sleep."

In a few days the baby was quite large. He was called taitca-oli (oli, young fellow). He was Coyote's son. He went around for a long time. He had no home. One day he decided to find his home. He went to Tamalpais, but that hill was too low for him. So he went to St. Helena mountain and stayed there.

(I was telling Julia [Maria Copa's daughter—Ed.], I guess that is why there is so much obsidian around there.)

walinapi's boy was always with Coyote, always close to him. He never grew large.

Typescript, pp. 519-520; MC 9:44-45 May 2

HOW RABBIT GOT HIS LONG EARS

Jack Rabbit (aule) was crying for the horn of his mother's brother, Elk (tante). He was crying all the time. His mother said, "You can't carry that horn; it is too big for you. And your uncle won't let you have it."

But Rabbit said, "Oh, I want that. I want it so I can pack something to eat in it and bring it home."

Then the mother said, "Well, you tell your uncle that you want to use it." They were living under the ground. The woman told her brother that Rabbit wanted his horn. Then the uncle said, "Let him have that horn. But he must be careful not to let anyone see it, or they will take it away. That horn costs a lot of money (bispi)."

Rabbit was so glad to have the horn. He started out early in the morning when the sun was coming up. He was playing around looking at his shadow. He did not think to pick any food. A long way off other elk were watching him.

One said, "Let's go over there. It looks just like our horn (kili) there."

And another said, "Let's go and see. It is just like our horn."

They went there and found the little boy playing with the horn. They came close and grabbed the horn. They took it and said, "You can't pack this horn. You have no use for it." Then they gave Rabbit his long ears.

He was crying and crying. That is why his lip is cut. His face was swelling. He did not go home, but went far away. He has a swollen eye because he cried so much. His uncle looked for him but could not find him.

Typescript, p. 530; MC 11:33 May 10

HOW BAT GOT HIS WINGS

Bat (nawa-winai?i: looks like a kekos name) and Red-headed Woodpecker, and other birds were going to eat clover. Bat said, "Brothers, I want to go with you." He wanted to fly with them.

They said, "Let us go."

"I can't; I have no way to go."

Then Bat went to his grandmother. She was wearing a skin skirt. He said, "Grandmother, make me wings. I want to go with my brothers."

"But how can I make you wings?"

"Make them of palas, a kind of tule."

"All right, don't cry. I'll try." They made wings and his grandmother said, "Now try them." Bat flew a little way and then dropped down. They tried again. Then once more. This last time Bat cut wings from his grandmother's skirt.

He sang, "I want to go with my brothers to eat clover." The grandmother cut a piece from her skirt. Bat tried to fly three or four times, then flew. That is why Bat has the kind of wings that he has. He flew off, then came back home.

Typescript, p. 535, MC 11:11 May 10

Plant Uses of the Coast Miwok

by Charles Kennard (1999)

Coyote-man . . . gathered a lot of sticks of different kinds—some hard, as oak, madrone, and manzanita; some soft and hollow, as the sage herb—and made a big pile of them and said that by and by they would turn into people. Then he went all over the country and wherever he wanted a village he laid down two sticks, and gave the place a name—and the name he gave it then has always been its name and is its name to this day. Then he went away. In a short time the sticks turned into people, and all the rancherias were started with the first real people. In places where he had put sticks of hardwood the people were strong and well and warm-blooded and could stand cold weather; but in places where he put poor wood the people were weak and sickly and could not stand cold weather. (Coast Miwok story recorded by C.H. Merriam)

Plants are people's ancestors, their brothers and sisters sharing the earth, in the Coast Miwok world view. It is a mutually beneficial relationship, in which, if plants are treated with the respect and restraint that is relatives' due, the food-gatherer or basket-weaver will be rewarded with bountiful harvests. Weavers today say that living plants need to be used in order to flourish, but at the same time the gatherer must leave a prayer and an offering in exchange, and honor taboos regarding when and how to gather.

These attitudes, together with practices such as pruning, weeding, digging and fire-setting, regulated and increased the harvest of what we tend to keep at arm's length with the term 'natural resources.' The relationship between people and landscape was intimate, spiritual and transforming. Pre-European contact Marin was no virgin wilderness, as park managers discover through their efforts to maintain open grasslands and their floral diversity. Here, where lightning is rare, frequent intentional burns are necessary to prevent brush from taking over meadows and hillsides at the expense of grasslands, and keep forest undergrowth from accumulating to dangerous levels.

Virtually every common native plant has a traditional Indian use as food or medicine, in ceremonies, or for making houses, clothing, boats, baskets, tools or twine. There was a gathering season for each, and as much harvest as possible was preserved for future use, protected in a granary or stored in a dry place not too far from the warm hearth. Basketry materials required storage and seasoning to shrink fully before use.

In February, the first spring greens were greeted with delight: miner's lettuce with its spade-shaped young leaves, clovers, mule-ears and fiddleneck. Gray willow, used in basketry, budded in March, when Coast Miwok families traveled up to the Healdsburg area to cut and peel longer withes than those found at Nicasio. In late April, the first wood strawberries bear fruit, heralding the Strawberry Festival—revived at Kule Loklo, near Olema, in 1987—



Baskets and twine made from local plants by Charles Kennard, and photographed in a sedge bed

when dancers carry the delicate fruit into a roundhouse hung with wreaths of wildflowers. Spring was the time for digging 'Indian potatoes,' the bulbs and corms of grassland flowers in the lily family. Among them were Ithuriel's spear, blue dick, onions, mariposa lilies, and the blue-flowered camas found near the radio station on the Point Reyes peninsula. Soap root bulbs were dug before the flowers emerged, and were transformed into little brushes, glue, and food, as well as soap.

As spring turned into summer, the seed and berry and season began: manzanita berries and California blackberries ripened, as did the fruit of the rare leatherwood shrub found near Nicasio and at Bodega; the seeds of grasses, checkerbloom, farewell-to-spring, California buttercup, mule-ears and goldfields were parched with hot coals and ground into flour for *pinole*. In the summer, tules were cut to dry for house thatching, for double-ended tule boats and baskets. Hazel sticks were gathered for cradles and strong burden baskets. It was also harvest time for huckleberries, blue elderberries, and the late-blooming tarweeds.

Fall was a busy time, when a village gathered enough acorns—especially those of the tanoak—to allow for 400 pounds or more for each family. The October Acorn Festival is a time of celebration and thanksgiving at Kule Loklo. California-laurel fruits were also gathered, the flesh to be eaten raw, the nut to be stored and baked. Fall was the time for collecting cordage material from perennial herbs before rain rotted their dying stems; the Coast Miwok most likely made use of California hemp (also known as leather-root) growing eight feet tall along many creeks, dogbane found near Fairfax, and perhaps the ground iris, whose leaf contains two strong fibers. Coast Miwok are known to have used split roots of a bush lupine growing in sandy soil behind the dunes, and fiber from the riparian shrub, ninebark, for twine and rope. To gather the sedge rhizomes used in fine basketry, later generations of Coast Miwoks have gone to Sonoma County, but the prized basket sedge can be found in small patches in many areas of Marin. A species growing in coastal swales has the finer rhizomes, most suitable for small baskets.

In the rainy winter months, golden chanterelle mushrooms push up through the forest humus, and oyster mushrooms form pale staircases up the trunks of dead alders and oaks; these fungi and others were baked on hot rocks, perhaps alongside toyon berries. In the winter too, more hazel and willow were gathered, for making work-baskets and traps.

Coast Miwok today continue to celebrate the rhythms of the seasonal cycle, teaching the rest of us the beauty and generosity of this earth, especially of this corner of the earth where we live, Marin County.

Charlie Kennard of San Anselmo is a long-time basket weaver and student of central California Indian and European techniques. He has taught for the Miwok Archeological Preserve of Marin (MAPOM), Point Reyes Field Institute, U.C. Botanical Garden, and in many schools and at teacher trainings. Tule boats made in his workshops can be seen at the California Academy of Sciences, the Bay Model in Sausalito, and other museums. You can also visit a basketry plant garden he has created at the Marin Art and Garden Center in Ross. Charlie is active in native habitat restoration in Marin, managing several projects for Friends of Corte Madera Creek Watershed. He can be reached at charleskennard@comcast.net

Native Plants of Tomales Bay State Park

These are some of the plants, shrubs and trees with which you should become familiar if you are to successfully live in ways similar to those of a Coast Miwok Indian.

Caution: Many of these plants are not edible until prepared by traditional Miwok methods. Please do not eat or use any plant without first consulting park staff. All plants and fruits, except berries, are protected by law in California State Parks.

POISON OAK The only member of the Sumac family which presents itself in 3 forms (vine, shrub, and tree). The juice from stems, leaves or roots was used as a cure for warts. The wart was cut or pricked and the juice applied immediately. This juice was also used as a cure for ringworm. The fresh juice turns black quickly and was used as a dye for basket material. Note: Do not touch this plant. Severe skin inflammation may result!



COAST LIVE OAK Acorns were the staple food for the Coast Miwok as they were for most Californian Indians. Acorns were collected in the fall and stored in granaries for year-round use. As much as 2,000 pounds of acorns would be gathered for a year's supply for one family. Among the Live Oaks, the coast Live Oak was most highly prized. The acorns from other species of evergreen oaks were also gathered. Please refer to the Appendix B for an acorn mush recipe.



Native Plants at Tomales Bay State Park cont.

CALIFORNIA BAY, LAUREL, PEPPERNUT

The oily, pungent leaves were used medicinally. Headache was cured by placing a leaf inside the nostril or by binding a number of leaves on the forehead. To cure rheumatism, Bay leaves were used in a hot bath or steam bath. The leaves also served as an insect repellent in Miwok houses. Roasted nuts are edible. The leaves were also used for flavor in cooking.



TOYON OR CHRISTMAS BERRY This is a common shrub or small tree on brushy slopes and in canyons throughout most of California. The bright red berries were rarely eaten raw. They were cooked either by roasting over hot coals with bunches of berries being held over the fire or by tossing in a cooking basket with hot pebbles. Coast Miwoks also used the leaves and bark to make a tea to cure aches and pains.

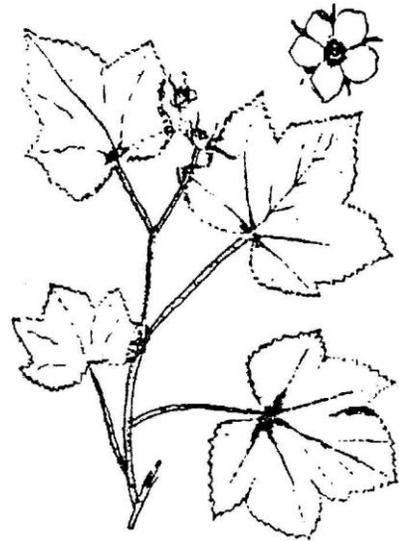


CALIFORNIA HUCKLEBERRY Berries were gathered and eaten raw. They remain delicious and plentiful at Tomales Bay State Park in the fall.



Native Plants at Tomales Bay State Park cont.

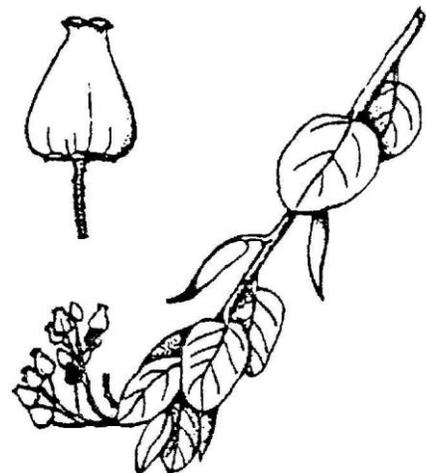
THIMBLEBERRY This common shrub is from 3 to 6 feet high. Its berries are scarlet, mild in taste and edible.



CANYON GOOSEBERRY One of the most common gooseberries found along the coast is this well thorned 4 to 8 feet high shrub. The berries are dark purple and covered with stiff, spine-like, gland-tipped bristles. The berries were mixed into other food by Coast Miwoks for flavoring.

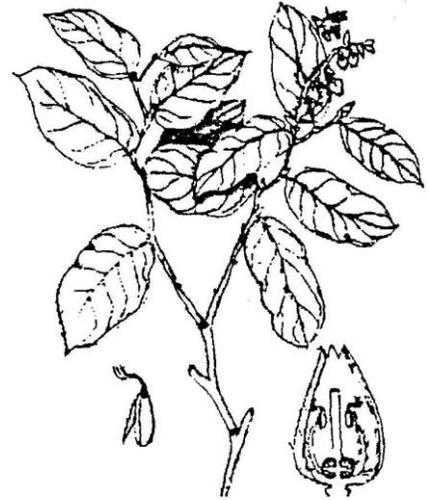


MANZANITA Most of the 43 species in the State were used for food in the early days. Indians usually collected only the ripe fruit, beating it into the collecting baskets as they did the seeds of grasses. Often the berries were eaten fresh. Large quantities were dried and stored for winter use. The pulp was used to make a drink.

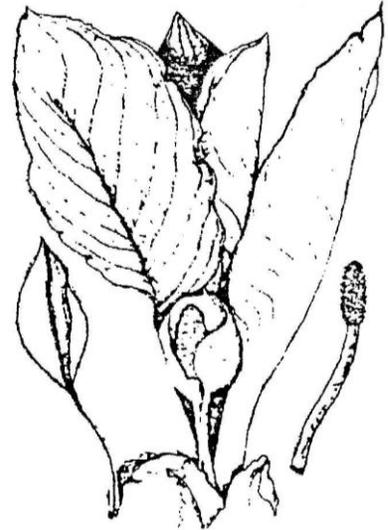


Native Plants at Tomales Bay State Park cont.

SALAL This evergreen shrub is found along the California Coast. In the spring, Salal has white or pinkish urn-shaped flowers. The flowers turn into quarter-inch purplish black berries savored by the people, birds and some other mammals



SKUNK CABBAGE This plant is common in fresh water marshes. Indians sometimes used this plant for food.



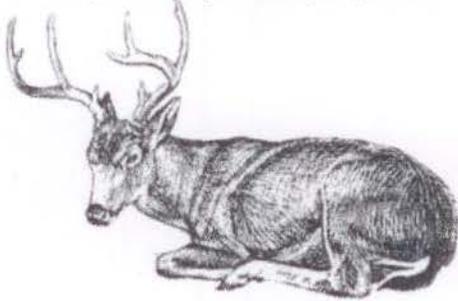
CALIFORNIA BLACKBERRY This common evergreen shrub trails over the ground or climbs over other vegetation in the coastal brush fields and the forest edges. Berries are gathered and eaten raw.



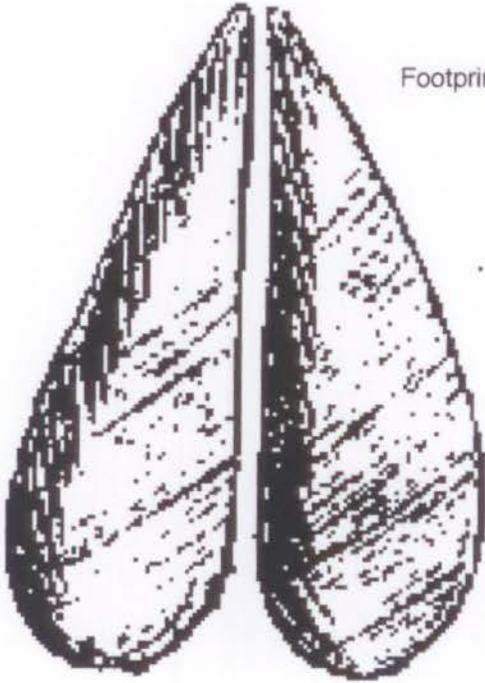
Common Mammals of the Scrub Ecosystem on the Pt. Reyes Peninsula

compiled by T. Brady

black-tailed deer. Fur: red back, black ears, gray face. Food: grasses and other herbs, leaves of small shrubs and trees, acorns. Feces: oblong, with nipples (same as tule elk); 20-30 pellets per pile.



Footprint (actual size; animal still)



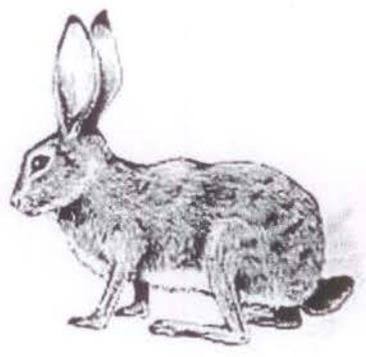


Footprint (actual size; animal running)



Feces (actual size)

black-tailed hare. Fur: black. Food: grasses, other herbs. Feces: flattened spheres, 3/8" diameter.

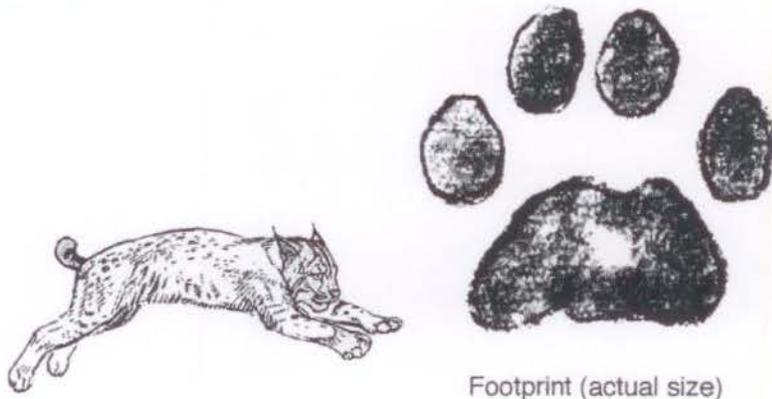


Footprints (x1/2)

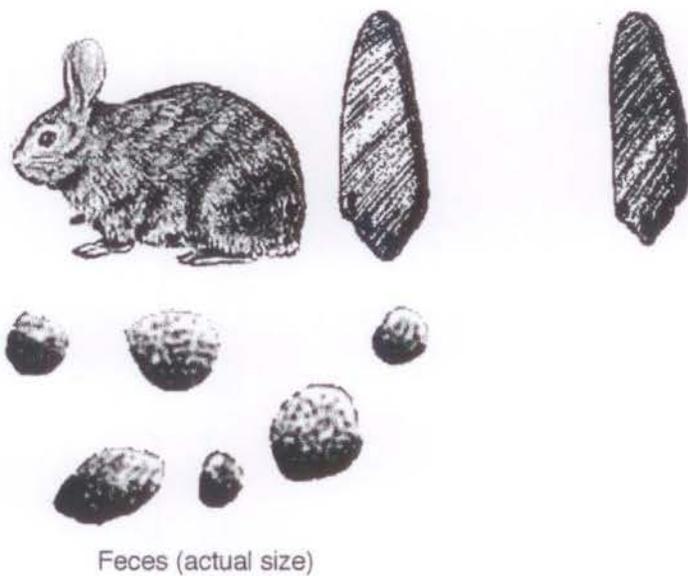


Feces (actual size)

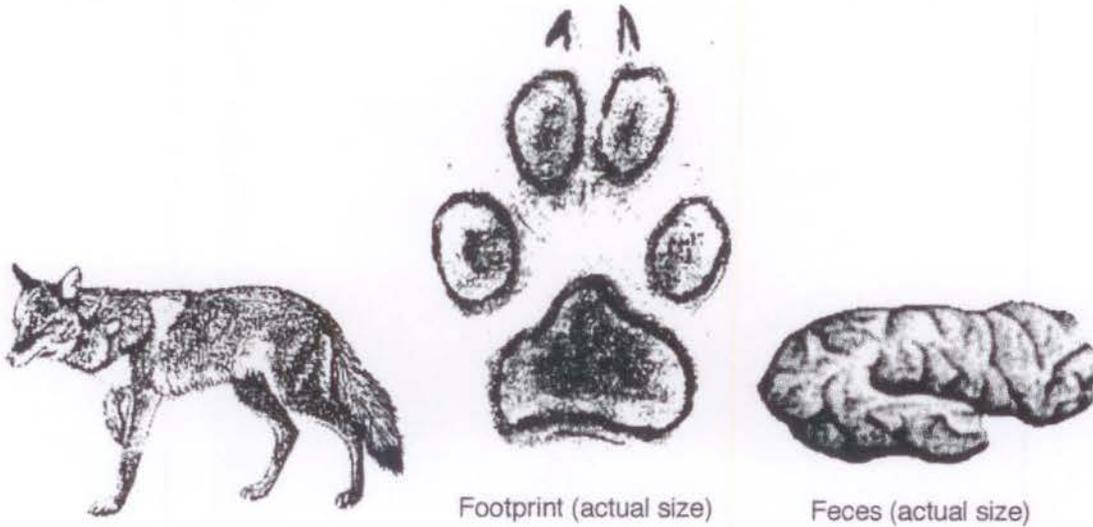
bobcat. Fur: spotted, white, black. Food: squirrels, rabbits, reptiles, birds. Feces: buried.



brush rabbit. Fur: dark brown, gray, white. Food: grasses and other herbs. Feces: flattened spheres, 1/4" diameter.



coyote. Fur: dark-gray or brown or reddish-brown. Food: mice, squirrels, rabbits, insects, berries, carcasses. Feces: tubular, 3/4" diameter, both ends rounded, often contains fur.



Footprint (actual size)

Feces (actual size)

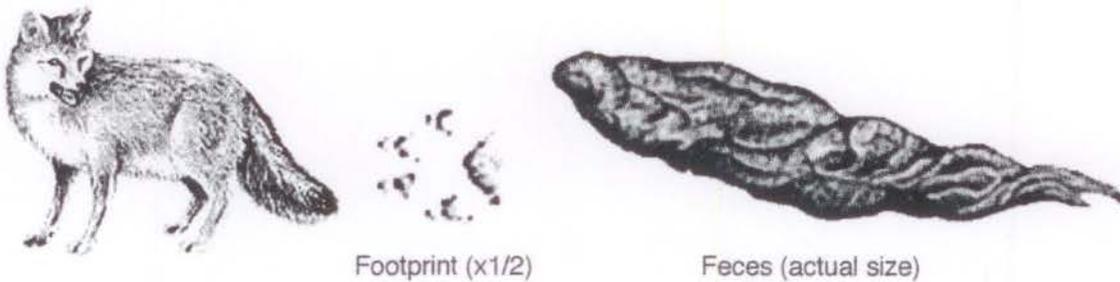
deer mouse. Fur: dark gray or black or white or gray. Food: seeds, leaves, insects, fungi. Feces: shaped like small seeds (same as Sonoma chipmunk).



Footprints (actual size)

Feces (actual size)

gray fox. Fur: silvery gray, white, black. Food: small rodents, birds, berries, insects, fungi. Feces: tubular, 1/2" diameter, both ends tapered, often contains fur.



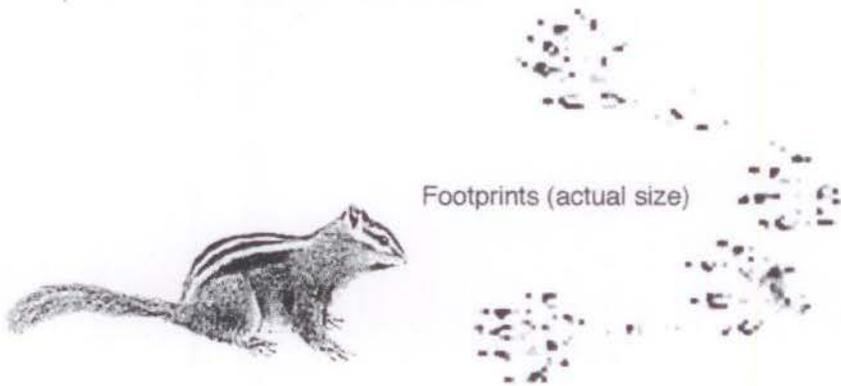
Footprint (x1/2)

Feces (actual size)

mountain lion. Fur: reddish and white, or grayish and white. Food: deer, skunks, porcupines, squirrels, rabbits, and other mammals. Feces: buried.



Sonoma chipmunk. Fur: reddish brown, pale gray, brown, white. Food: leaves, seeds. Feces: same as deer mouse.



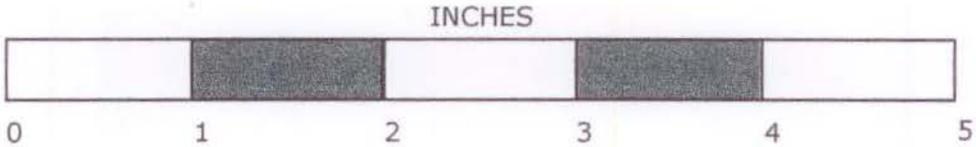
spotted skunk. Fur: black, white. Food: beetle larvae, cutworms, mice, earthworms, berries, plant bulbs. Feces: buried.



tule elk. Fur: light brown, dark brown, white. Food: grasses, leaves, acorns. Feces: same as black-tailed deer except 40-60 pellets per pile.



Footprint (actual size)



Acorn Mush Preparation

Many types of acorns were recognized and used by native Californians.

The acorns are gathered and carried home in a burden or carrying basket.

The acorns are first shelled then ground into meal with a mortar and pestle.



The meal is sifted in a round flat tray. Course meal was reground.



A shallow depression is made in the sand and lined with broad leaves (maple or grape). Water is poured onto the meal until the bitter tannic acid is removed. This process is called *leaching*.

Leached meal is mixed with water to make a mush. It is cooked using rocks heated in the fire.

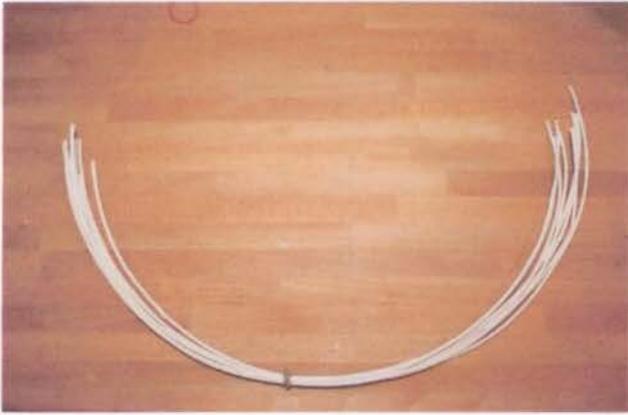
The rocks are taken from the fire with a pair of special sticks and dipped into a basket of water to remove ashes.

The rock is then placed in the "mush boiler" basket. To prevent the rocks from burning the basket, they must be constantly stirred with a looped stick or stirring paddle.

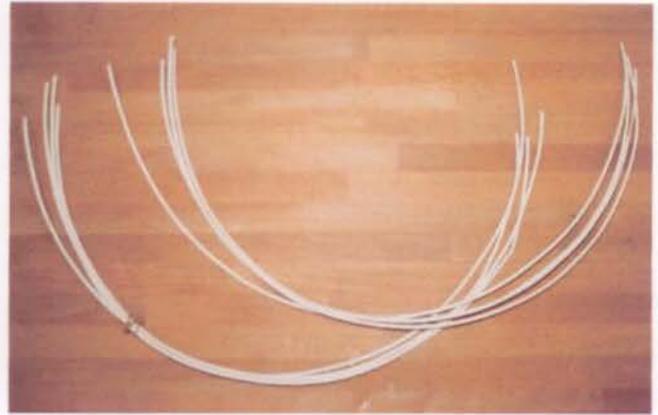


Gather acorns in the fall. Let them dry for a week, remove the shell and red hull. Grind in mortar and pestle. Place the meal in a colander lined with cheesecloth and run warm water through it until the water comes out clear. The meal should now be a white color. Mix the water to mush consistency and eat hot or cold.

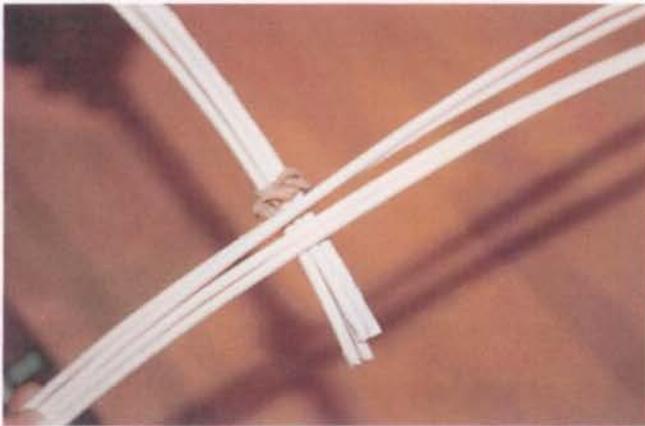
Basketry



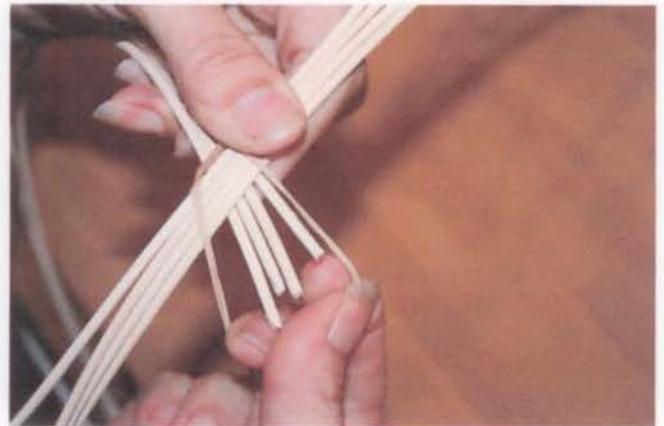
Cut rib reed to desired length (15-18 inches)
And bundle in groups of 8 with colored band



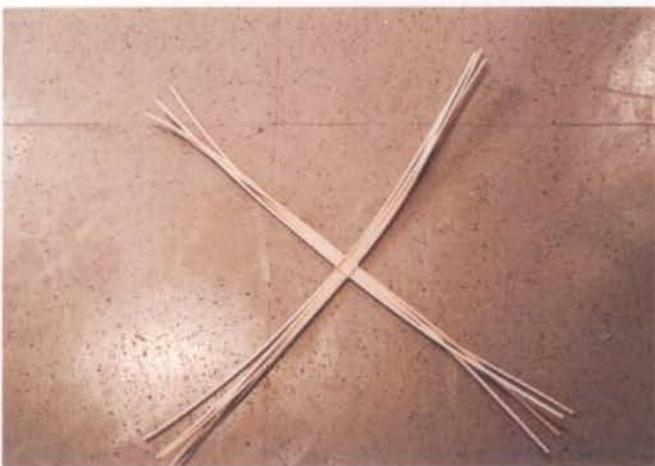
To begin making baskets, soak ribbing (just a few minutes) Next pull out four of the ribs.



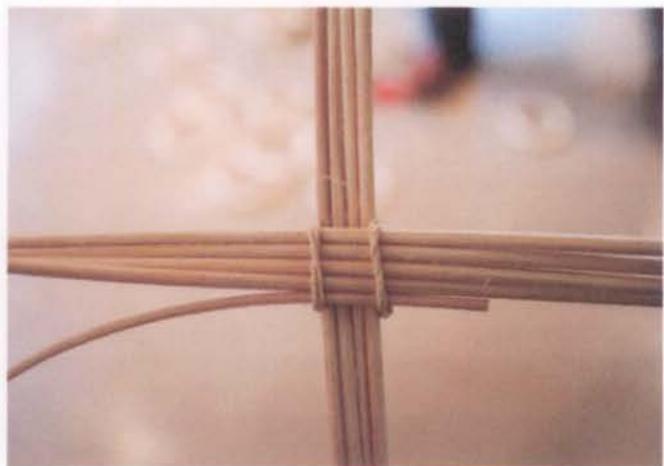
Slide rubber band to 1 inch from end of ribs.
Place loose ribs over end and flatten all ribs.



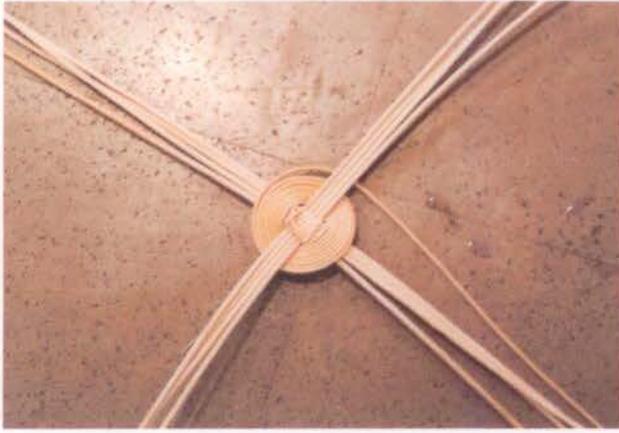
Grab rubber band from top of ribs and pull
band over the loose ribs and the rib ends.



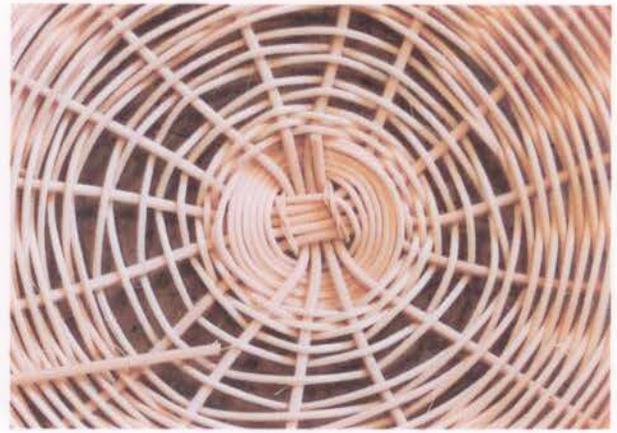
Slide rubber band back to center of ribs and
again be sure that all ribs remain flat.



Select soaked weaver rib and unwind. Slide
end of weaver rib under rubber bands.



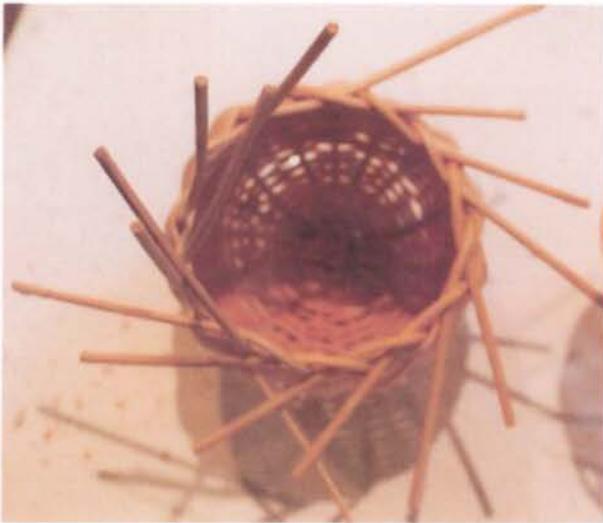
Wrap weaver around ribs following rubber Band (over where rubber band is over, and under where rubber band is under. This will form your base (about 8 wraps). Next you will select one rib and cut it at center, leaving 15 ribs.



Start weaving, being sure to go over the first rib, under next, then over, etc. Spread the ribs evenly as you start weaving. As you begin the second round of weaving, again work on spreading the ribs evenly.



Weave away and enjoy the experience. Remember to leave about 3" of a rib at the end to finish the basket.



For outside spikes:

Cut all ribs to same length and be sure the ribs are wet. Take a rib and fold it inside the adjacent rib, and then outside the next. Continue to the end and tuck the last rib into the first loop to lock it into place.



Loop Finish:

Cut all ribs to same length and be sure the ribs are wet. Select a rib, bend and insert into the front (or back) of the next rib. Continue around basket.

For variance, you may wish to leave longer ribs and bend and insert into the second rib from the one you selected. This will give you a crossing loop finish.



Inward Braid Finish:

Cut all ribs to same length and be sure the ribs are wet. Take a rib and fold it outside the adjacent rib, and then inside the next. Continue to the end and tuck the last rib into the first loop to lock it into place.

Shapes and Uses of California Indian Basketry

Note: The sizes of the baskets illustrated here are proportional to one another.

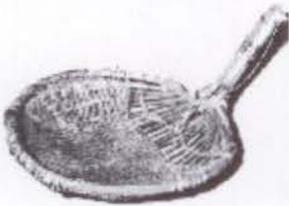
Plant Food Gathering and Transport

Gift/Storage Basket. The gift/storage basket is presented as a gift and is used for transporting goods or plant foods. Typical size: ht. 30"; dia. across mouth: 25".



Gift/Storage Basket. Ht. 30"; Dia. 25".

Seedbeater. Using the seedbeater, edible wild seeds were harvested by knocking seeds off the plant and into the burden basket. Typical length: 20".



Seedbeater. Length 20"

Acorn and Seed Meal Winnowing, "Sifting" Baskets, and Trays. "Sifting," winnowing baskets, and trays are round or triangular. The baskets are deep while the trays are shallow or flat. Close-twined round or triangular "sifters" were used to separate fine, fully-ground acorn meal from the coarser meal which required additional pounding. Seeds were also sifted with these basketry implements. The fine meal was separated by a side-to-side shaking action. Both closed- and open-weave baskets and trays were used for winnowing. Typical dia.: 20".



Deep Sifting Basket. Dia. 20".

Openwork Winnowing Basket. Dia. 20"



Triangular Basket. Length 20".



Mortar and Pestle. Acorns were the staple food source of the California Indians. These nuts were pounded into meal on stone mortars. The funnel-shaped mortar baskets, with a hole at the bottom, were used to concentrate the meal in the bottom of the basket onto the mortar rock. This prevented the meal from flying off the mortar during pounding. Typical dia. across the top: 14".



Mortar Basket. Dia. 14".

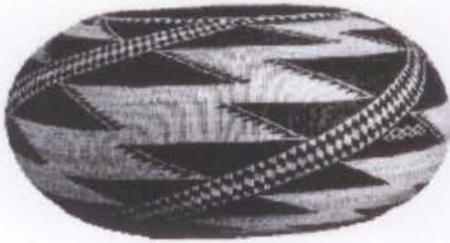
Mortar Basket and Pestle. Dia. 14".

Storage and Food Serving Baskets

Large Storage Baskets. Large twined storage baskets for acorns and other non-perishable foods often have sides incurving toward the top. In north central California the baskets are round or globular in shape. In the northwestern area of the state the large storage baskets are typically taller with a larger opening. Fancy or highly decorated gift baskets were used for storing different items. Typical dia. across largest area: 30".



Large Gift/Storage Basket from North Central California. Dia. 30".



Large Storage Basket from Northwestern California. Dia. 30".



Food Serving Tray. Dia. 20".

Food Preparation and Serving Baskets

Cooking Baskets. Cooking baskets have flared, straight or slightly incurved sides. Red-hot rocks are repeatedly dropped into the basket until the acorn soup or mush is cooked. The large (24" or more) cooking baskets have flaring sides to make it easier to remove the cooled rocks. These large baskets would probably have been used to cook for the extended-family households typical in pre-contact times. Today feasts for community gatherings are prepared in the baskets. Small cooking baskets (12" or smaller) may have a slightly incurved profile but are more open (so that rocks can be removed) than the storage basket with strongly incurved sides.

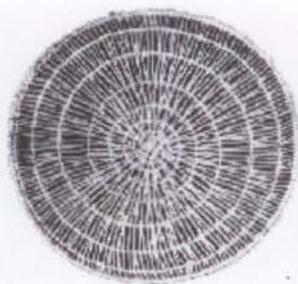


Large Cooking Basket. Dia. 24".



Large Cooking Basket. Dia. 24"

Food Serving Platters. In many parts of northern California, openwork twined platters were used to serve roasted fish or meat. Typical dia.: 12-15".



Food Platter. Dia. 15".

Food Serving Baskets. Small coiled or twined gift baskets with flaring sides were used for individual servings of acorn soup or mush, and for dipping and pouring water. Typical dia. across mouth: 3" to 6".



Small Serving Basket. Dia. 6".

Specialized Baskets

Shell money and other valuables were often stored in small, necked gift baskets whose shapes are reminiscent of pottery. Typical dia.: 7".

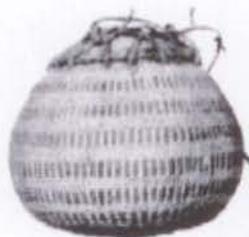


Shell Basket. Dia. 7".

Lidded "Trinket" Baskets were a post-contact innovation in northwestern California. They were made primarily for sale to European collectors. Typical dia.: 6".

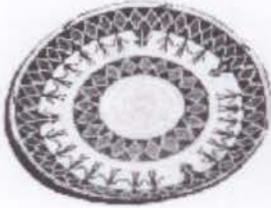
Basketry Tobacco Pouches were also made in northwestern California. Typical dia.: 3".

Gambling Trays, shallow, round woven basketry were used by women while playing gambling games. Typical dia.: 20".



Tobacco Pouch. Dia. 6".

Gambling Tray. Dia. 20".



Lidded Trinket Basket. Dia. 6".

Fancy Gift Baskets

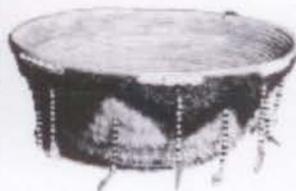
Elliptical or Boat-Shaped Baskets. These baskets had various uses. Small ones (typically 5" long) were often used to store valuables. Shaman and native doctor's paraphernalia were stored in medium-sized baskets (typically 14" long). The very large elliptical baskets (typically 30" or more in length) were used to store dance equipment and regalia.



Elliptical Basket. Length 5-30".

Treasured Gift Baskets. The Pomo tribes are famous for their elaborately decorated coiled-baskets used as gifts to store small valuables. Such "treasure" baskets were (and are) more valuable than the items stored in them. The baskets are decorated with beads or feathers. Sometimes they are completely covered with red woodpecker feathers ("sun" baskets), or with a combination of brightly colored feathers. The feathers were tightly stitched into the basket weave. Such valuable baskets were presented as gifts to friends as well as for wedding gifts. They are also used as sacrificial item when a person who owned the basket dies. These elaborate baskets are also made for sale to collectors. Typical dia.: 7".

Feather Basket. Dia. 7".



Sun Basket. Dia. 7".

Miniature Baskets displayed the basketweaver's skill. They were given as a gift or sold, and sometimes were used in doctoring ceremonies. Typical dia.: 1/4" - 2".



Miniature Basket. Dia. 1/4" - 2" .

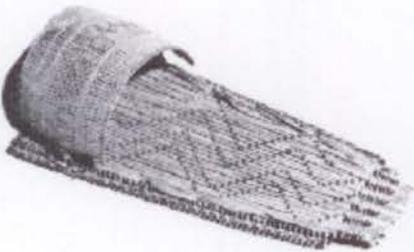
Other Specialized Basket Types

Water Bottle. A water-proof twined weave was used for these baskets from the central area of eastern California. Typical dia.: 10".



Basketry Water Bottle. Dia. 10".

Basketry Cradle. Basketry cradles were used by all northern California tribes. The baby was fastened into the cradle which was carried on the mother's back. Typical length is 30" although a variety of sizes were made to correspond to the age of the infant.



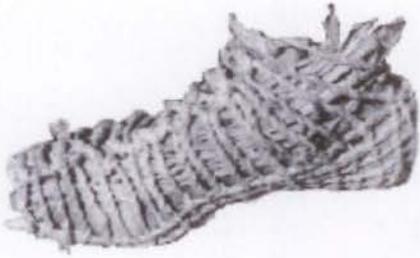
Basketry Cradle. Length 30".

Basketry Cap. Basketry caps were worn in the northwest and areas of eastern California. Plain, everyday caps were worn by both men and women. Fancy dress-up caps of the finest quality twined weave are still made and worn by the women today. Typical dia.: 8".



Basketry Cap. Dia. 8".

Basketry Moccasins. Some tribes also used basketry techniques to weave foot-gear or moccasins out of tule rushes or other plant materials.



Basketry moccasins. Length 10".

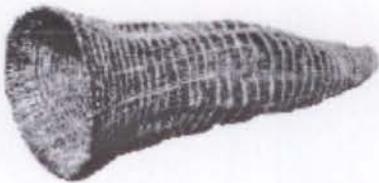
Traps

Birds and fish were the principal animals caught with traps. In California, salmon and certain other migratory fish were second only to acorns as a food staple. Basketry traps were made in three main forms. A "plunge" trap was used to scoop up fish. "Invaginated" traps had a narrow, funnel-shaped opening leading the fish into a second chamber from which they were unable to exit. A third trap type is long and funnel-shaped. Upon entering the trap, the woodpecker, quail or certain fish became wedged into the small end. The size, structure, and weave of each trap varied according to the specific animal. Three types of traps are illustrated: the Pomo invaginated fish-trap, typical dia. at the mouth: 18"; the Atsugewi basketry fish-trap, typical dia. at the mouth: 12"; and the Pomo woodpecker trap, typical dia. at the mouth: 4".



Invaginated Fish Trap. Dia. 18".

Fish Trap. Dia. 12".



Woodpecker Trap. Dia. 4".



Basket Weaving Methods

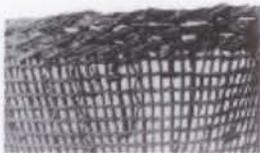
A basket was worked, and formed of grasses, twigs and fibers into a piece of artistic design--sometimes only to be admired for its artistry, but usually created to serve a further purpose. Baskets were made to serve all the container needs of the early California peoples who had no pottery. Not merely handwoven, they were filled with meaningful designs, symbols, even stories, following tribal tradition. Beyond tradition, weavers exercised artistic freedom leaving their individual marks. Three types of basket weaving is illustrated below.

Coiling. A flexible rod, or cluster of 3 rods, is coiled and continuously bound to the preceding level. This method produces a strong but quite stiff basket or tray.



Coiling.

Simple Open-Work Twining is used for traps and some winnowing trays. As in cloth weaving, a horizontal weft goes under and over the vertical warp. Two or three pieces of horizontal weft material may also be twisted around each other.



Simple Open-Work Twining.

Tightly Woven Twining. This weave is used for cooking baskets, caps, water bottles, and for other items where waterproofing is required, or where flexibility is essential. The weaving includes a variety of complex and difficult techniques and designs.



Tightly Woven Twining.

Soap Root Brushes

One of the Miwok uses of Soap Root (or Amole) was that of making brushes from the fibers which encased the bulb.

The dried fibers are held together while the end is bound with string or other natural cord or fiber, forming a handle.

A glue can be made from the crushed pulp of the white, bulbous portion of the plant. This adhesive is then worked into the handle of the brush fibers and left in the sun to dry for a day or two.



Soap Root plant showing bulb, leaves and flowers



Peeling fibers off the bulb for brush making fibers

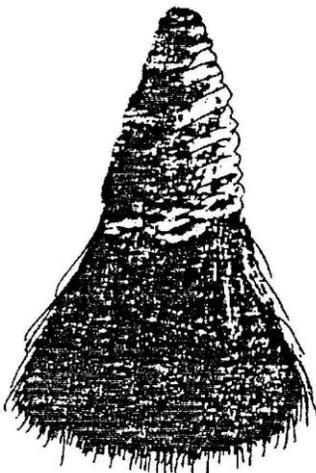
The glue can be made by one of several methods.

One is to cut the bulb open and simply scrape the sticky substance from the fleshy part of the bulb with a knife or a filed bone or stick.

Another method is to roast the bulb over coals, which will cause the sticky juice to ooze from the bulb and be collected as glue.



Binding with a cord



Finished brush

A third method is to cook the chopped bulb over a low flame until a soft, sticky mush is reached.

Soap Root (Amole)

Uses:

1. Stun fish
2. Brush for acorn meal
3. Soap

Process:

1. Rinse root fibers in water to clean.
2. Even the curved fibers so all of them are going in the same direction.
3. Take curved fibers and divide into 2 sections.
4. Take waxed sinew and fasten together in a figure 8. Then fasten by going around the whole thing several times.
5. Boil bulb in water that just covers the bulb for approximately 2 hours or until soft.
6. Drain through a sieve.
7. Push the pulp out, leaving the fibers.
8. Mix pulp with water and boil down to a thick gravy.
9. Put in a cup or small can and start dipping the handle to the brush so it covers the sinew.
10. Let dry in sun or by fireplace.
11. Repeat the dipping and drying process until your handle is to your liking.
12. Do not leave out in the damp air as the glue becomes soft.

Drills

Early California Indians used a very simple hand drill made of a wooden shaft with a stone (usually chert) bit lashed onto one end of the shaft. The Spanish introduced the pump drill to California.

The Pump Drill

Pump drills are still used in some areas of our country, such as in the Southwest, where they are used primarily for drilling turquoise beads. The Cherokees of North Carolina use them to drill pipestone bowls. Blunt-tipped wood pump drills are found in some fire-making kits which have frustrated Boy Scouts for years.

Pump drills vary considerably in size, but even large ones can be easily disassembled for storage or transport. Measurements given here are average for general use. In general, the larger the apparatus, the easier and more rapid the cut (given comparable drill bits). Too gross a size becomes awkward to manipulate; too small a size tends to be rather erratic and difficult to operate smoothly.

A pump drill is made of three parts: a drill shaft on which a string may twist and which is tipped with the drill bit; a fly wheel which provides momentum after each downward thrust; and a bow and string which change vertical action to rotary action.

The Drill Shaft

A slim, round shaft of well-seasoned hardwood 18-24 inches long is needed for a drill shaft. A peeled sapling or shoot can be used, or it can be whittled from a large stick. Three-eighths inch diameter at the top is good to taper to 1/2 - 3/4 inch at the bottom. A narrow shaft gives more rotations to each "pump". Too narrow a shaft may bend or wobble with each stroke. The upper end can be drilled to receive a bow string so it will stay in place well; a notch makes the apparatus easier to disassemble without untying the bow each time.



When you have completed a nicely tapered shaft, smooth it with sandpaper or rub it on sandstone for a nice finish. Check it for straightness by sighting along its length. Rolling it on a flat surface will also show bends. Warm the warped area over heat and bend it true with your hands. If you hold it until cool, it should retain this adjustment.

The bottom of the shaft must have a bit attached to it which can cut in either rotation. If you are in a hurry, some hardware stores carry drill bits for a modern "Yankee" pump screwdriver, if you use a "Yankee" bit, you'll have to grind some flats on that part which will be inserted into the shaft to keep it from rotating in the shaft instead of the work. The little notches which are intended for the screwdriver tool just aren't enough. By the way, don't bother with regular twist drill bits which cut only in a clockwise rotation.

Stone points can be re-flaked right on the drill shaft to re-sharpen them until not enough material remains for a good point. The same is true for a steel point. In this context, remember that primitive drills seldom were intended to bore deeper than an inch and holes often were drilled from opposite sides to meet in the middle of the work. Mechanically precise diameters were not important. Also remember that these holes were usually conical, not cylindrical.

The Drill Bow

The bow needs no flexibility. It can be made of any wood or even a long piece of bone. It can be quite short, less than 8 inches, or as large as 2 or 3 feet. A convenient rule-of-thumb might be to make the bow half the length of the drill shaft.

Although a simple round stick can be used bow-and-arrow fashion at the side of the shaft, a flat bow, about 1/2 by 1 inch in section, is better and can be drilled in the center with a hole larger than the drill shaft above the flywheel. Thus, the shaft is pushed up through the bow's hole so that the bow cannot slip off during use.





Teacher with a completed pump drill

The ends of the bow can be notched or drilled to receive the bow string. You'll not want to make this attachment permanent, because you'll probably need to make adjustments in tension from time to time. A good craftsman will want to put a nice finish on the bow, but a nice finish does not add to its function.

Any cord can be used for a bow string. Original pump drills used a buck skin thong. If you use buckskin, cut it as even as possible. If you use a cord, get a strong, thin one which is limp so that it will wind smoothly around the shaft.

Tie one end of the bowstring on the bow, insert the shaft (with the flywheel in place) through the bow's hole, and put the string through the hole or notch at

the top of the shaft. The attachment of the string through the top of the shaft should not be permanent to allow for adjustments later.

Tie the free end of the string to the other end of the bow so that the bow can be suspended from the shaft about 2-3 inches above the flywheel. The closer it is, the longer each pump-stroke can be, but, if it's too close, you will find it difficult to operate the drill as your fingers get in the way of the flywheel. Adjust the string in the shaft top so that the bow is in a horizontal position. Slide the bow up and down a few times to see that the shaft can twirl in the hole freely.

The Flywheel

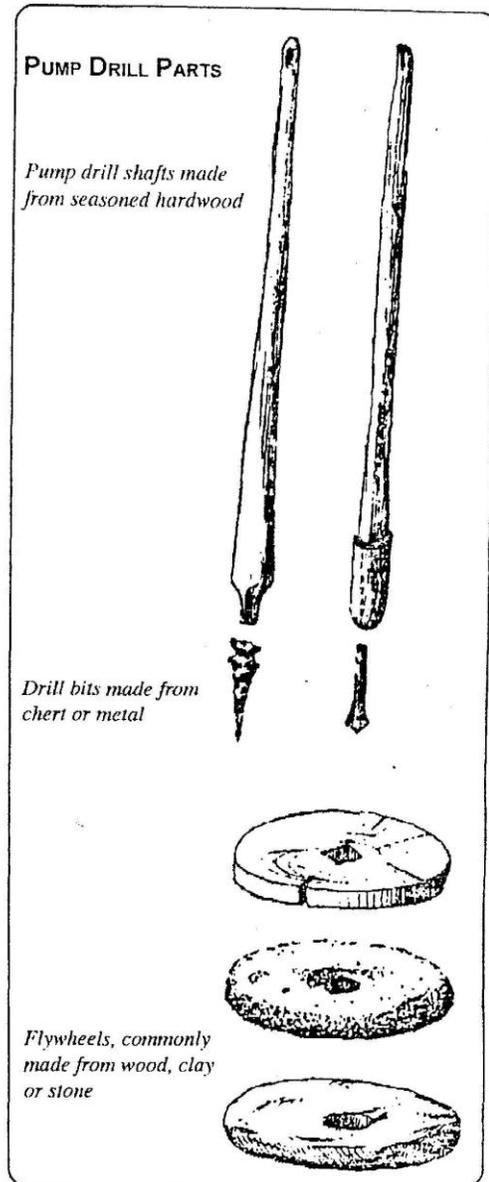
Flywheels are made of stone, ceramic, or wood. The weight of stone is preferred, but the process of manufacture is more involved and is not worth the time unless you intend to put the drill to much use. Any type of stone can be used. Try to find a beach pebble which is already worn to a flat, circular, disc- shape.

Peck or grind this to a true circle as much as possible. A stone 3-5 inches in diameter and less than an inch thick should give plenty of momentum for your drill. Clay is easy to shape but will need to be fired before use.

A tree branch or small log can be sawed crosswise to produce a flat disc. A disc about 3/4 inch thick and 4-6 inches in diameter needs little refining to make a good wheel. With cross-cut wood such as this, you may have some problems with cracks as the wood dries. These cracks will not diminish its function unless the wood cracks in half. In general, the size of the flywheel is dependent upon the size of the drill and the weight of the material used.

Shape the flywheel by whatever means is appropriate to the material you have selected to make it nearly perfect in shape and thickness. Drill a hole in its center large enough to receive the shaft.

The flywheel should slip down the shaft to a point close to the bit end — a few inches from the tip. This is necessary to give a bottom-heavy weight to the shaft to keep it rotating without wobbling. Enlarge the hole or narrow the shaft accordingly. In any case, the fly wheel should be seated snugly so that the wheel and shaft rotate together. Twirl the shaft and wheel in your hands to see if any adjustment can be made on the flywheel to make it as balanced as possible. A wood wheel can be trimmed, and a stone one can be pecked a little more on the heavier portion to run more balanced. A wheel a little out of balance will run well, but not perfectly well. As much as possible, see that the hole in the wheel and the section of the shaft oval are squared with a shoulder on the shaft below to keep the wheel from slipping too far down. In this way, the flywheel can be changed easily from one shaft to another with little worry about it rotating itself.



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Making Arrowheads: The Art of Flint Knapping

Flint knapping is the age-old art of making arrowheads and other edged stone tools. Hunter-gatherers relied upon this key wilderness survival skill to create important tools and hunting implements. Many people continue to practice the skill today, including traditional bowyers, experimental archaeologists, and primitive skills enthusiasts.



At its most basic level, flint knapping consists of: breaking open a piece of parent material (called a core); striking flakes off of that core; and then shaping those flakes into the intended tool.

In general, the process of making arrowheads includes the following primary concepts:

1. Safety and Ethics
2. Choosing the Proper Materials
3. Percussion Flaking
4. Pressure Flaking
5. Notching

Safety and Ethics

Because flint knapping includes breaking apart rocks with force, where sharp flakes can fly off in any direction, it is very important to wear safety glasses. Gloves, shoes, and sturdy pants are also highly recommended. It is also important to flint-knap in a place where you can easily catch the sharp flakes that will fall to the ground (so that they are not accidentally stepped on). You can put down a tarp or sweep up afterwards. Also, use a well-ventilated area, so not to breathe the dust created by breaking rocks.

When it comes to the ethics of flint knapping, the primary concern is to be mindful of the archaeological record. To an archaeologist, piles of flaked stone (debitage) can indicate the presence of an ancient village or camp. To prevent your work from being confused as archaeological evidence, always add a penny or two to your pile of debitage and be sure to sign and date your completed work with a diamond-tipped pen.

Choosing the Proper Materials

The best stones for making arrowheads include flint, chert, obsidian, jasp quartzite and other stones that are somewhat brittle and have a fine-grained, uniform texture that is free of cracks, fissures, and fractures. Glass and porcelain can also be used. You can also tap the stone and listen to the pitch. Stones that produce a higher pitch when tapped are generally better for knapping.

To break apart and shape your material you will be using some simple tools for percussion and pressure flaking. These tools can be made out of antler, soft metal, soft stone, bone, or very hard wood. The best pressure flaking tools are made with an antler or copper tip.

Percussion Flaking

Percussion flaking is the act of striking your material to break it apart in a controlled manner. In a uniform material, the force from a strike moves out from the point of impact in a cone shape that is roughly 100 degrees wide. This is called a Hertzian Cone (see figure 1). Understanding this concept of how forces move through stone allows you to angle your stone to break it apart in an intentional way.

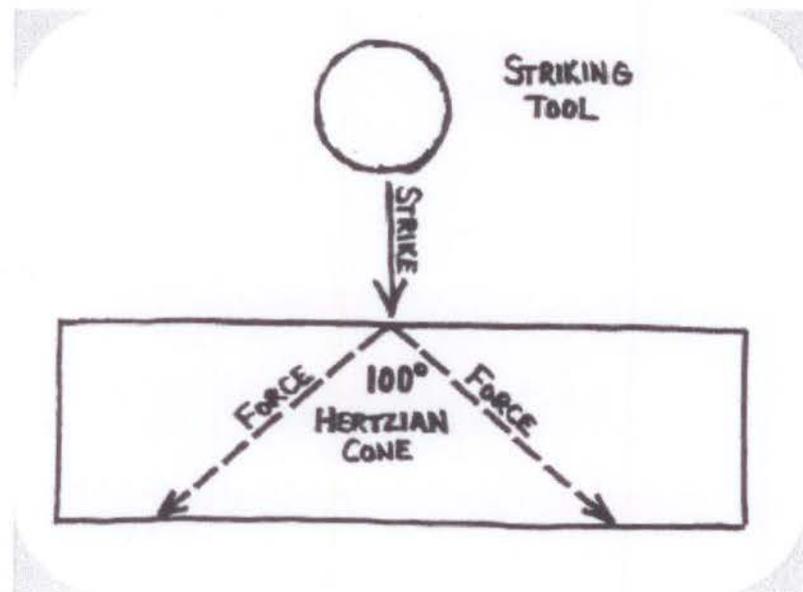


Figure 1

If your parent material (also called a core) has rounded edges, the first step is to break it apart so that you have good edges to work with. This can be done by using a large hammering tool. The goal is to create platform edges that are less than 90 degrees (see figure 2).

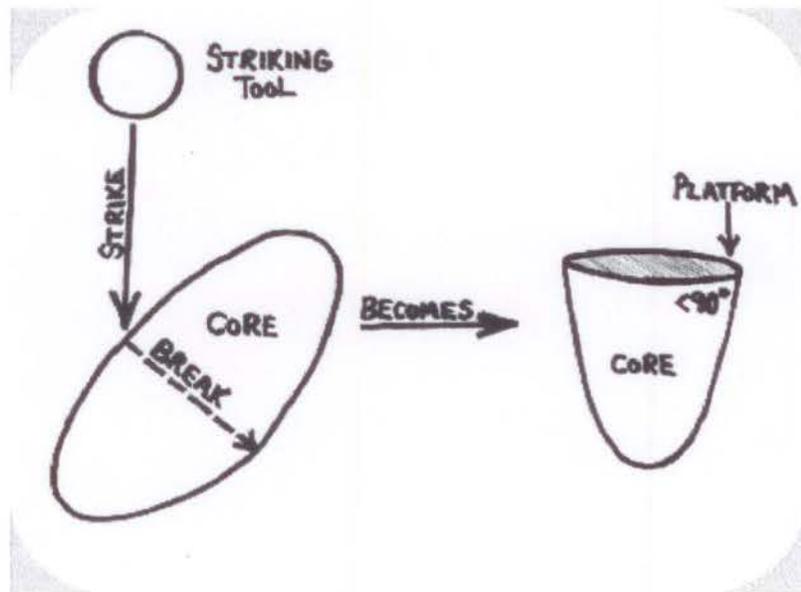


Figure 2

The next step is to strike flakes off of your core using smaller striking tool. It is these flakes that you will be further shaping into implements such as arrowheads (see figure 3).

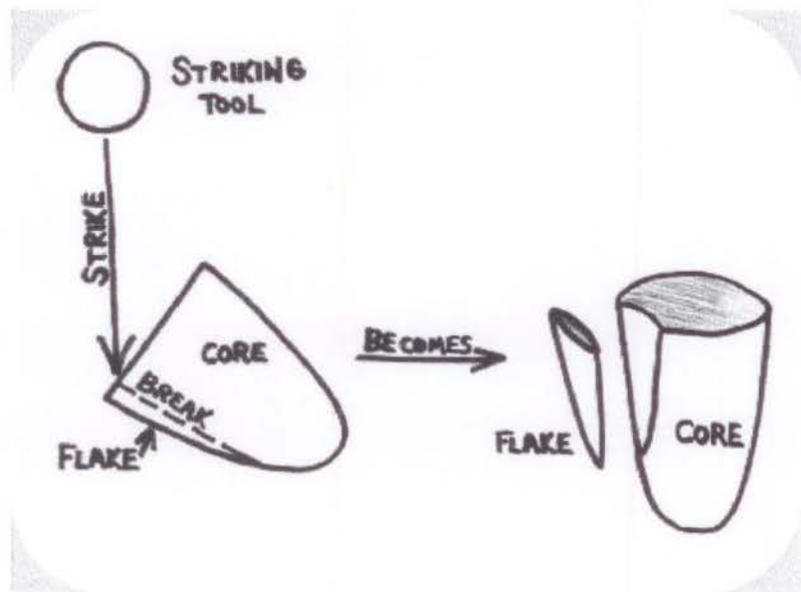


Figure 3

Pressure Flaking

Pressure flaking is the act of using a pressure flaking tool (such as an antler) to load significant pressure against an edge and then popping off a long thinning flake. Pressure flaking allows a flake to be carefully shaped down into the finished tool.

To pressure flake, an edge often needs to be strengthened by abrading it to remove thin weak pieces. A platform is then picked out, which is a point on the edge that sits below the centerline of your flake. The pressure flaking tool is then pushed onto the platform with significant force and a small thin flake is popped off of the piece (see figure 4).

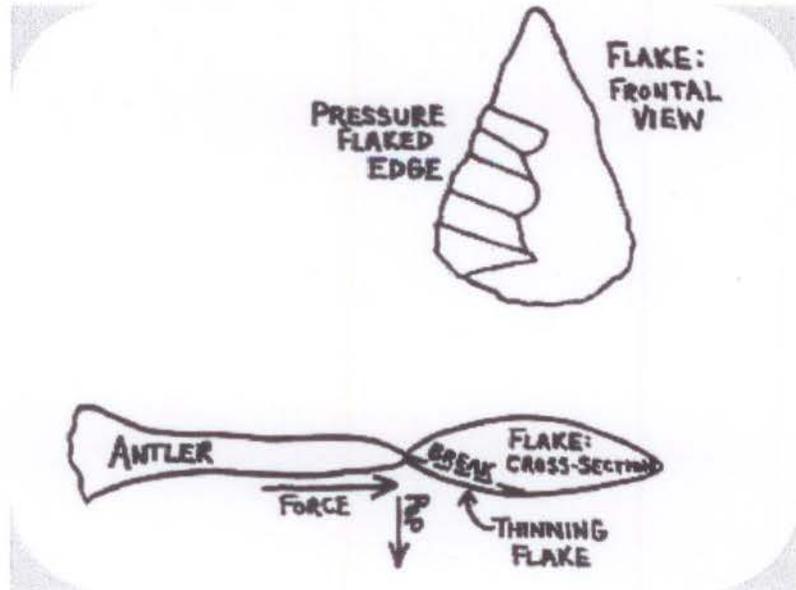


Figure 4

Notching

Notching is the final step in making arrowheads. The notches are made using a combination of pressure flaking and abrading to carve out the gaps that allow the arrowhead to be bound to an arrow shaft (see figure 5).

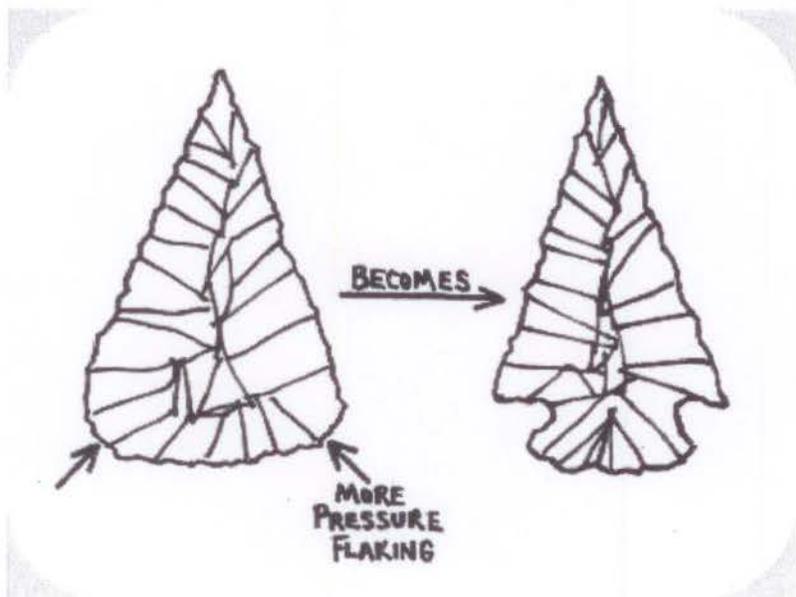
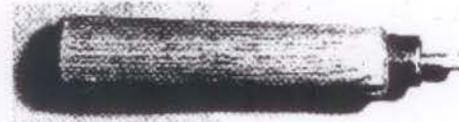


Figure 5

Pressure Flaking

This is most often the final stage of the knapping process. Pressure flaking gives the tool its final form and sharpens (and resharps) the cutting edge. The piece being worked is held in one hand (usually your left hand if you are right handed, usually not if you are left handed) and the pressure flaker is held in the other. A piece of leather is usually used between the objective piece and the hand holding it. This is to protect your hand against the flakes which are being pushed off by the pressure flaker. The flaker was traditionally antler although many contemporary knappers prefer thick copper wire mounted in some sort of handle. Unlike hard and soft hammer percussion, where finesse rather than force is emphasized, pressure flaking literally pushes the flakes off. Depending on the material being used, this can require that a lot of force be applied.



The point you are working on will already be bifacially worked and have a sharp edge. Because pressure flaking requires that a force be built up on the edge, the thin edge of the biface will crush, if you do not prepare the platform. The simplest way to prepare a platform is to use the flaker to scrape *upward* on the edge in the area you want to remove the flake from. The new edge will be able to hold long enough for the inward pressure you exert on it to build up, so that the flake can be driven off. The flake will come off of the *underside* of the piece being worked. The tip of the pressure flaker is placed against the prepared edge

and pressure is applied inward, and *then* downward. The inward force determines how big the flake will be, while the slight downward motion detaches the flake.

Some things to remember:

- The flakes come off the **underside** of the peice being worked, not the top, so you **MUST** protect your palm with a leather pad.
- Remember to push **in** first and **down** second. It will be tempting at first to just punch out the shape of an arrowhead, but you should try to focus on making long, well controlled flakes. Its good to start pressure flaking on bottle glass, because its a smooth surface, with a nice flat edge to help you practice making nice long flakes.
- Like all the other stages of knapping, remember to find ridges for your flakes to travel along. They will be longer and better defined if you send them scooting along a ridge left by an earlier flake removal. Flakes which are not made on ridges will fan out, and tend to be short and wide.

You can use pressure flaking to get an arrowhead out of a beer bottle!



[Back to Flintknapping Fundamentals.](#)



[Return to the Knappers Anonymous Main Page.](#)

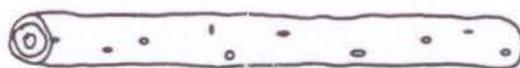
NORTHERN CALIFORNIA SINEW BACKED BOW

MATERIALS - BOW WOODS

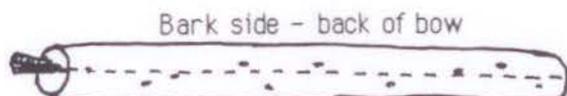
- 1.) Juniper - Trade Item
- 2.) Yew - Trade Item
- 3.) Dog Wood
- 4.) Bay
- 5.) Ash
- 6.) Maple - (Vine or Big Leaf)
- 7.) Toyon
- 8.) Cedar - (Yosemite Miwok)
- 9.) Oak

SELECTION OF WOOD

A Miwok was always looking for good bow wood. When he was out hunting or gathering he kept his eyes open for good wood.



1 1/2 inches to 2 inches in diameter with small knots.



Bark side - back of bow

Bark side - back of bow



Splitting wood with wedges

If it is good wood you can get two bows out of one log

BOW LIMB DESIGN

Buckskin grip wrapping



Belly of the bow



Sinew on back of the bow

GLUES FOR SINEW BOW BACKING

- 1.) Hide glue
- 2.) Sinew glue
- 3.) Fish bladder glue
- 4.) Soap root glue

STRING MATERIAL

- 1.) Sinew - (The strongest)
- 2.) Indian Hemp
- 3.) Nettle fiber
- 4.) Milk Weed
- 5.) Raw Hide

SEASONING OF BOW WOOD

The Miwok would cut and work the green wood down to a finished bow and then dry the wood for five days. They would then sinew back the bow and let it set for two weeks. It was then ready to shoot.

Joe Dabill 10-23-93

Miwok Games

Miwok people, like most of us, liked games. They especially liked games that involved chance. Two of the popular games are explained here.

Hand Game

One of the more popular Indian guessing games, this one was played with a pair of bones by two teams. There should be at least four people on each team. The teams sit facing each other with a deer skin or woven mat between them on the ground. Counting sticks, usually a dozen, were laid in a pile on the mat ready to be used to keep score.



One player held both bones, shuffling them from hand to hand before or behind him, sometimes under a small deerskin or lap robe. The player with the bones moved them about while his team sang. His opponent on the opposite team would try to guess which hand held the marked or unmarked bone.



The team with the bones used every strategy of songs and movements to distract the guesser. If the opponent guessed correctly, then his team received the bones. If the opponent guessed incorrectly, a counting stick was given the team with the bones. When all counting sticks had been taken from the pile, sticks were given and taken by the two teams until all the counting sticks were with one team who was then considered to be the winner. The game might go on for several days with members of each team being replaced from time to time.

Spectators and team members alike made bets of beads and goods as to the outcome of individual guesses or entire games.

To play, you need two pieces of bone about 1/2 inch diameter and three inches long. They may be filled with pitch or clay, one of them should be wrapped with string. You will also need twelve counting sticks about six to nine inches long and about 1/4 inch in diameter. The counting sticks were commonly made of willow with the bark peeled off.

Staves

A popular game in this area is Staves. Among some groups it was considered a women's game while other people put no such limit on it. To play the game, you will need twelve counting sticks as in the hand game above. You will also need six staves made of elderberry, maple or willow. Elderberry seems to be the most common in Mann County. Staves are played extensively in California and the staves themselves vary in size and design from place to place.

To make staves, take three pieces of elderberry about one inch in diameter and six to twelve inches long. Split the sticks lengthwise into even halves. Then smooth the edges, using a rough rock. The curved side can be left with the bark on or peeled. If peeled, it should be colored or burned in a traditional pattern.



Staves with design.

To play, a player holds the staves in a bundle in one hand and throws them onto a hide or mat. If all but one staff were either face up or face down, the players received one counter stick. If half the staves were face up and half face down, the player received two counter sticks. No other combination scored. A scoring combination also gave the player another cast.

When the pile of counting sticks was gone, then a scoring player would draw a counting stick from the next player to the right who had a counter. The game was played until one player had all the counting sticks.

The game is played by two or more people sitting in a circle. Side bets of shell or other goods were made on the outcome.

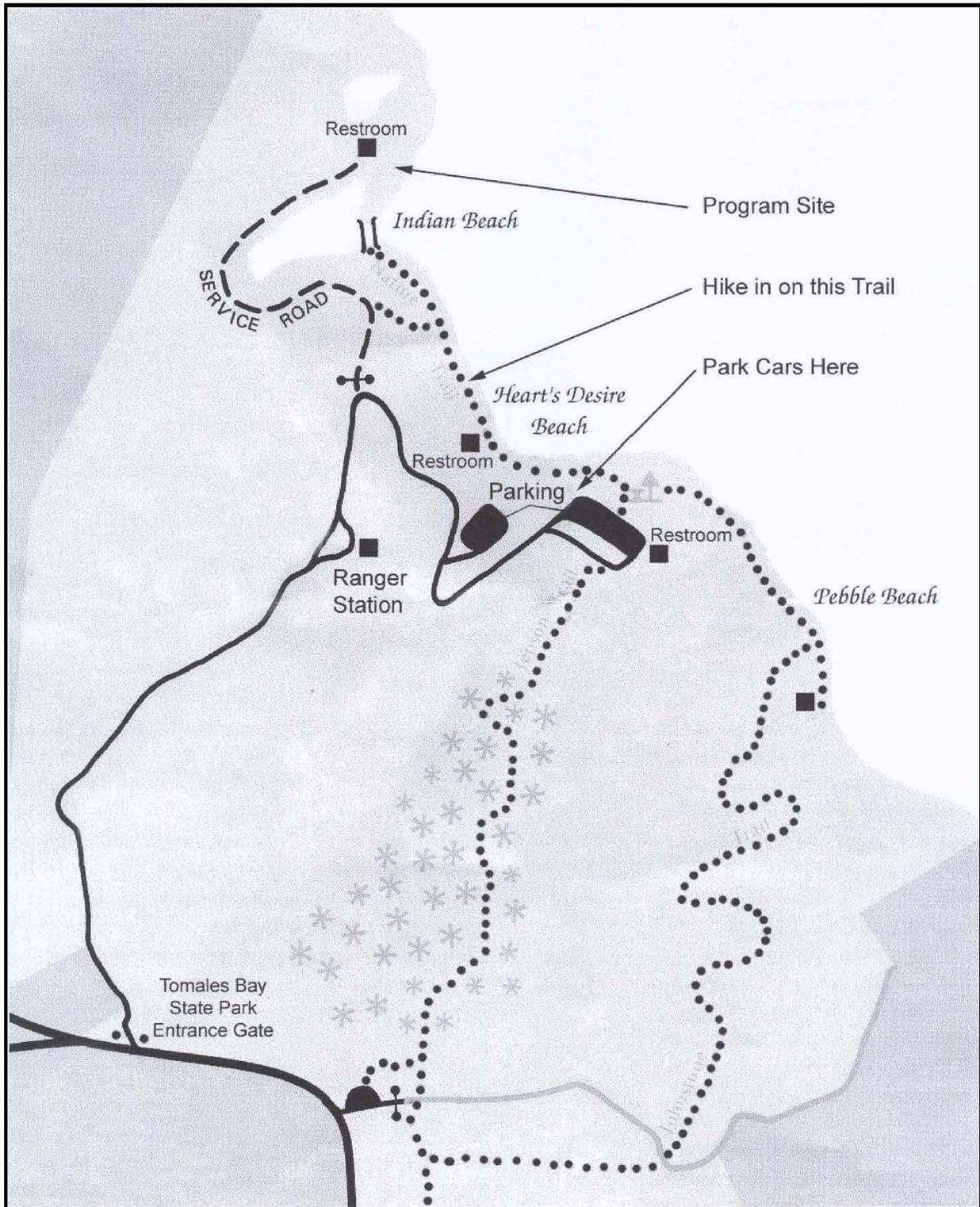
Designs were put on game staves by first cutting patterns or holes in strips of tree bark. The bark strips were then held against the side of a bark-peeled stick. The stick was then held over a fire until the exposed areas were blackened with soot. When the bark pattern was removed, the design remained on the stick.

Environmental Living Program Location Map
Tomales Bay State Park

8 miles north of Inverness on Pierce Point Road



Environmental Living Program - Parking Location and Access Map



Sample Permission Slip

Tomales Bay State Park — Overnight Trip Permission Slip
This slip is to be returned no later than Friday, September 21, 2013
September 12, 2013

Dear Parents,

We are very lucky to be able to participate in such a unique learning experience. Please discuss appropriate behavior and the seriousness of the trip with your child before you sign this slip. We are going back in time to simulate a way of life which no longer exists. This requires a leap of the imagination, not to mention a certain level of responsibility and maturity.

Although we don't anticipate it, should your child misbehave for any reason, you will be notified by phone immediately and you will be asked to come get him/her. Please include a day and night time emergency phone number where you may be reached.

Thank You!

I, (Mr./ Mrs. /Ms.) _____,

give my child, _____,

permission to attend the Tomales Bay Environmental Living Program field trip on Thursday and Friday, September 26th and 27th, 2013.

Day time phone number () _____ - _____

Night time phone number () _____ - _____

Signature _____ Date _____

Sample Letter to Parents

April 10, 2013

Dear Parents,

We are fortunate to have an Environmental Living Program (ELP) available to our students at Tomales Bay State Park this year.

On Tuesday, April 24th, our class will be going for a pre-visit orientation to Indian Beach, our ELP site at Tomales Bay State Park. We will also stop that day at Point Reyes National Seashore to briefly visit the Coast Miwok village called Kule Loklo.

The pre-visit orientation will be followed by a full day and overnight ELP at Indian Beach on Thursday and Friday, May 4th and 5th. Our classes will be living a day and a night such as it might have been lived during the pre-contact period of California history.

The students have spent time this year studying California's rich cultural heritage. We see these trips as a way to enrich our studies. One of the secrets of success for this program is adult involvement. Please consider being a chaperone.

Transportation for both the pre-visit and the Environmental Living Program will be by school bus. On the pre-visit trip we will leave _____ Elementary School on Tuesday April 24th at 9:00 A.M. and return at 1:30 P.M. We will leave for the overnight ELP on Thursday, May 4th at 9:00 A.M. and will be returning on Friday May 5th at noon.

Students will need bag lunches for both trips. Please send an additional \$_____ to cover the cost of the two meals we will be cooking on the overnight trip. If this amount is a problem, please let us know. There are funds available to meet this need.

Please complete the enclosed permission slip and return it with your child tomorrow, or as soon as possible.

We will be contacting you if you indicate that you are available to volunteer.

Thank you,

_____, Classroom Teacher

Sample Equipment Checklist

- Sleeping bag
- Ground cloth/tarp or extra blanket
- Plate, cup and utensils
- Clothing: **warm jacket**, clothes for wide temperature range. Period clothes are quite fun if the spirit moves.
- Bandana and/or hat
- Toilet articles: comb, brush, soap in container, washcloth, towel, toothbrush, toothpaste, tissue, **sun screen**
- Backpack (if possible)
- Notebook and pencils
- Pillow (if desired)
- Camera may be brought if care is taken
- Tents may be advisable in case of inclement weather
- Bag lunch for Thursday - there is NO place nearby to purchase lunch
- No other equipment, electronics, etc.!

TOMALES BAY SCHEDULE

MAY 8 & 9, 1997

DAY 1

7:00 A.M. DEPART FROM STOCKTON

11:00 A.M. ARRIVE AT TOMALES STATE PARK
UNLOAD
LUNCH

11:30 MEETING OF THE ELDERS
JOURNEY INTO THE PAST THROUGH THE TRAIL

12:30-1:15 STATION 1

1:15-2:00 STATION 2

2:00-2:45 STATION 3

2:45-3:30 STATION 4

3:30-4:15 STATION 5

4:15-5:00 STATION 6

5:00-5:30 ELDERS MEETING
ARRANGE SLEEPING EQUIPMENT
FINISH ANY TASK

5:30-6:30 DINNER
CLEAN-UP

6:30-7:30 GAMES

7:30-8:30 STORY TELLING
SONGS
SET WATCHES

8:30-9:00 NIGHT HIKE WITH THE OWLS

NIGHT WATCH

9:00-11:00 P.M.
11:00-P.M.-1:00 A.M.
1:00-3:00 A.M.
3:00-5:00 A.M.
5:00-7:00 A.M.

DAY 2

7:00- 9:00 A.M. BREAKFAST , CLEAN-UP

9:00 -10:00 CLOSING CEREMONY
PREPARE TO DEPART

10:00 PACK OUT

Tomales Bay Task Rotations

45 Minute Stations	12:30	1:15	2:00	2:45	3:30
Hunting/Cooking (juntar/cocinar)	Group 1	Group 5	Group 4	Group 3	Group 2
Baskets (canastas)	Group 2	Group 1	Group 5	Group 4	Group 3
Arrowheads (puntas de flecha)	Group 3	Group 2	Group 1	Group 5	Group 4
Exploration (exploración)	Group 4	Group 3	Group 2	Group 1	Group 5
Jewelry & Leather (joyas & piel)	Group 5	Group 4	Group 3	Group 2	Group 1

Group 1	Group 2	Group 3	Group 4	Group 5
Aaron Jenna Yazmeen Shelly Kurt	Jesse Ben Savannah Libby	Shea Natalia Cassie Robert Miles	Lucy Johana Marlene Cibel Robin	Emma Marianna Asia Kaya Holden

Night-Watch

0-11:00: **Cindy**, Savannah, Robert, Miles
 0-12:00: **Brian**, Shea, Asia
 0-1:00: **Erika**, Mari, Libby, Jenna
 :2:00: **Mrs. Perez**, Johana, Ben, Aaron
 :3:00: **Ms. Molina**, Holden, Kurt, Jesse
 :4:00: **Sarah**, Cibel, Yazmeen, Kaya
 :5:00: **Jennifer**, Lucy, Emma, Robin
 :6:00: **John**, Shelly, Cassie, Natalia

Emergency Procedures

You will be camping on the beach at Tomales Bay State Park. Cellular phone coverage is unreliable. Safety must be considered at all times, and emphasizing this to the students is critical.

You should have a first aid kit available. If there are any students with special medical needs the ranger staff must be notified in advance. The nearest hospital is approximately one hour from the program site. Please see maps on the following pages.

All vehicles are locked in the park after closing hours. Only park staff can assist you with the gate.

In the event of an emergency you must call 911 or 472-0911 (Marin County Sheriff's Emergency Number) **then** notify staff at his/her residence. Information on how to locate the staff's residence will be discussed during the first day of the visit.

MARIN GENERAL - GREENBRAE



Start **Tomales Bay State Park**
Uninc Marin County, California

End **250 Bon Air Rd**
Greenbrae, CA 94904

Travel **29.6 mi – about 1 hour 1 min**
Marin General Hospital (415) 925-7000

A **Tomales Bay State Park**
Uninc Marin County, California
Drive: 29.6 mi – about 1 hour 1 min

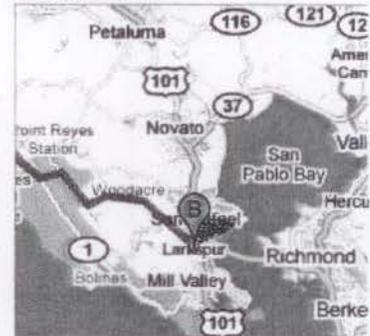
- | | |
|--|--------------------|
| 1. Head southwest toward Pierce Point Rd | 0.4 mi
1 min |
| ← 2. Turn left at Pierce Point Rd | 1.2 mi
2 mins |
| ← 3. Turn left at Sir Francis Drake Blvd | 5.6 mi
11 mins |
| → 4. Slight right at Bear Valley Rd | 2.3 mi
4 mins |
| → 5. Turn right at CA-1 | 0.1 mi
1 min |
| ← 6. Turn left at Sir Francis Drake Blvd | 19.5 mi
39 mins |
| → 7. Turn right at Bon Air Rd | 0.4 mi
2 mins |
| 8. Make a U-turn | 0.1 mi |

B **250 Bon Air Rd**
Greenbrae, CA 94904

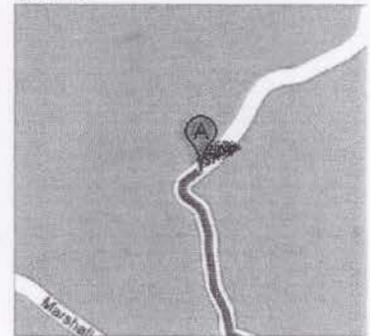
These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

Map data ©2008 NAVTEQ™

Overview



Start



End



Map data ©2008 NAVTEQ™

NOVATO COMMUNITY HOSPITAL



Start **Tomales Bay State Park**
Uninc Marin County, California

End **180 Rowland Way**
Novato, CA 94945

Travel **29.2 mi – about 55 mins**

Novato Community Hospital – Sutter Health 415- 209-1300

A Tomales Bay State Park
Uninc Marin County, California

Drive: 29.2 mi – about 55 mins

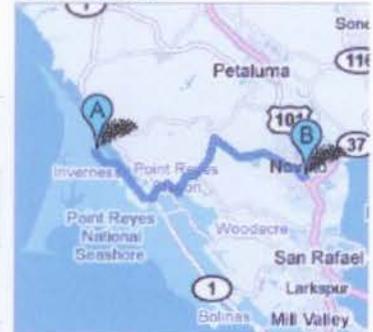
- | | | |
|---|---|-------------------|
| | 1. Head southwest toward Pierce Point Rd | 0.4 mi
1 min |
| ← | 2. Turn left at Pierce Point Rd | 1.2 mi
2 mins |
| ← | 3. Turn left at Sir Francis Drake Blvd | 6.4 mi
13 mins |
| ← | 4. Turn left at CA-1 | 0.2 mi
2 mins |
| ← | 5. Turn left to stay on CA-1 | 0.6 mi
3 mins |
| → | 6. Turn right at Point Reyes-Petaluma Rd | 3.1 mi
6 mins |
| ← | 7. Turn left to stay on Point Reyes-Petaluma Rd | 6.8 mi
9 mins |
| → | 8. Turn right at Novato Blvd | 8.5 mi
14 mins |
| ← | 9. Turn left at Diablo Ave | 0.1 mi
1 min |
| → | 10. Turn right at Redwood Blvd | 1.2 mi
2 mins |
| ← | 11. Turn left at Rowland Blvd | 0.4 mi
2 mins |
| ← | 12. Turn left at Rowland Way | 0.3 mi
1 min |

B 180 Rowland Way
Novato, CA 94945

These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

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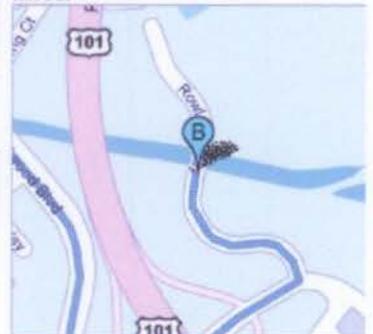
Overview



Start



End



Map data ©2008 NAVTEQ™

KAISER - SAN RAFAEL



Start **Tomaes Bay State Park**
Uninc Marin County, California
 End **99 Montecillo Rd**
San Rafael, CA 94903
 Travel **30.3 mi – about 59 mins**
 Kaiser Permanente Hospital 415-444-2000

A **Tomaes Bay State Park**
Uninc Marin County, California
 Drive: 30.3 mi – about 59 mins

- | | |
|---|-------------------|
| 1. Head southwest toward Pierce Point Rd | 0.4 mi
1 min |
| ← 2. Turn left at Pierce Point Rd | 1.2 mi
2 mins |
| ← 3. Turn left at Sir Francis Drake Blvd | 6.4 mi
13 mins |
| ← 4. Turn left at CA-1 | 0.2 mi
2 mins |
| ← 5. Turn left to stay on CA-1 | 0.6 mi
3 mins |
| → 6. Turn right at Point Reyes-Petaluma Rd | 3.1 mi
6 mins |
| ← 7. Turn left to stay on Point Reyes-Petaluma Rd | 3.0 mi
4 mins |
| → 8. Turn right at Nicasio Valley Rd | 3.8 mi
6 mins |
| ← 9. Turn left at Lucas Valley Rd | 9.7 mi
17 mins |
| → 10. Turn right at Las Gallinas Ave | 1.4 mi
4 mins |
| → 11. Turn right at Nova Albion Way | 0.4 mi
1 min |
| → 12. Turn right at Montecillo Rd | 482 ft |

B **99 Montecillo Rd**
San Rafael, CA 94903

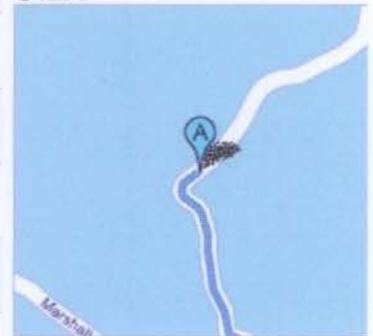
These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

Map data ©2008 NAVTEQ™

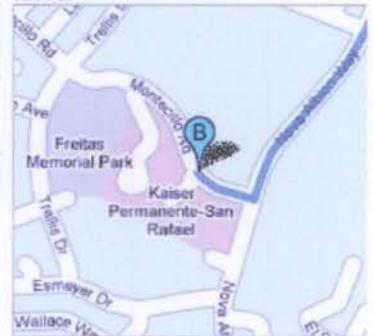
Overview



Start



End



Map data ©2008 NAVTEQ™

PETALUMA VALLEY HOSPITAL



**Start Tomales Bay State Park
Uninc Marin County, California**

**End 400 N McDowell Blvd
Petaluma, CA 94954**

Travel 29.1 mi – about 57 mins

Petaluma Valley Hospital - St. Josephs Health 707-778-1111

**A Tomales Bay State Park
Uninc Marin County, California**
Drive: 29.1 mi – about 57 mins

- | | |
|---|--------------------|
| 1. Head southwest toward Pierce Point Rd | 0.4 mi
1 min |
| ← 2. Turn left at Pierce Point Rd | 1.2 mi
2 mins |
| ← 3. Turn left at Sir Francis Drake Blvd | 6.4 mi
13 mins |
| ← 4. Turn left at CA-1 | 0.2 mi
2 mins |
| ← 5. Turn left to stay on CA-1 | 0.6 mi
3 mins |
| → 6. Turn right at Point Reyes-Petaluma Rd | 3.1 mi
6 mins |
| ← 7. Turn left to stay on Point Reyes-Petaluma Rd | 11.0 mi
17 mins |
| 8. Continue on D St | 4.6 mi
9 mins |
| ← 9. Turn left at Lakeville St | 0.1 mi
1 min |
| → 10. Turn right at E Washington St | 1.0 mi
3 mins |
| ← 11. Turn left at N McDowell Blvd | 0.5 mi
2 mins |

**B 400 N McDowell Blvd
Petaluma, CA 94954**

These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

Map data ©2008 NAVTEQ™

Overview



Start



End



Map data ©2008 NAVTEQ™

FOOD SAFETY TIPS:

American Dietetic Association and ConAgra Foods Cook Up Safe Food Preparation Tips to Top Your Summer Menu

As summer temperatures rise, so do the risks of foodborne illness. Keep outdoor dining safe by following a few easy steps:

Bust Bacteria. With many families planning to use their grill at least twice a week this summer *, halt harmful bacteria in its tracks. Scrub the grill with hot soapy water before cooking up your outdoor favorites.

Soap Up Frequently. Wash hands before, during and after food preparation. Pack moist towelettes or a hand sanitizer in your cooler for those moments when soap and water are not readily available.

Prep that Party Food. Thaw frozen foods in the refrigerator or microwave, not on the countertop or outside at the party. Remember to marinate foods in the refrigerator, and never reuse marinade used on raw meat or poultry unless it's boiled first.

Keep Coolers Cool. All foods should be refrigerated promptly below 40 degrees F, so be sure to keep coolers stocked with plenty of ice or ice packs. Freeze bottles of water or juice boxes for a refreshing treat that will also help keep foods packed around them cool. Drop a refrigerator thermometer into the cooler to make sure foods are stored properly. Transport the cooler in the air-conditioned back seat of a car instead of a hot trunk.

In-Between Clean. Make it a habit to clean out coolers with soap and water between uses.

Different Plates for Grilling Greats. Keep raw meats and ready-to-eat foods separate; ditto for the utensils used to handle each. Pack extra color-coded plates and utensils to help prevent cross-contamination. Use different spoons and forks to taste, stir and serve.

Stay in Tune with Temps. Favorite summer foods can be harmful if not fully cooked. Use a meat thermometer to make sure grilling favorites such as hamburgers are cooked to 160 degrees F, chicken to 170 degrees F and hot dogs reheated to 160 degrees F. Never partially grill meat or poultry to finish cooking later.

Escape Expiration. Pay particular attention to expiration dates on packaging, especially for raw meats.

Be Careful when it's Hot, Hot, Hot. To prevent growth of harmful bacteria, don't leave food outside in hot weather (90°F or above) for more than one hour. Throw away all perishable foods that have gone unrefrigerated for an hour.

* ADA/ConAgra Foods Foundation survey conducted by Impulse Research, April 2003

Keep Raw Meats and Ready-to Eat Foods Separate

Be careful with cutting boards.

When juices from raw meats or germs from unclean objects accidentally touch cooked or ready-to-eat foods (such as fruits or salads), cross-contamination occurs. If not cleaned correctly, the board harbors harmful bacteria.

Acrylic, glass, marble, plastic or solid wood?

You choose. Just follow these guidelines:

Use two cutting boards: one strictly to cut raw meat, poultry and seafood; the other for ready-to-eat foods, like breads and vegetables. Don't confuse them.

Wash boards thoroughly in hot, soapy water after each use or place in dishwasher.

Discard old cutting boards that have cracks, crevices and excessive knife scars.

Reminders To Prevent Cross-Contamination:

Wash plates between uses or use separate plates: one for holding raw meat, poultry and seafood; another for cooked foods.

Store raw meats, poultry and seafood on the bottom shelf of the refrigerator so juices don't drip onto other foods.

Place washed produce into clean storage containers, not back into the original ones.

Use one utensil to taste and another to stir or mix food.

Make sure you use clean scissors or blades to open bags of food.

SAMPLE FOOD LIST

DINNER

Game Hens
 Corn
 Potatoes
 Salad
 Lettuce
 Mushrooms
 Green Onions
 Tomatoes
 Radishes
 Walnuts
 Cranberries
 Cucumbers
 Bell Pepper
 Red Onion
 Cilantro
 BBQ Sauce - Bulls Eye
 Italian Dressing
 Granny Smith Apples
 Oysters

Oyster Sauce
 Oyster Sauce
 Oyster Sauce
 Baked Apple Dessert

BREAKFAST

Coffee
 Decaf
 Tea
 Hot Cocoa
 Cider
 Preserves
 Bread
 Eggs
 Shredded Cheese
 Half & Half
 Dates & Nuts
 Oatmeal
 Orange Juice
 CranApple Juice
 Milk

Coffee Pouches
 Decaf Pouches
 For coffee/Oatmeal
 For oatmeal

MISC

Crushed Garlic
 Margarine
 Butter
 Brown Sugar
 Cinnamon
 Salt & Pepper
 Sugar
 Sweet & Low
 Non Dairy Creamer
 Paper Towels
 Bottled Water
 Roasted & Salted Peanuts
 Coffee Cups
 Juice Cups
 Plastic Ware
 Napkins
 Plates

Oatmeal/baked apples
 Baked apples

Home made peanut butter

SAMPLE SUPPLY LIST

AX OR HATCHET

¼ CORD FIREWOOD

3 BAGS CHARCOAL (25# - 2 DINNER / 1 BREAKFAST)

LIGHTER FLUID

TARPS - TO USE TO SLEEP ON OR UNDER IN DAMP FOG – OR RAIN SHELTERS

ICE CHESTS FOR FOOD

ICE CHESTS FOR ICE STORAGE

FOIL PLASTIC WRAP ZIP LOCK BAGS (FOR FOOD STORAGE)

PAPER TOWELS

NAPKINS

NON WATER HAND SANATIZER

DRINKING WATER

SALT/PEPPER/SPICES

KITCHEN TOWELS FOR DRYING UTENSILS/EQUIPMENT

CAMPING LAMPS

ELP PROVIDES:

DISH SOAP

BLEACH FOR SANATIZING

SCRUBBING SPONGES

GRILL BRUSH

WATER BUCKETS

8 FOOT TABLE

MATCHES / LIGHTER

SOAP AT WATER FAUCET

RUBBER GLOVES

SCRUBBING BRUSH

WASHING TUBS

GARBAGE BAGS

DRY GOOD STORAGE BIN

3 LG CAMPING coffee POTS



- | | |
|-------------|--|
| 2 EA | LG CAMBRO HOTEL PANS W/LIDS |
| 1 EA | LG GRATE FOR CAMBRO HOTEL PAN |
| 2 EA | SM. SAUCE PANS² |
| 2 EA | LARGE ROASTING PANS (NOT SHOWN) |
| 4 EA | FULL SIZE METAL SHEET TRAYS
(NOT SHOWN – CAN BE USED AS LIDS
FOR ROASTING PANS) |



- | | |
|------|---------------------|
| 1 EA | LG CUTTING BOARD |
| 1 EA | SM CUTTING BOARD |
| 1 EA | 4 CUP MEASURING CUP |
| 2 EA | XLG SAUTEE PANS |



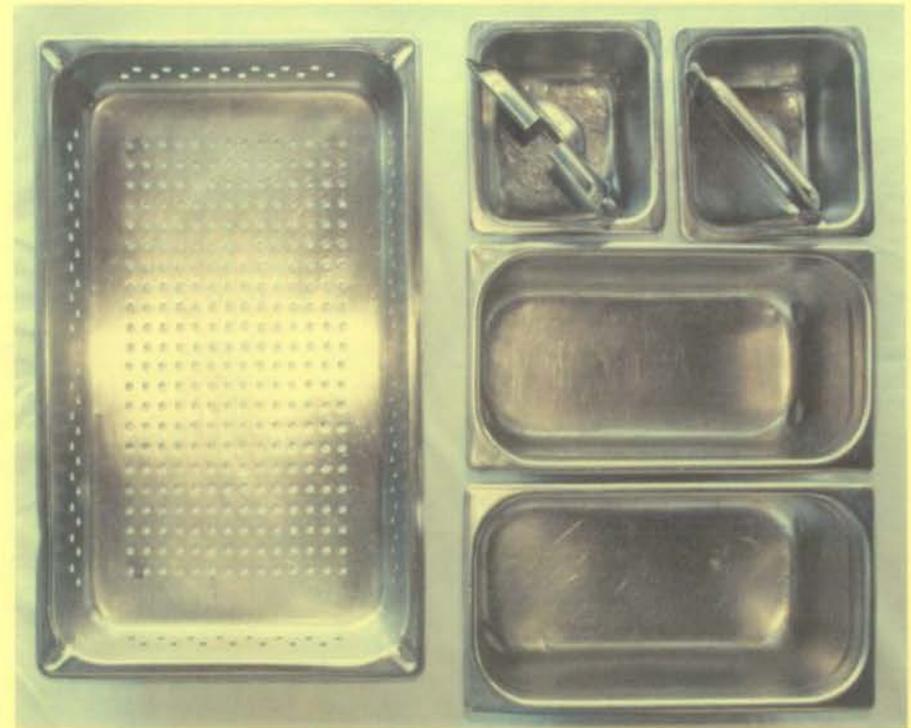
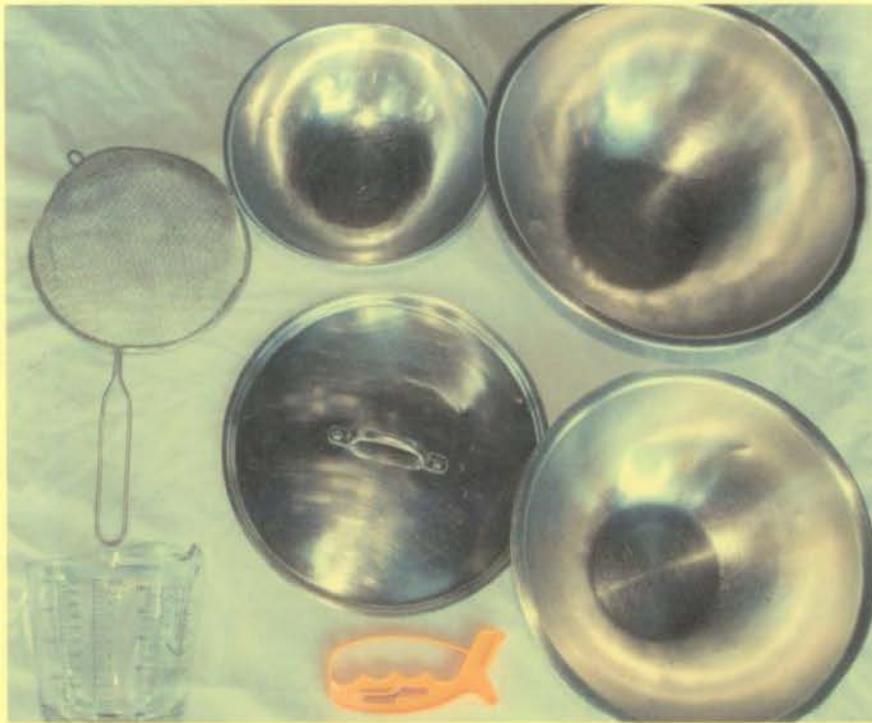
- 2 EA XLG POTS
- 2 EA LG POTS WITH LIDS
- 2 EA SM. SAUCE PANS



- 1 EA KITCHEN SCISSORS
- 1 EA CAN OPENER
- 1 EA WINE/BOTTLE OPENER
- 4 EA PLASTIC SERVING SPOONS
- 4 EA METAL SERVING SPOONS
- 5 EA NONSTICK PAN SPOONS
- 2 EA NONSTICK PAN SPATULAS
- 2 EA HI TEMP SPATULAS



- | | |
|--------|-----------------------------|
| 3 EA | LADLES (SM / MED / LG) |
| 1 EA | POCKET THERMOMETER |
| 2 EA | OYSTER SHUCKERS |
| 4 EA | TONGS (SM / 2 MED / LG) |
| 3 EA | COOKING FORKS |
| 2 EA | METAL SPATULAS (SM / X LG) |
| 1 EA | 10 PIECE KNIFE SET |
| 1 PAIR | SAFETY CUTTING GLOVES |
| 6 EA | POT HOLDERS (NOT SHOWN) |



- | | |
|------|--|
| 1 EA | LG HOTEL PAN STRAINER |
| 1 EA | 1/3 DEEP HOTEL PANS / 1 LID |
| 2 EA | 1/4 HOTEL PANS / 2 LIDS |
| 1 EA | HOTEL PAN CHAFFER INSERT
(NOT SHOWN – USED TO HOLD
ABOVE ITEMS IN HOT WATER) |
| 1 EA | 3 PIECE MIXING BOWL SET / 1 LID |
| 1 EA | STRAINER |
| 1 EA | KNIFE SHARPNER |