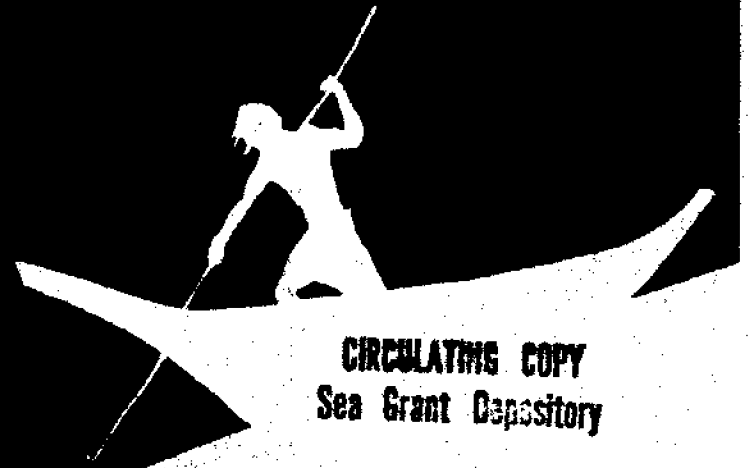


# EARLY FISHING PEOPLES OF PUGET SOUND



CIRCULATING COPY  
Sea Grant Depository

**ORCA OCEAN RELATED CURRICULUM ACTIVITIES**



**PACIFIC SCIENCE CENTER / SEA GRANT  
MARINE EDUCATION PROJECT**  
Shirley Pauls, Manager

# ORCA OCEAN RELATED CURRICULUM ACTIVITIES

## Junior High Activity Packets

<u>Title</u>	<u>Number of days</u>	<u>Author</u>
Energy from the Sea	7-11	Claire Jones
Early Fishing Peoples of Puget Sound	18	Jenifer Katahira
Beaches	10	Andrea Marrett
Literature and the Sea	12	Jenifer Katahira
Beach Profiles and Transects	7-9	Claire Jones
Tides	6	Andrea Marrett
Tools of Oceanography	3-4	Florence Sands

Activity Packets for Elementary and High School levels are also available  
from:

Marine Education Project - ORCA  
Pacific Science Center  
200 Second Avenue North  
Seattle, WA 98109  
(206) 625-9333

## ORCA

The ocean? It's 2 miles away; it's 200 miles away; it's 2000 miles away. What does it matter to me? For those students who live close to the ocean, a lake or a stream, the effect of water might be more obvious. For the student who lives on a wheat farm in the arid inlands, the word ocean is remote. It may conjure up images of surf, sand and sea gulls, experiences far removed from their daily life; or it may have no meaning at all. Yet for that same youngster, the reality of the price of oversea wheat shipments or fuel costs for machinery are very real. The understanding of weather and its affects on the success or failure of crops is a basic fact of everyday life. The need for students to associate these daily problems with the influence of the marine environment exists. It requires exposure to ideas, concepts, skills and problem solving methods on the part of the youngsters. It also requires materials and resources on the part of our educators.

The goals of ORCA (Ocean Related Curriculum Activities) are: 1) to develop a basic awareness of ways in which water influences and determines the lives and environments of all living things; and 2) to develop an appreciation of the relationship of water to the study of the natural sciences, social sciences, humanities and the quality of life.

ORCA attempts to reach these goals by: 1) developing interdisciplinary curriculum materials designed to meet the needs of students and teachers living in Washington state, 2) developing a marine resource center, and 3) providing advisory services for marine educators. In conjunction with these efforts, ORCA is coordinating communication among educators throughout the state and the rest of the nation.

The curriculum materials are developed to be used in many areas including the traditional science fields. They consist of activity packets which fit existing curricula and state educational goals and are designed for use as either a unit or

as individual activities.

The ocean affects all our lives and we need to be aware and informed of the interconnections if we are to make sound decisions for the future of the earth, the ocean and our own well being. We hope that through Project ORCA, teachers will be encouraged to work together to help students understand and appreciate the ocean and the world of water as a part of our daily existence.

## ACKNOWLEDGEMENTS

The Ocean Related Curriculum Activities (ORCA) are a product of a cooperative effort. These materials were developed at the Pacific Science Center. Assistance was provided by the National Oceanic and Atmospheric Administration (NOAA) Sea Grant held by the University of Washington. The Office of the Washington State Superintendent of Public Instruction provided technical support and assistance with printing and duplication costs.

### TRIAL TEACHERS

Trial teachers test us and answer the most important question of all: "Does it work?" The teachers who gave their time, effort and advice were:

Lynda Hughes and Allen Husker, Edmonds School District  
Lee Boulet; Highline School District  
Barbara Deihl and Susan Swenson; Kent School District  
Andrea Marrett; Lake Washington School District  
Claire Jones and Jenifer Katahira; Pacific Science Center School for Science  
Greg Aveleson, Joe Budde and Mary Ketcham; Renton School District  
Margaret Bonham, Ivan Ellis, Willim Lippit, Barb Norsen and Jay Sasnett;  
Seattle School District

### CONSULTANTS

Several marine consultants provided valuable assistance and expertise. Our grateful thanks to:

Wolf Bauer, Hydraulic Engineer, Seattle  
Dave Borden, Director of the Marine Science Center, Poulsbo  
Dennis Campbell, Teacher, Edmonds School District  
Alyn Duxbury, Ph.D., Assistant Director for New Programs, Division  
of Marine Resources, University of Washington  
Charles J. Flora, Ph.D., Director of Aquatic Studies, Western  
Washington University  
Charles Hardy, Coordinator, Math and Science, Highline School District  
Richard Sternberg, Ph.D., Department of Geology, University of Washington

The aid, advice and encouragement of the following educators were essential to the successful development of this project:

Ann Foley, Reading Specialist; Edmonds School District  
Angela Hoffman, Teacher, Pacific Science Center  
David Kennedy, Supervisor of Science and Environmental Education,  
Office of the Superintendent of Public Instruction  
Nan Munsell, Supervisor for the Archeology Project, Pacific Science Center  
Pam Phillips, Program Assistant, Pacific Science Center  
Ann Sankey, Manager of Elementary Programs, Pacific Science Center  
Elizabeth Sears, Biology Teacher, Edmonds School District  
Jan Turnbull, Environmental Education and Energy, Shoreline School District  
Beverly Williams, Education Intern, Pacific Science Center

Other consultants who offered their time and special expertise were:

Sally Snyder, Ph.D., Anthropologist  
Hilary Stewart, Author  
Jerry Strain and Joel Rogers, Photographers  
Terry Taffoya, United Indians of All Tribes

### ADVISORY COMMITTEES

The Marine Education project was reviewed annually by the Sea Grant Site Evaluation committee. We thank them for their advice and support.

Continuing guidance for the program direction was provided by the Pacific Science Center Education Committee, the members of which are:

A.D. Ayrault, Jr., Headmaster, Lakeside School  
Levon Balzer, Ph.D., Dean of Instruction, Seattle Pacific University  
Charles Hardy, Coordinator, Math and Science, Highline School District  
David Kennedy, Supervisor of Science and Environmental Education;  
Office of Superintendent of Public Instruction  
Roger Olstad, Ph.D., Associate Dean of Graduate Studies, University  
of Washington, Committee Chairperson  
Alice Romero, Teacher, West Seattle High School  
Sally Stapp, Teacher, Frank Wagner Elementary  
William Stevenson, Superintendent, Shoreline School District

### STAFF

Finally, our heartfelt appreciation to the staff members who were instrumental in creating, developing and supporting this project. Thank you to the curriculum writers Jenifer Katahira, Claire Jones, Andrea Marrett, Florence Sands and Sally Snyder. We appreciate the efforts of the people responsible for graphics and paste up; Susan Lundstedt, graphics; Luann Bice, artwork; Valene Starrett, covers; and Andrea Marrett and Carolyn Hanson, paste up. We sincerely thank our project investigator, Bonnie DeTurck, Director of Education and Debbie Fowler, the Marine Education Intern at the Pacific Science Center. We wish also to express our gratitude to Patty Kelley, Jan McLachlin, Leslie Wozniak and Peggy Peterson, for their patience in typing, retyping and alas, typing it all over one more time.

A special thanks to my husband, John Pauls, for all the moral support he provided during the development of these materials and his idea-generating questions.

Shirley Pauls  
Project Manager  
September 1977 to February 1979

For current information of project activities and/or materials, contact:

Andrea Marrett  
Manager, Marine Education Project  
Pacific Science Center  
200 2nd Avenue North  
Seattle, WA 98109

## EARLY FISHING PEOPLES OF PUGET SOUND (18 days)

1

### ABSTRACT:

This unit presents the early Puget Sound Indian culture, emphasizing the importance of the water environment on their way of life. It stresses the people's dependence on the natural environment and the outstanding degree to which the Puget Sound region was able to provide for all their needs.

The student is familiarized with the geography, climate, and natural resources of Puget Sound and early tribal names and locations via maps and charts. Legends are included as examples of Indian teaching techniques.

As fish were one of the most important natural resources, a study of early fishing technology comprises a major portion of the unit. There are activities comparing fishing then and now, and actually making Indian hooks and lines following authentic methods as closely as possible.

Like fish, the western red cedar was a valuable natural resource. There are activities involving the various methods of acquiring, processing, and using cedar.

### SUBJECT AREAS:

Social studies, anthropology, history, science

### GRADE LEVELS:

Junior High

### WRITTEN BY:

Jenifer Katahira

## EARLY FISHING PEOPLES OF PUGET SOUND

### OBJECTIVES:

Following the activities in this packet, the student will demonstrate his/her ability to:

1. Explain the relationship between a people's natural environment and their way of life.
2. Identify and locate on a map major geographical features and locations of the Puget Sound region.
3. Identify major natural resources of the area.
4. Identify early Indian tribal groups in the area.
5. State how long the Puget Sound area has been inhabited.
6. Understand the role of legends in the lives of early Puget Sound Indians.
7. Identify some unique and distinguishing characteristics of the Puget Sound Indians.
8. List some common fish in the Puget Sound area.
9. Describe and recognize a variety of modern fishing gear used in the Puget Sound area.
10. Understand these aspects of early Puget Sound Indian life:
  - a. total dependence on the natural environment
  - b. highly successful fishing technology
  - c. the rich Puget Sound environment provided for all their needs.
11. Analyze and describe a variety of early Indian fishing techniques.
12. Understand and appreciate the skill required to make hooks and lines using natural materials.
13. Explain the relationship between the composition and construction of a rope and its strength based on a series of experiments.
14. Compare Indian rope-making techniques to those used today.
15. Explain that the Indian's fishing culture was reflected in other aspects of their lives.
16. Understand and demonstrate the construction of:
  - a. the unique Puget Sound Indian plank houses
  - b. cedar canoes
  - c. the steamed bent-wood boxes
17. Keep an organized notebook of materials and assignments.
18. Summarize learning experiences in writing.



## EARLY FISHING PEOPLES OF PUGET SOUND

### OVERVIEW:

#### ACTIVITY 1:

"The Place and the People" - an introduction to Puget Sound's geography and early inhabitants. (4 days)

It includes:

1. identification of major geographical features, locations on maps, and natural resources of the Puget Sound region
2. identification of early Puget Sound tribal groups
3. student readings and related study questions
4. completion of maps
5. classroom discussion
6. a legend

#### ACTIVITY 2:

"Fishing in Puget Sound Today" - develops the idea that fish are an important natural resource in this region and that modern fishing technology is complex and elaborate. (2 days)

It includes:

1. classroom discussion/instruction on fish and fishing in Puget Sound
2. charts for students to complete
3. display of fishing gear (optional)
4. extended activities

#### ACTIVITY 3:

"Fishing in the Puget Sound Area Long Ago" - develops the idea that all people are dependent on their environment and the early Indians had a highly successful fishing technology utilizing natural materials. (5 days)

It includes:

1. student readings and related study questions
2. classroom discussion on relationship between people and their environment
3. display of a variety of natural materials
4. optional field activity
5. overhead transparencies of Indian fishing techniques
6. charts for students to complete
7. assignments
8. legends
9. extended activities

#### ACTIVITY 4:

"Construction of Hooks and Lines" - students actually make a section of fishing line or a fishing hook using Indian methods and materials. (2 days)

It includes:

1. classroom discussion of construction techniques
2. small group activity - complete projects
3. small group activity - complete projects
4. extended activities

**ACTIVITY 5:**

"Unmaking and Making a Rope" - students perform a series of experiments with assorted kinds of rope and compare Indian rope-making techniques to those used today. (2 days)

It includes:

1. classroom discussion about the ancient technology of rope making as it relates to the Indians' needs.
2. students work in pairs to do experiments and record their observations.
3. students make cedar bark line.
4. film "Red Man, Red Cedar" - Part 1.

# EARLY FISHING PEOPLES OF PUGET SOUND

## PLAN AHEAD

### LIST:

Several weeks before starting this packet:

1. Order Burke traveling kit (see Teacher Information Sheet, "Traveling Collections").
2. Order films.
3. Order cedar bark and check sources for other project materials (see Activity #4, #5, and #6).
4. Plan and arrange for field trips.
5. Make overhead transparencies.
6. Make student copies of handouts.
7. Experiment yourself with those activities you plan to have the students do.
8. Read teacher background information.

Possible field trips:

1. Gathering of natural materials
2. Pacific Science Center Longhouse
3. Museums to visit
  - A. Burke - University of Washington
  - B. Museum of History and Industry
  - C. Other museums and historical organizations in state with small collections (see list attached)
4. Ballard locks fish ladders
5. Fish hatchery

Possible sources of cedar bark:

Specialty Products Cedar Mill - Enumclaw  
West Coast Orient - Tacoma  
Buse - Everett  
Seaboard Log Dump - Quindell

If these don't work out, call the Forest Service at 442-0446.

# EARLY FISHING PEOPLES OF PUGET SOUND

TABLE OF CONTENTS:		<u>Page</u>
Activity 1	The Place and the People . . . . .	7
Activity 2	Fishing in the Puget Sound Area Today . . . . .	26
Activity 3	Fishing in the Puget Sound Area Long Ago . . . . .	31
Activity 4	Construction of Hooks and Lines . . . . .	61
Activity 5	Unmaking a Rope . . . . .	74
Evaluation	. . . . .	92
Vocabulary	. . . . .	99
Bibliography	. . . . .	101

This activity packet was produced at the Pacific Science Center. With noted exceptions for copyright, the permission to reprint these materials is subject to approval by the Pacific Science Center.

## ACTIVITY 1: THE PLACE AND THE PEOPLE (5 days)

### CONCEPTS:

1. The Puget Sound region has been inhabited for 10,000 years.
2. The water environment greatly influenced the early Puget Sound Indians' entire way of life.
3. The early Puget Sound Indian culture has affected us in many ways.
4. Telling legends was a traditional way of teaching among Puget Sound Indians.

### OBJECTIVES:

Following the activity the student will demonstrate his/her ability to:

1. identify and locate on a map major geographical features of the Puget Sound region
2. identify major natural resources of the Puget Sound region
3. correctly interpret an archaeological time line indicating how long the Puget Sound region has been inhabited
4. recognize the Indian origin of many Western Washington state place names
5. know the location of early Puget Sound Indian tribes in relation to the student's own experience
6. understand the use of legends and stories in the lives of early Puget Sound Indians
7. identify some unique characteristics of the Puget Sound Indians

### TEACHER

#### PREPARATION:

1. The teacher should read Teacher Information Sheet, "Early Fishing People of Puget Sound", by Dr. Sally Snyder.
2. The teacher should read Teacher Information Sheet, "Archaeological Time Line."

### MATERIALS:

Class set of:

1. Student handouts: Blank outline map of Puget Sound
2. Student handouts: "Early People of Puget Sound"
3. Student handouts: "Unique Characteristics of Early Puget Sound Indians"
4. Teacher Information Sheets:
  - a. completed map of Puget Sound geography
  - b. map of early tribal locations (suitable for overhead transparencies)
  - c. "Time Line"
  - d. Legend, "About the Change".
5. Maps of Western Washington from which students can identify place names with Indian origins (road maps would do), 1 map per 2 students

### PROCEDURES:

1. Pass out blank map of Puget Sound
  - students label, in pencil, any major features of which they are aware (Puget Sound, Hood Canal, Whidbey Island, Mount Rainier, Seattle, city in which they live, etc.)

- allow students to point out features on a wall map or fill in on overhead transparency
- following discussion, students make corrections and completions on their maps
- 2. Pass out student reading, "Early People of Puget Sound"
  - students read silently
  - students answer questions
- 3. Lead a discussion about the early people of Puget Sound
  - review answers to study sheet
  - emphasize how long the Indians have been here using Teacher Information Sheets, "Time Line" and "Indians of Puget Sound" (pages 1 and 2)
  - point out for how long fishing has been their way of life
- 4. Pass out Western Washington maps, 1 map per 2 students
  - working in pairs, make a list of tribal names from rivers, cities, etc. (Snohomish, Puyallup, Nisqually)
  - display Teacher Information Sheet, Map of Early Tribal Locations, allowing students to compare present Indian names with early tribal locations
  - explain that some Indian place names were from individuals ("Chief Sealth"- Seattle)
- 5. Lead a discussion to introduce the place of legends in the lives of these early Indians
  - the origin of the many tribes all along the shores of Puget Sound is explained in a Swinomish legend called "About the Change."
  - Telling legends was the traditional way of teaching the younger generations. Religion, customs, family history, standards of behavior and explanations of natural phenomenon were all taught through stories.
  - Andrew Joe, who was descended from Lower Skagit and Swinomish ancestors in Puget Sound and Cowichan in Canada, first heard this legend from his father's people in Northern Puget Sound. Parents taught this legend to their children as part of their childhood education. It taught that breaking tribal law leads to complete rejection and that parents have ways of finding out about the misdeeds of their offspring.
  - teacher read or tell the legend.

#### BIBLIOGRAPHY:

Longhouse Legends by Emerson Matson.  
Indians of Puget Sound prepared by Burke Museum,  
 University of Washington  
Washington State Place Names by James W. Phillips  
 may be helpful.

### Early Fishing People of Puget Sound<sup>\*</sup>

A majority of the books which are readily available to teachers are written about the whole Northwest Coast. This is a major culture area extending as a narrow coastal strip from Humboldt Bay in Northern California to Yakutat Bay in Alaska. In general, all the people in this area lived in the same way. However, the details of this way of life differed considerably so that the Northwest Coast can be divided into three areas: the Southern, which includes Northwest California and most of the Oregon coast; the Central, which extends from the Columbia River to and including Southern British Columbia; and the Northern from Central British Columbia to Southeastern Alaska. Each division, in turn, may be further subdivided. The Indians of Puget Sound are within the Central division. There is no one division or tribe within a division which is "typical" of the Northwest Coast as a whole. There are many local variations and special elaborations on the basic Northwest culture pattern.

The most remarkable characteristics of the Northwest Coast culture area are dependent on the region's geography - its extremely abundant and varied natural food resources and its temperate climate. The Indians of the area did not domesticate animals, except the dog, nor plants, and sustained themselves entirely on foods that they fished, gathered and hunted. Edible seafoods, land game, waterfowl and plant life were so plentiful that the Indians were able to obtain all the food they needed in a seven-month period--from about mid-March to mid-October--to feed themselves during a long leisure season of freedom from food-getting pursuits during the five coldest and wettest months of the year. This culture area is the only one in the world where peoples lacking plant and animal domestication were able to obtain foods in quantities large enough to carry them through a long, single period of nearly full-time ceremonial activity.

On the Northwest Coast, the yearly food supplies were exceptionally dependable. And it was unnecessary for gatherers of shellfish and plant-foods, fishermen and hunters to travel long distances to obtain a great deal of food in suitable variety during the seven-month food-getting season. There was never danger that customary food resources would be depleted. The berries, roots, fish and game reappeared regularly on schedule at the same grounds year after year. Although game, plants, shellfish and many species of true fish were plentiful, all of the Northwest Coast Indians counted on salmon as their staple. And it was not only their staple, but most species of salmon figured as their prestige foods as well.

Because of five consecutive months of freedom from food production and dependability of resources, it was possible and practical for the Northwest Coast Indians to build large, sturdy, comfortable, permanent homes. Most were multiple-family houses, divided into apartments, accomodating from several to thirty or more families.

\* Written by Dr. Sally Snyder

Excerpted in part from Thomas Burke Memorial Washington State Museum, "The Indians of Puget Sound," set 6, University of Washington, Seattle, WA

In Puget Sound, villages consisted of from one to four such large buildings. Villages were not simply abandoned in the warm months when people were travelling about for foods. During summer they were occupied by a portion of the population and served as headquarters for the others who would bring in their catches of fish, slain game and plant-foods to be processed and stored for winter.

The Northwest Coast combination of permanent village architecture and the seasonal work-leisure pattern is unique for the world's hunting-fishing-gathering peoples. In fact, the Indians of the Northwest had considerably more freedom from food-getting pursuits, and were far more sedentary and prosperous than many farmers and herders who had more advanced techniques for food production. It is not surprising that the population density on the Northwest was the highest in the world for all recorded cultures similarly lacking plant and animal domestication.

Because food was obtained in such great surplus, the excess of food and most goods was handled as wealth. It was controlled through a complex of rights by important family heads and village leaders. There was favoritism in distribution of goods and foods, so that some of the population had considerably more wealth than others. Accordingly, there was a social-class system based on wealth and hereditary privilege. This is unique in that the existence of social classes based on wealth is a phenomenon that is usually encountered only in well-to-do farming and herding societies, as well as in industrialized nations.

Thus, through several closely interrelated features, the Northwest Coast was one of the most remarkable culture areas known to anthropology. To summarize its fundamental characteristics:

1. Lack of animal and plant domestication
2. Large annual food surpluses
3. Long annual sedentary leisure period
4. Permanent villages and village architecture
5. Fishing the dominant food-getting activity, and salmon the dietary staple.
6. Social classes based on wealth.



Student Handout

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

## UNIQUE CHARACTERISTICS OF EARLY PUGET SOUND INDIANS

When you finish this reading, you should know why the Puget Sound Indians did not:

1. hunt for most of their food
2. use animal hides for shelter and clothing
3. use horses
4. hunt whales
5. wear moccasins
6. use smoke signals

## UNIQUE CHARACTERISTICS OF EARLY PUGET SOUND INDIANS

The Indians of Puget Sound always located their villages on the shore of the Sound in protected coves near the mouths of rivers and above high tide line. Behind them was a rain forest of gigantic trees and almost impenetrable underbrush. Since the Indians preferred fish to meat and had little use for skins, they did little hunting. It is easy to understand that the mild climate and the prevalence of rain dictated clothing and shelter of materials other than hides. The dense forest and the village placement made the canoe and not the horse the logical mode of travel, even after horses were available.

None of the Puget Sound Indians hunted whales. For one thing, there were not enough whales in the Sound to make hunting them profitable. The only group south of the Canadian border which hunted whales were the Makah (Mah-kah') at Cape Flattery on the coast of the Pacific Ocean. These people had migrated there from the west coast of Vancouver Island and were not native to the Puget Sound area.

Since skin clothing will stretch if exposed to rain or even to dampness, it is impractical in this climate, and therefore cedar bark was used extensively. Women wore skirts and sometimes capes of shredded cedar bark. Men wore only breechcloths. The mild temperature made heavy clothing unnecessary. In cold weather they sat around an open fire in the house. This did not warm the back, so they wore blankets around their shoulders. The very wealthy had blankets of mountain goat wool and others used blankets of fur.

Nothing was worn on the feet. Skin moccasins would not last long on wet sandy beaches, and when damp would stretch until they fell off. When dried, they would shrink and harden until they could not be worn. These Indians were much like modern Americans; they did not walk when they could ride, and since they lived on the shore, they could always ride in canoes. Walking on a beach is easier barefoot than with sand in shoes, or in moccasins either. They did very little walking in the woods.

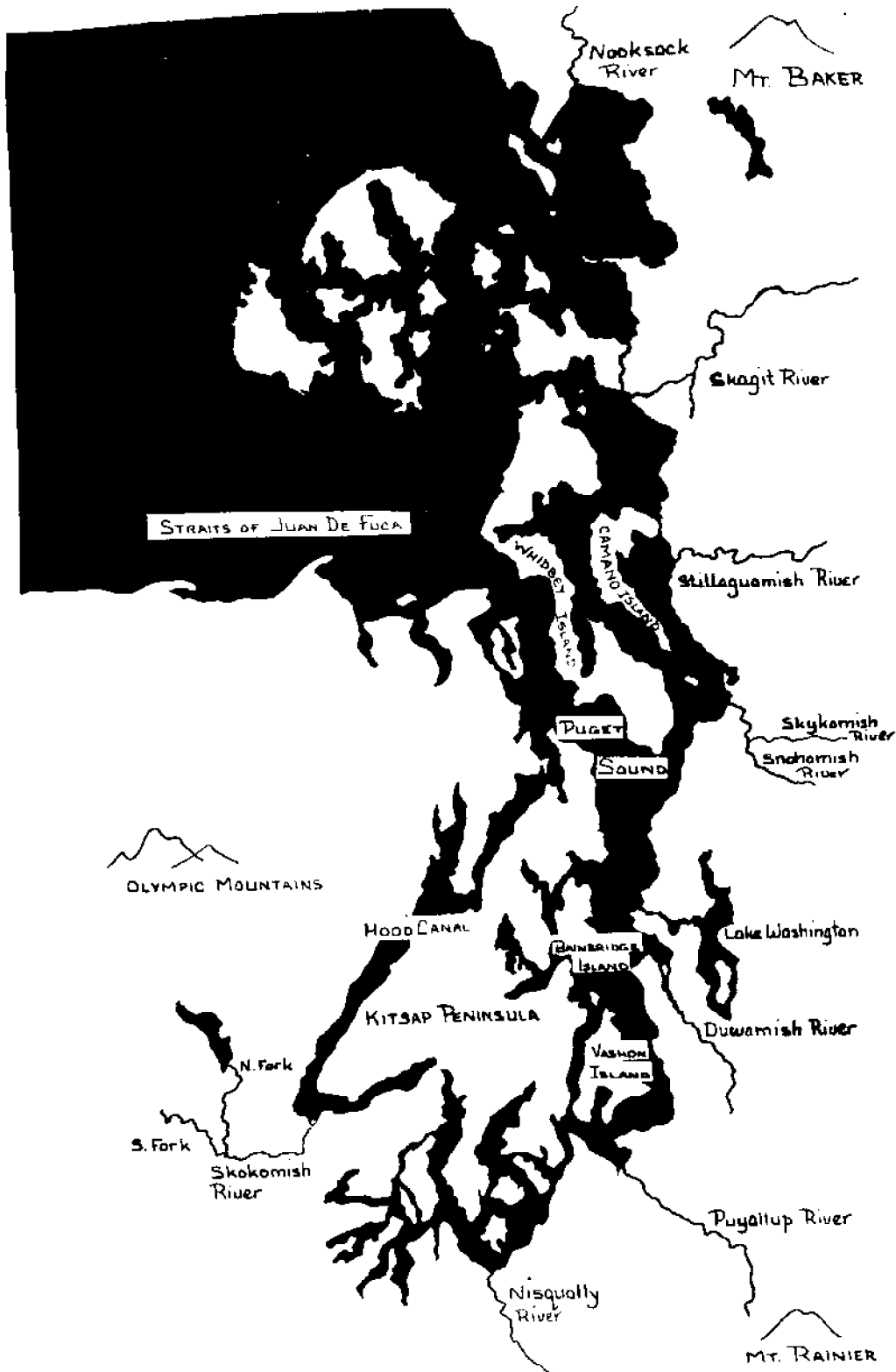
They had no water-proof material. Poncho type raincoats made of cattail matting were worn by men paddling canoes on long trips in the rain. The ponchos were water repellent and kept the water running off the paddlers so they did not get wet quite so fast. Rain hats made of twined spruce root basketry were worn. In shape they were much like the "coolie" hat. They were double in structure and very rain resistant.

## Unique Characteristics of Early Puget Sound Indians (cont'd)

In all the villages around Puget Sound, different dialects of the Salish language were spoken. This language uses the glottal stop, a sound very difficult if not impossible for English speaking people to make.

Smoke signals and sign language were not used. The trees were so tall and dense that such signals could not have been seen. Giving thought to the physical environment will show the absurdity of some of the commonly accepted ideas of what all Indians must have done. If a message had to be sent, a messenger was dispatched by canoe to deliver it.

Teacher Information Sheet



Student Handout

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_



Student Handout

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

## EARLY PEOPLE OF PUGET SOUND

A strong and serious youth guides his canoe toward the mouth of a river. Through the fine Puget Sound mist, his eyes are intent upon the surface of the water, his spear poised for action. A salmon jumps and disappears and he speaks to it with great respect: "Come up again; Swimmer, that I may see you. For you are speaking kindly to me when you jump." The salmon jumps again, and the spear flashes toward the silver swimmer.

From the ashes of a glowing fire, an old man pulls a hollow stem of kelp. Splitting it open, he removes a thin stick carved to size from a tree branch and his sensitive fingers decide whether it is limber enough to bend. When it is just right he bends the steamed wood into a curving "U" shape. With this fish hook, he will catch halibut.

Near summer's end, when the rich soil and the warm moist air of Puget Sound have combined to produce sharp nettles standing high above a person's head, three women stand among them cutting the slender stems. They split and dry the stalks from which their experienced hands separate long fibers, spinning the fibers into twine and with knots produce fish nets of great strength.

A carver gently smooths the sides of a wooden club he has made. The sandpaper he uses is a piece of rough dogfish skin. With the club, he will deal the final death blow to a netted fish.

A lone woman stands before the cedar tree soaring above her. Before she strips off the bark, she prays to the tree's spirit explaining that she will use the bark for baskets, twine, clothing and other things necessary to her life.

In her prayer, she both apologizes and gives thanks for so useful a material.

Strong and experienced hands, long familiar with their task, place the wedge just so and strike it firmly with the stone hammer. The wood splits straight and deep. The neatly sized wooden planks will form the sides of a village house.

These scenes reflect the everyday life of the early Puget Sound area. The streams, rivers, lakes, islands, tidelands, coves, bays, peninsulas, and inlets provided the setting for many villages, housing thousands of people all along the water's edge.

The water environment predominated and influenced the lives of people all up and down the Pacific Northwest Coast. They had different beliefs and ways of doing things and spoke different languages, but the one thing they had in common was the water and their reliance on it. There were inland trails for hunting, gathering berries and roots and trading, which was important, but the water had the greatest influence on their lives.

The people traveled swiftly by dugout canoes to visit, trade, hunt, collect materials and most importantly, they traveled to fish. The beaches provided huge quantities of shellfish and seaweed. The long kelp stems were made into strong fishing lines and storage bottles for (fish) oil. Shells you see on the beach were used for tools,

## Early People of Puget Sound (cont'd)

implements, and ornaments. Legends, dances, songs and ceremonies were based on some aspect of the sea or river, its spirits, the underwater world or the fish. Sea life became spirit helpers, were carved into bowls, and clubs, woven into baskets and everywhere made part of their way of life. Fish, and especially salmon, was the most important food resource. Five species of salmon made annual runs up the rivers. There were also halibut, herring, smelt, mollusks, seal and sea mammals. It was said by early settlers that the salmon population was so great you could walk across a river on the backs of migrating salmon.

There was a general belief that salmon are really people who lived under the sea in villages at the edge of the horizon. Five villages housed the five tribes of Salmon People, each with its own habits and breeding places. At specific times of year, these people transformed themselves into fish and swam up rivers after journeying through the sea. Some fishermen believed they were led by their chief, who would then be the first one caught, and therefore must be given such honor as befits a chief. Others believed they sent out scouts ahead, and if they weren't treated with courtesy and respect when caught, then other salmon would not follow up the river. Consequently, elaborate salmon ceremonies were performed marking the catch of the season's first salmon. At the end of the meal the bones were gathered and thrown back to the sea ensuring that the salmon would become whole again and return to the land of the Salmon People.

These early people lived largely on the abundance of animal life in the sea. They were essentially fishermen with other activities being secondary. Families owned specific places at the fishing grounds and these were known and respected by others. A man might invite a relative to fish with him, or someone might request to use another's fishing spot, and if he needed the food he was not refused. These rights to fishing places were inherited from one generation to the next or sometimes acquired through marriage.

The land along the Sound is a lowland plain bordered by the Coastal Range on the west and the Cascade Mountain Range on the east. The climate is mild with no extreme or long periods of hot or cold. Rainfall (as we well know) is great, producing an abundance of berries and root vegetables and dense forests which include the extremely valuable cedar tree from which most manufacturing was done. The total rich environment of the area had the capacity to provide for all these people's needs, but it was the water and its resources that made early Puget Sound inhabitants unique among their counterparts. They were totally adapted to living with rivers and the Sound. They knew the tides, currents and changing winds. They understood and respected the water, its life, and their natural surroundings. They loved the shores on which they lived with a deep reverence, and in return those shores were good to them providing them with wealth and nourishment for both body and spirit.

EARLY PEOPLE OF PUGET SOUND

1. Who were these early people of Puget Sound? (*Indians*)
2. What part of the environment most influenced the way they lived? (*water*)
3. What was their most important food resource? (*fish*)
4. Where were their villages located? (*water's edge*)
5. Why did they throw the bones of the salmon back in the water after a meal?  
(*Salmon would become whole again and return to the land of the Salmon People.*)
6. What are some names of Indian tribes that lived in this region? (*answers vary*)
7. How might we find some more specific tribal names?  
(*present day place names--rivers, cities, schools*)
8. For how many years do you think people have lived in the Puget Sound region?  
(*10,000*)

Student Handout

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

## EARLY PEOPLE OF PUGET SOUND

1. Who were these early people of Puget Sound?
2. What part of the environment most influenced the way they lived?
3. What was their most important food resource?
4. Where were their villages located?
5. Why did they throw the bones of the salmon back in the water after a meal?
  
6. What are some names of Indian tribes that lived in this region?
7. How might we find some more specific tribal names?
  
8. For how many years do you think people have lived in the Puget Sound region?



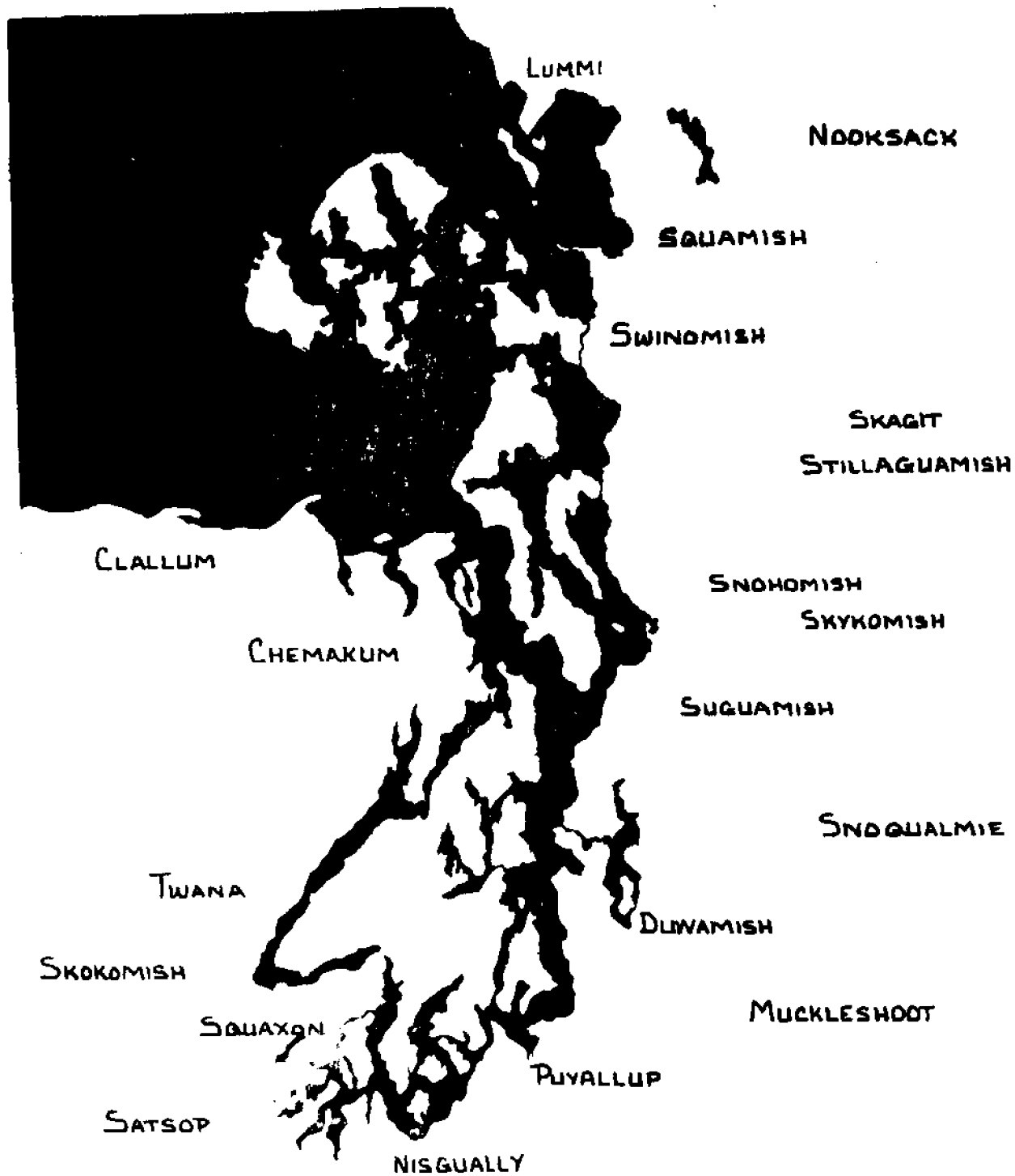
## Teacher Information Sheet

## SOME EARLY PUGET SOUND INDIAN TRIBES &amp; PRONUNCIATION GUIDE

Note: There is no standardized spelling of Indian tribal names. Whenever the tribal name is the same as that of the river on which it had its winter villages, the standardized spelling of that river is used here for the name of the tribe. (Pronunciation is the same as Webster's dictionaries.) The suffix "-amish" indicates they are the "people of" a certain river system.

Clallam (klal/lam)	-group formerly between Port Discovery Bay west to mouth of Straits of Juan de Fuca.
Chemakum (chem/a kum)	-formerly occupied land from the mouth of Hood's Canal to the mouth of Port Discovery Bay.
Duwamish (du wa/mish)	-small group of people once living along the Duwamish River, on the present site of Seattle.
Lummi (lum/mi)	-tribe near northern end of Puget Sound and north Straits area
Nooksack (nook/sak)	-tribe formerly living along Nooksack River. Name means "mountain men."
Puyallup (puyal/lup)	-tribe once living along the Puyallup River and adjacent to Puget Sound.
Samish (sa/mish)	-a group once living along the Samish Bay of the northern Puget Sound region south of Lummi.
Skagit (skag/it)	-tribe lived south of the Samish, mainly near the upper Skagit River
Skokomish (sko ko/mish)	-tribe formerly living at the mouth of the Skokomish River, which flows into the southern end of Hood Canal. The name means "river people."
Snohomish (sno ho/mish)	-tribe once living on the south end of Whidbey Island and along the adjacent east coast of Puget Sound. Everett is at the mouth of the Snohomish River.
Squaxin (squak/son)	-tribe formerly living east of the Twanas and west of the Puyallup at and around the base of the great peninsula between Hood Canal and the main sound.
Stillaguamish (still a gua/mish)	-tribe once living along the Stillaguamish River in northwestern Washington.
Suquamish (su kwa/mish)	-tribe formerly living on islands west of Seattle and possibly along adjacent shores of Puget Sound.
Swinomish (swin/o mish)	-(1) a tribe once living along lower Skagit River (2) an Indian reservation in Northwestern Washington

PUGET SOUND INDIAN TRIBES



## Teacher Information Sheet

Archaeological Time Line

9,000-5,000 yrs. ago



- A. People were mainly transient subsisting basically on hunted game.
  - B. Sites located on upper terraces and directly on top of glacial till. Environment unstable resulting from glaciers, sea level fluctuations and changing climatic characteristics.
  - C. Tools primarily basalt. No bone tools found. Little evidence of domestic tools.
- 

5,000-3,000 yrs. ago  
Maritime Adaptation

- A. People had long-term village sites, either permanent or seasonal.  
  
In context, marine and riverine food resources indicate shellfish and salmon.
  - B. Sites on salt water or inland at places which were once on salt water. Climate stabilizes, sea levels, and water temperatures more or less stabilized. Sites begin to reflect exploitation of river and marine habitats.
  - C. Domestic tools as well as hunting and fishing implements. Beginnings of development of plank houses and seafaring vessels. Materials used in tool making were: nephrite, soapstone, slate, bone, antler, and cedar.
- 

3,000-1,500 yrs. ago  
Maritime Adaptation

- A. Peoples less transient, remaining in winterbase camps, living in longhouses with 10-15 households, 300-400 people in a settlement, and dispersing for summer fishing. Subsistence consisted of salmon, other fish, sea mammals, birds, shellfish, some land mammals and vegetable products.
  - B. Sites are located on deltas or islands. Climate was like it is today, considerably cooler and more humid, resulting in similar vegetation.
  - C. Antler, obsidian, shells (dentalium), beaver teeth, cedar, chert, and slate were used for woodworking, tool-making, cooking utensils, hunting and fishing implements. Continued evidence of production of canoes.
-

## Teacher Information Sheet (cont'd)

Archaeological Time Line

1,500 yrs. ago  
White European contact  
Maritime Adaptation

- A. Peoples living in permanent winter villages, dispersing during summer and fall for salmon fishing and processing, and food gathering. Evidence of much fish catching, some mammal hunting, plant and shellfish gathering.
- B. Living sites are located on the ocean bay coast and river climate remains constant.
- C. Tools become more specialized. Evidence of herring rakes, composite fish hooks, weirs, canoes, dams, and traps. There is a strong emphasis on bone artifacts and little emphasis on those of chipped stone. Points are often basalt and slate. Besides fishing implements there are distinctive collections of woodworking and domestic tools, resulting in basketry and weaving.

## Legend: "About the Change"

The Indians of Puget Sound told stories during the winter when people had more time for entertainment and recreation than during the warm months.

Beside being entertaining, the Indians' stories were also explanatory and educational. They presented moral lessons about how humans should relate to one another and to the supernaturals, how people should cooperate in getting their foods and be generous in sharing them. And the stories tell of the origins of all things.

The most popular stories are myths, stories set in a long-ago time of the Myth Age when the condition of the world and its inhabitants was quite different than today. During the Myth Age, humans and all intellects - mammals, fish, birds, insects and guardian spirits, communicated freely in speech and thought. But there were many more dangerous creatures and people then than now. Many of these characters could miraculously change form through the gamut of inanimate objects, through animal to human form. In the Myth Age, many regular and natural features of the terrain and events of nature were not formed or different and frightening. So the myths tell how familiar features of the landscape, the rhythm of the seasons, the constant movement of the tides, the sun and moon, annual migrations and habits of animals, fish and birds, and characteristics of modern human and animal species came about. Myths also give the origins of human customs and knowledge.

This tale tells of the origin of magic spells, and of how they were used by a culture-hero and ancestor of Lower Skagit to create the different people who the Indians came to know, in time, to inhabit the earth.

Over the generations, stories were gradually changed to explain new discoveries and knowledge. "About the Change" illustrates how new information was incorporated into the Indians' body of knowledge. The new information presented in this story is that far to the east is mother ocean and a land where White people live. The first Whites in Puget Sound were believed by the Indians to have come from Boston, and indeed many were from there. For that reason, Indians refer to Whites as Pasdids, which is the pronunciation for "Boston" in Puget Sound dialects.

This version was related by Andrew Joe, who was descended from Lower Skagit and Swinomish ancestors in Puget Sound and Cowichan in Canada, and came to him from his father's people in northern Puget Sound.

His story also makes the moral point that to have skill and wealth one must fast and swim to attract a spirit power, the source of all skill and wealth.

There had been a great flood, a time when everything went wrong. Only five people on this earth were saved. They had been given words of magic by the creator, and could do great things.

After the flood, the five people made everything small by magic so that they could load everything they saved, everything on earth, into their canoe. At first the canoe landed in a dry place that the people didn't like. So they left it and came to the island country, and landed here in this very village, Txwuwu'ts (on the Swinomish Channel). It was a name that came from before the time of the flood. And

## Teacher Information Sheet

the language that the five people spoke, Skagit, was from before the flood and so is the oldest language spoken.

After the people settled here, a child was born whom they named Son of the Creator. When the boy was about ten, he was taught to go find a guardian spirit. He was taught that he must bath and fast in order to attract a spirit. At first, he would neither bath nor fast. He was just skylarking around like kids of today, and killed birds and squirrel and saved their skins. He wasn't bathing like he was taught, so he got the itch. And he was eating roots that his pet, Coyote, dug for him near Lake Campbell on Fidalgo Island. He and Coyote started swimming there for fun, so they got clean, but they never missed a meal. One time when they went out to swim, one of the boy's uncles went over to spy on them, and he saw that they were just having a great picnic, eating and swimming and having a good time. So the uncle went back to Twixiwu'ts and told the boy's father. The people were disgusted with the boy, and tore down the whole village to leave him. They left only one house post. The boy's grandmother felt badly for the child, and left him a bit of fire in a clamshell which she buried under the house post. Then the people moved to Utsaladdy (on Camano Island). They had taken everything, because they had power to take everything on earth. They even took the tide, so that the water couldn't go out anymore, and the boy couldn't even dig clams. And they had taken all of the other food along with them.

When the boy and Coyote got back from Campbell Lake, they found the people gone. But Coyote was telling the boy that something was buried under the house post. He dug there and found the fire and the little hides he had saved from the animals he had killed. He sewed them together and made a little blanket for himself. After that, there was nothing left to do but swim and fast, as he had been taught in the first place. That was the idea of his people leaving him, to teach him. His lessons were coming the hard way.

He swam every day. When he was really clean, he dreamed that the Creator came. The Creator said to him, "I want your blanket, the blanket of this whole earth. If you wave that blanket over the water and over the land, you'll have plenty of food for your people for all time to come." The boy waved that blanket four times, and plenty of food showed up from over the water and under the water, especially the smelt from this slough (Swinomish Channel). He waved the blanket over the forest and the soil, saying the words in magic for them. And the food came walking down--the deer, the birds, everything that still exists on earth among our Indian people.

When the boy got all the food, he wondered where were the people of which the Creator had spoken. So he swam again, and again became clean like his family had instructed him. Then he dreamed that he should gather all the bones of all the animals and timber on earth from the flood until he completed the making of this whole island country. Now he had the power to put this whole island country together so that he could step over from one ocean to another. He threw everything into one big pile, everything that existed, and waved that blanket over it, using the words of magic. And after he had waved it four times, his people started to rise, all different kinds of people. We were the Indians who stayed here. Now he had plenty of people, and made a home for them in his village. But not for long, they were so crowded, and they couldn't speak a word. So he went out for a few days more to find what he could do to make them talk. Swimming and dreaming, the dream he dreamed was that he should make brains for his people from the soil. And he went through the same thing, saying the words in magic, waving the blanket four times, and made brains. But his people started talking in all the different languages, and he decided it wouldn't do to have them together. So he took his blanket and he blew the people to where they belonged, all the different tribes. He blew the buffalo bones to the prairies, which became the Plains Indians, and white bones to the other ocean, which became Pasdids. Wherever the bones came from, he sent his people to where they belonged.

That is why it is forbidden to tell which exact bone each tribe came from, for if an enemy were to know the ancestral name, he could kill an entire tribe through that magic of naming ancestral names.

**ACTIVITY 2:**

**FISHING IN THE PUGET SOUND AREA TODAY**

**(2 days)**



## ACTIVITY 2: FISHING IN THE PUGET SOUND AREA TODAY (2 days)

### CONCEPTS:

1. People's lives are influenced by their environment.
2. Fish are an important natural resource in this region.
3. Modern fishing gear is made of processed or synthetic materials and is often complex in construction.

### OBJECTIVES:

Following the activity the student will be able to:

1. identify fish as a major natural resource of this region
2. list some common fish in Puget Sound
3. explain the relationship between a people's way of life and their environment.
4. fill in a chart correctly with information about fishing gear
5. analyze fishing gear as to its materials, construction and purpose
6. generalize about modern fishing technology based on the analysis of gear

### TEACHER

#### PREPARATION:

1. Teacher should read Teacher Information Sheet--"Common Fish in Puget Sound"
2. Become familiar with chart, Teacher Information Sheet--"Puget Sound Fishing Today" (teacher's copy)

#### MATERIALS:

1. Teacher Information Sheet--"Common Fish in Puget Sound"
2. Pictures of fish--poster, Department of Fisheries  
--any others teacher can locate
3. Student handout --"Puget Sound Fishing Today"
4. Variety of fishing gear supplied by students and/or teacher

#### PROCEDURES:

1. Lead a discussion to establish the relationship between a people's way of life and their environment
  - a. review geography of Puget Sound region
  - b. review importance of water and fish as natural resources pointing out their importance today as to the early Indians
  - c. to bring discussion to a more personal level:
    1. how many have fished?
    2. where? (rivers, lakes, Sound)
    3. how and for what fish?
    4. what gear and equipment?
    5. any relatives who fish commercially?
  - d. allow time for "fish stories"
2. Lead a discussion on common fish in Puget Sound (from previous discussion and Teacher Information Sheet--"Common Fish in Puget Sound")
  - a. list common fish on the board and students each keep a copy
  - b. display pictures of fish
  - c. discuss size, methods of catch, uses
  - d. include shellfish

3. Lead a discussion of modern fishing technology
  - a. pass out student handout--"Puget Sound Fishing Today"
  - b. explain the headings and instructions
  - c. referring to discussion of students' own fishing experience, list a few examples of modern gear on the board
  - d. display gear brought to class (optional)
1. Students complete charts with minimum of four objects. Encourage them to enlist the help of adults.
2. Bring in a variety of fishing equipment to examine and analyze (optional)
 

Suggestions:    hooks                    nets  
                   poles                    bait  
                   lines                    floats  
                   reels                    clam shovels  
                   sinkers                    crab traps  
                   lures                    cleaning tools  
                   knives                    "how-to-fish" books
3. Make generalizations in writing about modern fishing technology based on analysis of gear (materials=synthetic or processed and machine made, construction=complex, source=bought).

**EXTENDED  
ACTIVITIES:**

1. Field trip to the Seattle Aquarium or Ballard Locks fish viewing areas
2. Discuss the life cycle of salmon. (See Teacher Information Sheet.) Visit a salmon hatchery to see what they look like, feel like, life cycles and technology required to maintain salmon population due to dams and other impediments to natural processes.
3. Highly recommended:  
 Assign students to read Fisherman on the Puyallup, a short, easy to read book, about a young Puyallup boy learning the art of drift fishing from his grandfather. It is set in modern-day Tacoma, but teaches how the Puyallup have been fishing for centuries and the respect they feel for the life of the river.  
 It comes with a 15-page teacher's guide and is available from Daybreak Star Press, United Indians of All Tribes Foundation, Daybreak Star Indian Cultural-Educational Center, Discovery Park, Seattle, WA 98199. \$2.50/copy. (A limited number of field testing copies may be available.)

Another possibility, although on a younger reading level: United Indians of All Tribes Foundation, Chief Sealth and His People, 1976, 36 pp. grades 1-3. The story of Chief Sealth's people on Puget Sound, the Suquamish, before the coming of the white man and at his coming. The book concludes with the Suquamish today, telling how they live on the Port Madison Reservation. The book is illustrated by Indian artist, Larry George.

## Teacher Information Sheet



## LIST OF COMMON FISH IN PUGET SOUND

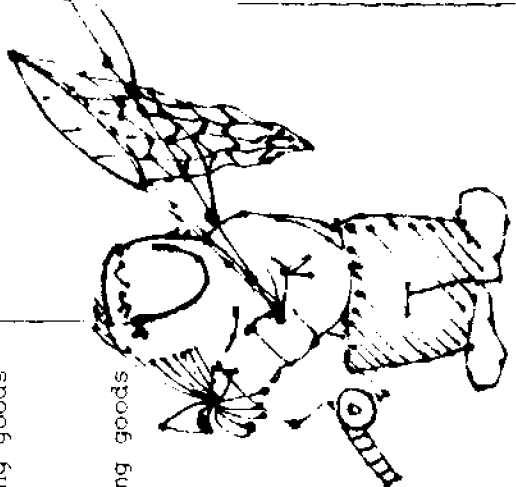
FISH	SIZE RANGE	METHOD OF CATCH
Salmon (See Dept. of Fish chart) included in unit	Chinook or Spring 4'10" & 80 lbs. Coho or Silver 30" & 6-12 lbs. Pink or Humpback 30" & 3-10 lbs. Chum or Dog 38" & 8-18 lbs.	Trolling-gear, purse-seine and gill net commercially. Lures by sportsmen.
Halibut	Males 4'7" & 40 lbs. Females 8'9" & 470 lbs. (largest and most valuable bottom fish)	Taken on set lines baited with herring, squid or octopus
Cod	Up to 3'3"	Trawling
Flounder	To 3' and 20 lbs.	Bottom trawling
Herring	10" - 13"	Captured by purse seines and single catch may be 12,000,000 fish. Travel in schools; located by echo sounders which show location with relation to bottom of ocean
Smelt	Length 6-10"	Taken commercially by seine and gill-net and beach fishermen with seines, scoopnets, and small gill-nets.
Steelhead Trout	Up to 45" and 36 lbs. Average 12 lbs.	Taken commercially by gill-net and anglers in rivers
Cutthroat Trout	Up to 30"	Trolling or casting from shore

Taken from: Some Common Marine Fishes  
 G. C. Hill  
 British Columbia Provincial Museum  
 Victoria, Canada  
 1975

Teacher Information Sheet

PUGET SOUND FISHING TODAY (Teacher's Copy)

DIRECTIONS: List gear (object) that you have used, seen, or that you know is used to catch fish in Puget Sound. Tell what it is used for (function), what it's made of (materials), how it's made (construction), where you get it (source), and any personal fishing experience you have had.

OBJECT	FUNCTION	MATERIALS	CONSTRUCTION (analyze)	SOURCE	PERSONAL EXPERIENCES "Fish Stories"
Example: 1. reel	pull in line, hook, & fish	metal, wood, etc.	machine made-- complex (form metal, attach parts with screws)	sporting goods store	
2. boat	transport fish, equipment & men	metal, fiber-glass, wood	molds, machine-made, heavy power machinery complex (many parts)	marina	
3. lines	connect hook & pole and snag fish	synthetics, nylon	machine made	sporting goods store	
4. traps (crab pots)	catch crab	metal, rope	machine made	sporting goods store	
5. hooks 6. clam shovel or "gun" 7. anchor					

Student Handout

PUGET SOUND FISHING TODAY

NAME \_\_\_\_\_  
 DATE \_\_\_\_\_  
 PERIOD \_\_\_\_\_

DIRECTIONS: List gear (object) that you have used, seen, or that you know is used to catch fish in Puget Sound. Tell what it is used for (function), what it's made of (materials), how it's made (construction), where you get it (source), and any personal fishing experience you have had.

OBJECT	FUNCTION	MATERIALS	CONSTRUCTION (analyze)	SOURCE	PERSONAL EXPERIENCES "Fish Stories"





### **ACTIVITY 3:**

## **FISHING IN THE PUGET SOUND AREA LONG AGO**

**(5 days)**



## ACTIVITY 3: FISHING IN THE PUGET SOUND AREA LONG AGO (5 days)

### CONCEPTS:

1. All people are dependent upon their environment.
2. Early Puget Sound Indians, were totally dependent on the natural environment.
3. To these early Indians fishing was a way of life and they had a highly successful fishing technology.
4. The rich Puget Sound environment provided all the natural materials and resources necessary to develop this fishing technology.
5. Telling legends was a traditional way of teaching among Puget Sound Indians.

### OBJECTIVES:

Following the activity the student will demonstrate his/her ability to:

1. explain the relationship between a people's way of life and their environment
2. understand the importance of fishing to the early Indians' way of life
3. explain how the Indians used only natural resources to develop a highly successful fishing technology
4. analyze pictures of early fishing techniques
  - a. correctly explain the methods used
  - b. identify the materials used
  - c. identify what kind of fish were caught by these methods
5. understand the use of legends in the lives of the early Indians

### TEACHER

#### PREPARATION:

1. Teacher gather samples of natural materials (or plan field trip--see extended activities)
2. Read Teacher Information Sheet, "Early Puget Sound Indian Fishing Technology" and see accompanying graphics
3. Read student handout, "Dipper and Coyote."

#### MATERIALS:

1. Variety of natural materials of possible use to the early Indians' fishing technology
  - a. grasses (bear grass, sweet grass, cattail)
  - b. roots (cedar, spruce, camas, arrowroot)
  - c. bark (cedar)
  - d. branches
  - e. rocks
  - f. seaweed
  - g. kelp
  - h. shells (mussels, clams, scallops)
2. Student handout, "A Fish Story" (one copy per student)
3. Student handout, "The Mystery of Early Puget Sound Fishing" (one copy per student) and teacher copy of same
4. Student handout, "Dipper and Coyote". (one copy per student)
5. Overhead transparencies of illustrated fishing techniques (1-7)
6. Student handout, "Explain What's Happening" (one copy per student)

7. Teacher Information Sheet, "Early Puget Sound Indian Fishing Technology"

**PROCEDURES:**

1. Pass out student hand-out, "A Fish Story," allowing time for students to read and answer questions.
2. Lead a discussion to emphasize the relationship between people and their environment.
  - a. introduce the idea that people develop technologies uniquely adapted to their environment
  - b. emphasize that the highly successful fishing technology in Puget Sound had been developed over thousands of years and was a way of life to the Indians
  - c. introduce the idea that the Indians had none of the modern fishing equipment we listed on the chart
  - d. ask: How did they fish?
    1. allow students to contribute ideas
    2. encourage them to draw, diagram, explain for the class
    3. direct student thinking toward actual construction of objects (dug-out canoe: what to cut and shape with? what size? work with wood wet or dry? why?)
3. Display a variety of natural materials for students to handle and speculate as to possible use (see MATERIALS) or take a walking field trip to a nearby undeveloped area to look for natural materials (see EXTENDED ACTIVITIES).
4. Pass out student hand-out, "Mystery of Early Puget Sound Fishing" to each student.
  - a. working in small groups to share ideas, students complete chart with a minimum of six objects
  - b. emphasize that the assignment requires "educated guessing" based on their knowledge of the area's natural resources (both plant and animal life), and fishing equipment used today
  - c. encourage them to be specific (in net-making, what kind of knot would you use?)
  - d. following discussion of completed charts, students keep them for later comparison with actual methods
5. Present overhead transparencies of early fishing techniques.
  - a. explain that students are to analyze them and try to "Explain What's Happening" on the hand-out of the same name
  - b. students work individually on this assignment
6. Present illustrations a second time reading Teacher Information Sheet, "Early Puget Sound Indian Fishing Technology" as you go along.
  - a. students take notes
  - b. students compare charts, "Mystery of Early Puget Sound Fishing" and answers to "Explain What's Happening" to the actual techniques.

**ASSIGNMENT:**

7. students select the technique that most interests them and summarize it in their notebooks.
8. Explain that the Indians of North Puget Sound were skilled at fishing. It was important to share and appreciate their good fortune. The legend of "Dipper and Coyote" moralizes on sharing this most important food, fish. Have students read the legend and discuss the characters of Dipper and Coyote.



**EXTENDED****ACTIVITIES:**

1. Class take a walking and gathering and drawing field trip in any nearby wooded or undeveloped area looking for natural materials they think might have been useful to early Puget Sound People. (Preferably near water, sound, lake, stream, or swamp.) In the interest of sound ecology, allow one specimen of an item and/or sketch and write a description. Good chance to discuss ecology. Return to classroom and display and discuss collections, specimens, and drawings.

Invite Indian to guide and help students identify various plants: roots, berries, sprouts, catta sweet grass, tules, cedar bark, seeds, etc.

- a. make a list showing why each was useful
  - b. make mats or baskets out of cattails
  - c. make dyes out of natural materials they have gathered
2. Ask students to imagine the environment of their local area as it had been in its natural state. Ask students to draw their schoolyard, home yard, neighborhood or some other area of their town as it might have appeared during the period of the early Puget Sound Indians.

**BIBLIOGRAPHY:**

"A Fish "Story" - excerpt quoted from Indian Fishing by Hilary Stewart.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

## A FISH STORY

Because the Indian was so completely in tune with the ways of the sea and river and all that was in it, he was able to devise many methods for reaping its harvest. There is a deeply inherent tradition of gathering the bounty of the sea.

In 1885 Albert Niblack wrote in a published report for the U.S. National Museum, "The apparent clumsy hooks of this region have been found to possess so many advantages over types used by Europeans that they are used to this day." He wistfully adds, "There is little in the art of fishing we can teach these Indians."

On the contrary, there was much in the art of fishing the natives could have taught the newcomers.

Captain Dixon and his crew, anchored their square rigged ship in a sheltered bay in 1787 and lowered a boat so that the hungry crew could catch fish fast. The results with European gear and methods must have been discouraging. He describes the Indian's successful method for catching halibut with baited hooks, lines and floats and then says: "Thus we were fairly beat at our own weapons, and the natives constantly bringing us plenty of fish, our boat never set out on this business again."

THINK CAREFULLY before answering these questions:

1. Were the Europeans lousy fishermen?

*(No, just in a different environment)*

2. Did the Indian's catch more fish than the Europeans because they were smarter?

*(No, had adapted technology to environment over thousands of years)*

3. Were the Indians more skilled at making fishing gear than the Europeans?

*(No)*

4. Why were the Indians more successful catching fish in Puget Sound?

*(They had adapted technology to the environment)*

## A FISH STORY

Because the Indian was so completely in tune with the ways of the sea and river and all that was in it, he/she was able to devise many methods for reaping its harvest. There is a deeply inherent tradition of gathering the bounty of the sea.

In 1885 Albert Niblack wrote in a published report for the U.S. National Museum, "the apparent clumsy hooks of this region have been found to possess so many advantages over types used by Europeans that they are used to this day". He wistfully adds, "there is little in the art of fishing we can teach these Indians".

On the contrary, there was much in the art of fishing the natives could have taught the newcomers.

Captain Dixon and his crew, anchored their square rigged ship in a sheltered bay in 1787 and lowered a boat so that the hungry crew could catch fish fast. The results with European gear and methods must have been discouraging. He describes the Indian's successful method for catching halibut with baited hooks, lines, and floats and then says: "Thus we were fairly beat at our own weapons, and the natives constantly bringing us plenty of fish, our boat never set out on this business again".

THINK CAREFULLY before answering these questions:

1. Were the Europeans lousy fishermen?
2. Did the Indians catch more fish than the Europeans because they were smarter?
3. Were the Indians more skilled at making fishing gear than the Europeans?
4. Why were the Indians more successful catching fish in Puget Sound?

Teacher Information Sheet (sample answers)

THE MYSTERY OF EARLY PUGET SOUND FISHING

QUESTION: Assuming that the early people needed at least some of the same basic fishing equipment as today, how did they get it using only natural resources?

CULTURE	FUNCTION	MATERIALS	CONSTRUCTION	SOURCE
boat	transport fish, equipment, people	wood carving tools	dig out log, carve, chisel, burn with stone	forest
nets or lines	collect fish	grasses, kelp, thin branches	knot, stretch, twist	forest, beach
traps	trap fish	wood		
hook	hook fish	wood, bone	carve, steam, bend, lash	natural surroundings
digging stick	collect shell-fish	wood	shape to size with sharp stone or shell	natural surroundings



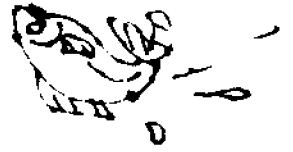
Student Handout  
CLASS B

NAME \_\_\_\_\_  
DATE \_\_\_\_\_  
PERIOD \_\_\_\_\_

THE MYSTERY OF EARLY PUGET SOUND FISHING

QUESTION: Assuming that the early people needed at least some of the same basic fishing equipment as today, how did they get it using only natural resources?

OBJECT	FUNCTION	MATERIALS	CONSTRUCTION	SOURCE



Teacher Information Sheet

EXPLAIN WHAT'S HAPPENING

Picture	Object(s)	Function	Material	What Is The Person's Job? How Many Involved?
#1	harpoon canoe	spear and pull in salmon	wood sharp points (bone or rock)	cut through kelp, tie canoe, spear and haul aboard salmon in one swift motion (1)
Additional explanation:				
#2	ets, lines canoe paddles anchors	trap variety of fish as tide comes in and pull to shore	kelp cedar wood rock	set lines and net, paddle canoe, pull net and fish in to shore (4)
Additional explanation:				
#3	grid trap weir spear	trap salmon as they wood, rope enter through cen- rock or bone ter fence opening & can't go forward		construct grid trap and weir, spear fish
In what direction is the water flowing in the picture? <u>Left to right or right to left.</u>				
Additional explanation: <u>When fish can't go forward they turn and are swept onto grid and caught between slats</u>				
#4	trap	trap salmon in fast flowing stream	wood, rocks, string	construct trap position with rocks, frighten fish back down river, spear fish
In which direction is the water flowing? <u>Left to right or right to left.</u>				
Additional explanation:				
#5	rake canoe	catch herring	wood, bone, stone	paddle canoe, make rake, catch fish by sweeping it through water
Additional explanation:				

Teacher Information Sheet - EXPLAIN WHAT'S HAPPENING (cont'd)

Pictur:	Object(s)	Function	Material	What Is The Person's Job? How Many Involved?
#6	fence weir canoe spear	trap fish going downstream	wood, rope, rock or bone	construct weir, spear salmon
In which direction is the water flowing? <u>left to right or right to left.</u>				
Additional explanation:				
#7	net canoe lines anchors	trap salmon in net	kelp, cedar, rocks	cut path through kelp, lower and raise net, set nets, manipulate canoes
Additional explanation:				
#8	hook	hook halibut	wood, bone, cedar, rope, steam to bend wood	make hook, hook halibut and pull in
Additional explanation:				

See Activity #4 - Making bentwood hooks.

Student Handout

NAME \_\_\_\_\_  
DATE \_\_\_\_\_  
PERIOD \_\_\_\_\_

EXPLAIN WHAT'S HAPPENING

Picture	Object(s)	Function	Material	What Is The Person's Job? How Many Involved?
---------	-----------	----------	----------	---

#1

Additional explanation: \_\_\_\_\_

#2

Additional explanation: \_\_\_\_\_

#3

In what direction is the water flowing in the picture? Left to right or right to left.

Additional explanation: \_\_\_\_\_

#4

In which direction is the water flowing? Left to right or right to left.

Additional explanation: \_\_\_\_\_

#5

In which direction is the water flowing? Left to right or right to left.

Additional explanation: \_\_\_\_\_



Stud. Handout  
Explain What's Happening (cont'd)

Picture	Object(s)	Function	Material	What Is The Person's Job? How Many Involved?
---------	-----------	----------	----------	---

#6

Additional explanation:

#7

Additional explanation:

#8

Additional explanation:

## EARLY PUGET SOUND INDIAN FISHING TECHNOLOGY

There were several different kinds of fishing depending upon the nature of the water in which the fish lived. There were freshwater lakes (name some of them in your area); freshwater streams and creeks that drained into the various inlets and bays on the Sound (name some in your area) and the straits; the water of the shallow bays, basically the tideland flats; the inlets and the Sound itself, which were considerably deeper and broader bodies of water than the shallow bays; and the large straits.

The five species of migrating salmon were originally captured in 1) nets, 2) weirs, 3) with hook and line before entering the river, and 4) spears. The salmon spent an average of three years at sea and returned to their spawning grounds and gravel beds in the freshwater streams in the mountains. In freshwater lakes, the object was to catch the fish before they entered deep waters. The Indians would therefore station themselves at the outlet of the lake and either spear or gaff the salmon. (A gaff is an implement about six feet long with a hook at the end.) PICTURE #1. The trick was to spear a fish and haul it aboard in one swift, continuous motion.

The five species of migrating salmon were originally captured in 1) nets, 2) weirs, 3) with hook and line before entering the river, and 4) spears. The salmon spent an average of three years at sea and returned to their spawning grounds and gravel beds in the freshwater streams in the mountains. (Discuss life cycle of salmon; see Teacher Information Sheet.) In freshwater lakes, the object was to catch the fish before they entered deep waters. The Indians would therefore station themselves at the outlet of the lake and either spear or gaff the salmon. (A gaff is an implement about six feet long with a hook at the end.) PICTURE #1. The trick was to spear a fish and haul it aboard in one swift, continuous motion.

In fast flowing streams and rivers, a variety of traps were used to catch salmon. One was the grid trap, PICTURE #3, and another was a river trap used in shallow, swift water, PICTURE #4.

The most famous fishing techniques were large weirs, usually community property, built across the rivers to catch the returning salmon. PICTURE #5. Weirs varied with the width of the stream, but generally they had tall poles stuck firmly in the stream bed to which a fence of stakes was attached. Salmon swam through the fence openings going upstream and were trapped behind the weirs. People used dip-nets to take the salmon, and they killed the fish with a club.

The technique of trapping fish was generally used in the tideland areas. Fish would come into the bays during high tide. Sometimes the people would build large pens while the water was still high and when the tide went out, the fish would be trapped inside the pens. This worked well with smaller fish such as smelt. The beach seine net was also used at high tide. (Show PICTURE #2 and read explanation.)

On freshwater streams and creeks the Indians used gill-nets as well. The gill-nets were large nets designed to catch fish of a certain size. The openings of the mesh in the net would allow small fish to pass through easily, but would

snare the gills of larger fish when they tried to force their way past the net. The nets would be set in a river for hours at a time and then pulled to shore filled with fish. Generally, these nets were not placed across the entire river, but on alternating sides of the river every several hundred yards so that some fish could get by and swim upstream to spawn.

Cod were also taken by bottom fishing with the same small hook used in trolling for salmon. A cod lure shaped like a shuttlecock would be pushed to the bottom on a pole or dropped with weights. When released the lure floated upwards, attracting the cod which was speared at the surface.

The herring was taken in large numbers with fish rakes and nets. The fish rake was paddle-like in shape set with a row of spikes along the edge. It was swung through a school of fish from the bow of a canoe. PICTURE #6.

Today fishermen complain that herring runs are depleted by overfishing. Fish were so thick at the time these rakes were used that this was a sure and easy method. For bone spikes, splinters from the leg bone of a deer were used.

For wooden spikes, sharpened points of ironwood were driven through the cedar shaft with a stone hammer.

The rake was rubbed with tallow and smoked over a fire for four days to strengthen and waterproof it.

PICTURES #6 and #7 and read accompanying explanations.

Perhaps the most exciting type of fishing done by the Indians of the region was flounder fishing. The flounder, a flat fish that tends to rest on the bottom of mud flats, loved those along the Sound. The Indian fishermen would simply wade into the mud flats until they stepped on a flounder, and then they would stand on the fish long enough to spear it with a sharp stick. The method sounds simple, but the sight of a hundred Indians all standing in mud flats jabbing sharp sticks at their feet was enough to frighten the whites who watched them. It was difficult to believe that the Indians rarely speared their own feet with all this frenzied activity, since the spectacle was one of continuous motion amid the muddiest water in the region.

Shellfish, such as clams and oysters, could be collected in the shallow bays and on the beaches. At the appropriate times the women and girls of the villages gathered these shellfish, sometimes using wooden digging sticks, drying some of them for the winter, but generally preparing a gigantic feast of fresh clams and oysters. Crabs were harvested in the same way, the best being those of Dungeness Bay, which was in the land of the Clallams along the northern end of the Olympic Peninsula. Crabs were plentiful in the spring and were difficult to preserve, so they provided a seasonal treat.

PICTURE #8. Of all fishing gear, the most familiar is the fish hook. Over thousands of years, Indian people designed and perfected hooks and their accessories--bait, lures, sinkers, floats and lines--for fish of various sizes, habitats, characteristics and behavior. Their fishing gear was so well suited to their environment and their skill so great, that they saw no need to change when white men sailed into their waters and introduced other kinds of hooks. The bone barb was replaced with iron eventually, and rope replaced kelp or cedar bark line, but the hook remained essentially the same.

The U-shaped, steam-bent halibut hook is one such perfected tool. PICTURE #8.

Early Puget Sound Indian Fishing Technology (cont'd)

Reason for use: The curved back arm of the steam-bent hook prevented the fish from fighting. If the arm had been straight, it would have caused more discomfort lying in the cheek of the fish and therefore, more fight. The curve prevented the hook from being swallowed by too small a fish; it could only be snagged by the lip and thrown back unharmed. The curved back tip of the hook ensured that the fish only took the baited part carrying the barb; since the fish could not open its mouth wide enough to include the curved tip.

Method of catching halibut: Bait (sometimes was octopus) was wrapped around the barb and was taken into the fish's mouth, but because it was impossible to swallow, it was rejected. The forceful exit of the angled barb caused it to penetrate the cheek and the fish was hooked.

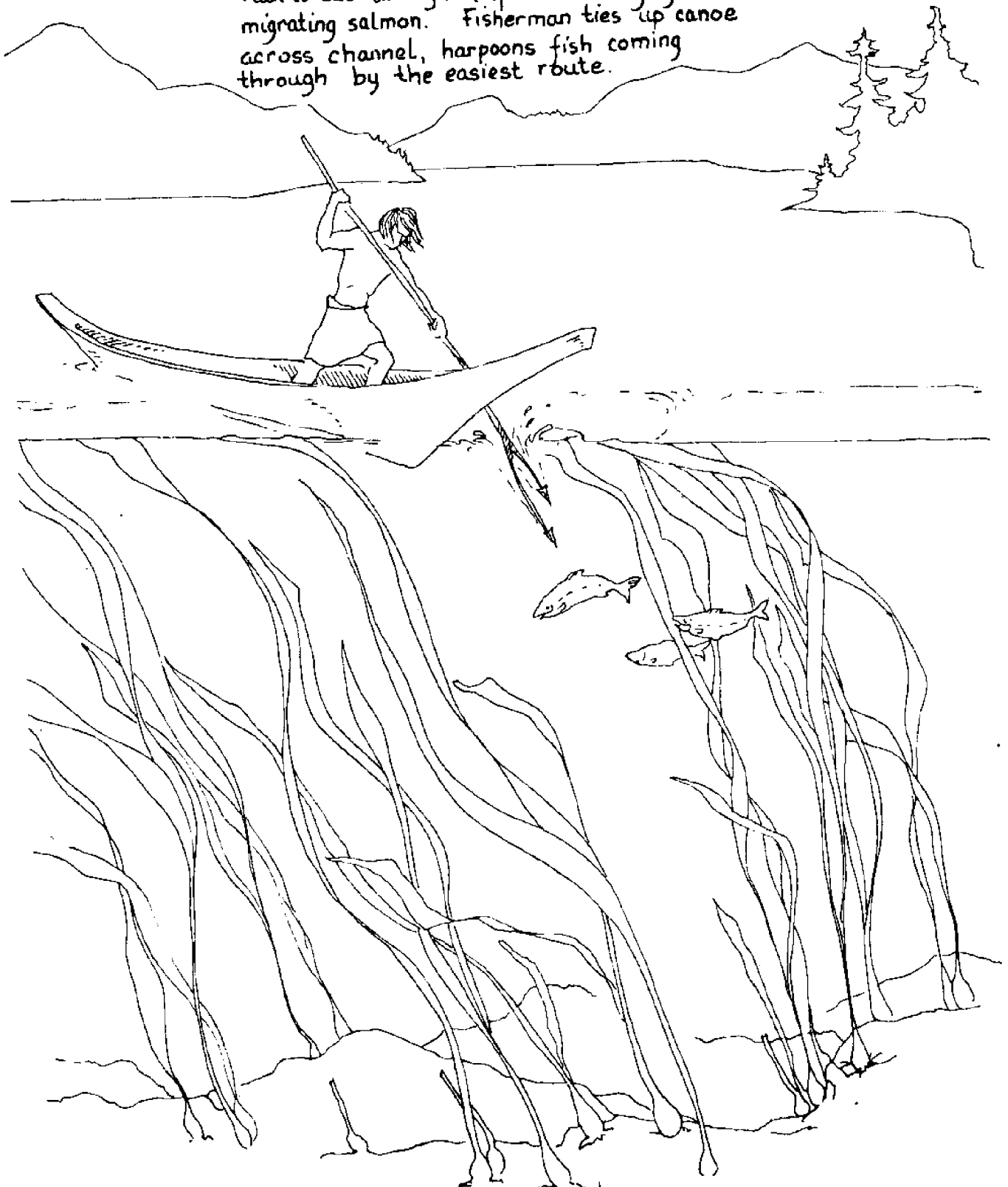
Customs: Before baiting, rub hands with seaweed and hold in salt water to remove human scent.

Halibut grow up to 8'9" and 470 lbs. (female) and 4'7" and 40 lbs. (male).

Picture #1 - Overhead Transparency - Teacher

## Harpooning Salmon in Sea

Path is cut through kelp bed on reef for migrating salmon. Fisherman ties up canoe across channel, harpoons fish coming through by the easiest route.



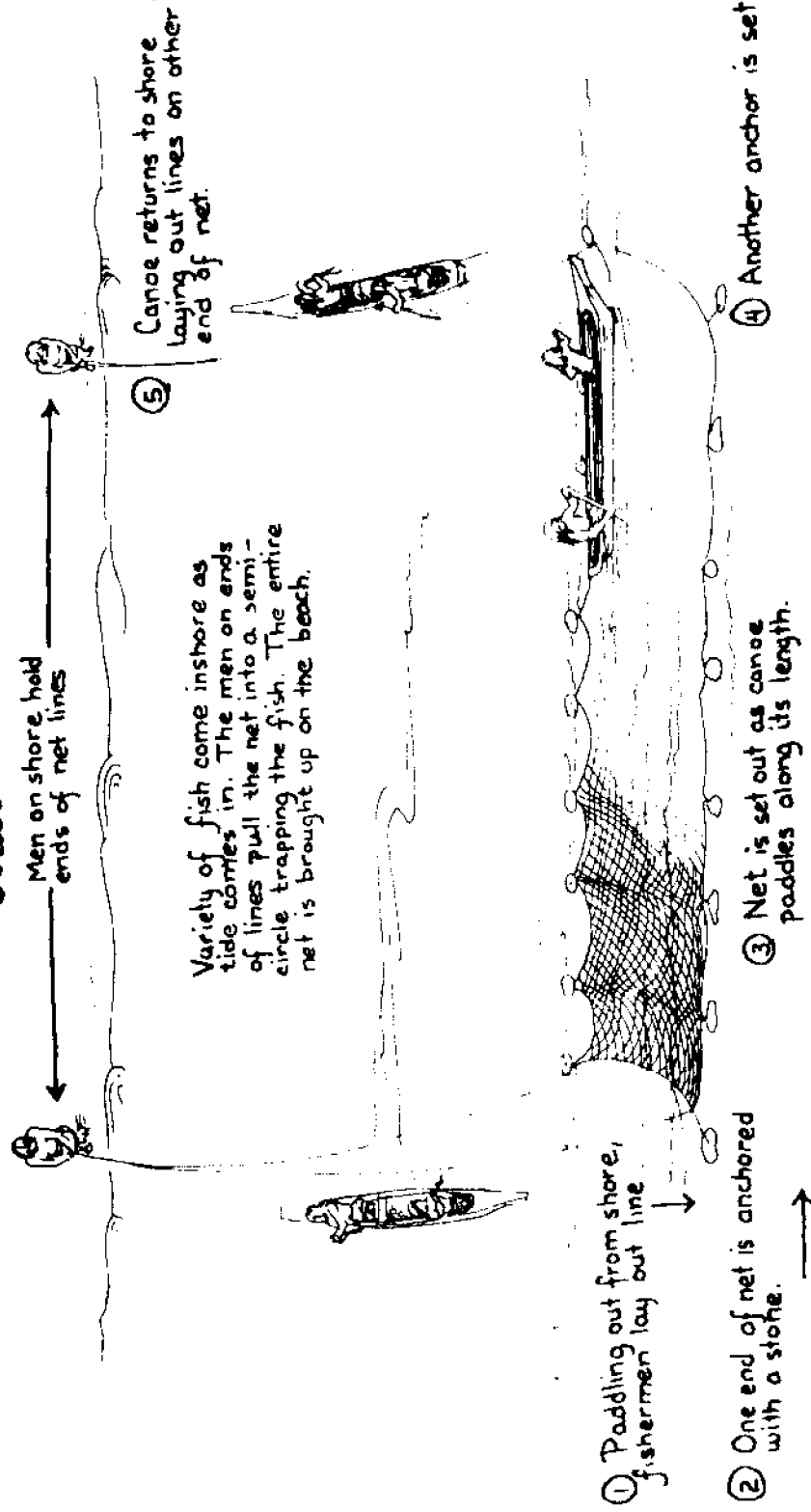
DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART

Picture #1 - Overhead Transparency - Student

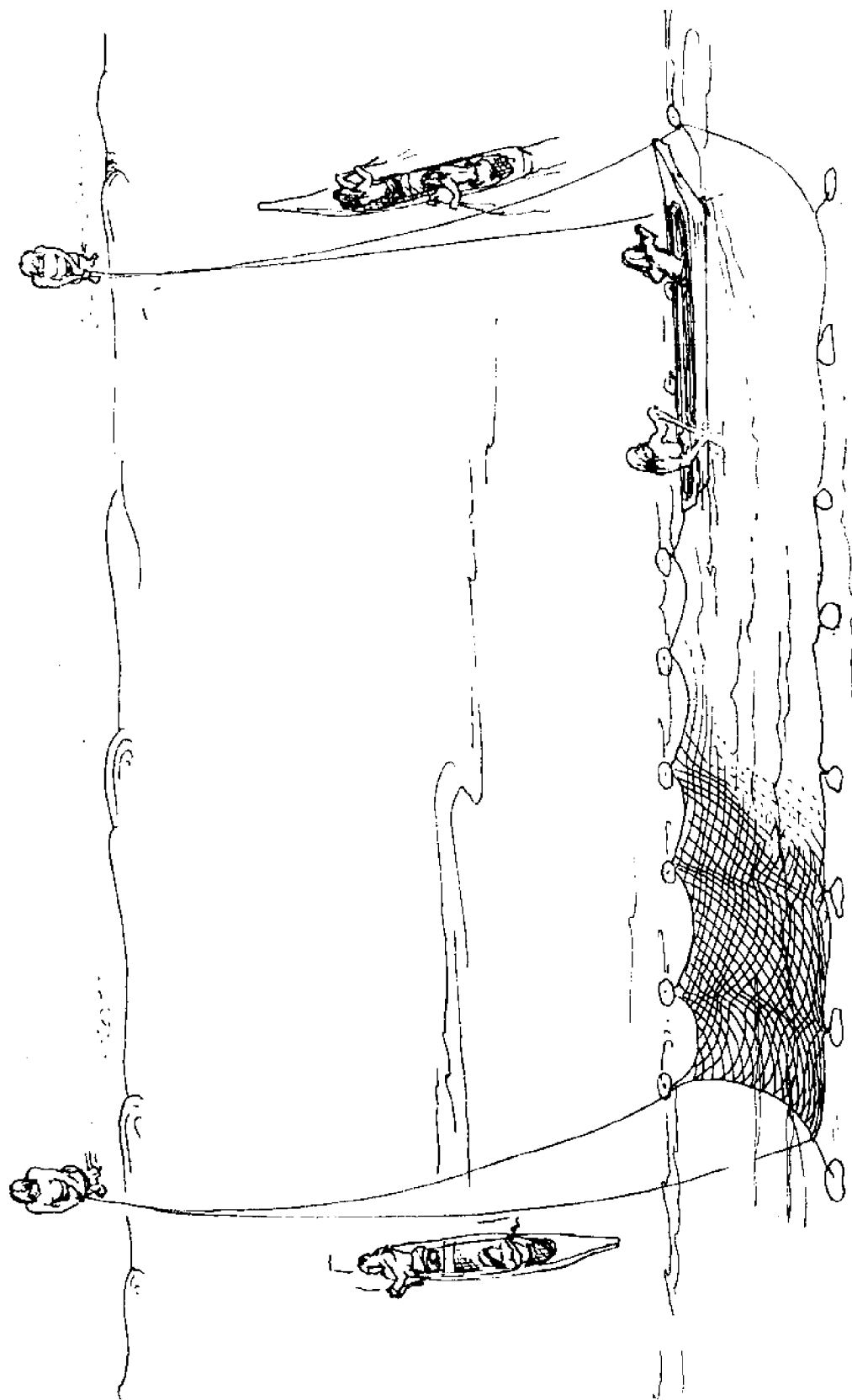


DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART

# Beach Seine Net Coast Salish



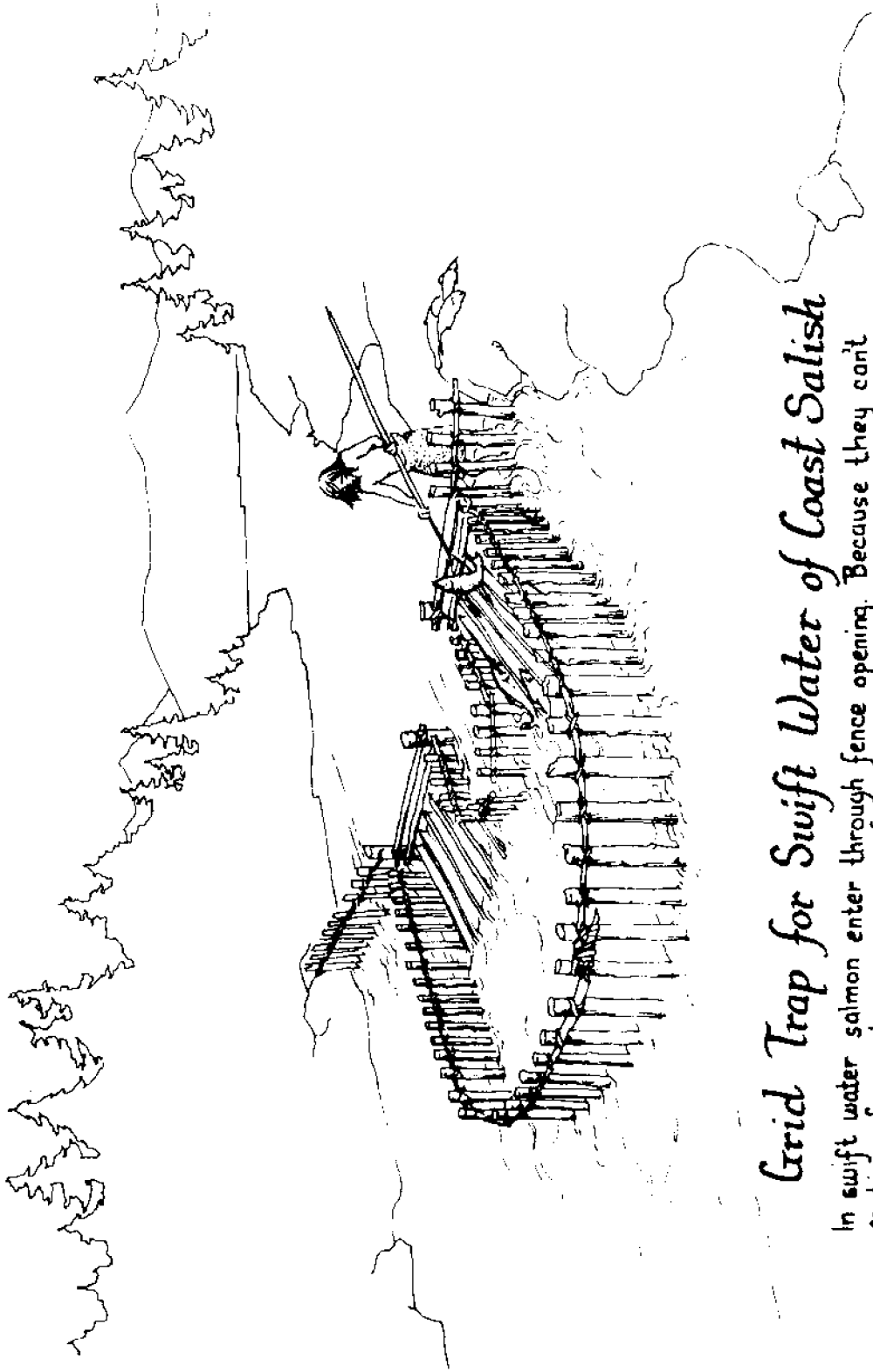
DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



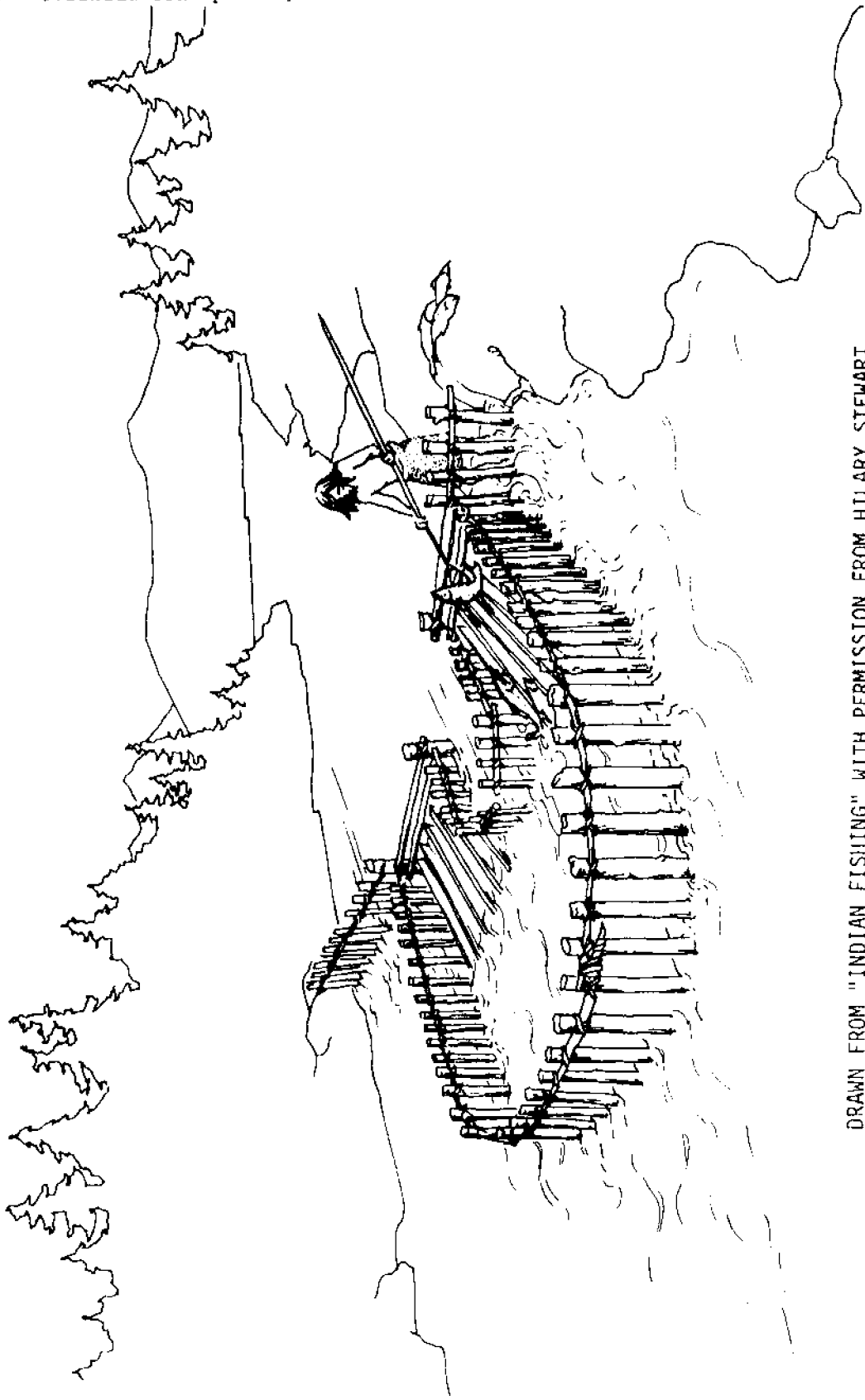
Picture #3 - Overhead Transparency - Teacher



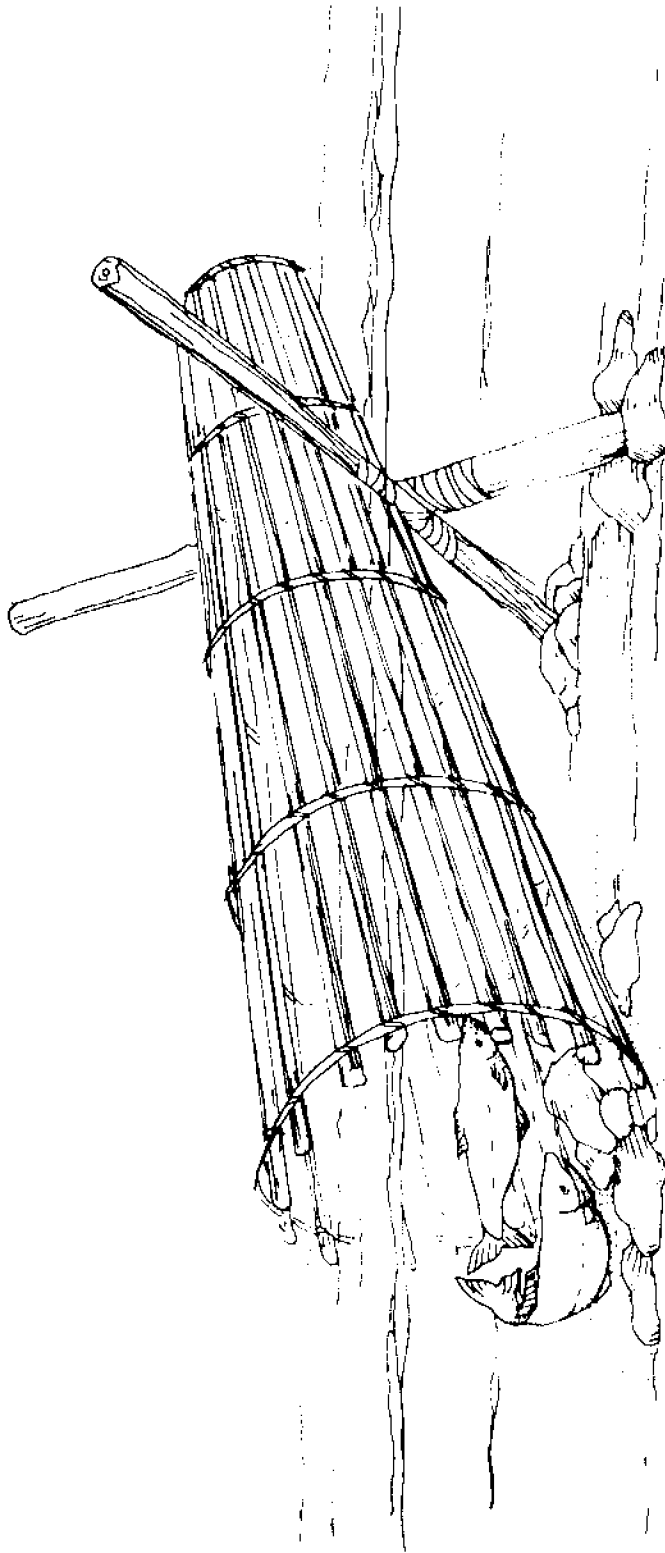
### *Grid Trap for Swift Water of Coast Salish*

In swift water salmon enter through fence opening. Because they can't continue forward they turn to find another way and are swept up onto grid and caught between slats.

DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



*River Trap of the Nookka*  
(Western Vancouver Island)

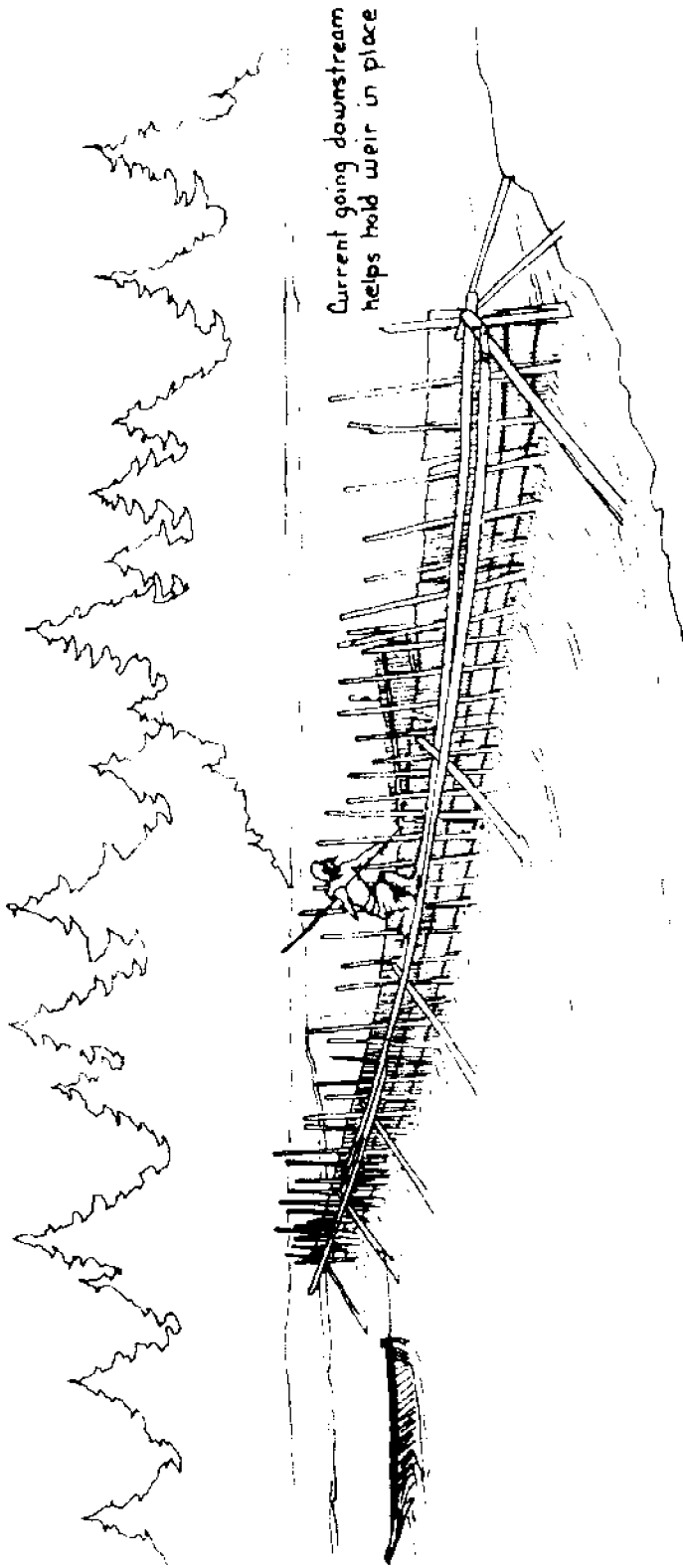
Similar traps of slightly different design were used by the Coast Salish. Used in shallow, fast flowing stream. When salmon are migrating upstream, men upstream frighten fish back down river. Strong current drives fish up into trap where they are speared.

DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART

Picture #4 - Overhead Transparency - Student

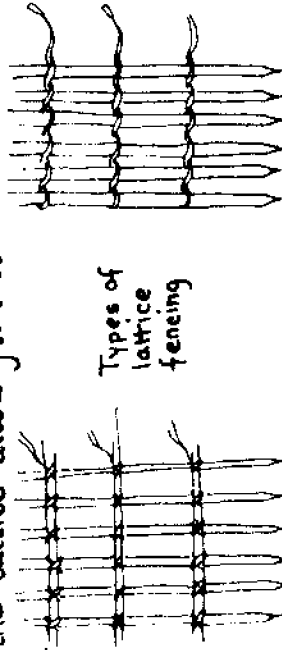


DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



### Fence Weir of the Coast Salish

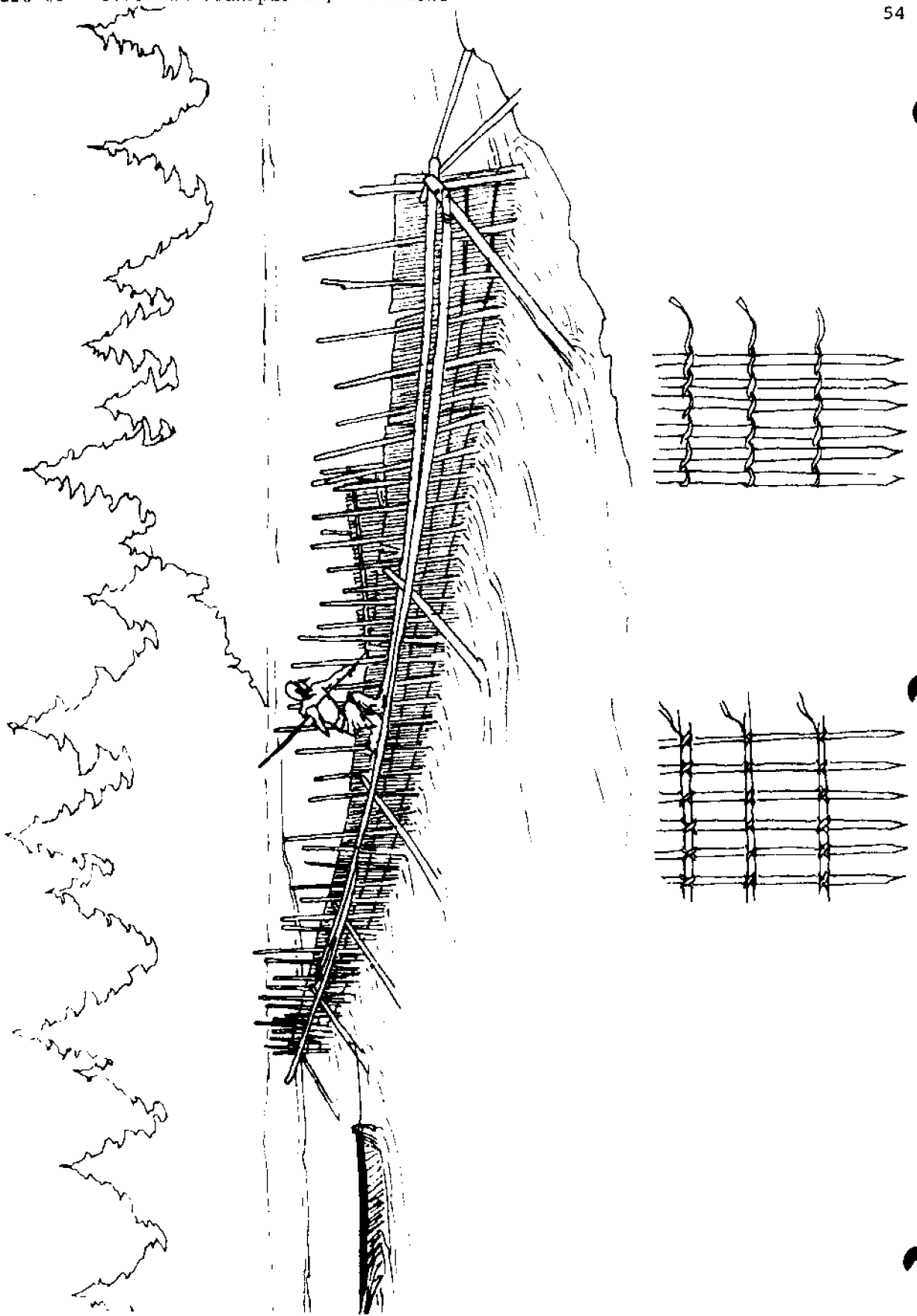
Sections of lattice fence are put up against a frame of tall poles across the river. Openings in the lattice allow fish to enter narrow traps in which they can't turn around.



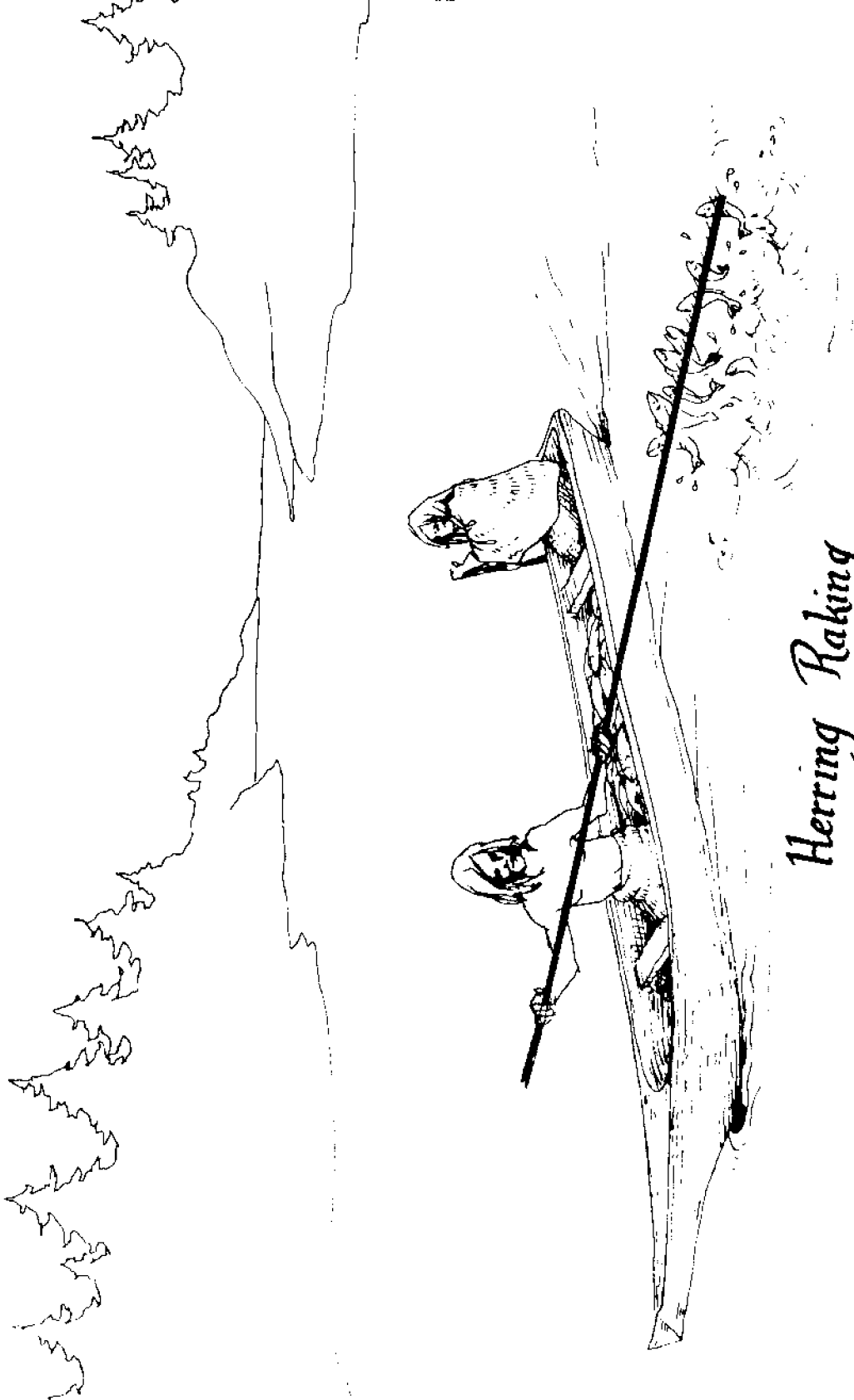
Types of lattice fencing

Split cedar sticks lashed with cedar withes.

1 and 2 strand twining with cedar withes.



DRAWN FROM 'INDIAN FISHING' WITH PERMISSION FROM HILARY STEWART



## *Herring Raking*

Fishermen sweep herring rake through water in one paddle-like motion, drawing it up and under fish.

DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM ILARY STEWART



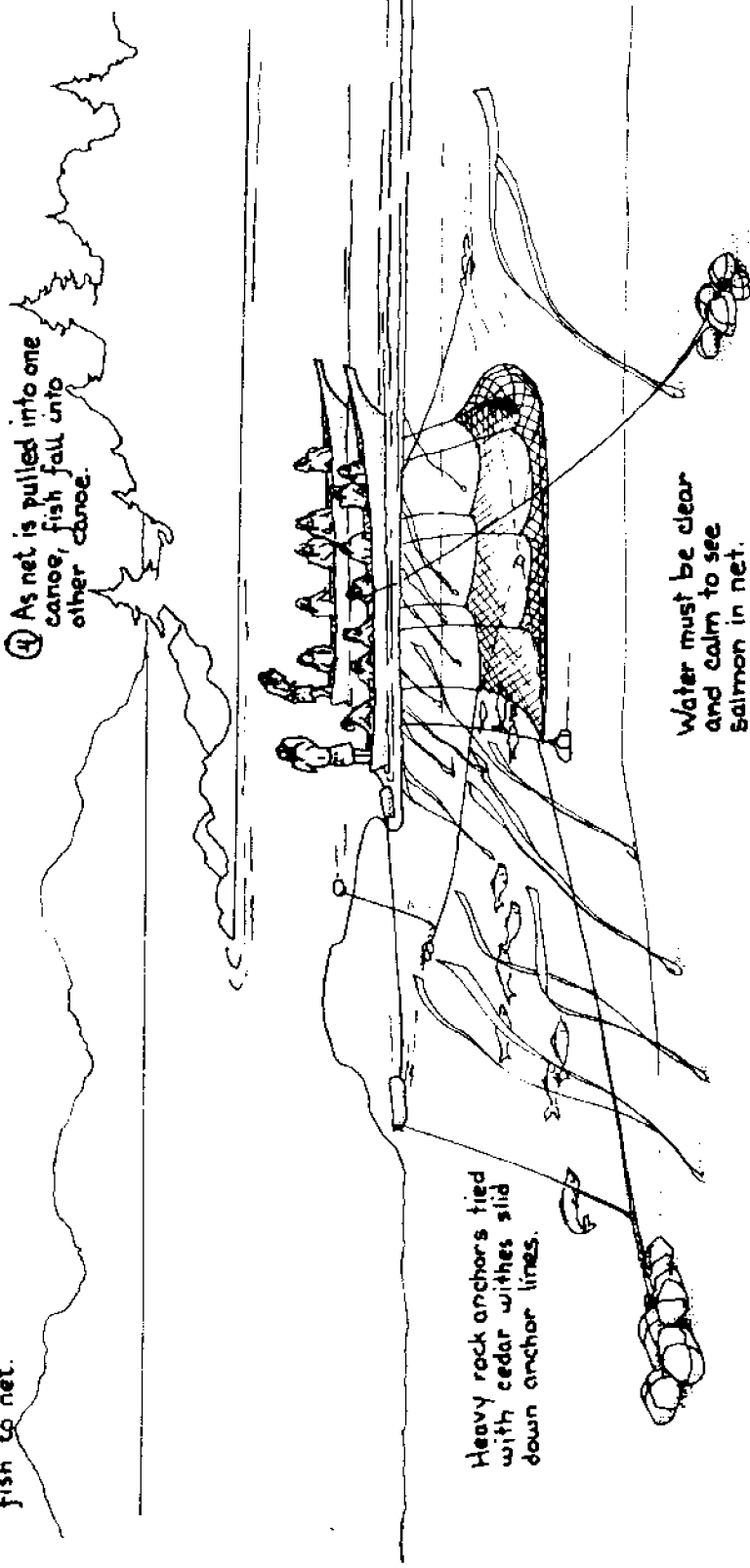
# Reef Net of Coast Salish

① Net is usually set just offshore where kelp covered reefs, in path of migrating salmon. Opening is cut through kelp to guide fish to net.

② Men in stems of canoes watch for salmon entering net. At the signal, crews raise net.

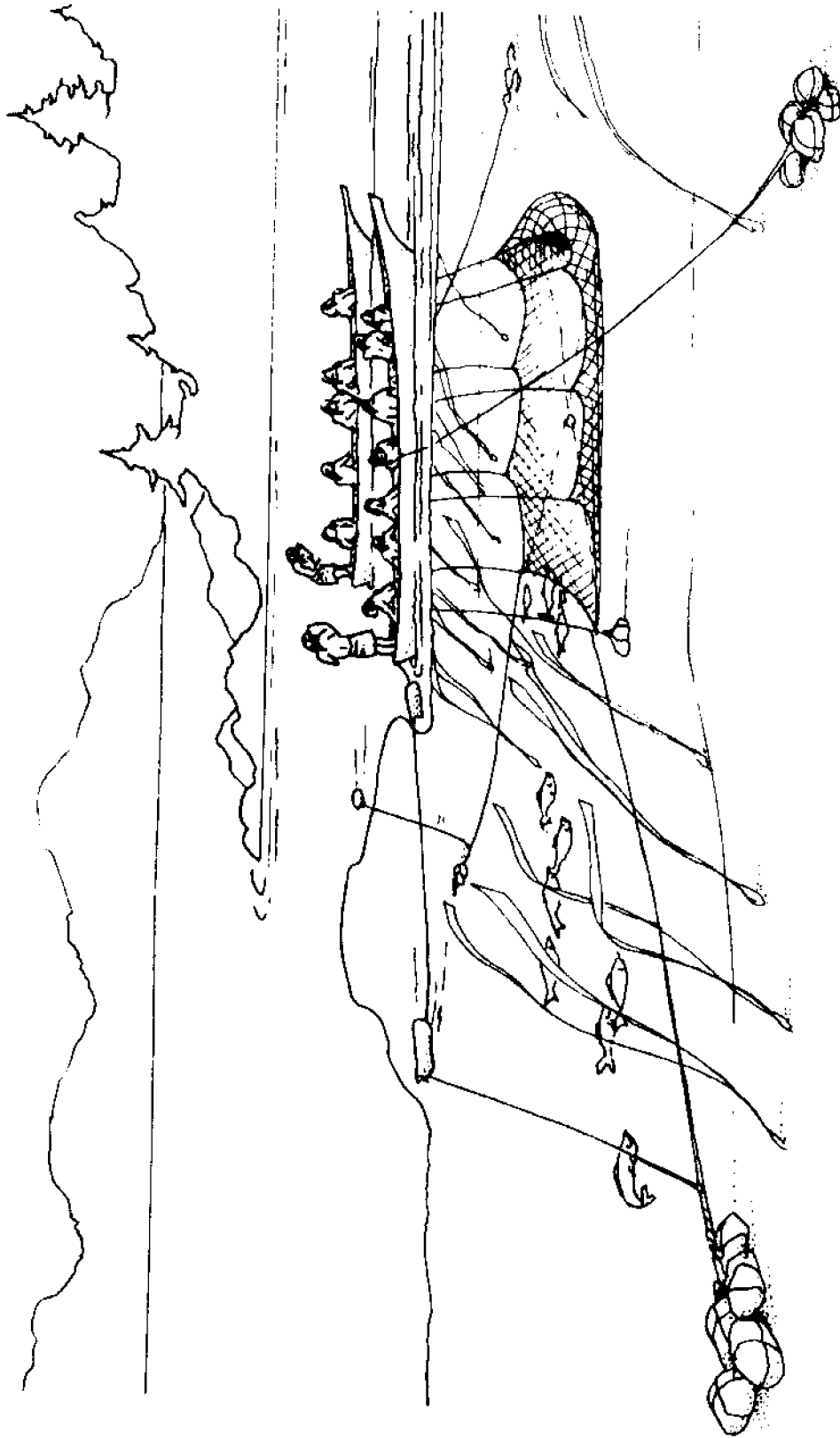
③ Slack on anchor line is let go. Canoes swing together.

④ As net is pulled into one canoe, fish fall into other canoe.

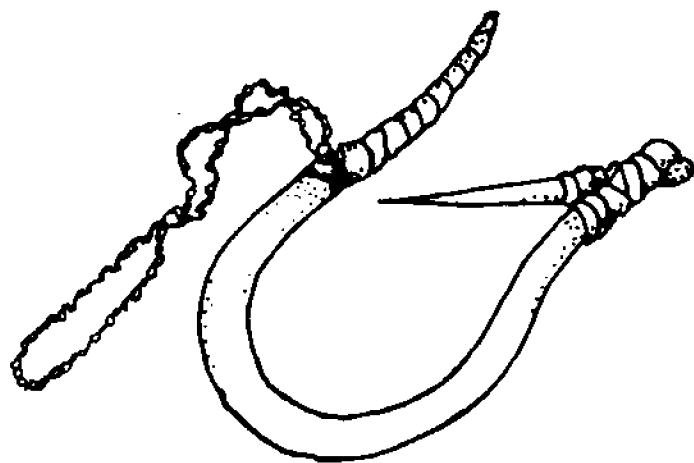


DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART

Picture #7 - Overhead Transparency - Student



DRAWN FROM "INDIAN FISHING" WITH PERMISSION FROM HILARY STEWART



NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

## Legend: Dipper and Coyote

The following story, a myth, moralizes on sharing the most important food, salmon. This story circulates widely among up-river people in northern Puget Sound. Coyote is a familiar folkloristic figure in stories told both by Indians living east of the Cascades and by Indians of Puget Sound who live in up-river villages. Dipper is a water bird often seen at the edge or on rocks in a stream teetering or dipping up and down. Mrs. Alice Campbell, an Upper Skaqit Indian of Concrete, related this version.

Dipper, a little water-bird, built a big fish-trap across the river. For a whole day he worked, all by himself. When it was finished he invited a lot of people to help him fish. They caught a lot of salmon in that trap, and then they cooked it. Dipper put all the choice portions of the salmon he cooked in a long wooden tray.

Meantime, old Coyote, who lived upstream, found out what Dipper was up to. Coyote wanted fish. He was always hungry, but it was Dipper's nice tray that he wanted most. So Coyote went down to where Dipper was cooking by his fish-trap and watched. When he saw Dipper leave his tray with salmon in it to go get more fish, he stole the tray and ran away. He stopped a long ways up-river to eat the salmon. Coyote was jealous of Dipper's fish-trap, and began to make plans to destroy it. He was a great guy for wrecking things; he wanted things to change.

So after Coyote ate up all the fish, he started hitting the tray and said four times, "You're going to cry!" And it started making noises like a little child. After a time a baby appeared in the tray, like a baby in a cradle. The child was to be Coyote's way of ruining Dipper's trap. Then Coyote floated the baby in the tray on the water. It drifted downstream and landed at Dipper's trap. Dipper saw the baby in the tray, "Oh my! There's a little child!" He could be a kind-hearted fellow. Dipper took the baby to shore where he was busy tending his fish-trap. He was all by himself and did not want to be alone.

Coyote commanded the baby, "You're going to keep crying and that will entertain Dipper." It did. The baby would not keep still and Dipper got very busy trying to quiet the baby on shore and tend the dam on the river, running back and forth. But he spent more time with the baby. It was crying so.

While Dipper was busy with the baby, Coyote got his chance to break up the trap. Soon, the trap was pretty well gone.

On shore, Dipper was getting tired of trying to stop the baby from crying, and got angry with it. He threw it down hard, down onto the ground, and it turned into his own tray. He knew now. "Oh, this is Coyote's work!" He ran down to his trap, and saw it was all broken.

It had been Dipper's business to keep fish from going further upriver. But now the fish were free. Coyote boasted about what he had done and told all the people. Coyote was a bad character but sometimes he accidentally did some good.



**ACTIVITY 4:**

**CONSTRUCTION OF HOOKS AND LINES**

**(2 days)**



## ACTIVITY 4: CONSTRUCTION OF HOOKS AND LINES (2 days)

**CONCEPTS:** 1. Considerable expertise is required to construct even seemingly simple fishing tools used by the early Indians.

**OBJECTIVES:** Following the activity, the student will demonstrate his/her ability to:

1. understand and appreciate the skill required to make hooks and lines from natural materials
2. make an actual fish hook or line following as closely as possible Indian methods

### TEACHER

**PREPARATION:**

1. Study student instruction sheets to determine the feasibility of doing this activity with your class (could be done at home with adult supervision and permission).
2. Gather materials and equipment necessary for projects.

**MATERIALS:**

1. Kelp and/or wood, (see student instructions) enough for those students doing projects
2. Various equipment used in construction of projects (see student instructions)
3. Copies of student hand-outs, "Making Bentwood Hooks" and "Making Fishing Lines"

**PROCEDURES:**

1. Explain that to gain a clearer understanding of what the construction of Indian fishing gear entailed, the students in groups of four or five will make a bentwood hook and/or a fishing line following Indian methods as closely as possible
  - a. pass out student hand-outs "Bentwood Hooks" and "Fishing Lines" to each student
  - b. go over instructions and diagrams carefully with the class
2. Student select projects, partners, and determine materials they will need.

**ASSIGNMENT:** Complete one project with a group.

### EXTENDED

**ACTIVITIES:** Having made a cedarbark fishing line, students may want to try other projects duplicating Indian uses for cedar. Try Extended Activities:

1. "Working with Cedar Bark"
2. "Plank House Construction"
3. "Canoe Building"
4. "Making a Steamed Bentwood Box"

Student Handout

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

MAKING BENTWOOD HOOKS

Your task, should you choose to accept this assignment, is to:

1. make a wooden mold
2. carve the stick
3. steam and bend the stick
4. reheat and grease the bent stick
5. cool it again and replace in the mold
6. finish the hook

Your group can organize into teams of two people each. Each team can do one part of your project (one team make mold, another carve and bend), or you can organize some other way if you prefer.

THIS IS A CHALLENGE!

This project calls for responsible behavior by everyone in order to work with carving tools, heat and sharp materials.

NOTE: Authentic methods of construction are shown here for study and appreciation. However, the teacher and students will adapt methods to the materials and equipment available to them. (For example: steaming over boiling water (tea kettle spout, double boiler), nails for pegs, bacon fat for tallow.)

MATERIALS

Large bentwood hooks (halibut, cod and dogfish)  
 branch of yew, fir, spruce, balsam, hemlock  
 carving tool  
 steaming equipment

Small bentwood hooks (Kelpfish)

Same as for larger hook except: branch length is the width of one hand, nails and hammer

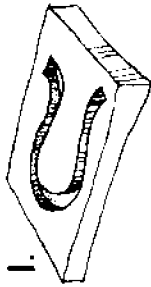
wooden mold (made by student)  
 tallow substitute (lard or bacon fat)  
 twine and rope

Student Handout

PROCEDURE FOR MAKING LARGE BENTWOOD HOOKS

NAME \_\_\_\_\_  
 DATE \_\_\_\_\_  
 PERIOD \_\_\_\_\_

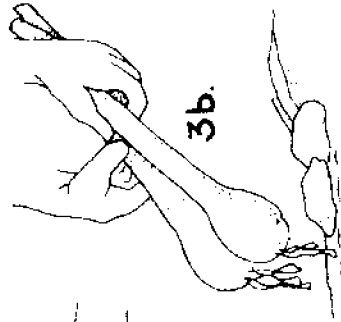
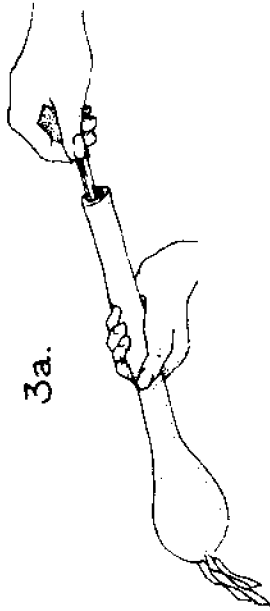
1. Carve desired shape and size of hook to appropriate depth into a wooden block to serve as the mold.



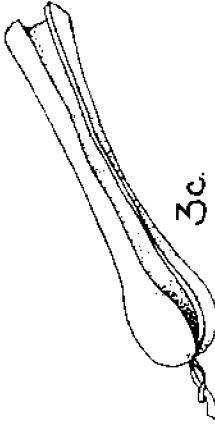
3. Steam until limber (about 20 minutes)

Indian method:

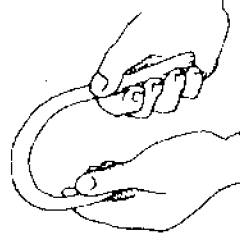
- a. put sticks in kelp tube, add water, plug end with moss
- b. bury kelp tube in hot ashes of fire and leave all night
- c. split kelp open in morning



3c.

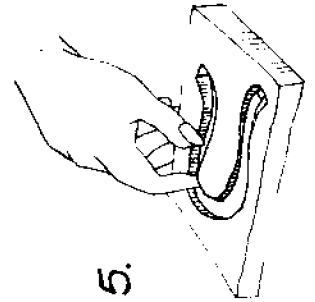


4. Carefully and slowly bend to shape.



4.

5. Press into wooden mold and let cool.



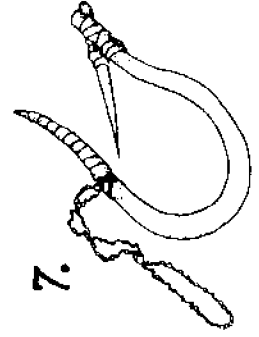
5.

6. Heat again over an electric stove. Rub with tallow (lard), (prevents wood opening out) and replace in mold to cool.



6.

7. Lash on bone or hardwood point with split spruce or cedar root (twine) and add rope leader.



7.

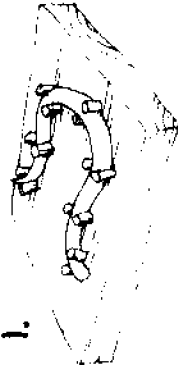


Student Handout

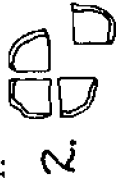
PROCEDURE FOR MAKING SMALL BENTWOOD HOOKS

NAME \_\_\_\_\_  
DATE \_\_\_\_\_  
PERIOD \_\_\_\_\_

1. Hammer 7-10 pairs of hardwood pegs (nails) into cedar board in the shape of a hook.



2. Whittle stick to a squared oval shape with one end flat and one end pointed.

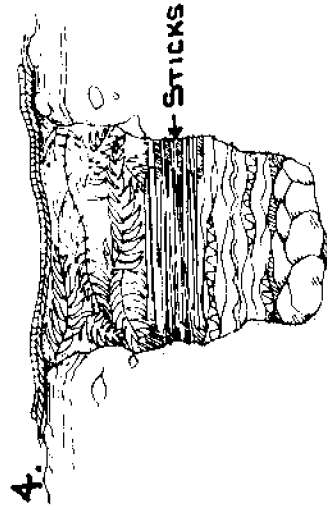


3. Soak sticks tied in bundles of 10, in a small box of fresh water before steaming.



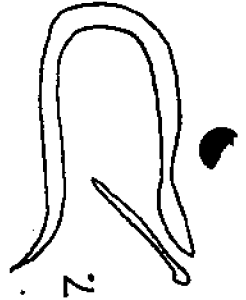
4. Steam until limber (15 minutes) in a pit dug in a corner of the house. Add water.

5. After 15 minutes, carefully bend to shape and press into mold until cool. (See Illustration #1)



6. Reheat and grease with tallow (lard).

7. Lash bone or hardwood point to flat side with split spruce root (twine) and add rope leader.



Student Handout

MAKING FISHING LINES

NAME \_\_\_\_\_

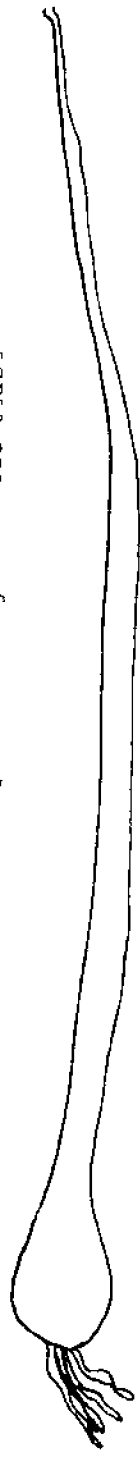
DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

Indian fishing lines were made from a variety of materials ranging from the fibers of nettle stalks to strands of human hair. The two mentioned in this handout are from bull kelp and inner cedar bark.

Bull Kelp Line

Material: bull kelp, a seaweed found in rocky areas along the whole coast



It sends out a stem up to 81 feet long and 3/8 inch in diameter at the base. It is cylindrical, solid and gradually increases in thickness. The stem becomes a hollow tube ending in a gas-filled bulb at the top. The bulb serves as a float to hold the seaweed up.

Procedure: The solid part of the stem is soaked in fresh water. The stem is then stretched, twisted for extra strength and tied with a "fisherman's knot." It blackens and shrinks to a thin line when dry.

It is tough and wire-like, but when put in water it returns to the original thickness within an hour and maintains the twist.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

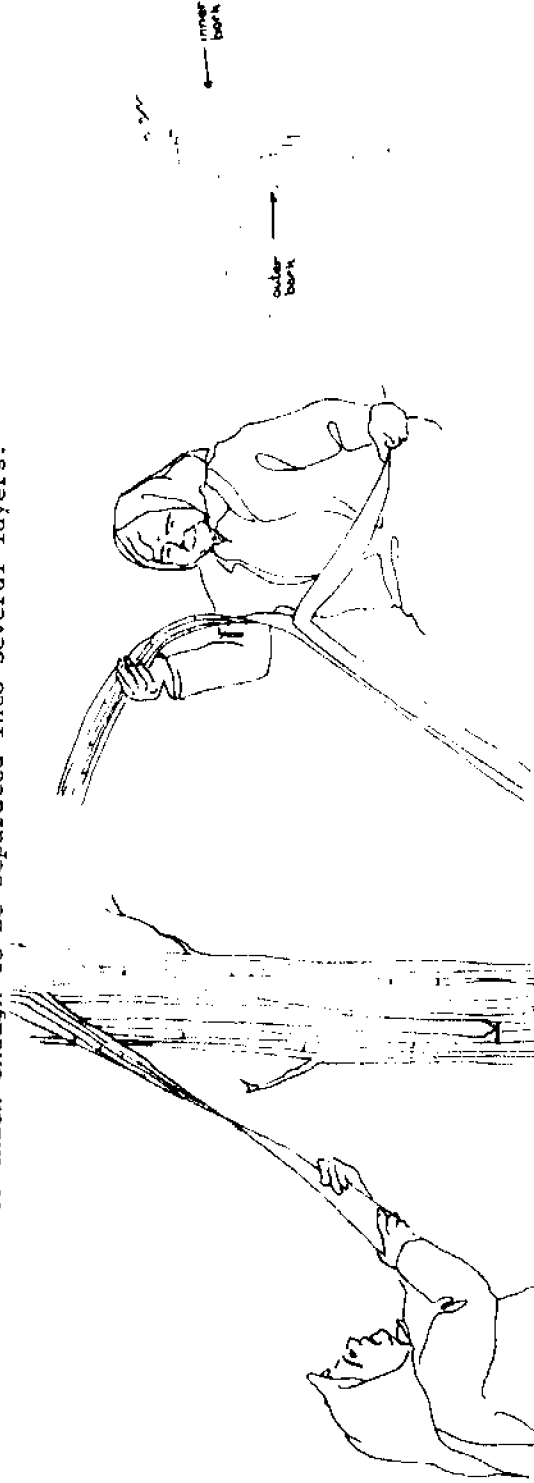
Student Handout

### MAKING CEDAR BARK FISHING LINES

#### Inner Cedar Bark Line

**Material:** The innermost layer of the two layers of the cedar bark. One of the qualities which makes both cedar wood and bark so useful is its straight grain. This allows cedar to be easily split or stripped.

- A. Bark was stripped from the tree by making a shallow horizontal incision in the trunk and with alternate hands pulling off long strips.
- B. Then the two layers of bark were separated so that the soft inner layer could be used.
- C. It is thick enough to be separated into several layers.



**Procedure:** Separate the layers of bark keeping a strip of inner bark about 2 feet long. Split the inner bark into thin strips about 1/4 inch wide. Soak the strips in water to make them pliable. Then twist three of these thin lines into a strong rope. Cedar bark used in this way by the Indian fisherman was pliable and strong enough for halibut line. (Halibut weigh up to 400 pounds!)

#### Lines of Cedar Limbs

Limbs were stripped of leaves, soaked in water, and twisted into rope. This rope had remarkable strength.

Single limbs worked to pliability were used to tie or sew corners of wooden boxes or the cross pieces of canoes.

Extended Activities

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

WORKING WITH CEDAR BARK

I. It might be said that the great cedar that once dominated the forests in the Northwest Coast represented life to the Indians here because of its tremendous versatility. The cedar can be recognized by its great height as well as its rough outer bark which was used probably for fuel.

II. The inner bark of the cedar tree was of great use to the Indians. While it was used in its natural state for some things, it often had to be processed for others. Just as we would not wear clothing of raw wool, the Indian would not use unprocessed bark for clothing and blankets.

The straight grain of both the cedar wood and bark made it useful. It splits easily. No single item was so ubiquitous in the Indian household. Shredding of bark was the constant busy work for women (done with a chopper-dull blade of wood or bone). It was shredded fine enough for use as towels; a coarser grade was plaited into skirts and capes and later into complete dresses. In the unshredded state, cedar bark was cut in strips of varying widths, the broader ones being plaited to serve as fishes. Also bark was used to line cooking pits. Wood, limbs, bark, leaves and roots were used. Wood was used for: planks for houses, rails, shingles, posts, canoes, oars, baby boards, buoys, spinning wheels, boxes, buckets, torches, arrow shafts, fish traps, and firewood. The limbs were used for baskets and ropes; bark for baskets, mats, lines, and strings, canoe bailers and when beaten, for skirts and hats, capes, beds for infants, drapes, napkins, blankets; gum and leaves for medicine; and roots for baskets.

III. The inner bark is a very thin layer between the sapwood and the rough outer bark. The Indians knew that bark came off the tree most easily in the spring, when the sap is running. A horizontal cut about 6-8 inches long is made in the tree about three feet from its base. The bark is then pulled away from the tree. (See illustrations in student hand-out, "Making Cedar Bark Fishing Lines", Activity 5.) Because the grain of the wood is so straight, the width of the bark can be maintained as the piece is torn.

The outer bark is then scraped off the inner bark before the sap dries. The inner bark is rolled up and stored in a dry place. The long, tough fibers make this inner bark ideal for basketry, mats, clothing and rope.

As a woven article is needed, a piece is cut from the dried bundle and soaked in water for several hours. The thin, dry bark absorbs so much water that it becomes thick and very pliable and can be split into long, thin pieces ready to be worked.

Extended Activities

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

WORKING WITH CEDAR BARK

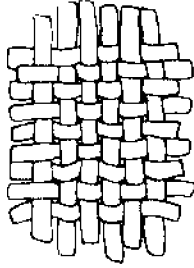
Part I: Mats - Mats were used on the floor and as wall partitions. Broader strips were plaited and used for dishes.

Directions: Make a small cedar bark plaited mat

- Materials:
1. cedar bark
  2. cutting tool
  3. water

Procedure:

- (Steps 1 and 2 should be done in advance of activity)
1. Soak the bark for several hours to make it pliable.
  2. Separate the inner bark from the outer bark



3. Cut inner bark into strips about  $\frac{1}{4}$ " wide and 4-6" long
4. These strips may be layered into three or four thinner strips
5. Plait (or weave) these strips into a mat  
(alternate over one-under one method)

Part II: Baskets - Used for fish, clams and the gathering of berries and roots

Directions:

Make a small cedar bark basket using a method that has been used by these Indians for hundreds of years. Many styles of weaving can be used; we'll use the "flat weave" and what is known as "twinning".

Materials:

1. cedar bark
2. cutting tool
3. water

## Extended Activities

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

Procedure:

1. Pick out six equal widths and lengths ( $\frac{1}{4}$  x  $4\frac{1}{4}$ ) of inner bark from water in which it has soaked for several hours

2. Weaving

The flat weave consists merely of under one-over one, alternating.

The bark strips extending from the flat weave are called "spokes". These become the sides of the basket which are drawn up by the amount of tension as we actually weave the sides.

Weave the bottom of your basket.

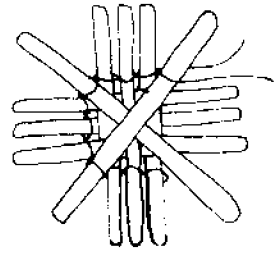
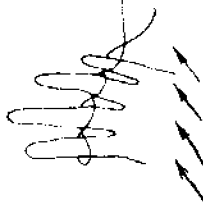
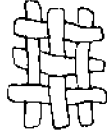
3. Twining

Before we get many things going at once, let's look at a set of "exaggerated spokes", your fingers. Take a long strip of cedar bark and loop it in half, one end longer than the other. Loop around first finger, twist, (always in the same direction) loop around next finger pulling it tightly next to first one, and continue. This method of weaving is called "twining".

The shape of the basket is determined by how much tension your twining bark feels.

4. Additional Alterations

The spaces between groups of spokes have to be filled in to make a uniform basket. Strips of bark that are cut at equal widths can be incorporated by simply placing the new spokes crosswise across the flat weave and twining it in with the other spokes. These can be added, as needed, at any stage while you are twining. Remember, the twisting always goes in one direction which gives the basket a tidy, uniform look.

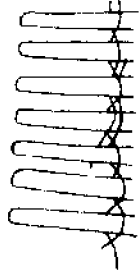


Extended Activities

NAME \_\_\_\_\_  
DATE \_\_\_\_\_  
PERIOD \_\_\_\_\_

4. There is a very definite reason that the long "twining strip" must be looped with one end longer than the other. You will eventually run out of this piece as you continue twining. As this happens, you must simply add on: lay about 2" of one end of a new strip over the old one. Treating them as one piece, continue to twine.

Soon, the new piece has been twisted in and has become part of the basket. If the original looped piece had two equal lengths, you'd run out of both at the same time, making it nearly impossible (not to mention, frustrating) to hang on to all the ends.



With a long strip of cedar bark, begin twining the spokes of your basket.

Basketry directions courtesy of Pam Phillips, Pacific Science Center.

Extended Activities

NAME \_\_\_\_\_  
DATE \_\_\_\_\_  
PERIOD \_\_\_\_\_

PLANK HOUSE CONSTRUCTION

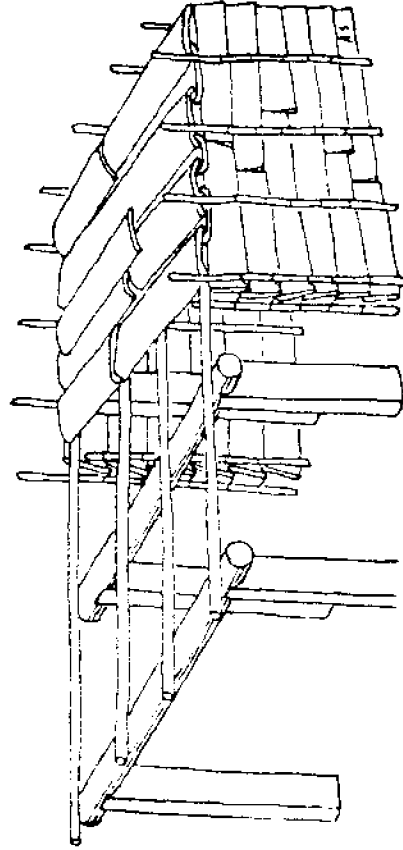
Directions: Construct a model house adapting the authentic Indian methods and materials to those you have available (e.g. cardboard for planks, string for cedar withes, sticks for poles).

Materials: Cedar plank, (cut from large cedar trees with wedges of horn or wood and stone hammers) cutting tool, cedar ropes

Procedure: Vertical poles were installed permanently. Horizontal house planks were slung on ropes (cedar withes) tied between poles. Roof planks lipped like tiles to shed water effectively. There was a removable board on top to let smoke out. Roof and siding could be removed and assembled on another house frame of poles near a fishing area during the appropriate season. Entire villages moved from river to river throughout the fishing season following the fish as they made their annual runs up the rivers at various times of the year.

The Plank House might be very long (100-200 feet) and 35-45 feet wide, sometimes housing an entire village. It was partitioned off with mats, but 3-4 families shared a hearth.

Southern style (Salish)



Typical house type illustrating both framework and external appearance.

--Drawing courtesy of Thomas Burke Memorial Washington State Museum.



Extended Activities

CANOE BUILDING

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

Perhaps the best example of Puget Sound Indian woodworking is the canoe. Several types were used. Design varied considerably according to area and use. (Travel canoes were larger than fishing canoes.)

Directions: Construct a model or draw to scale and illustrate the steps involved. Adapt the authentic Indian methods and materials to those you have available.

Material: Half a red cedar log of length up to 60', adze, chisel, stone, maul, needle, cedar withes

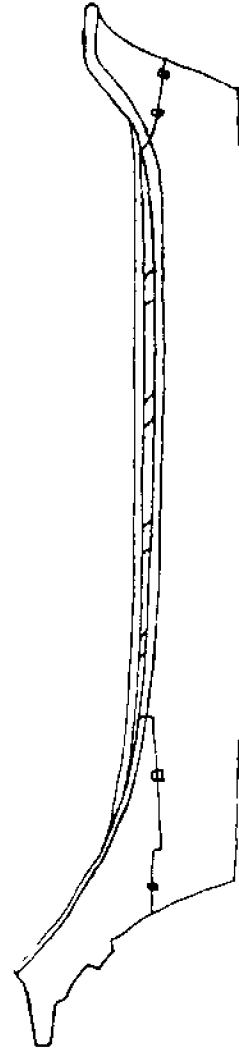
Procedure:

1. Shape outside of hull as desired with adzes and chisels.
2. Hollow inside by carefully splitting, chopping, and controlled use of fire if necessary, to give a graceful and seaworthy form.
3. To widen sides, put water in canoe (depth of a few inches) and red hot stones. (Stones are heated in fire, then placed in water to make it boil.)

Build a slow fire under the sides of the canoe. This steaming makes the canoe spread apart easily and flattens the bottom. Wood thwarts are used to spread the sides apart to final shape and then permanent thwarts are attached. Use care not to let canoe crack from heat.

4. Control thickness of hull with plugs. Drill hole and insert wooden plug of equal length. When inner surface of hull reaches plug, the proper thickness has been reached. Bow and stern pieces were fitted and sewn to hull with cedar withes. If a canoe cracked it was patched with pitch applied with hot rocks handled with tongs.

Note: This particular canoe is of Nootka (S.W. Vancouver) design, but materials and techniques of construction are the same as those used in Puget Sound.



--Drawing courtesy of Thomas Burke Memorial Washington State Museum

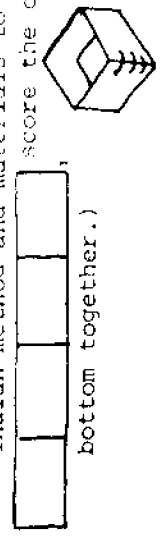
Extended Activities

NAME \_\_\_\_\_  
 DATE \_\_\_\_\_  
 PERIOD \_\_\_\_\_

MAKING A STEAMED BENTWOOD BOX

These boxes were made by steaming and bending one cedar slab to form the four sides of the box, using no nails, screws or glue. They were used to store tools, clothing, ceremonial masks and as they were water-tight (see procedure for making small bentwood boxes were sometimes used for cooking by the steaming-boiling method. (Hot stones heated in the coals of a fire were placed in the box of water. When the stones cooled, they were removed and more hot ones put in until the water boiled.)

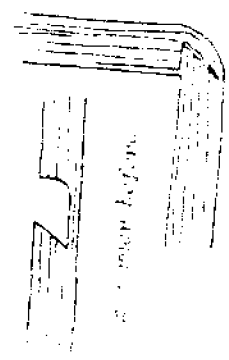
Directions: Either make an actual bentwood box or a replica of one from cardboard. Adapt the authentic Indian method and materials to those you have available. (Could use a piece of cardboard,



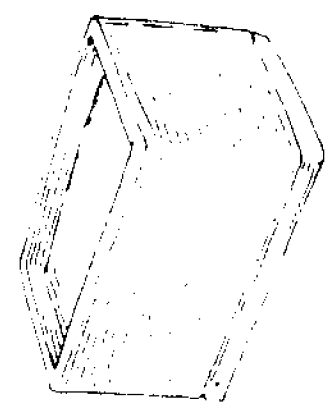
score the corners with a knife to bend, and sew the fourth seam and bottom together.)

Materials: 1 long cedar plank and 1 slab for bottom, pegs and a drill or twine, a needle, carving tool, water, heat

Procedure: Cut the cedar plank the length of the perimeter you want the box to have (4-inch or less in thickness). While the cedar plank is wet, carefully cut angled grooves where the corners will be and steam for one hour. While the plank is still in the steam, slowly bend at the grooves. Sew or peg the seam of the fourth corner. Peg or sew the bottom piece on. Make either a flat or a lipped-edge top.



--Drawings courtesy of Thomas Burke  
 Memorial Washington State Museum





## **ACTIVITY 5:**

### **UNMAKING A ROPE**

**(1 day)**



## ACTIVITY 5: UNMAKING A ROPE (1 day)

### CONCEPTS:

1. Thousands of years ago, the Indians needed fishing lines of great strength and pliability.
2. They discovered how to use the natural materials from the land and water around them to make such lines.
3. Certain principles of rope-making used by the Indians are still used today.

Following the activity, the learner will demonstrate his/her ability to:

1. perform a series of experiments with assorted kinds of rope
2. complete a chart based on the analysis of a piece of rope
3. draw logical conclusions based on the results of the experiments
4. determine from the experiments the relationship between the composition and construction of a rope and its strength
5. compare Indian rope-making techniques to those used today
6. understand and appreciate the Indian's methods for making rope from natural materials
7. identify a cedar tree

### TEACHER

#### PREPARATION:

Before class, the teacher should do the rope activity himself to clarify "strands", "yarns", and "fibers".

#### MATERIALS:

1. Assorted kinds and sizes of rope cut in two foot lengths (at least one rope per two students)
2. Scissors or knives to cut ropes
3. Buckets (one for each two students)
4. Collection of weights (rocks) for each pair of students (water could be used as the weight)
5. Student hand-out, "Unmaking a Rope" for each student
6. Several cedar-bark or kelp lines made in the previous activity
7. Cedar bark, cedar tree limbs (see student instructions)

#### PROCEDURES:

1. Lead a discussion to introduce these ideas:
  - a. the technology of rope making is one of the oldest technologies known to man
  - b. thousands of years ago, the Indians needed fishing lines of great strength and pliability. They developed just such lines from the natural materials of the land and water around them
2. Ask students what they know about how rope is made
3. Explain that to better understand and appreciate the early Indian's technology, the students will compare the Indian methods to rope-making methods used today.

3. Pass out student hand-out "Unmaking a Rope"
  - go over directions
  - pair students with partners
  - distribute
4. Students complete activity
5. Show film, "Red Man-Red Cedar"
6. Display cedar branch to be certain students can identify a cedar tree
7. Pass out student hand-out "Making Fishing Line"
8. Students complete activity

**EXTENDED ACTIVITIES:**

1. Traveling Collections
2. Museum Tours
3. Places to Visit
4. Film List

Student Handout

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

UNMAKING A ROPE

**Directions:** Take some rope apart to see how it's made and why it's made the way it is. Put your information on a chart.

**Materials:** Two feet of rope and assorted different kinds and sizes of rope, bucket, weights

**Procedure:** Using two feet of rope, carefully untwist a few inches of it. Examine the rope end-on, and record what you see on the chart:

1. Many ropes are made of three strands; each strand is made up of four yarns; each yarn is made up of a great many fibers. Be sure you know the difference between strands, yarns, and fibers before going on.

<u>*Clockwise or counter-clockwise</u>
My rope is 2 feet long and _____ inches in diameter.
Number of strands =
<u>*Strand twist direction*</u>
Number of yarns per strand =
<u>*Yarn twist direction*</u>
Number of yarns in whole rope =
Number of fibers per yarn (count exact number) =
Number of fibers per strand (estimate) =
<u>*Fiber twist direction*</u>

2. Fibers; separate all the fibers in 1 or 2 yarns into 3 or 4 piles according to their length. What do you observe about fiber length?

---



---



---



---

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

Student Handout

UNMAKING A ROPE

Page 2

What do you observe about the thickness of fibers?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Can you split a fiber into two or more fibers?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Test some single fibers for strength. Is there any relationship between fiber thickness and strength?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Experiment #1

- a. Take 1 yarn and loosen all the fibers. Untwist them and spread them two or three inches apart. SLOWLY...pull them apart.
- b. Put the fibers together again and twist them 5 to 10 times. Now pull out 1/3 of the fibers. How is this different from pulling the untwisted fibers.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

UNMAKING A ROPE  
Page 3

c. What effect does twisting have?

\_\_\_\_\_  
\_\_\_\_\_

d. Why do you think this is so?

\_\_\_\_\_  
\_\_\_\_\_

e. What happens when you twist even more?

\_\_\_\_\_  
\_\_\_\_\_

4. Experiment #2

a. Bunch five long fibers together. Don't twist them.

Lift a bucket or can as shown.



Add weights to the bucket until the fibers break. Record the weight at which the fibers broke.

b. After the five fibers break, twist the long pieces together quite tightly and repeat the experiment. Does twisting have any effect on the total strength of the five fibers?

\_\_\_\_\_  
\_\_\_\_\_

c. Question: Why does rope work the way it does? What are your conclusions?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



NAME \_\_\_\_\_

Student Handout

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

MAKING CEDAR BARK FISHING LINES

Page 2

Compare the Indian rope made in Activity 4 to the modern rope.

a. How are they alike?

---

---

b. How are they different?

---

---

c. Is one method of rope making better than the other? Why or why not?

---

---

---

---

## Teacher Information Sheet

TRAVELING STUDY COLLECTIONS  
 UNIVERSITY OF WASHINGTON  
 THOMAS BURKE MEMORIAL WASHINGTON STATE MUSEUM  
 Education Division  
 Seattle, Washington 98105

The Museum offers a variety of study collections in science and social studies for use by the schools in the state. The collections contain artifacts, specimens, models, and written information on the subject presented. Some collections contain supplementary books and illustrations. Collections are checked out for two-week periods.

School districts share with the Museum the cost of processing and maintaining the collections. The fee for a two-week period is two dollars (\$2) for all collections. The teacher or school district is responsible for picking up and returning the collection to the Museum. For schools unable to pick up, the Museum will mail the collections. The fee is three dollars (\$3). The school pays the return postage to the Museum. Collections may be mailed at the Library Materials rate.

The weight of each collection is listed for your convenience, along with the description of its contents.

Collections MUST be back in the Museum on the date stamped inside the box cover and on the shipping tag. Because of the very heavy scheduling for most of the collections, we ask that teachers cooperate by returning collections on time. For return mail, allow a minimum of two days for delivery. A fine of \$2 per box is charged for collections which are not returned on time.

University student teachers may have the use of one collection free of charge during their quarter of teaching responsibility.

The school and the teacher using the study collections are responsible for the care of the material in the classroom and the careful packing and return to the Museum. The teacher or school will be charged for any necessary repair or replacement of missing or damaged items.

TO ORDER

Four school districts--Seattle, Shoreline, Highline, and Bellevue--maintain their own pickup, delivery, and return service. The school districts are billed for the collections.

Seattle - Write or call the Education Division of the Museum to place order for collection, 543-5591. Deliveries are scheduled every other Monday.

Shoreline - Order through the librarian at your school. Deliveries are scheduled every two weeks.

Teacher Information Sheet (cont'd)

Highline - Write or call the Education Division of the Museum to place order for collection, 543-5591. Deliveries are scheduled every week.

Bellevue - Detailed directions for ordering can be found in your copy of Classrooms Unlimited. Deliveries are scheduled every Tuesday and Thursday.

Other School Districts - Write to the Education Division of the Thomas Burke Memorial Washington State Museum, University of Washington, 98105, or phone 543-5591. Include in your request: name of collection, approximate dates desired, school, address. Send appropriate fee, \$2 if picked up, \$3 if mailed. PLEASE MAKE CHECKS PAYABLE TO THE UNIVERSITY OF WASHINGTON. RESERVATIONS FOR COLLECTIONS CANNOT BE CONFIRMED UNTIL RECEIPT OF PAYMENT.

SOCIAL STUDIES COLLECTIONS

These collections contain museum specimens, and authentic reproductions of typical household objects, tools, and clothing.

INDIANS (NORTHWEST)

House model, wood-working tools, and household implements of the Indians of the North Pacific Coast from the Canadian border through southeastern Alaska. (26 lbs.)

INDIANS (EASTERN WASHINGTON)

Tools, household implements and clothing (25 lbs.)

INDIANS (NORTH AMERICA)

Two or three artifacts from each of the major culture areas of North America. (26 lbs.)

INDIANS (PUGET SOUND)

A canoe model, cattail mat, wood-working tools, household implements and a pair of dolls dressed in aboriginal costume. (25 lbs.)

INDIANS (PUGET SOUND WINTER VILLAGE CUTOUT)

Village beach scene showing plank house painted on heavy cardboard 18 inches high and 2 feet long. Includes individual cardboard figures, 3 to 4 inches high, involved in everyday activities (17 lbs.)

WASHINGTON STATE HISTORY

Historical objects of the Pioneers, and four dolls dressed in everyday clothing of 1850. (32 lbs.)

## Teacher Information Sheet (cont'd)

## OTHER RESOURCES AVAILABLE

## MUSEUM TOURS

Tours of the Museum exhibits must be arranged in advance. Call Mrs. Flo Fugita at the Museum, 543-5689, to make reservations.

## PRESENTATION AT THE PACIFIC SCIENCE CENTER

"Northwest Coast Indian Life," a special presentation prepared by the Thomas Burke Memorial Washington State Museum, is being offered to school children at the Pacific Science Center, Building #4.

The program is one of the many educational sessions included at the Center for elementary and secondary school classes. It is presented by Burke Museum Docents, within a full sized reconstruction of Kwakiutl Indian house, as an introduction to the native culture of the Pacific Northwest Coast Indian people. Featured is a display of material from the Burke Museum, including artifacts illustrating Indian life in relationship to the environment and dioramas of Northwest Coast houses. Within the scale model structures are blanket looms, baskets and other items which would be found in such houses. Slides and taped sound supplement the presentation.

For information about the presentation, call the Pacific Science Center, 625-9333, or Mrs. Fugita at the Museum, 543-5689. It is advisable to make reservations well in advance.

## Teacher Information Sheet

PLACES TO VISITBellingham

LUMMI INDIAN AQUACULTURE PROJECT. Six miles northwest on Lummi Reservation. Commercial fish and shellfish production plant. Open for guided tours throughout the year. Write or call for group appointments. Lummi Indian Tribal Enterprise, Marietta, Washington 98268. (206) 743-8180.

LUMMI INDIAN WEAVERS. Seven miles northwest on Lummi Reservation. An all Indian enterprise, manufacturing a variety of cotton and synthetic fiber products on four-harness hand looms. Open June to Labor Day, daily 9 to 8; Labor Day through May, Monday through Friday, 9 to 5.

WHATCOM MUSEUM OF HISTORY AND ART. 121 Prospect Street. Housed in a restored 1892 building; exhibits of Indian artifacts, state history and art. Open Tuesday through Saturday, 12 to 6, Sunday, 1 to 5.

Bremerton

KITSAP COUNTY HISTORICAL MUSEUM. 837 4th Street. Houses exhibits on local history. Open Tuesday through Sunday 1:30 - 4:00; free.

Cashmere

PIONEER VILLAGE AND WILLIS CAREY HISTORICAL MUSEUM. Recreates the history of the Columbia River Indians before the arrival of the first pioneers.

LaConner

SWINOMISH FESTIVAL. Swinomish Reservation. Baseball games, Indian stick games, dances and salmon bake. Memorial Day.

FISH PROCESSING PLANT. Swinomish Reservation.

Marietta

LUMMI STOMISH WATER CARNIVAL. Lummi Reservation. Canoe races, Indian dances, games, salmon barbeque. International war canoe races. June, during first two weeks (dates depend on tide).

Maryhill

MARYHILL MUSEUM OF FINE ARTS. Six miles west of Maryhill on U.S. 830. Outstanding collection of Indian artifacts. Open March 31 through November 15. Admission charge.

Marysville

TULALIP TRIBES TREATY DAYS. Tulalip Reservation. Commemorating the signing of the Point Elliott Treaty. Features ceremonial dances, smoked salmon feast. January.

Teacher Information Sheet (cont'd)

Mukilteo

POINT ELLIOTT TREATY SITE MONUMENT. On January 22, 1855, Indians from surrounding tribes ceded lands to the U.S.

Neah Bay

MAKAH DAYS. Makah Reservation. Commemorating acquisition of citizenship by the Makah Indians, ceremonial dances, Indian games, and traditional feast. Weekend closest to August 26.

MAKAH MUSEUM. Makah Reservation.

OZETTE DIG. Makah Reservation.

Oakville

CHEHALIS TRIBAL DAYS. Chehalis Reservation. May 29, 30 and 31.

Ocean Shores

NORTHWEST COAST MUSEUM AND GIFT SHOP. P.O. Box 366, Ocean Shores, Washington 98551. Quinault Indian Exhibit. Individual and group tours. Admission charge.

Port Townsend

JEFFERSON COUNTY HISTORICAL MUSEUM. City Hall, Old Court Room.

Redmond

NORTHWEST INTER-TRIBAL INDIAN DAYS CELEBRATION. First weekend in August. Marymoor Park.

San Juan Islands

ORCAS ISLAND HISTORICAL MUSEUM. Center in village of Eastsound. Indian artifacts. Museum building is composed of several old homestead cabins.

Seattle

BLAKE ISLAND MARINE STATE PARK. Four miles west of Seattle. Features Tillicum Indian Village where authentic Indian arts and crafts are displayed. Phone (206) LA 2-6444 for information.

MUSEUM OF HISTORY AND INDUSTRY. McCurdy Park on Lake Washington, 2161 East Hamlin Street. Indian artifacts, pictures. Set of 55 slides on Washington State Indians available to teachers in King County.

THOMAS BURKE MEMORIAL STATE MUSEUM. University of Washington. Northwest Coastal and Plateau Indian relics.

## Teacher Information Sheet (cont'd)

Museums/Libraries

State Capitol Museum, Washington, 211 West 21st Avenue has a permanent display of some Indian material and more in storage. Often it has special programs and exhibits. A membership will keep you informed by newsletter of events of interest. A growing collection of photographs and slides of Indian art. Has sponsored Evergreen interns. Located near the Capitol Campus in Olympia.  
Hours - Tuesday - Friday 10-4, Saturday - Sunday 12-4.

Washington State Historical Society, Tacoma, Washington, 315 North Stadium Way, has a reference library with Northwest material including photographs, books, and clippings. A large portion of fourth floor features displays of Indian artifacts.  
Hours - Tuesday - Saturday 9-4:30.

Thomas Burke Memorial Washington State Museum at University of Washington campus features the finest display of Northwest Coast material in the state. To accompany the exhibit is a useful exhibit Guidebook with notes on manufacture of various items on display.  
Hours - Tuesday - Saturday 10-4:30, Sunday 1-4:30.

In addition to these major collections in western Washington, smaller museums and historical societies often have fine collections of artifacts, photographs, and manuscripts, and may also sponsor interns.

Some of these worth knowing about and checking with as you pursue your studies are:

Sidney Museum and Arts Association  
 731 Prospect Street  
 Port Orchard

Cowlitz County Museum  
 4th and Church Streets  
 Kelso

South Thurston County Historical Society  
 P.O. Box 339  
 Tenino

Lewis County Museum  
 1070 Washington  
 Chehalis

Polson Park Museum and Historical Society  
 1611 Riverside  
 Hoquiam

Dupont Historical Society  
 Box 5  
 Dupont

## Teacher Information Sheet (cont'd)

Renton Historical Society  
508 Cedar Avenue South  
Renton

Clark County Museum  
1511 Main Street  
Vancouver

Kitsap County Museum  
Silverdale

King County Historical Society  
6046 Lake Sammamish Parkway N.E.  
Redmond

ERZA MEEKER Historical Society  
321 East Pioneer  
Puyallup

East Grays Harbor Historical Society  
Route 1 Box 130  
McCleary



## Teacher Information Sheet

SUGGESTED FILM LISTMen and the Forest, Part I: Red Man and The Red Cedar (12 minutes)

The purpose of this film is to show how the coastal Indians used the western red cedar as part of their environment for food, clothing, shelter, transportation and art. The relationship of present day Indians to the old culture is portrayed through demonstrations of how things were done in the old culture. Through these scenes, the student gains an appreciation for the high degree of skill which the early Indians had in using the cedar tree, and how many ways that we use the tree today were not originated by the white man, but the red man equaled and even surpassed our modern culture in ingenious and creative use of their environment. Available at Seattle Public Library.

Men and the Forest, Part II: The Cedar Tree (11 minutes)

This film shows how the uniqueness of the Cedar Tree contributes to man: straight even grains and natural oils which dramatically reduce rot. The tree yields many "split cedar products" the basic one being the shake. The Western Red Cedar is used almost exclusively to make shakes, a major forest product of the Pacific Northwest. The Port Orford Cedar of southern Oregon and northern California provides another example of products made from splitting cedar: the arrow shaft. A major portion of all arrow shafts made come from this tree. Split products are only one group contributed by the four species of cedar, for much sawn lumber is taken also. Altogether, the Cedar Tree makes a major contribution to the economy of the Pacific Northwest.

Thunderbird (23 minutes)

While not a Puget Sound tribe, an interesting legend of the Quinalt, a Washington coastal group. A trip to the Olympic Peninsula making canoes, boating to a sea lion island and an Indian seal hunt. Available at the King County Film Library.

Wooden Box: Made by Steaming and Bending (33 minutes)

The Indians of the northwest coast developed woodworking to a degree unequaled elsewhere among aboriginal people. One of the specialties of these people was the steaming and bending of a single wood slab to form the four sides of a box, using no nails, screws, or glues. The boxes, some of which were elaborately carved, inlaid, and painted, were used for gifts, drums, storage, and transport. Follows carefully every stage of making the Kwakiutl box. Release date: 1962 EMC. Salish also made these boxes.

## Teacher Information Sheet

## SUGGESTED FILM LIST (cont'd)

Quillayute Story (25 minutes)

This film, produced by Jucl Lange of Bremerton and narrated from a script prepared by Dr. Erna Gunther, Director of the Washington State Museum and Professor of Anthropology at the University of Washington, shows in detail how the Quillayute Indians have adapted themselves to modern civilization. The old crafts are portrayed, but modern tools are used. The film treats of handicraft activities, sports, festivals, games, dances, fishing, agriculture, and religious worship. It is regrettable that a number of names are mispronounced. (Titania - 1951)

Indian Canoes Along the Washington Coast (18 minutes)

This film demonstrates how and with what tools a traditional Indian cedar dugout canoe is made. Also shown are highly competitive river and saltwater races, the stocking of a King Salmon fish hatchery, dancing and a salmon bake. Available at the King County Film Library.

Paddle to the Sea (28 minutes)

A film adaptation of Holling C. Holling's book, Paddle to the Sea. A hand-carved canoe is launched in the Northern forest and experiences many events before eventually making it to the sea. Available at the King County Film Library. Live action.

The Eagle and the Moon (5 minutes)

A Northwest Indian folktale with illustrations about a young prince who captured the sun and the moon in order to show how brave he was. The wicked raven stole these treasures but with the aid of the eagle, the sun and moon were replaced. This is why the eagle is "the sign of peace and good will". Animated. Available at the King County Film Library.

Other Possibilities:

Contact the RED EARTH Play Company and have them visit your class and perform the play "Changer".

Recordings

Northwest (Puget Sound), Long-Playing Record AAFS L34, the Library of Congress, Music Division-Recording Laboratory, Archive of American Folk Song, Washington, D.C.

Eleven songs including a lullaby, love songs, gambling songs, religious songs both old and new, and some story telling songs. All are sung by Indians. The booklet which accompanies the recordings contains a background for the music by Dr. Erna Gunther, Professor of Anthropology at the University of Washington, and an analysis of the songs by Willard Rhodes, Professor of Music, Columbia University.

**EARLY FISHING PEOPLES OF PUGET SOUND**

**EVALUATION**

**VOCABULARY**

**BIBLIOGRAPHY**

## EARLY FISHING PEOPLES OF PUGET SOUND

### EVALUATION:

#### 1. Map Activities

Identify the geographical features shown by letters on the map:

- A. Mount Baker
- B. Straits of Juan de Fuca
- C. Whidbey Island
- D. Puget Sound
- E. Olympic Mountains
- F. Hood Canal
- G. Lake Washington
- H. Puyallup River
- I. Mount Rainier

#### 2. Name three tribes of the Puget Sound region

- a. (Answers vary)
- b. \_\_\_\_\_
- c. \_\_\_\_\_

3. All three tribes belonged to a language group called the (Salish).

4. The Puget Sound area has been inhabited for about (10,000) years.

5. The chief food resource of the Puget Sound Indians was (fish, salmon).

6. What were two reasons for telling legends? a. (teach)

b. (entertain) (explain natural phenomenon)

7. Name three common fish in the Puget Sound area. a. (salmon)

b. (cod)

c. (Halibut) (smelt, herring, trout, flounder)

8. What three natural resources were most important to these Indians?

- a. (water)
- b. (fish)
- c. (cedar trees)

9. Where were their villages located? (near water's edge)

10. List three natural materials Indians used as fishing gear and what they were used for:

	Material	Use
a.	<u>(answers vary)</u>	<u></u>
b.	<u></u>	<u></u>
c.	<u></u>	<u></u>

#### TRUE OR FALSE

- F 1. Fishing technology used in Puget Sound today is quite simple and relies on natural materials.
- T 2. The early Indians depended entirely on the natural environment for all their needs.
- F 3. These Indians' fishing technology was not very successful.
- T 4. The Indians made rope by twisting together three long strips of inner cedar bark.
- T 5. Modern rope construction is still based on this principle.
- F 6. Early Indian fishing lines and ropes were not very strong.
- F 7. Four Indian techniques for acquiring fish were nets, weirs, fish-farming, and spearing.
- T 8. A large steamed bent-wood hook was used to catch halibut.
- T 9. In fast flowing streams, a variety of traps were used to catch salmon.
- F 10. Salmon were taken in large numbers with fish rakes.

#### Vocabulary to match with meanings:

- |                                       |   |
|---------------------------------------|---|
| <u>g</u> 1. anadromous                | a. a large brown seaweed  |
| <u>c</u> 2. migrate                   | b. easily bent  |
| <u>h</u> 3. technology                | c. move to another region with the change in seasons                                    |
| <u>f</u> 4. weirs                     | d. narrow waterway connecting two large bodies of water                                 |
| <u>a</u> 5. kelp                      | e. a long arm of the sea  |
| <u>d</u> 6. strait                    | f. a kind of fence built across rivers to trap fish                                     |
| <u>e</u> 7. sound (as in Puget Sound) | g. a fish which goes upstream from the sea to breed                                     |
| <u>b</u> 8. pliable                   | h. all the knowledge, skills, and materials used to make things necessary for a culture |

## ESSAY

1. Explain why Puget Sound Indians did not 1) hunt for most of their food, 2) use horses, 3) wear moccasins, 4) use smoke signals.

*( 1) preferred fish and little use for skins, 2) forests too dense and water so close, canoe made more sense, 3) moccasins would not last long in wet sand--would stretch then harden when dry, 4) trees too tall and dense for smoke signals--sent canoe messengers )*

2. Why were the Indians more successful at catching fish in Puget Sound than the early European explorers who came here?

*(had adapted fishing technology to their specific environment)*

3. Explain the relationship between how a rope is made and how strong it is.

*(tighter twist = greater strength)*

4. Why weren't gill nets placed across the entire river?

*(on alternate sides every several 100 yards so some fish get through to swim upstream and spawn--early conservation)*

5. Why were the white men shocked and frightened to watch the early Indians fish for flounder?

*(Fisherman stepped on flounder and stood on it long enough to spear it. Hundreds of Indians standing in mudflats jabbing sharp sticks at their feet! Continuous motion in muddy water.)*

6. Describe the First Salmon Ceremony and its importance.

*(Great respect shown to the "Salmon People." Bones thrown back to sea to ensure Salmon would return whole again and return to the land of the Salmon People.)*

Note: For the final part of this examination the teacher should have two illustrations of fishing techniques (overhead transparencies). The illustrations should have blanks. Students should fill in the blanks explaining fishing methods.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

EVALUATION

1. Map Activities

Identify the geographical features shown by letters on the map:

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

D. \_\_\_\_\_

E. \_\_\_\_\_

F. \_\_\_\_\_

G. \_\_\_\_\_

H. \_\_\_\_\_

I. \_\_\_\_\_

2. Name three tribes of the Puget Sound region

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

3. All three tribes belonged to a language group called the \_\_\_\_\_.

4. The Puget Sound area has been inhabited for about \_\_\_\_\_ years.

5. The chief food resource of the Puget Sound Indians was \_\_\_\_\_.

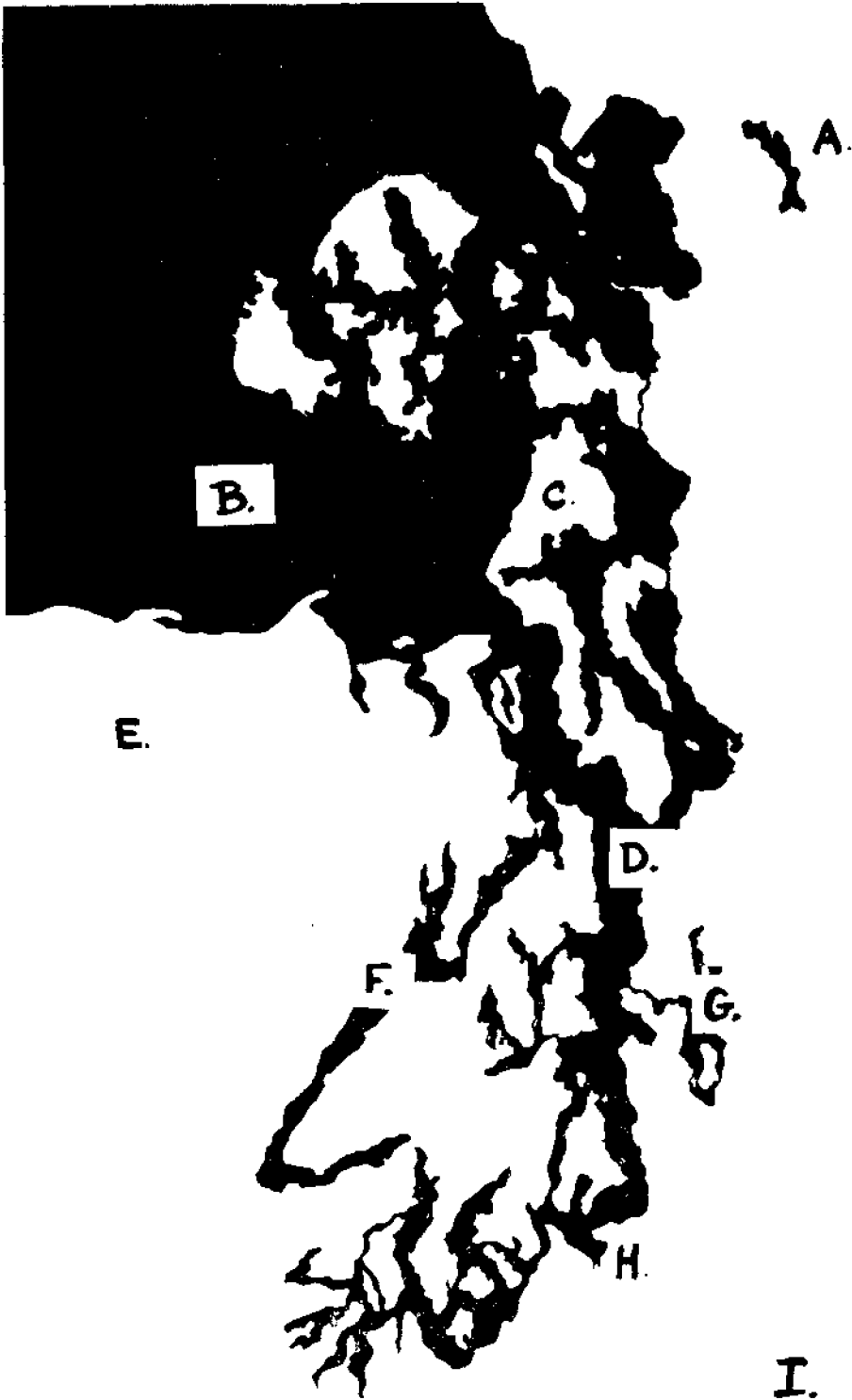
6. What were two reasons for telling legends? a. \_\_\_\_\_

b. \_\_\_\_\_

7. Name three common fish in the Puget Sound area. a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_





NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

8. What three natural resources were most important to these Indians?

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

9. Where were their villages located? \_\_\_\_\_

10. List three natural materials Indians used as fishing gear and what they were used for:

	Materials	Use
a.	_____	_____
b.	_____	_____
c.	_____	_____

#### TRUE OR FALSE

- \_\_\_\_\_ 1. Fishing technology used in Puget Sound today is quite simple and relies on natural materials.
- \_\_\_\_\_ 2. The early Indians depended entirely on the natural environment for all their needs.
- \_\_\_\_\_ 3. These Indians' fishing technology was not very successful.
- \_\_\_\_\_ 4. The Indians made rope by twisting together three long strips of inner cedar bark.
- \_\_\_\_\_ 5. Early Indian fishing lines and ropes were not very strong.
- \_\_\_\_\_ 6. Modern rope construction is still based on this principle.
- \_\_\_\_\_ 7. Four Indian techniques for acquiring fish were nets, weirs, fish-farming, and spearing.
- \_\_\_\_\_ 8. A large steamed bent-wood hook was used to catch halibut.
- \_\_\_\_\_ 9. In fast flowing streams, a variety of traps were used to catch salmon.
- \_\_\_\_\_ 10. Salmon were taken in large numbers with fish rakes.

NAME \_\_\_\_\_ 95

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

Vocabulary to match with meanings:

- |                                    |   |
|------------------------------------|---|
| _____ 1. anadromous                | a. a large brown seaweed  |
| _____ 2. migrate                   | b. easily bent  |
| _____ 3. technology                | c. move to another region with the change in seasons                                    |
| _____ 4. weirs                     | d. narrow waterway connecting two large bodies of water                                 |
| _____ 5. kelp                      | e. a long arm of the sea  |
| _____ 6. strait                    | f. a kind of fence built across rivers to trap fish                                     |
| _____ 7. sound (as in Puget Sound) | g. a fish which goes upstream from the sea to breed                                     |
| _____ 8. pliable                   | h. all the knowledge, skills, and materials used to make things necessary for a culture |



## EARLY FISHING PEOPLES OF PUGET SOUND

### VOCABULARY:

1. geographical feature - *a natural feature of the land such as a mountain or lake*
2. Sound (as in Puget Sound) - *a long arm of the sea*
3. inlet - *narrow strip of water extending into a body of land*
4. bay - *a wide inlet of the sea*
5. strait - *narrow waterway connecting two large bodies of water*
6. tideland flats - *flat beach on which tides go in and out*
7. natural resource - *something found in the natural environment of use to man*
8. nettles - *a weed with stinging hairs*
9. kelp - *a large brown seaweed*
10. inhabitant - *a person that lives in a specific place*
11. archaeology - *study of life of ancient people*
12. sites - *locations*
13. unique - *unusual; rare*
14. reverence - *feeling of deep respect*
15. breech clout - *a cloth worn about the hips*
16. synthetic - *artificial or produced artificially*
17. anadromous - *going upstream from the sea to breed*
18. migrate - *to move to another region*
19. spawn - *to produce and deposit eggs*
20. salmon - *common fish in Puget Sound*
21. halibut - *common fish in Puget Sound*
22. cod - *common fish in Puget Sound*
23. flounder - *common fish in Puget Sound*
24. herring - *common fish in Puget Sound*
25. smelt - *common fish in Puget Sound*

26. weirs - *fence set in water to catch fish*
27. grid - *evenly spaced lines, criss-crossed lines*
28. lattice - *open structure of crossed strips of wood*
29. reef - *a ridge of sand or rock near the sea*
30. bentwood hook - *a hook made by steaming and slowly bending wood*
31. plaiting - *interweaving*
32. ubiquitous - *present everywhere at the same time*
33. pliability - *easily bent, flexible*
34. strand - *fibers twisted to form a unit for further twisting into yarn or rope*
35. yarn - *a continuous strand of fibers*
36. fiber - *a thread*
37. stone boiling - *method of heating water to boiling by continually immersing red hot stones in the water*
38. technology - *all the knowledge, skills, and materials necessary to make things used by a culture*

NAME \_\_\_\_\_

99

Student Handout

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

VOCABULARY

1. geographical feature
2. Sound (as in Puget Sound)
3. inlet
4. bay
5. strait
6. tideland flats
7. natural resource
8. nettles
9. kelp
10. inhabitant
11. archaeology
12. sites
13. unique
14. reverence
15. breech clout
16. synthetic
17. anadramous
18. migrate
19. spawn
20. salmon
21. halibut
22. cod
23. flounder
24. herring
25. smelt

Student Handout

VOCABULARY (cont'd)

26. weirs
27. grid
28. lattice
29. reef
30. bentwood hook
31. plaiting
32. ubiquitous
33. pliability
34. strand
35. yarn
36. fiber
37. stone boiling
38. technology

# EARLY FISHING PEOPLES OF PUGET SOUND

101

## BIBLIOGRAPHY:

### Books

- Clark, Ella. Indian Legends of the Pacific Northwest, University of California Press: Berkeley, California, 1953.
- Deloria, Vine, Jr. Indians of the Pacific Northwest, Doubleday and Company, Inc.: Garden City, New York, 1977
- Drucker, Phillip. Indians of the Northwest Coast, The American Museum of Natural History, The Natural History Press: Garden City, New York, 1955.
- Gunther, Erna. Ethnobotany of Western Washington, University of Washington Press: Seattle, Washington, 1945.
- Haerberlin, Hermann and Gunther, Erna. The Indians of Puget Sound, University of Washington Press: Seattle, Washington, 1930.
- Lyons, C.P. Trees, Shrubs and Flowers to Know in Washington, J.M. Dent and Sons, Limited: Toronto, Canada, 1956
- Matson, Emerson N. Longhouse Legends, Thomas Nelson and Sons: Camden, New Jersey, 1968.
- McFeat, Tom. Indians of the North Pacific Coast, University of Washington Press: Seattle, Washington, 1966.
- Phillips, James W. Washington State Place Names, University of Washington Press: Seattle, Washington, 1971.
- Stewart, Hilary. Indian Fishing, J.J. Douglas Ltd., Vancouver, B.C., Canada, 1977

### Curricula

Thomas Burke Memorial Museum, University of Washington, Seattle, Washington.

#### The Indians of Puget Sound

EDUCATION DEVELOPMENT CENTER, INC. Social Studies Programs, 15 Mifflin Place, Cambridge, Massachusetts 02138.

#### People and Technology. 1972

The Evergreen State College. Lynn Patterson, Olympia, Washington: TESC.

#### An Introduction to the Study of Northwest Coast Cultures. 1977



TTT Project and Center for Indian Teacher Education. University  
of Washington, Seattle, Washington

The History and Culture of the Indians for Washington State. 1/5

Resources

Thomas Burke Memorial Washington State Museum Guide Books.

United Indians of All Tribes Foundation, Fisherman On the Puyallup,  
1978, 28pp. Grades 3 and up.

Although this book has fictitious elements, it documents Indian fishing on the Puyallup River in the city of Tacoma and for this reason we list it under non-fiction. Intended for a social studies curriculum, it is the story of a young Puyallup boy learning to fish from his grandfather on the Puyallup River. The book is illustrated by Indian artist, Roger Fernandes.

ORCA FEEDBACK REPORT  
MARINE EDUCATION PROJECT

We need your ideas, comments and suggestions about this activity packet to refine existing materials and plan for future program development. Please fill out this survey, remove it from the packet and mail it to us. It has been pre-addressed for your convenience. In anticipation of your response and contribution, thank you.

Teachers Name \_\_\_\_\_ School \_\_\_\_\_  
School District \_\_\_\_\_ Grade Level \_\_\_\_\_  
No. of Students Involved \_\_\_\_\_ Type of Class \_\_\_\_\_  
(i.e., science, social studies, math, etc.)

1. Circle the activity packet you are evaluating.

Beaches	Profiles and Transects	Literature and the Sea
Early Fishing People of Puget Sound	Tides	
Energy from the Sea	Tools of Oceanography	

2. Please list (and comment about) the activities you have used from the activity packet. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Keeping in mind you course objectives:

- a. How well did this material relate? \_\_\_\_\_
- b. How appropriate for your students were the concepts, principles and vocabulary of this activity packet? \_\_\_\_\_  
\_\_\_\_\_
- c. How realistic were the activities and skills for your students? \_\_\_\_\_  
\_\_\_\_\_

Are the teacher's materials and instructions adequate and complete? \_\_\_\_\_

5. How could this activity packet be improved? \_\_\_\_\_  
\_\_\_\_\_

6. All things considered, which of the following best describes your overall feeling about the ORCA packet you used?  
very useful \_\_\_\_\_ useless \_\_\_\_\_  
1 2 3 4 5

7. Do you plan to use these materials again? \_\_\_\_\_

8. Do you plan to use any of the other activity packets? \_\_\_\_\_

9. Have you introduced other teachers to the activity packets? \_\_\_\_\_  
If so, who else may be presently using the materials? \_\_\_\_\_  
\_\_\_\_\_

10. Would you use Marine Education activities as a vehicle to teach skills in other areas? (Please check all those that apply.)  
\_\_\_\_\_ SCIENCE \_\_\_\_\_ ENGLISH \_\_\_\_\_ ART \_\_\_\_\_ VOCATIONAL EDUCATION  
\_\_\_\_\_ SOCIAL STUDIES \_\_\_\_\_ MATH \_\_\_\_\_ HUMANITIES \_\_\_\_\_ HOME ECONOMICS  
\_\_\_\_\_ OTHER (Please specify)

11. Would you be interested in?

a. Using the Marine Education Resource Center and the Pacific Science Center? \_\_\_\_\_ YES \_\_\_\_\_ NO

b. Attending a marine education inservice workshop? \_\_\_\_\_ YES \_\_\_\_\_ NO

12. May we contact you for further information? \_\_\_\_\_

Space for additional comments on back.

Additional Comments:

-----  
(fold here)  
-----

-----  
(fold here)  
-----

STAMP

Marine Education Project  
Pacific Science Center  
200 2nd Ave. N.  
Seattle, WA 98109