

DAVID THOMPSON, JACO FINLAY,  
AND FUR TRADE VOYAGEURS

Pacific Northwest Frontier  
Journeys of Discovery



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Illustrated by James LeGette

*Pacific Northwest Journeys of Discovery*

OREGON TRAIL ROUTE  
PRESENT DAY LOCATIONS

LEWIS & CLARK, 1805  
DAVID THOMPSON, 1811  
ROBERT STUART, 1812

KESSLER  
Museum of the Pacific Northwest



*“Exploration is the product of a cultural or individual curiosity; it is a unique process that has enabled mankind to know and understand the world and is at the heart of scientific thinking. One of its most significant aspects is that it teaches people to ask the right questions; by doing so, it forces us to reevaluate what we think we know and understand.*

*At its core, exploration is a series of moral dramas. But it is these dramas, involving new lands, new people, and exotic ecosystems of staggering beauty, that make the explorers’ stories not only moral tales but also some of the greatest adventure stories ever recorded. They represent the process of learning in its most expansive and vivid form.”*

–William Goetzmann



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*For Sharon Okamoto, Michael Friedland, and Amy Timoll;  
Seattle Urban Academy educators of wisdom and courage.*

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## Environmental Knowledge

*“Respectful use and management of natural resources requires intimate understandings of environmental systems, native species, and agricultural practices. The desire to get more than one needs leads individuals, groups, and even nations to harm land and life. The health of individuals and culture is related to the health of the environment—plains and forests, streams, rivers, beaches, and oceans.”*



## Introduction

Welcome to the adventure of learning through *The Passages of David Thompson, Jaco Finlay, and Fur Trade Voyageurs: Pacific Northwest Frontier Journeys of Discovery*. This travelogue-sourcebook is one in a series that is founded on the very basic assumption that students and teachers desire to search for ideas and insights that we are explorers at heart ourselves! Moreover, exploration is education in fullest expression. The epic discovery accounts featured through Journeys of Discovery take learners directly to original source materials, freeing the imagination and fostering the quest for quality interdisciplinary learning. Journeys of Discovery invite participants to become historians, artists, scientists, dramatists, philosophers, and builders in an attempt to transform learning into the active construction of lasting ideas and values revealed with contemporary relevance.

Journeys of Discovery lessons are organized around authentic daily entries from journals, letters, and other primary source materials that directly relate to individuals whose lives and times represent significant elements of our diverse cultural heritage. The Journeys approach contends that the best learner is the self-directed learner capable of taking on and completing intellectually stimulating tasks as evidenced in the lives of great explorers who were themselves writers and scientists, ethnographers and historians. For these reasons, students are led through the readings to identify activities, topics, and resources that meet learners' needs at deeper levels of inquiry and enable them to make wide-ranging connections from the source material to the world around them today. As learners begin to make connections, text material can assume real meaning.

Geography represents a pivotal link in the Journeys of Discovery curriculum as geography's essence is one of both human and physical dimensions. H. J. MacKinder writes that geography "postulates both scientific and human knowledge. If our aim is to give unity to the outlook of our pupils, and to stop that pigeon-holing of subjects in their minds which has prevailed in the past, then geography is admirably fitted as a correlating medium." The daily discovery travelogue readings are the heart of the curriculum but lead readers to myriad natural connections in the sciences and humanities. When students read primary source material an intellectual transformation happens. Medieval students are said to have known more of Aristotle than do their present-day counterparts because in that time there were no textbooks, only the original accounts. Primary sources, whether from Eleanor of Aquitaine or David Thompson, offer no conclusions and no "insights" which presents the possibility for creative thought.

Also central to the Journeys approach are concrete activities associated with the readings. When hands-on activities are connected to readings, an intellectual renaissance becomes possible. The activities (see below, "A World of Illustrated Journaling Presentations"), whether drama, reports, construction, or experiments, are the basis of intellectual engagement. Since writing is among the most important expressions of thought for purposes of evaluation, students follow the examples of lifelong learning exemplars featured in the travelogue by journalizing themselves throughout the year. Daily paragraph entries on a wide range of topics derived from the sourcebook readings provide an enriching record of student learning throughout the year.

Writing skills are developed in accordance with a six-trait writing model (see Appendix A: "Quality Writing Attributes") to create a unique portfolio of observations, reflections, and discoveries to document one's own learning journey. Sample topics offered by students from a single Elizabethan era Journeys travelogue reading included "British currency," "Ashland Shakespearean Festival," "A Classroom Readers Theatre," "Origin of the Word 'Albion,'" "Famous Castaways," and "The Island of St. James."

## Travelogue Components

**Study Guides**—The schedule of sourcebook readings are easily adaptable to any instructional pace but are generally organized in clusters of five to correspond to the regular school week. A Study Guide introduces each reading with questions, project ideas, and information that provide a basis for more fully understanding the reading and highlights the selection’s significance. Period illustrations are from important artists of the era including Canadian Paul Kane, commissioned by Hudson’s Bay Company Governor Sir George Simpson to accompany Chief Factor James Douglas on a trip to the Columbia Department in 1847-47, and 1850s U. S. Pacific Coast Survey artists Gustavus Sohon and John Mix Stanley. (During Sohon’s service as interpreter and surveyor with Washington Territorial Governor Isaac Stevens, the German-born artist also contributed the masterful drawings of leading Northwest Native American leaders that illustrate the resource page tribal cultural profiles.)

The Journey Study Guides also include the following elements:

*Heading/Seeking/Mapping:* “Headings” are names of places for which the correct latitude and longitude coordinates are to be supplied by the student, or coordinates with which a significant place is to be identified. “Seekings” are short-answer questions about persons, events, and points of interest associated with the sourcebook reading; and “Mappings” suggest regional maps for students to draw that highlight respective chapter itineraries.

*Problem Solving:* These exercises involve mathematical skills in calculating and problem analysis.

*Editing:* Extracts from original journal entries by David Thompson and the Ft. Nisqually “Journal of Occurrences” provide these daily oral language exercises. The number in parentheses at the end of each entry indicates how many Standard English spelling, punctuation, and usage errors appear.

*Defining:* Six vocabulary words taken from each sourcebook reading are listed with space provided for students to define them. These terms are provided to build vocabulary, spelling, and alphabetizing skills. The last two italicized terms in each set are considered enrichment words.

*Discussing:* The organizing principle of these statements is to scaffold learning by providing the kind of instructional support that fosters interaction with important ideas contained in the readings and encourages student evaluation of these ideas in light of knowledge and experience. The statements are generally arranged according to three cognitive levels: information (understanding facts and definitions), knowledge (comprehending experiences and concepts), and judgments (evaluating ideas and actions).

*Connecting:* These references include resources from the National Geographic Society, state historical societies, and the Columbia Intertribal Fish Commission for students to explore topics in greater depth. (NGM=National Geographic Magazine; CM=Columbia Magazine.)

*Constructing:* Constructivist activities related to the sourcebook reading are suggested for both humanities and sciences. Student responses may be presented in class following adequate preparation time or included in the student journal when written responses and illustrations are appropriate. Information associated with the daily sourcebook selections is offered for further student and teacher inquiry.

*Sidetriping:* Sidetrips feature brief descriptions of places significant to area geography, history, and science as well as to contemporary cultural and economic development. Listings include state and national parks, wildlife refuges, museums, and other points of special interest.

**Travelogue Readings**—The core readings include original journal entries and letters, official documents, and other period sources related to the journey. Most readings are about 750 words in length and care has been taken to preserve the spirit of authors’ expressions with minimal editing for mechanical errors and adjusting sentence length for readability. Most of the explorations featured in the curriculum actually took many years to complete, and readings have been selected and arranged to preserve the true expedition chronology. Sidebar annotations offer definitions of key words and explanations of an obscure or technical nature, as well as star charts and information on natural history. Blackline illustrations may be colored by students and accurately depict persons, events, and objects mentioned in the readings.

**Resource Pages**—The fourth page of every four-page travelogue sequence contains correlated content information for each chapter in a sequence that includes resources for geography, literature, natural history, and current event “Journey Updates.” Literature selections include Native American myths associated with the Travelogue itinerary; natural history entries describe indicator animal and plant species mentioned in the journals of naturalists David Thompson, David Douglas, and John Kirk Townsend.

## Leading Questions of Discovery for Student Journalizing

A fundamental aspect of interdisciplinary learning involves the search for significant unifying concepts. These concepts become an additional expansive point of the curriculum, the place to go when you want to be sure that the itinerary is meaningful and relevant to contemporary issues. Thematic concepts provide a means for the social studies and language arts, mathematics and the natural sciences, the arts and other disciplines to be at once different, showcasing their unique properties, while at the same time revealing a similarity of purpose.

The liberating sense of carefully chosen, content enriching concepts is that they support connected, interdisciplinary experiences, and alleviate a superficial “tyranny of integration” for its own sake. Moreover, as Rutherford and Ahlgren write in *Science For All Americans*, “Schools do not need to be asked to teach more and more content, but to teach less in order to teach it better. By concentrating on fewer topics, teachers can introduce ideas gradually, in a variety of contexts, reinforcing and extending them as students mature. Students will end up with richer insights and deeper understandings than they could hope to gain from a superficial exposure to more topics than they can assimilate.”

Regular student journalizing in response to the sourcebook readings as an on-going academic endeavor is facilitated through the designation of eight broad conceptual themes that are central to discovery learning. These following themes and related “leading questions” can be objects of recurrent classroom discussion, presentation, and writing whether considering the American frontier period and Native American literature or mineral resources and the periodic table.

**Cause and Effect:** What is this action and change in conditions?

**Commonality and Diversity:** How are these the same or different?

**Systems and Patterns:** How is this organized or arranged?

**Scale and Symmetry:** What is the size and shape?

**Cycles and Change:** Is this effect repeated over time?

**Interaction and Relationships:** How do these relate to each other?

**Time and Space:** When and where did this happen?

**Equilibrium and Order:** Is there stability to this arrangement?

A modified taxonomy of understanding (see Appendix A: “Leading Questions of Discovery”) offers sample questions about subject area facts and skills, comprehension questions that relate knowledge to experiences and abiding conceptual themes, and evaluation questions that involve judgments. Is this useful? Is this beautiful? Is this meaningful? Is this right? These are the ultimate questions with which we want students to grapple, and the Journeys experience offers opportunity through authentic accounts of explorations and cultural encounters throughout history.

Thematic, interdisciplinary studies are at the heart of the Journeys of Discovery curriculum. Carefully selected themes housed within a goal structure of broad ideas are the keys to critical thought to which a vibrant human dimension is added through the dramatic stories of great exploration that are fundamental elements of our cultural heritage. These timeless models of inquiry can serve as dynamic instructional opportunities as students seek to understand the newest frontiers of space and microworlds as well as issues influencing their future wellbeing.

## A World of Illustrated Journaling Presentations

### I. EXPRESSING: Options for Writing

Written and reflective responses to Journeys travelogue experiences may take many forms. Since writing is a strong indicator of thought and can be expressed in so many ways, try different approaches that give you opportunity to better develop your own knowledge and share your understandings with others. Remember to always date each response.

**Journal**—Compose a paragraph to continue the travel journal as you follow an explorer’s route.

**Editorial**—Write an article expressing your opinion on a topic related to the travelogue reading.

**Poetry**—Compose a free or rhymed verse poem about a place or topic under study or something you imagined.

**News Story**—Become a reporter on the scene and contribute a story for a local paper or web site.

**Play Script**—Create a script for a scene or skit with parts for two to four characters.

**Letter**—Write a friendly letter to someone describing a discovery experience or a business letter expressing your ideas on a topic of interest or concern to an editor or public official.

**Short Story**—Write about a real or imagined incident or individual with attention to setting and characterization.

**Interview**—Develop a script for an interview between a host and famous guest or someone in a career or with experience related to your interest.

**Resource Review**—Describe and summarize a related magazine article, web site, or musical selection.

## II. CREATING: Ideas for Illustrating and Building

Explorers typically illustrated their journals with a variety of drawings, maps, doodles, and other illustrations to depict experience and understandings. Chose a method of illustration to depict an aspect of your journal entry.

**Drawing**—Create an image of something real or imagined associated with a topic under study. Start by being bold in your expression without concern about being exact. Gradually adjust and add details to produce a finished work.

**Map**—Carefully draw and label a map showing a place or region under study. You may illuminate it with illustrations depicting locations, people, flora, and fauna.

**Field Sketch**—Closely observe and sketch the intricate structure of a leaf, flower, insect, animal, or other natural object. Depict the special characteristics that distinguish it from other species.

**Graph**—Create a circle, bar, or line graph to show interesting statistical information like popular choices among classmates, temperature ranges in favorite places, sports teams records, etc.

**Diorama/Model**—Carefully construct a scale model of an object, place, or structure under study using simple materials like hardboard, tape, and glue. (Note HO scale is 1 inch = 7 feet.)

**Timeline**—Create a timeline that accurately shows the sequence of important events under study with illustrations of persons and places in the chronology, or that were in other areas of the world at the same time.

## III. SHARING: Ways for Presenting

Throughout history inquiring minds have sought to share their experiences with others in order to promote fuller understanding of the world around us and foster appreciation for people, places, and creatures. Sharing may feature special attention on the relevance of inquiry to our shared past, present, or future.

**Oral Reading**—Share a journal entry, editorial, or other original selection related to a place or time being studied.

**Drama**—Present a scene from a play as a readers theatre or performance with simple props.

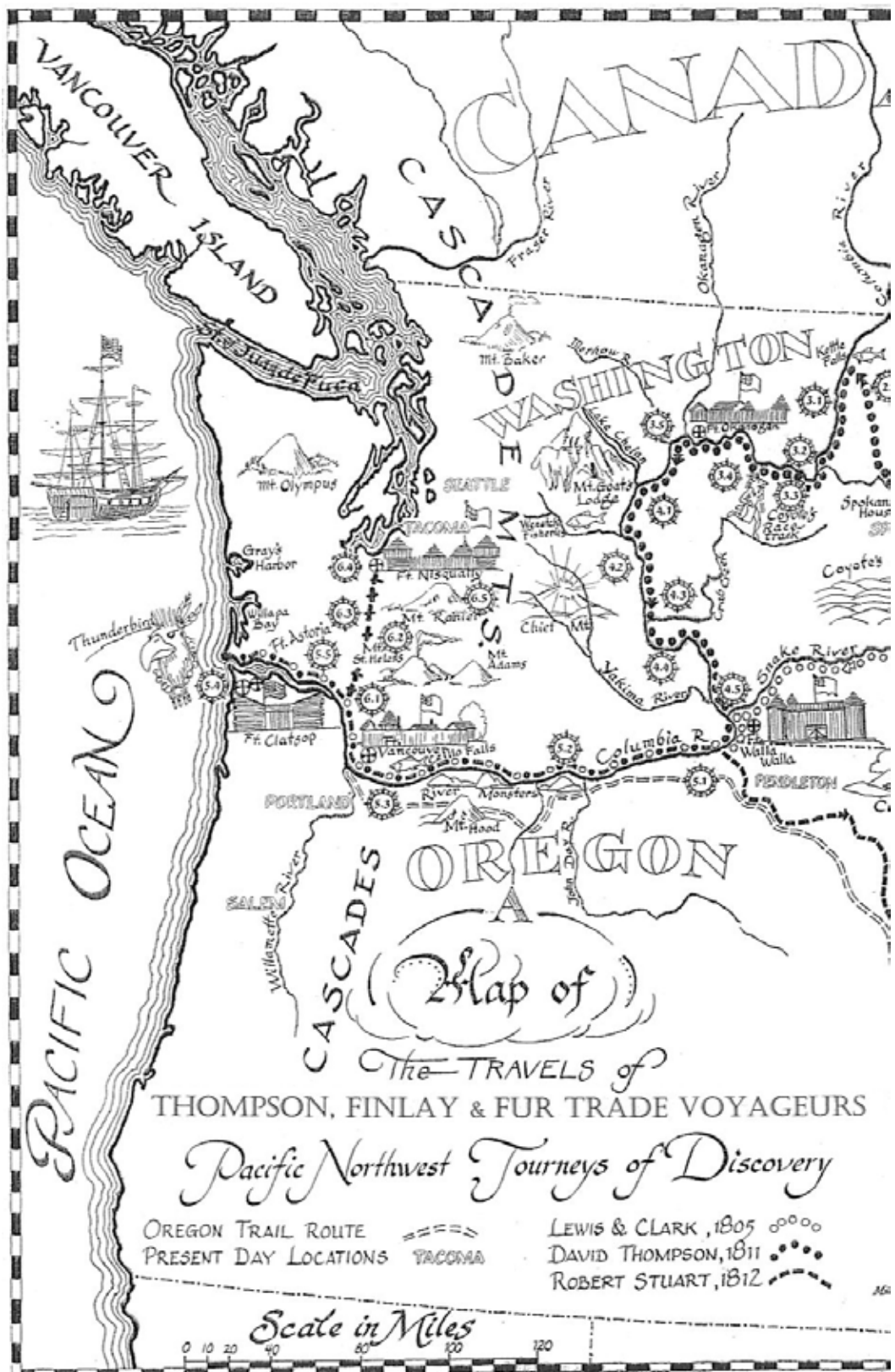
**Puppet Show**—Fashion cardboard or fabric characters and compose dialogue for a story or scene.

**Media Program**—Prepare a brief presentation for online viewing that features an outdoor or museum tour, an ethnic cooking program, or some other aspect of a foreign country or your cultural background.

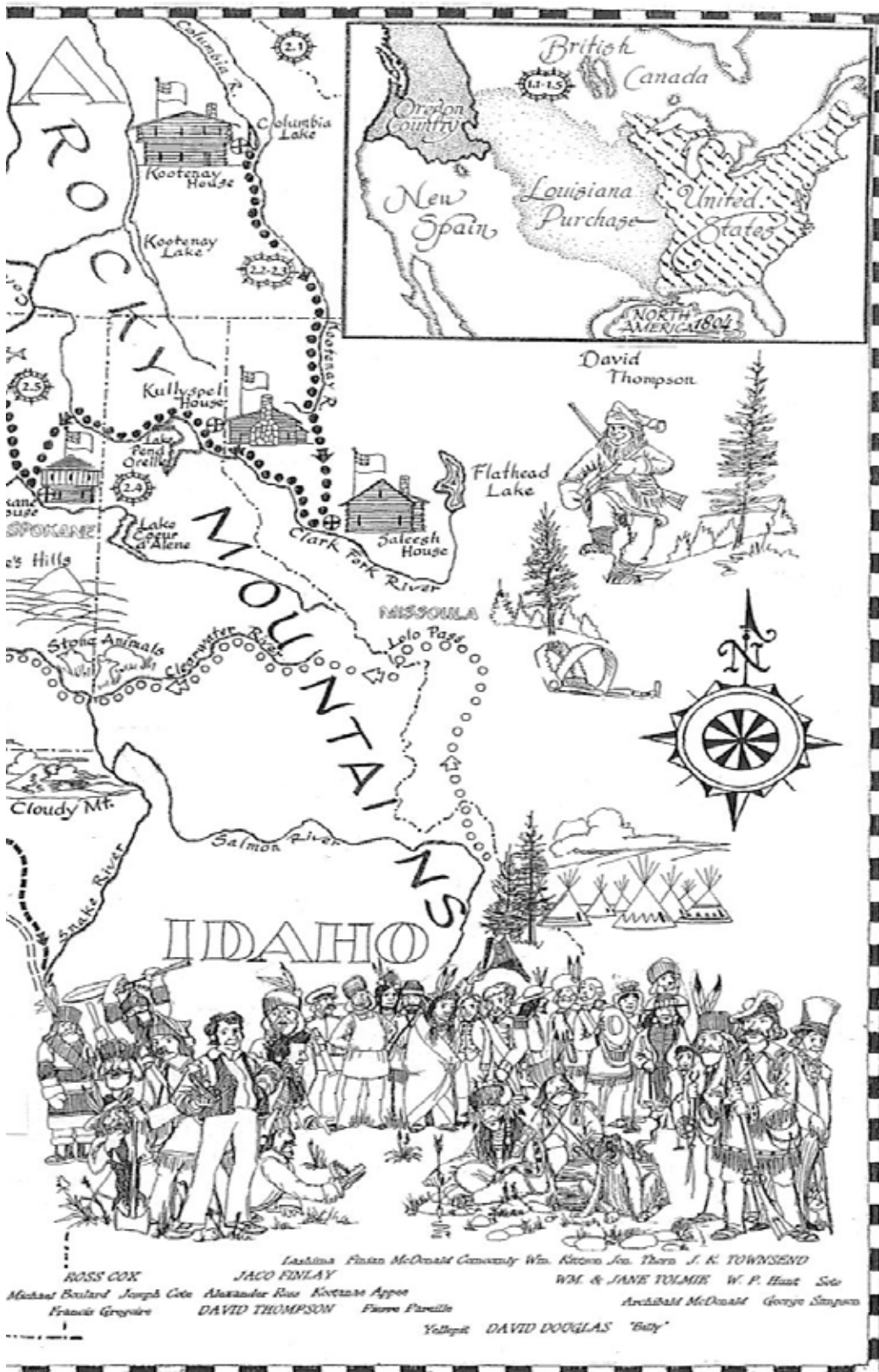
**Time Travel News**—Go back in time for the daily news and present highlights of the city, nation, and world.

*“...And the end of all our exploring,  
will be to arrive where we started,  
and know the place for the first time.”*

--T.S. Eliot, “Little Gidding”



Journey Overview Map







# Chapter One



## The Fur Trade and First Peoples



The Pacific Northwest and North America

## Prologue -- Expedition Origins

The Pacific Northwest's first fur traders were intrepid Americans whose appearance on the coast resulted from Yankee merchant interest in commercial routes disrupted by the Revolutionary War. Although British culture continued to strongly influence the new nation, Americans were forging a distinct cultural identity through experience in democratic government and westward expansion into the domains of the continent's First Peoples.

During a Pacific expedition in May 1792, Boston sea captain Robert Gray discovered the Columbia River to give the United States its first claim to the region. America's position was further strengthened by the overland journey of the 1804-06 Lewis and Clark Expedition. The Corps of Discovery's wintering quarters at Fort Astoria gave rise to the American Fur Company's post of that name which was founded in 1811 by New York financier John Jacob Astor near the mouth of the Columbia River.

The North West Company had been organized in 1783 by Montreal merchants of Scottish ancestry who employed brigades of French-Canadians and mixed Native American-European Métis to exploit the rich fur-bearing districts of North America. In the early 1800s, the company dispatched explorer-traders David Thompson and Jaco Finley to find the Columbia River's source and chart its route to the Pacific Ocean. They crossed the Rocky Mountains into present British Columbia via Athabasca Pass in 1807 and established Kootenae House near present Invermere, British Columbia—the Nor'Wester's first outpost in the Pacific Northwest.

Thompson completed his epic Columbia “voyage of a summer sun” in 1811 and his adventurous account forms the basis of these readings. Others followed in his wake including famed British botanist David Douglas and ornithologist John Kirk Townsend. The three were known to area Native Americans for their passionate interests—astronomer Thompson's nickname was Koo-Koo-Sint, “Star Looker,” while Douglass was known as “Grass Man” and Townsend was called “Bird Chief.”

The entry of the British Hudson's Bay Company into the Northwest fur trade marked the genesis of an enduring Euro-American presence and agriculture on both sides of the Cascade Mountains. After merging with the North West Company in 1821, the visionary HBC governor, Sir George Simpson, moved with monopolistic power to form “regular establishments” that would serve as exchange points for beaver and other peltries that brought high prices in Europe and Asia. Places like Ft. Vancouver, Ft. Colvile, and Ft. Nisqually became centers of exchange and agricultural development as well as key links in “The Honourable Company's” global trading empire.

The following travelogue accounts by Thompson and his contemporaries transport learners into another age with significant relevance for our day of political, cultural, and environmental challenges. The readings appear here in their original published form with minor edits for fluency and American English usage (labor for labour, gray for grey, etc.). Text insertions are indicated by brackets [ ].

Onward!



## Balanced Innovation

*“Change can be beneficial when promoting the well-being of humans within the natural world system and among cultures throughout the world. Conflicts with others have often arisen when such constraints are ignored in the name of short term gain or perceived higher needs. Many Native American political leaders (“chiefs”) like welcomed missionaries and adopted such agricultural and pastoral innovations as the raising of grains and livestock. Spiritual leaders (“medicine men”) spoke of the family of all mankind and for technological progress within the limits of moral obligations to creation.”*

## Study Guide

### Study Guide 1.1 - Someone Our Age

**Mapping:** The Pacific Northwest

**Problem Solving:** The Columbia River drains a land area the size of France. It begins in British Columbia, Canada, and empties into the Pacific Ocean where its mouth separates Washington from Oregon. The source of the Columbia lies in the Canadian Rockies at an elevation of 820 meters. By the time it reaches sea level, at its mouth, the distance from its source is 2000 kilometers. This is a steep drop for a river, and that is why the Columbia is able to create so much hydroelectricity in its 17 dams. What is the average descent per kilometer of the Columbia as it makes its way from its source to mouth?

**Editing:** When I awoke in the morning, I exclaimed, I saw no trees (3 errors)

**Discussing:**

- \_\_\_ 1. A cartographer is one who creates maps.
- \_\_\_ 2. The “Houses” set up by the North West Company were trading outposts.
- \_\_\_ 3. Alexander Ross found little need to learn about people’s languages and customs.

**Constructing:** Make a map of the Columbia River complete with the province and states through which it flows. Include important cities along the route and name the natural features through which the river passes. Decide on a scale that makes sense for the size of your map. Make sure that the important cities and natural features along the route are accurately located according to your scale. Use hash marks to show the distance of the river in 100 (or 200) km increments. Show the measurement conversion on your map in the lower right hand corner (for example, 1 inch = 200 km).

**Connecting:** Simon Worrall, “London on a Roll,” NGM (June 2000).

**Sidetripping: The British Library** (London) has more than 150 million items in its collection including the Magna Carta, Gutenberg Bible, and William Shakespeare’s legendary First Folio. The library also contains David Thompson’s exquisite color “Maps of North America from 84° West and 110° West [Longitude] to the Pacific Ocean” (1816). **Ft. Churchill** on Hudson Bay continues to operate as a trading post and museum for the Hudson’s Bay Company, the oldest continuously operating company in North America. Furs are still brought to the outpost from trappers operating in the forested regions north and west of the fort.



Northwest Indian Games  
(G. Sohon)

### Wordbuilding-

comprehend-

sufficient-

avert-

occasion-

endeavor-

attest-

resolute-



**Upper Columbia River**

**Emilie, August, and Kiakik (“Keyackie”)** Finlay were three of twenty children born to Jaco Finlay and his wife, a Cree Indian woman whose name has been lost to history. Jaco’s father was a Scottish fur trader and his mother was of Ojibwa (Chippewa) ancestry. The Finlay family provided valuable service as guides to many of the Northwest’s frontier explorers during the years they resided at Spokane House several miles west of present Spokane, Washington.

Among the European-Americans who visited the Finlays was young **Ross Cox** (1793-1853), a native of Ireland who came to the Northwest in 1811 at age 18 as an employee of John Jacob Astor’s American (Pacific) Fur Company. His vivid memoir, *Adventures on the Columbia River*, remains one of the most popular accounts of regional frontier life.

**The Sandwich Islands**, named for the British Earl of Sandwich, are Hawaii.

**Jupiter’s moons**, or satellites, and **Saturn’s rings** are visible through a low power telescope.

*“He was known as Koo-Koo-Sint, or Star Looker”*

## 1.1 Someone Our Age

Spokane House; September 24, 1815

Dear Friend Ross,

We write to express our gratitude for the many weeks of your company this past summer. Father [Jaco Finlay] endeavors to always be the gracious host to the travelers who pass by here, but not often do we have the pleasure of entertaining someone our own age for so long. You became well acquainted with our vast throng of friends and visitors who reside about here and our substantial family. Little Isabelle continues to ask when you will return and Keyackie misses his hikes with you along the river.

We remember your regular attention to journal writing and that you had especially asked for information about Father and the family. We still smile at your resolute effort to make known your inquiries to Jaco and his attempt to speak in a tongue you might comprehend. How peculiar his capacity to converse freely in the Indian languages of this country and the Plains along with French, Chinook, and even some Sandwich Islander. It seems to us he knows all languages but English!

Father was interested to know that you had met Mr. David Thompson upon your arrival at the mouth of the Columbia River. He was known to us as Koo-Koo-Sint, or Star Looker, because of his many observations of the heavens by which he sought to learn locations of the rivers, mountains, villages, and establishments of the region for his maps. We remember viewing the night sky through his instruments and seeing such marvels as the satellites of Jupiter and Saturn’s rings. Father has high regard for Koo-Koo-Sint’s good relations with our Indian people of the land and his care to deal fairly with us.

Father tells of first meeting Mr. Thompson in November, 1806 at Rocky Mountain House on the Saskatchewan River. The [North West] Company had asked Father to lead a small expedition west of the mountains that previous summer to find a suitable route for trade with the Kootenais. Father made the trip by October and constructed canoes for the main party that was to follow. Upon his return to Rocky Mountain House, Father met Mr. Thompson who had recently been put in charge of the post.



## Someone Our Age

He asked for details of Father's excursion across the mountains so he drew a map showing the trail and mountain ranges. Perhaps this was the first printed chart of the country.

Father also remembers the Company's struggles with the Piegans and eastern tribes who did not wish for them to undertake trade with the peoples of the mountains. On more than one occasion bloodshed was averted because he and Koo-Koo-Sint chose diplomacy over decision by force. In this way they gained the trust of the noted Piegan war chief, Kootanae Appee, who made a memorable visit to the House on New Year's Day following Father's first trip across the mountains. Mr. Thompson resided there throughout the winter with his wife, Charlotte, and their three children.

Finally in May the weather had warmed sufficiently for Mr. Thompson and his family to set off on horseback across the mountains with Finan McDonald—whom you cannot help but remember from your time here. On June 22 [1807] they crossed [Howse Pass] from the Kootenay Plains into the valley of the great Columbia River following the path taken earlier by Father. A month later they reached the lake [Windermere] where they built Kootenae House and where Father and the family remained for the winter.

For the next three years Father says he worked as a free hunter supplied by Joseph Howse of the Hudson's Bay Company from Edmonton House to trap and collect furs throughout the mountains. Our older brothers James, Bonhomme, and Thorburn and Mother can attest to their many adventures and deprivations of that time. But in the spring of 1810 Father returned to the employ of Mr. Thompson and he continued to work for the Company as trapper, clerk, and interpreter. At Mr. Thompson's request, we came to this place in the spring of 1811 with Finan McDonald to establish Spokane House.

Please write to us about developments there at Fort Okanogan. What are your responsibilities and have you traveled to the north? Are you still studying the language of our people? When might you have opportunity for a return visit? Father wants you to ride his horse in the next race.

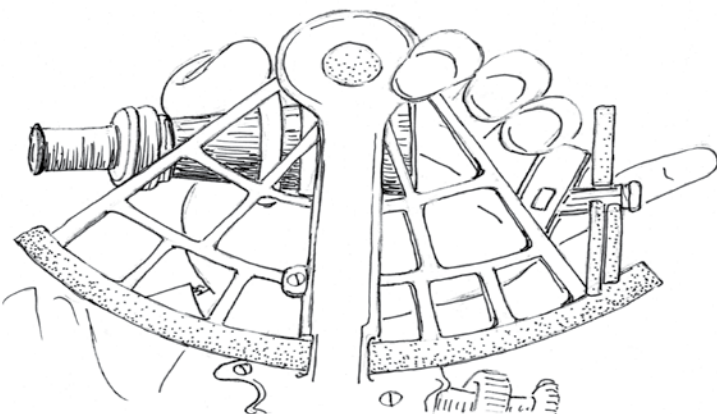
Your friends,  
Emilie Finlay August Finlay



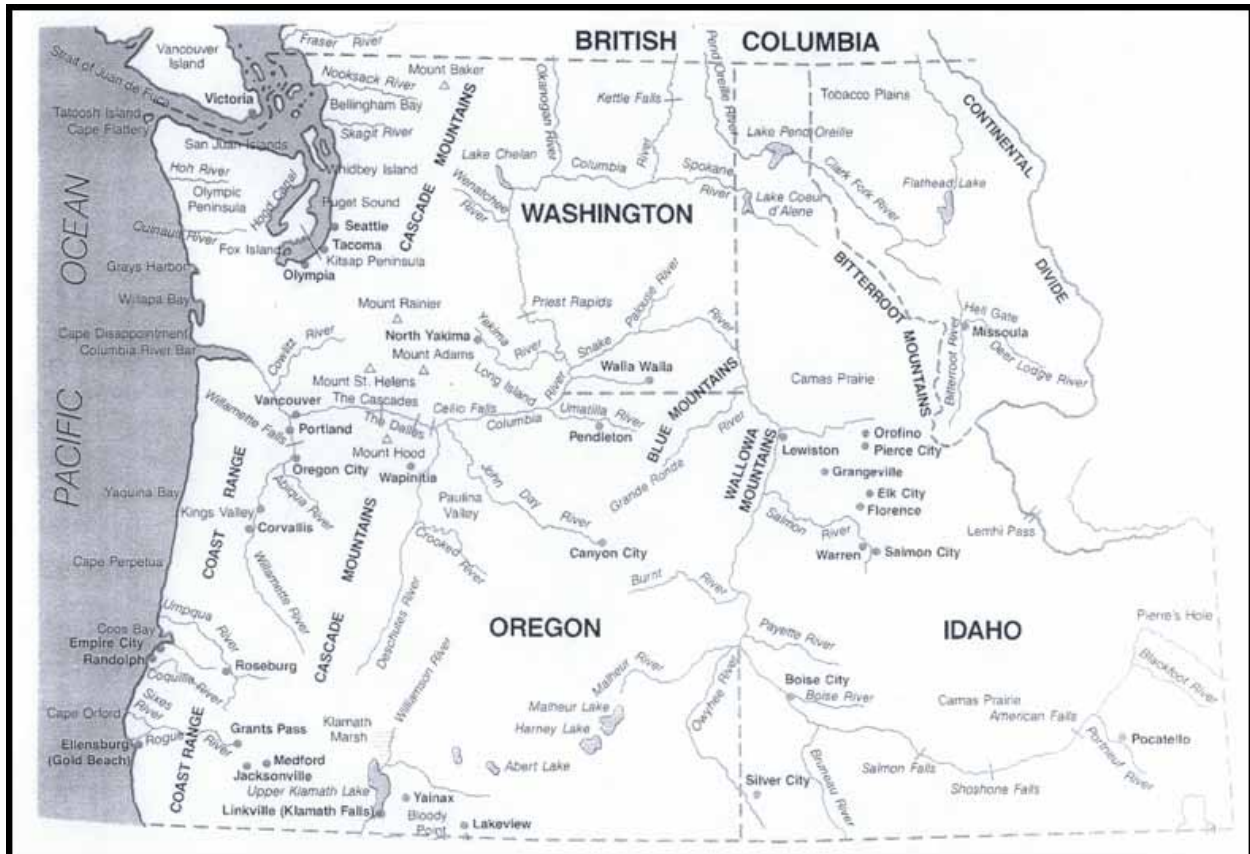
**The earliest known map of the Northern Rockies** showing the upper Columbia River, drawn by Jacob Finlay, is now in the HBC Archives in Winnipeg, Manitoba.

**The Piegans** are one of the three major divisions of the Blackfoot tribe—Piegans, Bloods, and Blackfeet. They ranged along the U.S.-Canada borderlands east of the Rockies. Chief Kootanae Appee befriended the young David Thompson when his first years at Kootenae House were threatened by other Indians.

**English explorer-linguist Joseph Howse** (1775-1852) established some of the earliest Rocky Mountain fur trading posts. He published important scholarly works on the languages of the Chippewa Cree Indians and was inducted into the British Royal Geographic Society.



## Mapping 1.1 -- The Pacific Northwest Today



The Pacific Northwest states of Washington, Oregon, and Idaho cover the nation's most diverse geography including ocean coastlines, mountains, deserts, and the country's only rainforest located on the Olympic Peninsula. The variety of landscape and climate led to unique lifeway adaptations by native peoples and challenges to travel by early explorers like David Thompson and David Douglas.

The region is bordered geographically on the east by the Rocky Mountain Continental Divide, so also includes parts of northwestern Montana, and stretches west to the Pacific Ocean. The Northwest's largest river system is the Columbia-Snake which drains vast areas of all Northwest states and extends north into the Canadian province of British Columbia.



## Study Guide

### Study Guide 1.2 - The Hudson's Bay Company

**Heading:** Coordinates for Greenwich, England.

**Problem Solving:** David Thompson estimated that Hudson Bay stretched from 52-60 degrees north latitude. The distance between each degree of latitude on the Earth is 111 kilometers. Therefore, according to his estimate, what is the length of Hudson Bay? The modern day estimate of the length of Hudson Bay is 1370 kilometers. How far off was young Thompson's estimate? If you used Thompson's estimate, where would the end of Hudson Bay be? Why is it important to have accurate measurements? Give an example of a situation where it would be acceptable to have an estimate instead of an exact measurement.

**Editing:** I embarked on the ship Prince Rupert belonging to the Hudsons Bay Company. (3 errors)

**Discussing:**

- \_\_\_ 1. Hudson Bay was the destination of the Prince Rupert carrying young Thompson.
- \_\_\_ 2. Thompson's love of travel and adventure developed through his reading of the classics.
- \_\_\_ 3. Writing paper was readily available and used by Thompson on a daily basis.

**Constructing:** When David Thompson finished his apprenticeship at the age of 21, he was offered a new suit of clothes. This was the typical present bestowed on a young man when he completed his assignment. Instead, he asked for a set of surveying tools. The officials were impressed with his request, and he was given both suit and tools. Imagine if you were to be given a set of tools of your choosing. What would it be? Remember, the definition of a tool is anything that helps you do certain tasks better.

**Connecting:** Peter C. Newman, "The Hudson's Bay Company: Canada's Fur Trading Empire," NGM (August 1997).

**Sidetripping:** **Manitoba Museum Hudson Bay Gallery and Archives** is a major cultural tourism destination in Winnipeg, Canada. The Hudson's Bay Company established a trading empire that stretched from Labrador in eastern Canada to the Alaskan Yukon district. In 1920, it celebrated the 250th anniversary of the founding of the company by collecting historical material for a museum commemorating the history of the Hudson's Bay Company which is now part of the Manitoba Museum.



Grey Coat School,  
London

#### Wordbuilding-

manuscript-

invoice-

embark-

apprentice-

surgeon-

credible-

venerable-



*Compass Rose*

*Compass points were first placed on cards and maps in the 14th century to indicate wind directions, which were much more important to navigators than the actual four points of direction. The design reminded sailors of a flower that led to name “wind rose” and these became elaborately decorated by cartographers.*

*Churchill Factory, among the oldest HBC trading posts, was located on the northwestern shore of Hudson Bay, while York Factory to the southwest served as the company’s headquarters. It remains in operation today as a museum and business center for the oldest continually operating business in North America which has grown into a diverse company of general merchandise as well as traditional retail items like commemorative wool trade blankets and jewelry.*

*Westminster is a historic district of London popularly known as the West End. It contains Westminster Abbey, the church where all English kings and queens have been crowned since the time of William the Conqueror in the 11th century. Nearby Westminster Palace was extensively rebuilt by King Richard II but was nearly destroyed in World War II. Westminster Hall is the only portion that survives as the entrance to Westminster’s enormous British Houses of Parliament.*

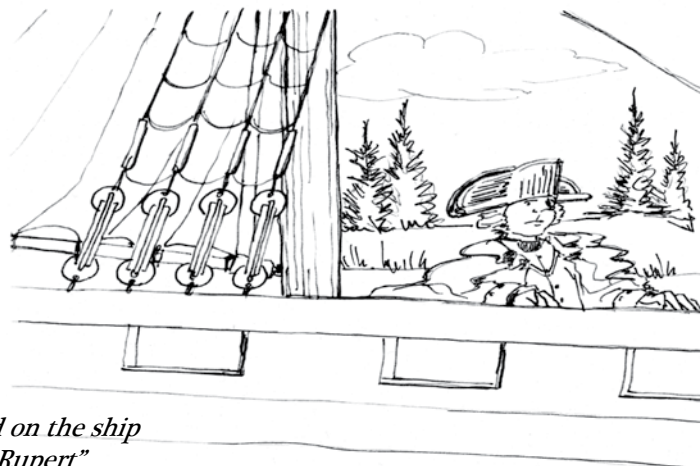
*Cloisters are the restricted areas inside a monastery or convent where only monks and nuns are permitted to reside in order to be secluded from the world.*

## 1.2 The Hudson’s Bay Company

David Thompson: In the month of May 1784 at the Port of London, I embarked in the ship Prince Rupert belonging to the Hudson’s Bay Company, as apprentice and clerk bound for Churchill Factory, on the west side of the bay. Until this voyage I had passed my life near Westminster Abbey, the last seven years in the Grey Coat School. This school was formerly something of a monastery and belonged to Westminster Abbey. During the year our holidays at different times were about eighteen to twenty days, the greatest part of which I spent at this venerable abbey and its cloisters, reading the monumental inscriptions and [at] Henry VII Chapel. My strolls were to London Bridge, Vauxhal, and St. James’s Park.

Books in those days were scarce and dear and most of the scholars got loan of such books as his parents could lend. Those which pleased us most were Tales of the Genii, the *Persian and Arabian Tales*, and *Robinson Crusoe* and *Gulliver’s Travels*. These gave us many subjects for discussion and how each would behave on various occasions. With such an account of the several regions of the Earth and on such credible authority, I conceived myself to have knowledge of any place I might come to, and the blue hills of Scotland were so distant as to leave to imagination to paint them as she pleased.

We held our course over the western ocean and near the islands of America saw several icebergs. The ships then separated, one for Albany and Moose factories, another for York Factory, and their third for Churchill Factory where we arrived at the beginning of September 1784. Hudson’s Bay including James Bay may be said to be an inland sea, connected to the Atlantic Ocean by Hudson’s Straits. It is in the form of a horseshoe, and in latitude extends from 52° to 60° North, and from 70° to 90° West of Greenwich in the northern part.



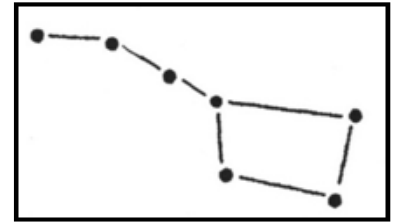
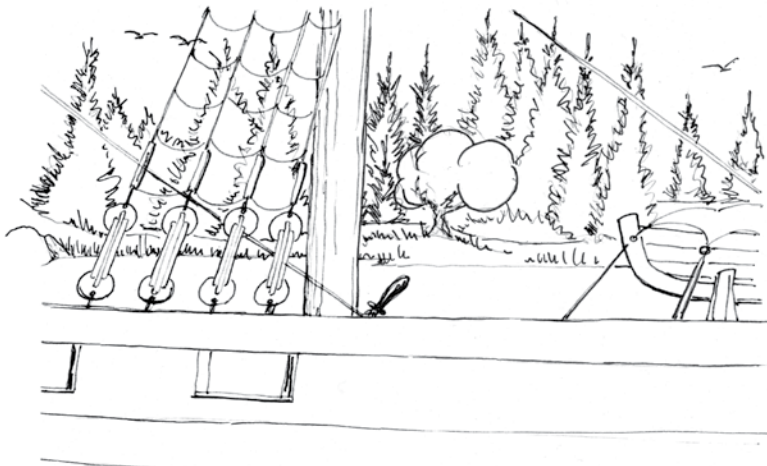
*“I embarked on the ship Prince Rupert”*

## The Hudson's Bay Company

Churchill River, where it enters the sea, is a noble stream of about one and half miles in width. On the south side is bounded by a low point of rock. The end of the point is about an acre in width on which was erected about the year 1745 a regular, well constructed fort of granite having about thirty cannon of six to eighteen pound shot. The factory is about five miles above the fort, in a small bay formed by a ledge of rocks which closes on the river about five hundred yards below the factory. The factory is supplied once a year with goods and provisions by a ship which arrives on the last days of August or early in September and in about ten days is ready for her homeward voyage.

I was fortunate in passing my time in the company of three officers of the factory, Mr. [William] Jefferson the deputy governor, Mr. [Thomas] Prince the captain of the sloop, and Mr. [John] Hodges the surgeon. They had books which they freely lent to me. Among them were several on history and on nature. These were what I paid most attention to as the most instructive. Writing paper there was none but what was in the hands of the governor, and a few sheets among the officers. On my complaining that I should lose my writing for want of practice, Mr. [Samuel] Hearne employed me a few days on his manuscript, entitled "A Journey to the North," and another time I copied an invoice.

It had been the custom for many years when the governors of the factory required a clerk with a mathematical education to send to the school in which I was educated. He was bound as an apprentice to them for seven years. [But] for all I had seen on their service neither writing nor reading was required. My only business was to amuse myself in winter growling at the cold, and in the open season shooting gulls, ducks, plovers, and curlews, and quarreling with mosquitoes and sandflies. Hudson's Bay is certainly a country that Sinbad the Sailor never saw, as he makes no mention of mosquitoes.



**The constellation Ursa Major** (*The Great Bear*), or "Big Dipper," derives its name from the Greek story of the nymph Calisto, whom Zeus turned into a bear and threw into the sky to save her from being hunted. David Thompson was known to Indians as *Koo-Koo-Sint*, or "Star Man," because he regularly determined his position by measuring the location of stars in constellations like the Big Dipper and nearby Little Dipper (*Ursa Minor*) relative to the earth's horizon.

The yellow star cluster **Dubhe** (*dub'·ha*) is the corner of the Big Dipper that, with its lower companion, *Merak*, points to *Polaris*, the North Star; which is located at the end of the Little Bear's tail.

**Robinson Crusoe** is the famous character in *Daniel Defoe's* novel, *The Life and Strange Adventures of Robinson Crusoe* (1719). The story of a castaway was based on the true account of a Scottish traveler, *Alexander Selkirk*, who was marooned in the Pacific Ocean's *San Fernandez Islands*. A distant relative of *Selkirk's* was the Scottish philanthropist *Thomas Selkirk*, a major HBC stockholder, for whom *Washington's Selkirk Mountains* are named.

**The Greenwich Meridian**, or 0° Longitude, runs through *Greenwich* (*grin'ich*), England, and meets the *International Date Line* on the opposite side of the world at 180° Longitude.

**A sloop is a large boat** with sails rigged aft, or to the rear, from a central mast and with a triangular jib to the fore, or front of the ship.

## Literature 1.2 -- “Invocation”

by Sound of Stars Rushing Through the Sky/Jane J. Schoolcraft (Chippewa)

*Jane Johnston Schoolcraft (1800-1842) was of Chippewa (Ojibwa) and Scots-Irish ancestry and is the first known Native American literary writer. She wrote critically acclaimed poetry and tribal stories in English and Ojibwa. Her husband, Henry Rowe Schoolcraft, included much of her writings in his six-volume Historical and Statistical Information Respecting...the Indian Tribes of the United States. Portions of this work were studied by Longfellow for his epic poem, The Song of Hiawatha.*

To my maternal grandfather, on hearing his descent from Chippewa ancestors misrepresented.

<p>Rise bravest chief! Of the mark of the noble deer,<sup>1</sup>              With eagle glance,              Resume thy lance,          And wield again thy warlike spear!              The foes of thy line,              With coward design,          Have dared with black envy to garble the truth,          And stain with a falsehood thy valorous youth.</p> <p>They say when young, thou were taken from the          Sioux,              And with impotent aim,              To lessen thy fame          Thy warlike lineage basely abuse;              For they know that our band,              Tread a far distant land,          And thou noble chieftain art nerveless and dead,          Thy bow all unstrung, and thy proud spirit fled.          Can the sports of thy youth, or they deeds ever          fade?              Or those e'er forget,              Who are mortal men yet,          The scenes where so bravely thou'st lifted the          blade,              Who have fought by thy side,              And remember thy pride,</p>	<p>When rushing to battle, with valor and ire,          Thou saw'st the fell foes of thy nation expire?</p> <p>Can the warrior forget how sublimely you rose?              Like a star in the west,              When the sun's sunk to rest,          That shines in bright splendor to dazzle our          foes?              Thy arm and thy yell,              Once the tale could repel          Which slander invented, and minions detail,          And still shall thy actions refute the false tale.</p> <p>Rest thou, noblest chief! In that dark house of          clay,              Thy deeds and thy name,              Thy child's child shall proclaim,          And make the dark forests resound with the lay;              Though thy spirit has fled,              To the hills of the dead,          Yet thy name shall be held in my heart's warm-          est core,          And cherish'd till valor and love be no more.</p>
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<sup>1</sup>“The mark of the deer” refers to Waubojee's clan totem.

# Study Guide

## Study Guide 1.3 - Stir in Camp



Jasper House  
(Paul Kane)

**Heading:** 58° 46' N. Latitude, 94° 11' W. Longitude (town)

**Problem Solving:** David Thompson mentions that the war party had been absent from the frontier camp for “more than two moons.” The time between one full moon and the next full moon is 29.5 days. The word “month” comes from the word “moon.” Yet our months have different numbers of days in them. If there are 12 months in a 365 day year, how long is the “average” month? How did the Mayan people solve the problem of making a calendar work given that months (moons) do not fit neatly into 365 day years?

**Editing:** Dr Richardson found the Eskimo along the seacoasts and writes, Their Winter huts are of a superior kind constructed of driftwood trees. (4 errors)

**Discussing:**

- \_\_\_ 1. A quiver is a holder for arrows.
- \_\_\_ 2. The Piegan horses were gifts from the British.
- \_\_\_ 3. Having a good relationship with others promotes trade.

**Constructing:** David Thompson writes that the elderly Piegan men “came and gave us their left hand and said they were thankful we had come....” Where did the idea of extending a hand in greeting come from? Write a paragraph on the different ways culture groups (for example, Americans, the Romans, etc.) use the extended hand or handshake in greeting. A handshake is a sign. Signs can communicate without the use of words. Can you interpret the meaning of this sign even though perhaps you cannot read the word that appears on it?

**Connecting:** Prit Veslind, “David Thompson: The Man Who Measured Canada,” NGM (May 1996).

**Sidetripping:** The **Glenbow Museum** in Calgary, Alberta is one of Canada’s largest museums. After he became extremely wealthy through petroleum, Eric Lafferty Harvie amassed a very large collection of papers and artifacts related to Aboriginal (First Nations) culture and the early history of Alberta. It was this collection which became the foundation of the museum. As part of a recent past exhibition about the history and artwork of the Canadian Pacific Railway, the Alberta Lego Users group created a unique installation titled “Vistas in Lego,” a commemoration of the landscapes featured in “Vistas: Artists on the Canadian Pacific Railway” and constructed entirely out of Lego blocks.

**Wordbuilding-**

immense-

ravage-

malady-

countenance-

horizon-

*anecdote-*

*aquiline-*



**Hudson's Bay Company Crest**

*The HBC crest features images of elk, beaver, and a fox with St. George's Cross above the Latin motto, "Pro Pelle Cutem," which officially meant "For Pelts—Fair Value." The phrase may also have held a double meaning for the company's founders, "For Pelts—Our Skins," indicating the risk of their investment, not to mention the hazards faced by frontier trappers and traders.*

*James Gaddy (ca. 1774-1833), an Orkney Island native, rose within the Hudson's Bay Company from laborer and canoeman to assistant trader and interpreter. HBC trapper-trader William Flett (ca. 1762-1823), also an Orcadian, was taken prisoner at York Factory in 1782 by the intrepid French naval commander and explorer Jean François de la Pérouse after receiving orders to attack their British rivals. Flett was released a year later and returned to Canada to help rebuild York Factory and continue in service to the company.*

*That northern tribes like the Piegan raided Spanish settlements in the American Southwest indicates the vast range of the nomadic Plains tribes.*

## 1.3 Stir In Camp

[1788-89]

David Thompson: We set off in the last days of September [1788] and under the guidance of James Gady proceeded in the direction of about west-southwest for the upper part of the Bow River near the east foot of the Rocky Mountains. At length the Rocky Mountains came in sight like shining white clouds on the horizon. We doubted what our guide said, but as we proceeded they rose in height and their immense masses of snow appear above the clouds to form an impassable barrier, even to the eagle.

A few miles beyond the Bow River about a dozen Piegans met us. They were well mounted and armed with bows and quivers of arrows, They gave us a hearty welcome and told us to camp where they met us and next morning show us to the camp. Two of them passed the night with us and were as anxious for news as any people could be. Early the next morning the rest of the party came and conducted us to their camp where we arrived about noon. All the elderly men came and gave us their left hand and said they were thankful we had come, as they were in want of ammunition and tobacco.

We separated ourselves, two by two to three different tents where the most respectable men lived. William Flett and myself were lodged in the tent of an old man whose hair was grey with age. His countenance was grave but mild and open. He was full six feet in height and of a frame that showed strength and activity. Almost every evening for four months I sat and listened to the old man without being in the least bit tired. [His stories] were blended with the habits, customs and manners, politics and religion, anecdotes of the chiefs, and the means of gaining influence in war and peace that I always found something to interest me. Upon the dreadful smallpox, whose ravages had ceased only a few years [before] he did not wish to speak.



## Stir In Camp

One afternoon, early in January, there was a stir in the camp and soon after we had the war song of victory sung by the young men. The old man informed me that a large war party which had been absent for more than two moons had arrived at the frontier camp. Part of them would be here on the morrow and they had seen no enemy but the Spaniards from whom they had taken a great many horses and mules. A few days after[ward] the war chief Kootanae Appee paid a visit to the old man. On entering the tent he gave me his left hand, and I gave him my right hand upon which he looked at me and smiled as much to say a contest would not be equal. He passed about a half an hour, conversing about the late campaign.

The old man recommended me to his protection which he promised. He was apparently about forty years of age and his height between six feet two to four inches, more formed for activity than strength, but well formed for either. His face had a fine oval, high forehead and nose somewhat aquiline. His large black eyes and countenance were open and frank, but somewhat stern. Kootanae Appee was friendly to the white men, and in his speeches reminded his people of the great benefit the traders were to them. He praised every chief that in the least deserved it, but never appeared to regard fame as worth his notice.

Our subsistence was on the flesh of the bison which were hunted and killed on horseback to the middle of January. During this time the women are busily employed in splitting the flesh into thin pieces and hanging it over the smoke to dry. When dried it is a favorite food for all people. Their pemmican is often mixed with chokecherries and braised with the stone of the cherry and dried. They make large quantities which require the powers of an ostrich to digest. If the belly has no ears to listen to reason, neither has it a tongue to complain of hard work.



**American bison (buffalo)**  
(Bison bison)

**Greek** bisōn *refers to a bovine species of extinct European ox (aurochs). A larger North American species, *B. b. athabascae*, is the wood bison of northwestern Canada named for the Athabasca River explored by Thompson and Finlay. Over ten thousand wood buffalo roam in Alberta's Wood Bison National Park.*

*bovine: resembling a cow or ox.*

**aquiline:** *curving like an eagle's beak, or resembling an eagle.*

**braise:** *to cook slowly in a closed container.*

**The proverb about listening and complaining** *is from the ancient Greek historian and essayist, Plutarch.*



*"the war chief Kootanae Appee paid a visit"*

## Biome 1.3 -- The Canadian Plains: A Prairie and Woodland Biome

**Turtle Mountain Provincial Park, Manitoba**, is named for imposing Turtle Mountain which rises about 1,000 feet in an island of prairie amidst the vast forests of south central Manitoba. The park is named for the western painted turtle which inhabits some 200 shallow lakes which provide an ideal habitat for turtles, fish, and migratory waterfowl. Some of the country's largest oak trees are also located in the park and provide habitat for moose, elk, deer, and other wildlife species. Between 1810 and 1870, Métis from the Hudson's Bay Company's Red River Colony made annual hunting trips, and some eventually wintered here to establish the area's first homesteads. The ancient myth of Turtle Island told by the Chipewya/Ojibway and other Plains tribes depicted North America as the exposed shell of a great turtle.



**Red-tailed Hawk (*Buteo jamaicensis*)**—This bird of prey, common to the United States, Canada, and Mexico, is one of the most effective factors in rodent control. It feeds primarily off of mice or other small rodents, but has been known to eat snakes and rabbits. When in flight, it averages a speed of about 22 miles per hour, but may reach higher speeds during a dive. It is up to 2 feet long, has a wingspan up to 4 ½ feet, and may weigh up to 4 pounds.



**White-tailed Deer (*Odocoileus virginiana*)**—Common throughout North America, the white-tailed deer has been hunted for thousands of years because of the meat and hide it provides. It is usually about 4 feet high to the shoulder, and may have a length to 8 feet. Unique traits include a long tail, usually about 11 inches, with white on the underside, and a set of forward pointing antlers with the prongs all branching off of one main antler. Deer commonly eat twigs, leaves, nuts, and grasses.



**Meadow Grasshopper (*Orchelimum vulgare*)**—Found in moist pastures and meadows, the meadow grasshopper is very common to the area in between the Rocky Mountains and the Atlantic Ocean. It is usually about 2 inches long and has folding front wings that overlap each other, and by using vibrating membrane on the front wings, it creates a rasping sound. Its food is mostly grasses, but it may turn to the leaves of plants for an alternate source of food.



**Big Bluestem Grass (*Andropogon gerardi*)**—This coarse grass is common throughout the United States but is greatly distributed in the regions of the Tall Grass Prairies. It typically grows in bunches and may reach heights to 6 feet. It favors dry soil and open plains. It frequently grows up with other species of grasses as well. It makes for an excellent grazing grass because of its ability to survive in harsh conditions.

**Limestone (Sedimentary)**—Limestone is a sedimentary rock that is made up of calcite, or calcium carbonate. When the calcite is raised to a high temperature, it then becomes lime. From there the limestone may be metamorphosed into marble. Often, the shells of marine animals are solidified into the limestone by means of calcite secretions from the animals. Today, we use a very fine form of this limestone called chalk, made up of soft limestone and shell fragments.

**Cave Formation**—Many Canadian lake districts are riddled with limestone caves. You can model the natural forces that carve these mysterious caverns by the following experiment. Collect a number of different rock samples from your local area. Place a sample in a rinsed-out 8 ounce milk carton. Use a medicine dropper to drip white vinegar onto each of the rocks. Which ones produce a fizzing sound and bubbles? Why do you think this happens? Since limestone is composed of calcite it chemically reacts with acids. Of course rainwater contains far weaker acids than the vinegar we used in our model and would take a very long time to dissolve an entire cavern underground. If no limestone is available in your area, try marble or even concrete chunks.



## Study Guide

### Study Guide 1.4 -- An Excellent Master

**Seeking:** The Ojibway Indians inhabited a vast realm along the U. S.-Canada borderlands from present Michigan to North Dakota. They were called the “Cree” by French Canadians, but popularly known by what other name to Americans?

**Problem Solving:** David Thompson learned mathematics and practical astronomy from Mr. Turnor, “an excellent master of the science.” Here is a modern-day problem in practical astronomy. The space shuttle flies in a 40,000 kilometer orbit around the Earth. The speed of the space shuttle is about 27,000 kilometers per hour. About how long does it take the space shuttle to complete one orbit?

**Editing:** Mr Wales the Astronomer observed the transit of Venus in 1769 (5 errors)

**Discussing:**

- \_\_\_ 1. The femur is the long upper bone in the leg.
- \_\_\_ 2. While his leg mended, Thompson used his free time to studying astronomy and other sciences.
- \_\_\_ 3. Local Indians showed kindness to Thompson when he was unable to care for himself.

**Constructing:** Study the night sky. Go outside in the evening and look up into the heavens. What do you see? Make a sketch of several of the bright objects in the sky. Be sure to record the time and date of your observation. Now go to the following website: [www.skyandtelescope.com/observing/ataglance](http://www.skyandtelescope.com/observing/ataglance) Complete your sky map by listing the names of the objects you mapped. Keep your map and observe the sky again in a month. Has anything changed?

**Connecting:** Michael Parfit, “Canada’s Highway of Steel,” NGM (December 1994); Daniel Glick, “Return of the Lynx,” NGM (January 2006).

**Sidetripping:** The **Whyte Museum of the Canadian Rockies** in Banff, Alberta, is a gateway for experiencing the culture, history and art of the region. In addition to an exceptional collection of artifacts and documents related to the Stoney Indians, the museum features eight heritage homes furnished with the belongings of their original owners. The annual **Calgary Stampede** held at Calgary in July hosts the largest and most free-wheeling rodeo in North America. Contestants come from virtually all western states and provinces to compete in bronc-busting, calf-roping, and the legendary chuck wagon race.



Northern Plains Buffalo Herd  
(J. M. Stanley)

### Wordbuilding-

almanac-

species-

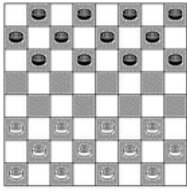
descend-

depot-

compile-

*emaciate-*

*alleviate-*



**Draughts Game Board**

**The popular British game of draughts** (pronounced “drafts”) was an expanded version of checkers and very popular pastime among frontier trappers and traders. National and world checker/draughts championships have been held since the 1840s.

“During the winter, at times we had much leisure, and we employed it in playing at Draughts, for which we had two checker boards, one with twelve, the other with twenty-four on each side. It is a game of skill and I became expert at it.”

—David Thompson, 1789

**HBC trapper-trader William Tomison** (c. 1739-1823) was known for his fair dealings with the Canadian Blood, Piegan, and other tribes that had contributed to HBC prosperity and growth across Manitoba and Saskatchewan by the 1790s. He retired to his native Orkney Islands in 1810 where the frugal frontiersman donated a substantial portion of his savings to provide schools for poor children.

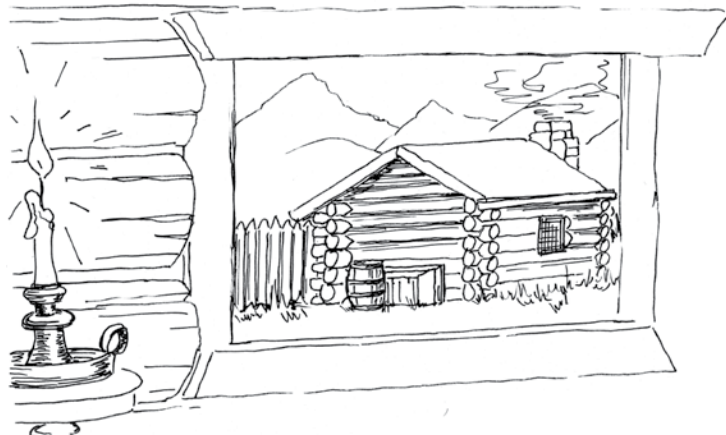
**Thompson’s serious accident** led to his unexpected opportunity to study mathematics and astronomy from HBC surveyor Phillip Turnor (c. 1751-c. 1800). In this way Thompson came to appreciate the benefits of his long confinement. Upon completion of his apprenticeship in 1791, he was presented a brass sextant rather than the customary suit of clothes, which pleased him greatly and, along with his compass and Bible, were his principal personal possessions for the next six years.

## 1.4 An Excellent Master

David Thompson: In September Mr. [William] Tomison arrived with canoes and goods from York Factory and they proceeded up the river to Buckingham House, the winter station for the fur trade. The three horse-keepers, with Andrew Flett and myself, were ordered to bring up the horses to the same place and we arrived safely with all. Winter came on and affairs went on as usual. The next year in the early part of March [1789] on coming down a rude steep bank I fell and broke the large bone of my right leg and had to be hauled home, which by the mercy of God turned out to be the best thing that ever happened to me. Mr. Tomison behaved with the tenderness of a father to me and alleviated my sufferings all he could.

As soon as the mild weather came on and the river was clear of ice, the furs and canoes were made ready to proceed to York Factory. I descended the river to Cumberland House which, at that time was not a depot and where I was left with two men to pass the summer and fish for our livelihood. The fish caught were sturgeon of an excellent quality, but too rich for my low state of health. I became emaciated till the berries became ripe, when the kind hearted Indian women brought me plenty of berries for my support. This was pure charity, for I had nothing to give them and I was much relieved.

In the latter end of August, Mr. Tomison [departed] with the canoes and goods for the fur trade, and left three men and myself with goods to trade and pass the winter. In the beginning of October two canoes arrived from York Factory bringing Phillip Turnor, [George] Hudson, and [Charles] Isham. This was a fortunate arrival for me, as Mr. Turnor was well versed in mathematics, was one of the compilers of the nautical almanacs, and a practical astronomer. Under him I regained my mathematical education and during the winter became his only assistant and learned practical astronomy under an excellent master of the science.



## An Excellent Master

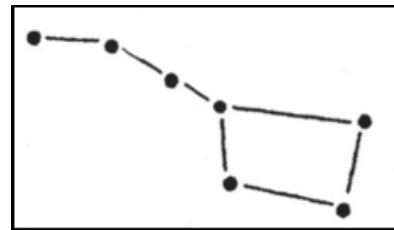
By too much attention to calculations in the night with no other light than a small candle, my right eye became so much inflamed that I lost its sight. In the early part of May when the rivers and lakes become navigable, my health and strength were thought too weak to accompany Mr. Turnor and his assistant and a Mr. Peter Fidler took my place. With the canoes and furs I descended the rivers and crossed the lakes to York Factory under the charge of Mr. Humphrey Martin and took my station as clerk and accountant.

The native inhabitants are two different races of Indians. North of the latitude of  $56^\circ$ , the country is occupied by a people called by the Hudson's Bay traders "Northern Indians," and by the southern neighbors "Chipewyans," or Ojibwa. Southward are the Nahathaway Indians. The French Canadians call them "Cree." The Indians in their manners are mild and decent, and treat each other with kindness and respect. Those acts that pass for generous charity and kind compassion in civilized society are no more than what is every day practiced as acts of common duty.

They believe in the existence of the Gitchie, Gitche Manitou, the Great, Great Spirit. They appear to derive their belief from tradition, and that the visible world with all its inhabitants must have been made by some powerful being. He is always kind to the human race and hates to see the blood of mankind on the ground. He has placed all other living creatures under the care of the Manitos. Each has a separate command and care, as one has the bison and another the deer; and thus the whole world is divided among them. On this account the Indians as much as possible neither say nor do anything to offend them, and at the death of each animal the religious hunter says or does something as thanks to the Manito of the species for being permitted to kill it.



*"I regained my mathematical education"*



*In the mythology of the Blackfoot and other Northern Plains people, the Big Dipper is Seven Brothers and Their Sister; while a cluster of five stars in nearby Hercules may be Hand in Sky. In Blackfoot lore, an Indian family remained in the vicinity of present Calgary, Alberta, after the rest of their band moved south. They were presented with a magical buffalo robe made by Wolf on which a hand had been painted, but no woman was allowed to touch it. When the man's wife wrapped herself in it one night, the hand was cast into the sky where it formed Hand in Sky.*

*The Milky Way is known to the Blackfoot as the Wolf Trail, while some Shoshone bands called it the Ice Crystal Trail, formed in the time of the Animal People when Grizzly raced up into the sky from a snowy peak in the Rockies.*

*A sextant is an astronomical instrument used to find the angle of the sun, moon, and stars in relationship to the horizon in order to determine latitude. The name is derived from its arc being one-sixth of a circle.*

*Gitchie Manitou was the name by which the Ojibwa/Chippewa and many other Northern Plains tribes reverently referred to the Great Spirit. The term "manitou" has since come to also refer to the supernatural force that pervades*

## Literature 1.4 -- "The Origin of the Robin"

by Sound of Stars Rushing Through the Sky/Jane J. Schoolcraft, c. 1823 (Chippewa)

An old man had only a son, a fine promising lad, who had come to that age which is thought by Chippewas to most proper to make the long and final fast. This is to secure through life a guardian spirit, on whom future prosperity or adversity is to depend, and who forms and established the character of the faster to great or ignoble deeds.

This old man was ambitious that his son should surpass all others in whatever was deemed most wise and great among his tribe. And to fulfill his wishes, he thought it necessary that his son must fast a much longer time than any of those persons known for their great power or wisdom, whose fame he envied.

He therefore directed his son to prepare with great ceremony for the important event. After he had been in the sweat lodge and bath several times, he ordered him to lie down upon a clean mat in the little lodge expressly prepared for him. At the same time he told him to carry himself like a man, and at the end of twelve days, he should receive food and the blessing of his father.

The lad carefully observed this injunction. He lay with his face covered with perfect composure, awaiting those happy visitations which were to seal his good or ill fortune. His father regularly visited him every morning to encourage him to persevere, expounding at full length on the renown and honor that would attend him through life if he accomplished the full term prescribed. To these admonitions the boy never answered, but lay without the least sign of unwillingness till the ninth day.

He then said, "My father, my dreams are of ominous evil! May I break my fast now, and a more propitious time make a new one?"

The father answered, "My son, you know not what you ask! If you get up now, all your glory will depart. Wait patiently a little longer. You have but three days yet to accomplish what I desire. You know, it is for your own good."

The son assented, and covering himself closer, lay till the eleventh day when he repeated his request to his father. The same answer was given him by the old man. His father added that the next day he would prepare his first meal, and bring it to him. The boy remained silent, but lay like a skeleton. No one would have known he was living but by the gentle heaving of his breast.

The next morning the father, elated at having gained his end, prepared a repast for his son, and hastened to set it before him. Coming to the door, he was surprised to hear his son talking to himself. He stooped to listen, and looking through a small aperture, was more astonished when he saw beheld his son painted with vermilion on his chest, and finishing his work by painting as far as his hand could reach on his shoulders.

He said at the same time, "My father has ruined me; he would not listen to my request. He will now be the loser. I shall be forever happy in my new state, for I have been obedient to my parent. He alone will be the sufferer, for the Spirit is a just one, though not propitious to me. He has shown me pity, and now I must go."

At the moment the old man broke in, exclaiming, "My son! My son! Do not leave me!" But his son with the quickness of a bird flew to the top of the lodge and perched on the highest pole, a beautiful robin. He looked down on his father with pity beaming in his eyes. He told him that he should always love to be near men's dwellings, and that he would always be seen happy and contented by the cheerfulness and pleasure he would display. He would still cheer his father by his songs which would be some consolation to him for the loss of the glory he had expected. Although no longer a man, he should ever be the harbinger of peace and joy to humans.

*"The foregoing tale observes the Indian custom of fasting to procure a personal spirit. The moral perhaps to be drawn from it is the danger of ambition. We should not seek for unreasonable honors, not take unusual means to attain them."*

## Study Guide

### Study Guide 1.5 -- This Electric Fluid

**Seeking:** If “aurora borealis” is the scientific term for the mysterious Northern Lights, what is the term for the Southern Lights?

**Problem Solving:** Many explanations were given over the centuries for the cause of the Aurora Borealis. This is an interesting example of **cause and effect**, which is a basic concept in science. We see an effect, and we want to be able to figure out the cause. For example, ancient people felt the effects of a thunderstorm, so they tried to attribute a cause. In Ancient Greek mythology, it was said that Zeus, the king of the gods, was throwing his thunderbolt! We know in modern times that the cause of thunder and lightning has to do with static electricity in the atmosphere.

One of the explanations for the Aurora Borealis was that ice particles in the air created a prism, which spread out the light into different colors of the rainbow, just as the rainbow itself is caused by water particles in the air refracted by sunlight. Here is your task as a scientist. We know the Aurora has colors, but not exactly the colors of the rainbow. Do some research to find the cause of the Aurora and draw a picture illustrating it using the colors found by the Northern Lights (another name for the Aurora Borealis).

**Editing:** I asked how many beaver houses there were before us, and he said, “there are now fifty two and we have taken several. (3 errors)

**Discussing:**

- \_\_\_ 1. Experiments showed that the magnetic needles were unaffected by the aurora borealis.
- \_\_\_ 2. For residents of the Far North, the aurora borealis was visible all year long.
- \_\_\_ 3. European and the Indian interpretations of the aurora borealis are strikingly different.

**Constructing:** How is the “fluid” of the aurora borealis formed? Where does it go? These were the questions David Thompson asked himself. Write a letter to Mr. Thompson in which you answer his questions. Draw the pattern iron filings make on a magnet and hypothesize about how this relates to the Earth’s magnetic field and the aurora.

**Connecting:** Timothy Ferris, “Cosmic Vision,” NGM (July 2009); “Hubble Renewed,” NGM (February 2010).

**Sidetripping:** **The Blue Mountain Observatory** in Missoula, Montana is operated by the University of Montana. Not only does the University’s Department of Physics and Astronomy run the only research observatory in the entire state, but it has been involved in a number of high-profile NASA missions. The most recent of these was the Genesis spacecraft sample return mission in 2001, which captured a sample of the solar wind and returned it to Earth for analysis.



Chief Broken Arm,  
Cree/Chippewa (G. Sohon)

**Wordbuilding-**

assert-

deviate-

dilute-

aurora-

universal-

attenuate-

pestilence-



*Upper Columbia*

*The Northern Lights is a phenomenon of colored light streams and curtains caused by solar rays interacting with the Earth's magnetic field. Usually confined to the polar regions, it is known as the aurora borealis in the Northern Hemisphere, and the aurora australis in the south.*

*coruscation: a brilliant reflection of light.*

*The North West Company was organized in 1779 by French-Canadians and Métis background and headquartered in Montreal. The Nor'Westers were the HBC's chief rivals until the two companies merged in 1821. David Thompson transferred from the HBC to the North West Company in 1797 since the latter gave him more freedom to conduct his cartographic explorations that eventually led to his mapping approximately four million square kilometers of land. His maps of the Northern Rockies were so accurate that they remained in use well into the 20th century.*

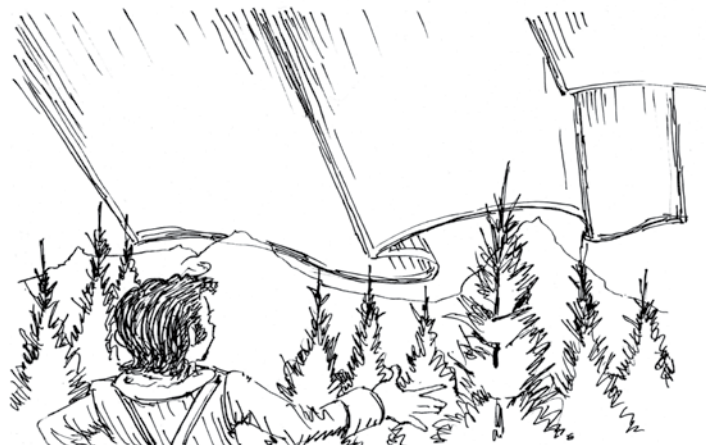
## 1.5 This Electric Fluid

David Thompson: Hitherto I have said little on the aurora borealis of the northern countries. At the Reindeer's Lake as the winter came on, especially in the months of February and March, the whole heavens were in a bright glow. We seemed to be in the center of its action, from the horizon in every direction from north to south, from east to west, the Aurora was equally bright with tremulous motion in immense sheets slightly tinged with the colors of the rainbow.

The men were positive they did hear the rapid motions of the aurora. This was the eye deceiving the ear. I had my men blindfolded by turns, and then inquired of them if they heard the rapid motions of the aurora. They soon became sensible they did not, and yet so powerful was the illusion of the eye on the ear that they still believed they heard the aurora. What is the cause that this place seems to be in the center of the most vivid brightness and extension of the aurora? From when this immense extent of electric fluid, how it is formed and wither does it go? Questions without answer.

Mr. Hood was told by one of the North West partners that he once saw the coruscations of the aurora borealis so vivid and low that the Canadians fell on their faces and began praying and crying, fearing they should be killed. He threw away his gun and knife that they might not attract the flashes, for they were within two feet of earth, flitting along with incredible swiftness and moving parallel to the surface. He added they made a loud rustling noise like the waving of a flag in a strong breeze. This rustling noise which is universally asserted by the servants of the North West Company was not, however, heard by any of the officers of the expedition.

It has been supposed that the magnetic needle was not affected by the aurora. But a vast number of experiments prove that in certain positions of the beams and arches the needle was considerably drawn



*"the whole heavens were in a bright glow"*

## This Electric Fluid

aside. This is mostly so when the flashes were between the clouds and the earth, or when their actions were quick, their light vivid, and the atmosphere hazy. At the same time it was observed that the needle was partially affected when the air was hazy, snow falling, or when the clouds in the daytime assumed the form of the aurora. It was not, however, a trembling or vibration, but a deviation from its natural direction. Though there is no reason to doubt this phenomenon being occasioned by a diluted, or attenuated electricity, yet a pith ball electrometer elevated on a pole never indicated an atmosphere charged with it.

At this place every clear night the aurora was visible and sometimes brilliant. In the early part of November, and as the cold increased, it became more extensive until it covered the whole vault of heaven. During the month of October the Aurora occupied the northern part of the sky, but more to the east than to the west of north. Around the horizon it formed arches. They were seldom thirty degrees above the horizon. From the points of the arches beams issued, sometimes to the opposite horizon, but frequently lost in the zenith. In an undulating motion the apparent curves keep their lines. They were compared to sheets of linen a mile in length, by a great breadth shaken by a gale of wind. When the weather was hazy, or lightly cloudy, the Aurora beneath the clouds was of a deeper red than usual.

In northern Europe the appearance of the aurora and its varying, changes of place and position gave to the gloomy minds of the people the evolutions of armies in battle, and they predicted tumults and wars, famines and pestilences. The Indians of North America have a very different opinion and call them the "Dead." When the aurora is bright in vivid, graceful motion, they exclaim, "See how happy our fathers are tonight, they are dancing to the enlivening songs of the other world."



**cariboo**

(*Rangifer tarandus*)

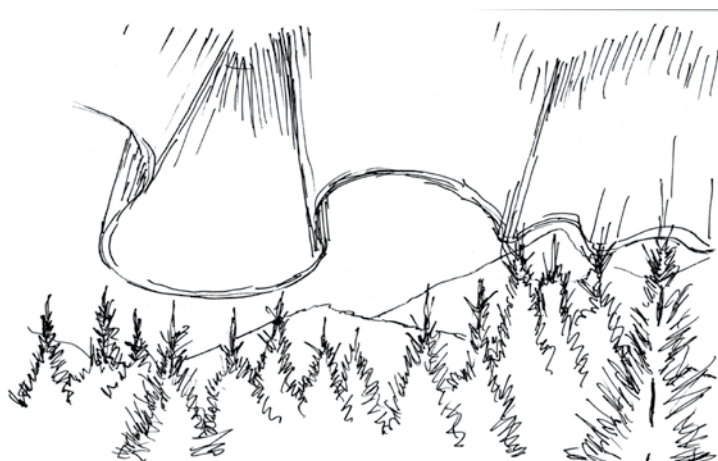
**Old French rangier** means reindeer, and Latin *ferus* is wild, untamed. Latin *tarandus* is the northern Eurasian tundra.

*feral*: wild

*attenuate*: to make thin or slender, lessen or weaken.

**Thompson married Charlotte Small**, a Cree Indian, in the 1790s and the couple remained together for 57 years. Charlotte described her husband as "...different from many of the company men... [who] think only of the river and don't hear the beauty of a bird's song or see the burst of new leaves on the bushes. They miss so much. Not my David. He liked to notice everything. Sometimes he would notice something and he would catch my eye to see if I saw it too, and we would smile."

**A pith ball** is a light, non-electrical conducting substance that is drawn to the static electricity in a positively charged object. As a component of simple electroscopes, pith balls also indicated the polarity of objects as they would be attracted to charges of opposite polarity.



## Journey Update 1.5 -- The Army Corps of Engineers 1931 Report and Bonneville Project Act

*The U. S. Army Corps of Engineers is the government agency authorized by Congress in the 1920s to study and develop the nation's rivers for multiple uses. The Corps' 1931 report proposed a series of dams along the entire Columbia River route in Washington and Oregon including a high dam at Grand Coulee that would prevent salmon migration to the species' ancient spawning beds throughout the upper Columbia. A subsequent congressional statute in 1937 authorized formation of the Bonneville Power Administration to develop and market hydroelectricity from Columbia River dams.*

Army Corps of Engineers Report (1931): The Columbia River and its tributaries are susceptible of being developed into the greatest system for water power to be found anywhere in the United States. The power can be developed at low cost. The sites determined by the Board of Engineers for Rivers and Harbors as most promising, all things considered, are at 10 localities.... The structures contemplated in the scheme for power development are all on a large scale, some on a grand scale, and the conditions at some of them as to foundations and flood discharge over the dams are without precedent. There is nothing however to cause a belief that the engineering difficulties cannot be surmounted.... The cost of this development will exceed that of any other single development of any kind for power that has ever been made....

[T]he board reports that, based on present information, the best general plan for the comprehensive utilization of the natural water resources of the Columbia River and for its ultimate improvement for the purpose of navigation in combination with the efficient development of the potential water power, the control of floods and the needs of irrigation is substantially as follows....

Bonneville Project Act (1937): [F]or the purpose of improving navigation on the Columbia River, and for other purposes incidental thereto, the dam, locks, power plant, and appurtenant works now under construction at Bonneville, Oregon and North Bonneville, Washington, ...shall be completed, maintained, and operated under the direction of the Secretary of War and the supervision of the Chief Engineers subject to the provisions of this Act relating to the powers and duties of the Bonneville power administrator... respecting the transmission and sale of electric energy generated at said project....

...In order to ensure that the facilities for the generation of electric energy at the Bonneville project shall be operated for the benefit of the general public, and particularly of domestic and rural consumers, the administrator shall at all times, in disposing of electric energy generated at said project, give preferences and priority to public bodies and cooperatives....

*The lives of Columbia River Indians were enormously impacted by the construction of high dams that flooded the major fisheries at Great Cascades, Celilo, and Kettle Falls proposed in Army Corps of Engineers' 1931 report. The study proposed construction of Bonneville Dam on the lower Columbia at The Cascades. Thousands of workers labored on the structure from 1933 to 1938 when completion formed Lake Bonneville inundating the tribes' historic Great Cascades fishery.*

*A proposal favored by Spokane civic interests to irrigate the basin through a gravity flow plan using water from the Pend Oreille River allowed for a low dam at Grand Coulee but Butler's report concluded that building a monumental high dam was the most feasible approach. Work on this project also commenced in 1933 and with Bonneville Dam became a key component in newly elected President Franklin Roosevelt's New Deal policy to stimulate economic recovery and create public utilities. Roosevelt's initial response for the Grand Coulee project favored a low dam but in 1935 the Bureau of Reclamation authorized a change that nearly doubled the height of the dam to 500 feet preventing upriver salmon migration.*



# Chapter Two



## Verdant Meadows and Open Woods



## *Language and Moral Literature*

*“Words contain special force implicit in sounds associated with natural forces, life forms, and landscapes, as with the wind, animals, and even personal names. Storytelling fosters understanding of experience. Cultural knowledge transmitted through myth (ancient), tale (experience), lore (anecdotal), and history provides practical and symbolic means to meaningfully relate to place and culture. These experiences develop moral sensibilities for respect, stewardship, generosity, cooperation, cleanliness, and hospitality.”*

## Study Guide

### Study Guide 2.1 -- A Staggering Track

**Charting:** Company Personnel and Labors

**Problem Solving:** The Athabasca is the longest river in Alberta, 1538 kilometers in length. Make a chart of Canada's 10 longest rivers. Place the list in order from the longest on down to the 10th. Make a map of Canada showing these 10 rivers.

**Editing:** The Great Plains commence at the Gulph of Mexico and extend to the north forests which continue to the arctic sea. (3 errors)

**Discussing:**

- \_\_\_ 1. The time of a summer moon is another way of saying one month.
- \_\_\_ 2. The creature described to Thompson had been seen by many throughout the years.
- \_\_\_ 3. Thompson was not especially affected by the sight of the Rocky Moun tains.

**Constructing:** The beaver was an animal in abundance in 19th century North America. Its European cousin had become extinct in Scotland by the 20th century. Now in the 21st century the beaver has been reintroduced to Scotland and is doing well in the lakes and streams of that country. Do some research on an endangered animal and the steps that have been taken to keep it from becoming extinct. There are many examples of endangered species, including the rare golden eagle found in the Athabasca River region. Make a sketch of the animal you select to study and write a paragraph in which you explain its history and near extinction.

**Connecting:** Douglas Chadwick, "Grizzlies," NGM (July 2001); Tom Mueller, "Ice Baby: Secrets of a Frozen Mammoth," NGM (July 2009); Jack Nisbet, "The Palouse Mammoths," CM (Spring 2004); "My Strength is from the Fish (documentary film)," Columbia River Intertribal Fish Commission.

**Sidetripping:** Alberta, Canada's **Columbia Icefield** straddles the mountainous **Continental Divide** of North America. Visible from the Icefield Parkway (Highway 93 North) the spectacular icefield is a popular tourist destination for visiting the Athabasca and other glaciers which appear to be retreating from the effects of global warming. In addition to being the continent's largest icefield, it is a "triple divide" draining into three different oceans—the Columbia River flows west to the Pacific Ocean; the Athabasca River flows north into the Arctic Ocean; and the North Saskatchewan River flows southeasterly into Hudson Bay and the Atlantic.



Boat Encampment  
(P. Kane)

### Wordbuilding-

carnivore-

coarse-

scaffold-

perpendicular-

ascend-

credence-

eminence-



*Upper Columbia*

*Although the “chart” drawn for Thompson has been lost, an earlier one dated 1801 shows the extent of European knowledge of the region’s geography at that time. The handwriting appears to be by the Scottish explorer-trader William McGillivray, who became head of the North West Company in 1804.*

*Thompson’s historic crossing of the Continental Divide took place in the spring of 1807. His Aug 24, 1807 journal entry near Kootenae House records that the “5 or 6 grains of barley that were sowed [in the spring] have thriven well...,” and represents the first reference to the cultivation of cereal grain in the Pacific Northwest.*

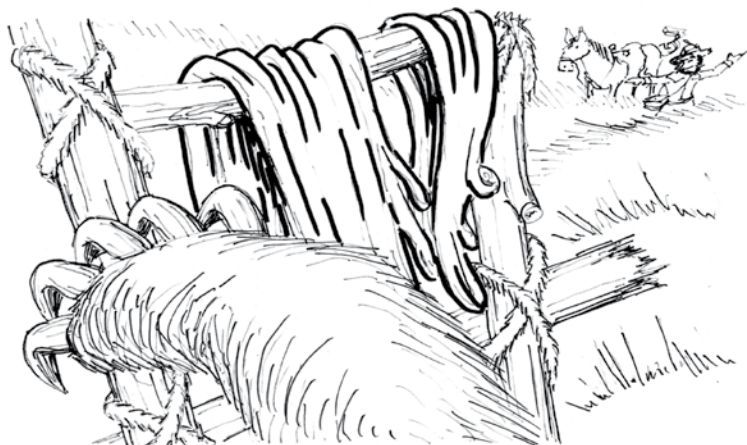
## 2.1 A Staggering Track

September 16, 1807

David Thompson: They have never before seen white people.... We conversed much about the country, which they say abounds in beaver.... [A]fter drawing a chart of the their country and from thence to the sea, and describing the nations along the river, they assured me that from this house to the sea and back again was only the voyage of a summer moon. But from the number of falls it does not seem easy to go without a guide.

...When proceeding up the Athabasca River to cross the mountains, ...on one of the channels of the river we came to the track of a large animal, which measured fourteen inches in length by eight inches in breadth by a tape line. As the snow was about six inches in depth, the track was well defined, and we could see it for a full one hundred yards from us, this animal was proceeding from north to south. We did not attempt to follow it, we had no time for it, and the hunters, eager as they are to follow and shoot every animal made no attempt to follow this beast, for what could the balls of our fowling guns do against such an animal.

Report from old times had made the head branches of this river and the mountains in the vicinity the abode of one, or more, very large animals to which I never appeared to give credence.... But the sight of the track of that large beast staggered me, and I often thought of it.... We camped in the passes of the mountains, [and] the hunters there pointed out to me a low mountain apparently close to us. [They] said on the top of that eminence there was a lake of several miles around which was deep moss, with much coarse grass and rushes in places. These animals fed there.



## A Staggering Track

They were sure from the great quantity of moss torn up with grass and rushes, ...this animal was not carnivorous, but fed on moss and vegetables.

Yet they all agree that not one of them had ever seen the animal. I told them that I though curiosity alone out to have prompted them to get a sight of one of them, but at a distance. The search for him might bring them so near that they could not get away. I had known these men for years, and could always depend on their words. They had no interest to deceive themselves, or other persons.

We came to a scaffold of meat which the hunters had made. Three of us leading horses very carelessly approached it, but quickly wheeled about as we saw it in possession of a large bear. He showed us his paws and teeth in proof that he was the lawful owner, but not liking the horses he walked off. We quietly took what he had left.

April 27th 1827

David Douglas: The sight of the mountains is most impressive. Their height from the level of the river from 6,000 to 6,500 feet, two-thirds covered with wood, gradually diminishing to mere shrubs towards the confines of eternal snow. One rugged beyond all description, rising into sharp rugged peaks; many beyond the power of man to ascend, being perpendicular black rocks distinctly seen, having no snow on their surface. On the right, rising from the bed of the Canoe River, the northern branch of the Columbia. They seem to be the most rugged; one the left, rising from the bosom of the Columbia, stands a peak much higher than the former, with a smooth surface. ...On beholding those mentioned impresses on the mind a feeling beyond what I can express, I would say a feeling of horror.



**Canada goose**  
(*Branta canadensis*)

*Anglo-Saxon brennan, to burn, refers to red-brown coloring, which is common in many other goose species. The Latin suffix -ensis means "belonging to," in this case inhabiting Canada.*

*Elsewhere in Thompson's and others' journals, the explorers speculate that the tracks may belong to a remnant herd of woolly mammoths that survived in the remote Northern Rockies.*

*"A three-way Continental Divide. ...High in the thin air lay the Columbia Icefield, a rumpled and frozen blanket 60 miles long and up to 350 yards deep. On its far side, the icefield gives birth to the Saskatchewan River, which wends across Canada towards Hudson's Bay. And at another corner, so huge is the icecap, it drips into the McKenzie River, eastward and then north to find the Arctic Ocean."*

—Robin Cody

*Scottish naturalist David Douglas (1799-1834) attended lectures on botany at the University of Glasgow by British scientist William J. Hooker who was greatly impressed with the young man's dedication. Hooker arranged for Douglas's further studies which led to his expeditions to the Pacific Northwest and Hawaii.*

*"we saw it in possession of a large bear"*

## Charting 2.1—Company Personnel and Labors



The Hudson's Bay Company's London-based Board of Directors oversaw a vast global enterprise that employed both commissioned officers and enlisted workers. Commissioned "Gentlemen" included the ranks of Governor-in-Chief of British North America (George Simpson), Chief Factor, Chief Trader, and Clerk. Factors were senior authorities for an entire district while Traders oversaw a particular post.

Clerks, who kept post account books and letters, were eligible after fourteen years of service to become Chief Traders. Engagés served at specialized roles with the highest rank being Postmaster followed by Interpreter, Mechanic (carpenter, gunsmith, cooper, etc.), and Guide. Next in service were the masterful Voyageurs with crews serving in three levels: Steersman, Bowman (pilot), and Midman (paddler). The company hierarchy's lowest levels consisted of Laborers assigned unskilled work.

Trappers comprised a separate class from the others and included HBC employees, semi-retired personnel, and freemen who traveled on regular company-sponsored expeditions or trapped independently to sell their pelts at area forts.

## Study Guide

### Study Guide 2.2 -- List of Goods

**Heading:** 52° 22' N. Latitude, 118° 11' W. Longitude (mountain pass)

**Problem Solving:** The logs for the houses and stockades David Thompson describes were likely made of Rocky Mountain Douglas fir trees, named later in honor of the great naturalist David Douglas. These trees grow to a height of 25 meters. Make a chart using graph paper to show the comparative heights of the Rocky Mountain fir tree, the birch, the blue spruce, and the yellow cedar. You can substitute other trees if you wish. The chart should be done to scale with drawings of the trees placed on the graph paper.

**Editing:** The Black, Brown and Yellow Bears feed on berrys and nuts. (5 errors)

**Discussing:**

- \_\_\_ 1. Provisions could be easily obtained along the route, so supplies were kept at a minimum.
- \_\_\_ 2. After spawning in streams of their origin, salmon head back to the sea to die.
- \_\_\_ 3. Salmon spawn in murky water so that their eggs are hidden from birds of prey.

**Constructing:** David Thompson writes about catching salmon near the source of the Columbia River, far inland from the Pacific Ocean. Make a drawing of the life cycle of the salmon showing its life span from eggs to fry and smolt to adult. Illustrate the journey the salmon take, swimming to the sea and returning to their spawning grounds far inland. Often the round trip journey takes several years.

**Connecting:** Mark W. Moffett, "Tree Giants of North America," NGM (January 1997); Wade Davis, "British Columbia's Outback," NGM (March 2004).

**Sidetripping:** Invermere, British Columbia's **Windermere Valley Museum** features the cultural and economic history of early British Columbia, and also serves as the stepping off point for a self-guided interpretive trail on the lives of David Thompson and his wife, Charlotte. The museum consists of eight different historical buildings, each one focusing on a specific period of regional history. A mining cabin, for example emphasizes the artifacts and history of area gold and silver mining.



Chief Mek-yāpy, Piegan (G. Sohon)

### Wordbuilding-

salve-

defile-

awl-

myriad-

resin-

*bastion-*

*stroud-*



Upper Columbia

**Jaco Finlay** appears to have operated this first trading post “Kootenay House” on the Kootenay Plain near the headwaters of the Saskatchewan River in the winter of 1806-07.

**bastion:** the projecting part of a fort, usually a corner; a stronghold.

**resin:** a natural transparent or translucent plant substance used in inks and varnishes.

**Thompson’s “red deer”** are Rocky Mountain elk, the world’s largest deer species, that migrate annually from forested lowlands to subalpine and alpine regions which they share with bighorn sheep and the sure-footed mountain goat, a species found only in North America.

**A capot** is a long, hooded overcoat popular among the fur traders and often fashioned from colorful trade blankets; calico is a plain white cotton fabric originally imported from Calcutta, India.

## 2.2 List Of Goods

David Thompson [1807]: We abandoned the trading post near the mountains... [and] crossed the mountains by the defiles of the Saskatchewan River which led to the headwaters of the Columbia River. We built log houses and strongly stockaded it on three sides; the other side resting on the bank of the river. The logs of the house and the stockades, bastions, & etc. were of a peculiar kind of a heavy resinous fir of a rough black bark....

At the latter end of autumn and through the winter there are plenty of red deer and the antelope with a few mountain sheep. The goats, with their long, silky hair were difficult to hunt from their feeding on the highest parts of the hills, and the Indians relate that they kick down stones on them.... At length the salmon made their appearance, and for about three weeks we lived on them. At first they were in tolerable condition, although they had come upwards of 1200 miles from the sea. Several weighed twenty-five pounds. But as the spawning went on upon a gravel bank a short distance above us, they became poor and not edible.

As the place where they spawned had swift, clear water on it, we often looked at them. The female with her head cleared away the gravel, and made a hole to deposit her spawn of perhaps an inch or more in depth by a foot in length. The male then passed over it several times, when both covered the hole well up with gravel. The Indians affirm...that not a single salmon, of the myriads that come up the river, ever returns to the sea....



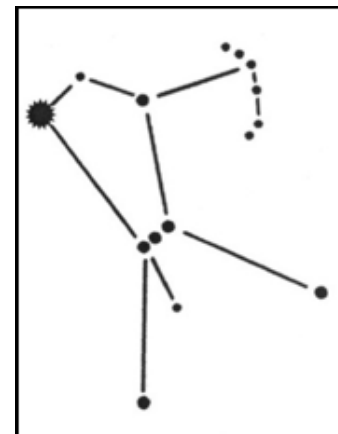


## List Of Goods

April 22nd [1808], Friday. In the early part of the day every point a rapid but not strong, with pieces of easy current. ... Where we are camped the points are fine meadow, and the first ground I have seen that I think has sufficient moisture to form a garden for herbs. The woods of the country are fine red fir, fir pine, very fine mountain larch, and along the river pines. ... [T]he low points have small aspens and willows.

List of Goods [partial], 29 December 1810, Athabasca River

Awls	doz	12	Lavender	bott	1
Axes, half		5	Nails		50
Blankets, green, 4 pts		1	Paper, fools cap	quire	3
flowered		1	Pepper	lbs	1
Beads, small	lbs	20 <sup>3</sup> / <sub>4</sub>	Peppermint	bott	6
Bells, hawk	gross	7 <sup>1</sup> / <sub>4</sub>	Quills	c	<sup>1</sup> / <sub>2</sub>
Books, blank	no	1	Razors & Strap	case	<sup>1</sup> / <sub>2</sub>
Buttons, coat	gross	57/12	Ribbon, 90	pieces	3
vest		5/12	Strouds, HB blue	fms	6
Capots, fine		3	red		6
Calico, fine	fms	4	Cloth, 2nd green		1
Cotton, checked		2	scarlet		<sup>1</sup> / <sub>2</sub>
Chocolate	lbs	1	Spoons, pewter	no	2
Files, of 8 in	no	6	Steels, fine		12
Flints, Gun		416	Seeds, garden parcel		1
Flour	lbs	65	Soap, common	lbs	3
Glasses, looking		72	Salves, drawing		1
Guns, NW		8	Scissors	pr	5
Gunpowder	lbs	93 <sup>1</sup> / <sub>2</sub>	Spirits	gall	2
Ink powder	paper	1	Sheetings, Russia	fms	3 <sup>1</sup> / <sub>2</sub>
Kettles, tin		11	Traps, steel	no	2
Knives, large	doz	6	Thread, sewing	lbs	<sup>1</sup> / <sub>2</sub>
small		11/6	Tobacco, Albany		141
& forks		2			



**The constellation Orion** depicts the "Great Hunter" Orion, son of the Greek god of the sea, Poseidon. Armed with a great bow and sword, Orion pursues the **Pleiades** (plē-i-dēz) in nearby Taurus while being chased by his enemy Scorpius the Scorpion. The Crows Indians of Montana consider the lower portion of Orion to be The Hand. It includes Wrist (Orion's Belt), the thumbnail is the Great Nebula, **Cursa** the end of one finger, and **Rigel** (rye'jel) the tip of the index finger.

The supergiant red star **Rigel** is Orion's left foot and one of the brightest stars in our galaxy, about 57,000 times brighter than the sun! The annual disappearance of the The Hand below the horizon signified the loss of the land's fertility that had to be restored through a sacrificial ceremony. For this reason young men in some Northern Plains tribes took part in the famous Sun Dance and inflicted great pain upon themselves and sought visions. In their ancient lore a powerful chief had neglected the rite of sacrifice and Thunder tore off his hand and cast it into the sky.



## Literature 2.2 -- "How Coyote Killed Flint"

by Mourning Dove/Christina Galler

*This hill, known as "Square Butte," is in Cascade County, Montana, south of Great Falls, and near the old Fort Shaw Indian School, which Mourning Dove briefly attended in her girlhood.*

Flint-Rock was a man whose lodge was towards the sunrise. Crane watched for him. When people drew near Flint's tepee, Crane made a noise to warn him. Flint would then come out to meet his visitors in the middle of a clear flat, on the edge of which he lived. Warriors had to come to Flint and pay him a big price to be able to chip off an arrowhead or spearhead.

Coyote heard about Flint-man. He wished to get arrowheads. He called his squ-stenk' powers, which then gave Coyote three rocks which were harder than flint rock. Squ-stenk' also gave him a little dog with only one ear.... Coyote said to his wife, Mole, "Go make your underground trenches in the flat where Flint lives. When you have finished and see me talking to Flint-man, show yourself where Flint and I can see you."

Coyote then set out for the tepee of Flint. As he drew near, he called his powers and made it foggy. Crane, the watcher, did not see Coyote until he was caught. Coyote took Crane from his perch high in the lone tree where he sat watching all the trails. Coyote broke Crane's neck before Crane could make a warning noise. Coyote then went on to the tepee of Flint. As he approached the doorway, Grizzly Bear, Flint's dog, ran at him to bite him. He called to Flint, "Stop your dog, or my dog will kill him!"

This amused Flint, who saw that Coyote's dog was very small. It had no tail and but one ear. Flint laughed. He said to Coyote, "You better take your dog away! My Grizzly Bear-dog will eat him up." Coyote laughed. He said to Flint, "You better stop your dog! One-Ear will kill Grizzly Bear-dog." This only made Flint laugh the more. He said, "No dog is big enough to kill my dog, Grizzly Bear."

Coyote then told One-Ear to go after Grizzly Bear-dog. Flint told his dog, Grizzly Bear, to eat One-Ear. Grizzly Bear gave a loud growl and ran towards One-Ear. He opened his jaws wide to bite One-Ear, when One-Ear jumped into his mouth. One-Ear went through Grizzly Bear-dog, cutting him wide open with his knife ear.

Coyote said to Flint, "See! I told you that One-Ear was bad. He can kill anything." Flint was surprised. Just then Coyote saw his wife, Mole, appear on the far edge of the flat, all dressed in red-painted skins. He said to Flint, "My friend, there is a woman across the flat. Let us run to her. Whoever reaches there first will take her as a wife."

Flint and Coyote ran towards Mole, who pretended to be digging spit-lum (bitterroot). Every time that Flint went over the underground trench of Mole, he would break through the trail and fall. Coyote would jump over Flint, shouting, "Eh! ha-yea! My friend, what is wrong?" As they drew near the woman, Flint was tired. He was heavy and began to fall more frequently. Coyote would jump over him twice before he could get up. Just as they reached the woman in red, Mole changed herself into a real mole and went back into her underground trench.

When Coyote saw that Flint was very tired, he took his three squ-stenk' rocks and began striking him over his body. Flint chips scaled off at every blow, but this did not affect the life of Flint. They fought over the underground trenches of Mole, where Flint fell at almost every step. Coyote kept striking Flint's body, chipping off more flakes. At last Coyote killed Flint, but it was only after he had chipped his entire body from about his heart.

After killing Flint, Coyote took his heart and threw it across the flat, where it stands to this day as a hill, or butte. It is there that the most flint is found. The body of Flint, which lay scattered about in flakes and fragments, Coyote gathered and threw all over the earth for the use of warriors as arrowheads and spears. Coyote then said to Flint, "You will be a man no more. From this day you will be only a dead stone." This is why flint is now but a senseless rock and cannot fight back when chipped for arrowheads. But it was not so at first.

## Study Guide

### Study Guide 2.3 -- An Equal Education

**Seeking:** Translation of the French word “Pend Oreille” used for the north Idaho lake and Indian tribe.

**Problem Solving:** David Thompson writes that he needs a red fir tree of “two fathoms round” in order to make a good dugout canoe. A “fathom” is a measurement term used by sailors to indicate the depth of the water. In Old English the term meant “a pair of outstretched arms.” What is the length of one fathom? What is the diameter (distance across) of a tree trunk that is two fathoms in circumference (distance around)?

**Editing:** We saw cranes frogs and rooks today and the Willows are budding. (3 errors)

**Discussing:**

- \_\_\_ 1. David Thompson was a caring father.
- \_\_\_ 2. The trading house that was built was to be used for Thompson’s family.
- \_\_\_ 3. Family relationships can suffer from lack of communication.

**Constructing:** David Thompson describes some of the work involved in building a temporary home and warehouse in the wilderness. Here is a challenge for you. This can be a group project or can be done alone. Imagine that you need to build a cabin in the woods. Draw a sketch of your cabin. Make a blueprint showing the exact dimensions of your cabin. What materials will you need? How will you furnish it?

Explain the difference between pictographs and petroglyphs. Draw some examples of each and speculate about their meanings.

**Connecting:** Jere Van Dyk, “Long Journey of the Pacific Salmon,” NGM (July 1990); Prit Vesilind, “Common Ground, Different Dreams: The U. S.-Canadian Border,” NGM (February 1990); William D. Layman, “The Columbia through Time,” CM (Winter 2006-07).

**Sidetrapping:** The **David Thompson Game Preserve** on the eastern shores of Lake Pend Oreille near Hope, Idaho, provides sanctuary to many species of waterfowl and small mammals. At the end of a peninsula is a large Indian petroglyph containing twenty-eight figures including stylized bear tracks, a mountain goat, and projectile points. Located nearby are remains of the rock chimney and walls of **Kullyspell House**, the post built by David Thompson and Jaco Finlay in 1809 as the first fur trading establishment west of the Rocky Mountains.



Northern Rockies Camp  
(G. Sohon)

### Wordbuilding-

oblige-

esteem-

negligence-

tolerable-

peninsula-

*providence-*

*conscience-*



*Upper Columbia*

The “House” mentioned by Thompson is the historic Kullyspel House on Lake Pend Oreille near Hope, Idaho. The following winter he returned with Charlotte and their children to Montreal to enroll their daughter in a boarding school before returning to the Rockies.

**The Flathead Indians** have lived for generations in the Bitterroot Valley of the Northern Rockies and ranged widely onto the Montana plains. They believe their English name derives from the Indian hand sign used to identify them which was two hands pressed against the side of the head. Among their most prominent 19th century leaders were chiefs Victor and Charlot.

The “**Pointed Hearts**” are the Coeur d’Alene Indians, a fiercely independent people who ranged from the Spokane Valley to the Clark Fork River in present Montana. Their reservation is located in Idaho south of the scenic city and lake named for them.

*“Put the beam, plate, and roof trees on the warehouse”*

## 2.3 An Equal Education

David Thompson: September 10th [1809] Sunday. A very fine day. Early set off with two Flatheads to look for a place to build a House. At length found a place somewhat eligible but labors under the want of good earth. I returned and we got all the goods embarked by the Flatheads and landed the whole by 3 PM, when we set up our lodge and tents.

Tuesday. A rainy night but very fine day. Began our warehouse. The ground is so very full of small stones that the holes for the posts is a long time making. Got the posts and needles ready and threw down a red fir of two fathoms round to make a canoe for fishing. Sixteen canoes of Pointed Hearts passed us and camped with the other Flatheads.

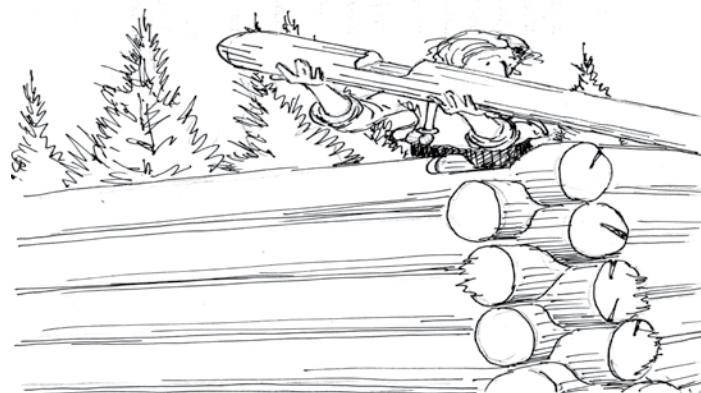
Thursday. A blowy day, but fine. Wind southeasterly. Set up the posts and needles and raised the warehouse about 2½ feet high. ... The wood is so very heavy that it requires the force of 4 or 5 men to lift a single piece of 10 or 11 feet.

Friday. ... Put the house up the intended height [of] seven feet. Indians traded a few things and promised to bring all they have presently. Traded a canoe for fishing & etc.

Saturday. A tolerable fine day. Put the beams, plate, and roof trees on the warehouse, and cut wood of birch for shelves and for nails, also cedar for net floats...

Monday. A rainy night and morning ‘till 2 PM when it ceased. We arranged three other nets and set them, and began cutting the roofing of cedar which must be hauled about 400 yards, as the wood around us is too large and too heavy.

September 21st, Thursday. ... Roofed the magazine and brought grass for to work in the mud that the roofing is to be made tight with. Took a walk around the peninsula on which we are, which took me about 4 hours. In the evening Jaco and family arrived. Set the large nets at the isles.



## An Equal Education

21 Dec. 1810, Athabaska River  
foot of the mountains

My dear Fraser,

I received your esteemed favor the 9th Sept. and am obliged to you for the traits of civilized life and the information of my daughter. She costs me £62 10s. at present, and I think £50 a year would do her all the good that the present sum costs me. It is my wish to give all my children an equal and good education: my conscience obliges me to it, and it is for this I am now working in this country.

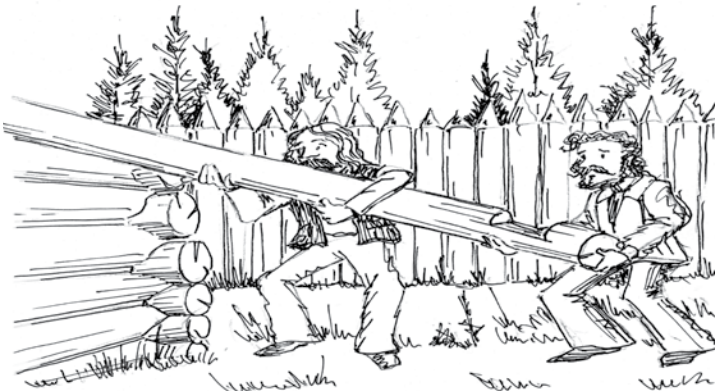
I intended to have paid you a visit at Montreal last summer, but the critical situation of our affairs in the Columbia obliged me to return. The Americans, it seems, were as usual... determined to be beforehand with us in the Columbia in ship navigation. As the Piegans killed an officer and 8 soldiers out of a group of 12, this accident has not drove them back, they will probably get the start of me. My canoes were also driven back by the Piegans, but not lives or property lost and I have changed our route... to the Athabasca River and am now preparing in this hard season to cross the mountains and gain my first post near the head of the Missouri [River], a march of about 34 days, and a part of it over a dangerous country for war. I hope good Providence will take care of us and bring me safe back again.

I am always in such distant expeditions that I cannot [write] to my friends regularly. They think I slight them, but are mistaken. It is my situation that prevents me and not negligence. I shall, after this apology, be glad to correspond with you as usual, if you have time to spare. If all goes well and it pleases good Providence to take care of me, I hope to see you in the autumn of 1812. I am getting tired of such constant hard journeys. For the last 20 months I have spent only barely two months under the shelter of a hut, all the rest has been in my tent, and there is little likelihood the next 12 months will be much otherwise.

I hope you are better at your ease and that you now enjoy that society you merit, though I suppose you now and then cast a thought to your old friends the Chipewyans who still talk of you.

Your humble servant,

David Thompson



**elk**  
(*Alces alces*)

**Latin *alces* is elk, the largest deer species, and likely derived from Greek *alkē*, strength.**

*alcaide*: a fortress commander.

*alcazar*: a Spanish castle or fortress.

Although born in New York, North West Company explorer **Simon Fraser** (1776-1862) moved with his Loyalist family as a small boy to Canada following the Revolutionary War. At age 16 he joined the Nor'Westers and was sent to the remote Northern Rockies Athabasca district where he was among the first to map the Peace River region and large portions of present British Columbia.

**The British symbol £** represents the British unit of currency, the "pound sterling," and is derived from the letter L in the ancient Latin word *libra*, meaning scale or measure.

**"After gathering itself from Canada, seven Western states, and two time zones, the Columbia slides from the desert into another dripping rainforest and heaves more water into the Pacific than any other river in North or South America, more than ten times what the Colorado sends through the Grand Canyon, twice the flow of the fabled Nile."**

—Robin Cody

## Biome 2.3—The Canadian Rockies: A Conifer Forest Biome

The David Thompson Heritage Lands Corridor, Alberta and British Columbia, is a vast pristine wilderness of some 30,000 acres that joins Jasper National Park and Hamber and Cummins provincial parks in the Canadian Rockies. The corridor commemorates the explorations of David Thompson and provides a contiguous conifer forest for wildlife and biodiversity across Athabasca Pass. This remote region offers habitat for over 300 endangered species including Rocky Mountain caribou, mountain goat, and grizzly bears. At 5,751 feet, Athabasca Pass was a pivotal link in the route of the Hudson's Bay Company's annual Columbia Express that traveled each year from York Factory to the Northwest's Columbia District to deliver mail and supplies and return with furs trapped throughout the region. David Thompson's explorations in 1811 included the first documented crossing of the pass.



**Grizzly Bear (*Ursus horribilis*)**—Although grizzly bears have been almost exterminated in the United States, these magnificent creatures once ranged throughout most of the western half of the country. Lewis and Clark first encountered them on the grasslands of the Missouri River where they fed on fish, grass, roots, and small animals. The average length of males is 7 ½ feet and they commonly weigh 500 pounds although some may reach 1100 pounds. Their lifespan is 25 years.



**Clark's Nutcracker (*Nicrifraga columbiana*)**—Named for William Clark who first described it in 1805, this bird generally lives in mountainous regions from Alaska to New Mexico. They may grow to about 13 inches in length and have a gray body with a white face and glossy black tail and wing feathers. These inquisitive birds build nests of twigs bound together with bark and grass that are sometimes lined with a mat of woven wool.



**Douglas Fir (*Pseudotsuga taxifolia*)**—This massive conifer is named for Scottish naturalist David Douglas who explored the Pacific Northwest in the 1820s. The tree grows over 200 feet high with the bark on the old tree a foot thick and formed into oblong plates. It grows throughout the Northern Rockies and can survive a wide range of climatic conditions. Its wood is highly valued for use in construction.

**Granite (intrusive igneous)**—Granite is a mineral composed of quartz, feldspar, mica, and sometimes hornblende. It is formed deep within the earth and becomes exposed by the erosion of mountaintops. Granite is hard and may be permanently polished to make excellent building stones.

**Timber Cruising/Field Techniques**—For this activity you'll need a forest area to visit. An undeveloped lot, park, or the school grounds if partly wooded, will do. Contact your nearest national or state forestry department office. They are always glad to help with learning projects. Invite a forester to come visit your class, and ask her/him to bring a DBH (diameter at breast height) tape or stick and perhaps a tree borer. Take a walking field trip with your forester through the woods. Measure out a 30 x 30 meter plot. Mark the sides with string or rope to make it easier to locate which trees are in your plot. Identify the trees with the help of your forester or a good guide book. Use the DBH stick/tape to measure the diameter of each tree. Then learn how to use his handy field instrument to estimate the height of several trees. Record the species, diameter, and height of each tree larger than a sapling (4" and up) in your field notebook.

## Study Guide

### Study Guide 2.4 -- An Original Character

**Heading:** Coordinates for Spokane, Washington.

**Problem Solving:** David Thompson writes, “about 300 yards below the place of the Kullyspel Road...” In other words, he estimated the distance. To estimate is to make a guess or an approximation. Practice estimating distances until you feel you have developed the skill. Here is how you can do it. Choose an object, maybe a tree or a house, and guess how far it is away from you. Write down your guess. Now measure your stride with a tape measure so that you know how far you step as you walk. Walk to the object counting the number of steps it takes until you reach it. Now calculate the distance. How good was your estimate? With practice, you will become better and better at estimating distances.

**Editing:** We see from camp with a birds eye view the road for tomorrows route 5 miles thro very fine woods. (4 errors)

**Discussing:**

- \_\_\_ 1. Finan McDonald is an Irish name.
- \_\_\_ 2. Oblique traps positions means they were set across the river at right angles.
- \_\_\_ 3. At all times and with all people, McDonald was a kind and gentle man.

**Constructing:** David Thompson recorded the latitude and longitude of Spokane House. What is latitude? What is longitude. Write a brief report, with drawings in which you explain latitude and longitude.

**Connecting:** Robert Caputo, “Mother Bear Man,” NGM (March 2000); JoAnn Roe, “David Thompson’s Columbia River,” CM (Winter 2010-11).

**Sidetripping:** The **Ranald MacDonald Cabin and Gravesite** located 13 miles west of Curlew, Washington, marks an obscure link to one of the most colorful personalities in Northwest history. MacDonald (1824-94) was the son of Hudson Bay Company trader Archibald MacDonald who had married the daughter of Chinook Chief Comcomly. As a youth, Ranald became fascinated with Japanese culture after several Japanese fishermen drifted ashore Cape Flattery in 1834. He determined to reach Japan even though the nation was closed to foreigners and he did so in 1851 after obtaining passage on an American whaling vessel. MacDonald was allowed to live in Japan for over a year and became one of that nation’s first teachers of English.



Mountain River Crossing  
(G. Sohon)

### Wordbuilding-

appease-

ludicrous-

meridian-

accent-

banter-

encroach-

oblique-



*Upper Columbia*

*Thompson's historic trek down the length of the Columbia River took place in the spring and summer of 1811. The river's scenic source, Columbia Lake in present British Columbia, flows north for 150 miles before abruptly turning south, so Thompson and his crew began their journey by going a short distance overland from the lake south to **Canal Flats** to the **Kootenay River** and **Lake Pend Oreille** (pond oray'). They eventually reached the Columbia River again at Ilthkoyape (Kettle) Falls in northeastern Washington.*

*Gaelic is the ancient Celtic language of Ireland and the Scottish Highlands. The Highlands are the scenic mountainous northern half of Scotland which was the homeland to many HBC employees.*

*mélange: a mixture of very different ingredients or elements, in this case people.*

*I have for my guides two young men, sons of Mr. Jacques Raphael Finlay"*

## 2.4 An Original Character

David Thompson: Thursday, June 14th [1811]. We arrived at Spokane House on the river of that name, where I left a small assortment of goods to continue the trade. There were forty tents of Spokane Indians, with Jaco as clerk. We remained here two days. I observed for Latitude  $47^{\circ} 47' 4''$  North,  $127^{\circ} 27' 11''$  West [Longitude].

Monday, June 17th. ...Not being able to find the horses till late, we did not set off until  $8\frac{3}{4}$  AM when we returned down the river.... About 300 yards below the place of the Kullyspel Road, we went up on the banks to the Ilthkoyape Road at  $9\frac{1}{2}$  AM, and held on. ...The road of this morning cuts to a large point of the Spokane River, we then leave it entirely and go straight for the Columbia River. ...Observed the meridian altitude of Mars,  $40^{\circ} 44\frac{1}{2}'$ .

Ross Cox: [Finan McDonald] belonged to a highly respectable family which emigrated from Inverness-shire to Canada while he was a lad. His first accents were lisped in Gaelic, but in the capital of the Highlands, so celebrated for its pure English, he made considerable progress in our own language. On arriving in Canada he was obliged to learn French... when he joined the North West Company as an apprentice clerk. ... He was subject to temporary fits of abstraction, during which... the most strange and ludicrous *mélange*... set of Gaelic, English, French, and a half a dozen of Indian dialects.

He was, however, a good-natured, inoffensive companion, easily irritated and as easily appeased. His appearance was very striking: in height he was six feet, four inches, with broad shoulders, large bushy whiskers, and red hair. For some years [it] had not felt the scissors and sometimes fell over his face and shoulders.





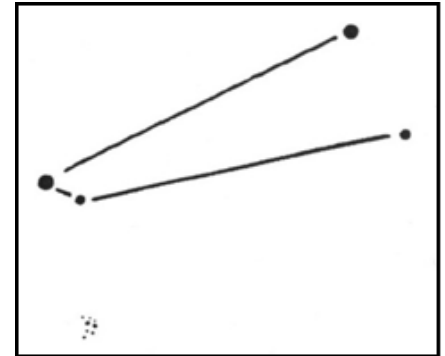
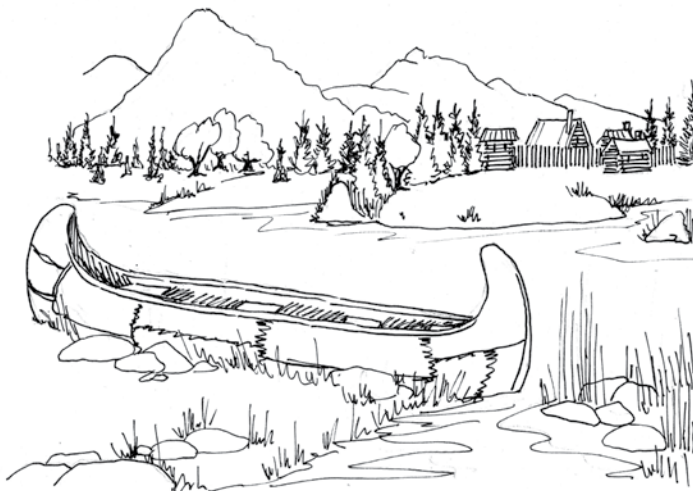
## An Original Character

He had taken a Spokane wife, by whom he had two children. A great portion of his leisure time was spent in the company of her relations, by whom, and indeed by Indians in general, he was highly beloved.

...McDonald was a most extraordinary and original character. To the gentleness of a lamb he united the courage of a lion. He was particularly affectionate to men of small size, whether equals or inferiors, and would stand their bantering with the utmost good humor. But if any man approaching his own altitude presumed to encroach too far on his good nature, a lowering look and distended nostrils warned the intruder of an approaching eruption.

David Douglas: Tuesday, [May] 9th [1826]. I have for my guides two young men, sons of Mr. Jacques Raphael Finlay, a Canadian Sauteur, who is at present residing in the abandoned establishment of Spokane, in which direction I was going. Mr. Finlay being a man of extensive information as to the appearance of the country, animals, and so on, Mr. Dease kindly gave me a note to him requesting that he would show me anything that he deemed curious in the way of plants, & etc.

Thursday and Friday, [August] 3rd and 4th. At nine o'clock in the morning crossed the Spokane River to the establishment on the south side, where we found old Mr. Finlay, who gave us an abundance of fine fresh salmon from his barrier, placed in a small branch of the main river. ... Their barrier, which is made of willows and placed across the whole channel in an oblique direction, in order that the current which is very rapid will have less effect on it, has a small square of thirty-five yards enclosed on all sides with funnels of basket-work (just made in the same manner as all traps in England), and placed on the underside, through which the salmon passes and finds himself secure in the barrier. When the spearing commences, the funnels are closed with a little brushwood. Seventeen hundred were taking this day....



*The constellation Taurus forms the head and shoulders of the Great Bull that defends the **Pleiades** (plee' a-deez) cluster of seven star sisters from the **Great Hunter, Orion**. In ancient Greek lore the Pleiades are the seven sisters of the mighty Titan, Atlas, who Zeus condemned to forever hold up the sky.*

*To the Blackfoot Indians of Idaho and Montana the Pleiades are the Lost Children who one spring many generations ago were teased by other children whose fathers had given them buffalo calf-skins. The children from a poor family wandered off afterward and were taken up the Sky World. They appear only in spring as a reminder of the consequences of misbehavior toward others.*

*The lowest Pleiad star, **Merope** (mer'oh-pe) appears in telescopes as a wispy smear since it is surrounded by a gaseous nebula. Nearby **Alcyone** (al-si'oh-ne) and **Electra**, the brightest Pleiads, are hot blue-white giants.*

*Sauteur is a French Canadian term for the Ojibwa (Chippewa) Indians.*

## Literature 2.4 -- "The Naming of the Animal People"

by Mourning Dove/Christina Galler (Colville)

The Great Spirit called all his people together from all over the earth. There was to be a change. He would give names to the people, and the Animal World was to rule. The naming was to begin at the break of day, each one having the right to choose his or her name according to who came first to the Spirit Chief's lodge. The Spirit Chief would also give each one their duty to perform in the changed conditions.

It was the night before the New World. Excitement was among the people. Each one desired a great name of note. All wished to be awake and first at the lodge of the Great Spirit Chief. Everyone wanted power to rule some tribe, some kingdom of the Animal World. Coyote was an imitator of everything that he saw or heard. When he asked a question, when he asked for information and it would be given him, he would always say, "I knew that before! I did not have to be told."

That was Coyote's way. . . . He boasted too much about his wisdom, about everything. Coyote went among the anxious people, bragging to everyone how early he was going to rise, how he would be the first one at the Spirit Chief's lodge. He bragged of the great name he would choose. He said, "I will have three big names to select from: there is Grizzly Bear, who will be ruler over all running, four-footed animals; Eagle, who will lead all the flying birds; Salmon, who will be chief over all the fish of every kind.

Coyote's twin brother, who took the name of Fox, said to him, "Do not be too sure." Maybe no one will be given his choice of names. Maybe you will have to retain your own name, Coyote. Because it is a degraded name, no one among the tribes will want to take it." This angered Coyote. He answered back to his brother, "I am tired of that name! I do not want to take it! Let someone else carry it. Let some old man or some old woman take it who cannot win in war as I can. I am going to be a great warrior with the New World. My brother, I will make you beg me when I am called Grizzly Bear, Eagle, or Salmon."

Fox laughed. He said to his brother, "Go back to your lodge! Go get your sleep, or you will not wake in time in the morning to select your name." Coyote went to his tepee in anger. He determined not to sleep that night. He would remain awake so as to be the first at the Spirit Chief's lodge for the name he wanted. As Coyote stooped to enter his tepee, his five children all called in one voice: "Le-a'-whn (Father)!" Their hungry and eager little faces were filled with the expectation that he had brought something home to eat. Coyote had no food. The children, their hair combed back and tied in a hard knot on the top of their heads with strips of buckskin, were disappointed.

The mother, Coyote's wife (afterwards Mole), sat on her feet at the side of the doorway, a good woman, always loyal to her husband in his mischief-making and troubles. Never jealous, she was always useful in his adventures. From her place at the doorway, she looked up at Coyote and said in a disappointed tone, "Have you no food for the children? They are starving! I can find no roots to dig."

"Eh-ha!" grunted Coyote sarcastically. He answered his wife, "I am no common person to be spoken to in that fashion by a mere woman. Do you know that I am going to be a great Chief at daybreak tomorrow? I shall be Grizzly Bear. I will devour my enemies with ease. I will take other men's wives. I will need you no longer. You are growing too old, too ugly to be the wife of a great warrior, of a big Chief as I will be." Coyote's wife, accustomed to his abusive language, turned to her corner of the lodge, took some old bones, and placed them with water in the la-ah'-chin. The water boiled and there was poor soup for the hungry children.

Coyote ordered his wife to gather plenty of wood for the tepee fire where he would sit without sleep all night. Half of the night passed; Coyote grew sleepy. His eyes would close however hard he tried to keep them open. Then he thought what to do. He took two small sticks and braced his eye-lids apart. He must not sleep! But before Coyote knew it, he was fast asleep. He was awakened by his wife, Mole, when she returned from the Spirit Chief's lodge, when the sun was high in the morning sky.

Mole loved her husband and did not want to lose him. She wished him to remain Coyote, did not want him to become a great chief only to leave her for younger and more handsome women. This is why she did not call him early morn. Coyote jumped up from where he lay. He hurried to the lodge of the Chief Spirit. Nobody was there, and Coyote thought that he was first. He did not know that the people had all chosen their names and had scattered everywhere over the earth. He went into the lodge and spoke, "I am going to be Grizzly Bear!"

The Chief answered, "Grizzly Bear was taken at daybreak!"

Coyote said, "Then I shall be called Eagle!"

The Chief answered Coyote, "Eagle has chosen his name. He flew away long ago."

Coyote then said, "I think I will be called Salmon."

The Spirit Chief informed coyote, "Salmon has also been taken. All the names have been used except your own: Coyote. No one wished to steal your name from you."

Poor Coyote's knees grew weak. He sank down by the first in that great tepee. The heart of the Spirit Chief was touched when he saw the lowered head of Coyote, the mischief-maker. After a silence the Chief spoke, "You are Coyote! You are the hated among all the tribes, among all the people. I have chosen you from all others to make your sleep, to go to the land of the dream visions. I a purpose for you, a big work for you to do before another change comes to the people. You are to be father for all the tribes, for all the new kind of people who are to come. Because you are so hated, degraded and despised, you will be known as the Trickster-person. You will have power to change yourself into anything, any object you wish when in danger or distress. There are man-eating monsters on the earth who are destroying the people."

"The tribes cannot increase and grow as I wish. These monsters must all be vanquished before the new people come. This is your work to do. I give you squ-stenk' powers to kill these monsters. I have given your twin brother, Fox, shoo'-mesh power to help you, to restore you to life should you be killed. Your bones may be scattered but if there is one hair left on your body, Fox can bring you back to life. Now go, despised Coyote! Begin the work laid out for your trail. Do good for the benefit of your people."

Thus, Coyote of the Animal People was sent about the earth to fight and destroy the people-devouring monsters, to prepare the land for the coming of the new people, the Indians. Coyote's eyes grew slant from the effect of the sticks with which he braced them open that night when waiting for the dawn of the name-giving day. From this, the Indians have inherited their slightly slant eyes as descendants from Coyote.

After Coyote had left the lodge of the Spirit Chief, the Chief decided to give to the Animal World and to the coming new people the spiritual benefit of the Sweat-house. But there was no one left to take the name, so the wife of the Spirit Chief felt pity for the animals and people, and she took the name of the Sweat-house. A spirit, she cannot be seen. But she is there! The pole-ribs of the sweat-house represent the wife of the Chief Spirit. Her songs are still sung by the present generation. She still hears the sorrows, the woes of her people, in the chant which goes up from the cone-shaped structure.

## Study Guide

### Study Guide 2.5 -- A General Rendezvous

**Seeking:** Meaning of the Interior Salish Indian word “Spokane.”

**Problem Solving:** David Thompson wrote, “from the Pacific Ocean to this place [Spokane] is about 740 miles.” Was he correct? Do a Google map search to determine the distance from Spokane to the Pacific Ocean.

**Editing:** The higher ground is a kind of deep black greasy Earth fit for cultivation (3 errors)

**Discussing:**

- \_\_\_ 1. The arrival of the salmon was a time for celebration among the tribes.
- \_\_\_ 2. Only a select few men were permitted to spear and net the fish.
- \_\_\_ 3. The Salmon Chief limited the catch to what could be eaten in a day.

**Constructing:** David Thompson writes, “It is affirmed that no salmon spawns twice. If so, at what age does a salmon acquire the power of spawning?” He simply did not know. Do some research and answer his question.

**Connecting:** Michael Parfit, “Pow Wow—A Gathering of Tribes,” NGM (June 1994).

**Sidetracking:** The **Columbia River Treaty** is an agreement made in 1964 between the U. S. and Canada to regulate the flow of water on the Columbia River. While some minor modifications were made to it in 1997, it still is essentially a coordinated development plan to address the Northwest’s needs for electrical energy and downstream flood control. As a result of the treaty, four new dams were built to increase water storage capacity on the Columbia—**Duncan, Keenleyside, and Mica in Canada, and Libby Dam in Montana**. After 2024, either the U. S. or Canada can terminate most of the provisions of the treaty, as long as written notice is provided at least ten years in advance. The treaty is regarded as the standard on which most international water coordination agreements are based.



Spokan Garry  
(G. Sohon)

### Wordbuilding-

moderate-

principal-

arbitrate-

myriad-

acquire-

*renezvous-*

*distend-*



Upper Columbia

*Ilthkoyape Falls* was one of several great inter-tribal salmon fisheries on the Columbia River that was flooded when the construction of Grand Coulee Dam in the 1930s created the vast reservoir of Lake Roosevelt. The native people of the area were the Colvilles, called *La Chaudières* (Kettles) by the early fur traders because of the kettle-like depressions in the rocks near the falls. They were also known as the “Basket People” because of the enormous 15- to 20-foot baskets of woven willow in which up to 3,000 fish were netted daily during the salmon runs.

The name “Ilthkoyape” comes from their name for these baskets, *ilthkape*, and *hoyape*, or trap. In 1825 the HBC built Ft. Colville nearby, named in honor of company official Andrew Colville.

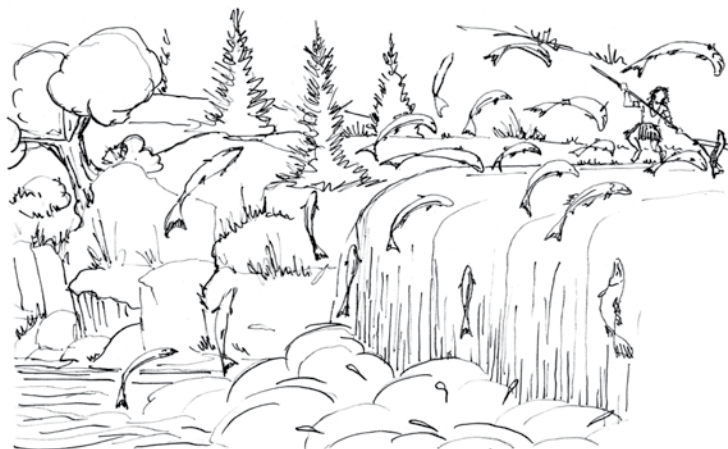
## 2.5 A General Rendezvous

[June 19-July 2, 1811]

David Thompson: Here was a considerable village of the Indians who had given their name to these falls, which were about ten feet in descent in a steep slope. This village is built of long sheds of about twenty feet in length, ...built of boards ...split from large cedars drifted down to the river. They are partly covered with the same and with mats, so as to withstand the rain. Each shed had many cross-poles for smoke drying the salmon as they have no salt. The sheds were clean and comfortable, and their persons would have been clean but they have no soap, and could wash only with simple water.

The arrival of the salmon throughout this river is hailed with dances and many ceremonies.... Deep attention is paid by them to what they believe will keep the salmon about them. For this purpose the beach of the river is kept very clean, no part whatever of the salmon is allowed to touch the river after it is brought on shore. The scales and bowels & etc. are all cleaned on the land a few years from the river. Experience has taught them the delicate perceptions of this fish. Even a dog going in the edge of the water [causes] the salmon dash down the current.

The spearing of the salmon at the fall was committed [to] one man for the public good. ...The third day we were here, the spearman in going to the falls with his spear came close to the bleached skull of a dog. This polluted his spear. He returned to his shed, informed them of the accident, and to prevent the fish going away he must purify himself and the spear. This was done by boiling the bark of the red thorn, the steam of which on himself and the head of his spear began the process. When the heat had moderated, his face and hands and the spear were washed with it and by noon he was ready and proceeded to the falls....



*“immense numbers that ascended these falls”*

## An Original Character

...From the Pacific Ocean to this place is about 740 miles. The river at these falls is about 300 yards wide, and from the immense numbers that ascended these falls from sunrise to its setting might have employed at least thirty spearmen.... It is a firm belief of the Indians of this river that of the myriads of salmon that annually leave the salt water ocean and entry fresh water rivers, not one ever returns alive to the sea. They all proceed to their respective spawning places, accomplish this, and soon after (a few weeks) die of exhaustion. That such is the case of those who come to, and beyond these falls there can be no doubt, as after the spawning season the shores are covered with them, besides all that are carried away by the stream. It does not appear that they take any nourishment after they leave the sea as their stomachs are always empty, probably from finding in fresh water no nourishment suitable to them. It is affirmed that no salmon spawns twice. If so, at what age does a salmon acquire the power of spawning?

The life and habits of this fish has something curious. Some of them are spawned above a thousand miles from the sea, in fresh water in which they are nourished, and continue to be so to the sea. Here a change takes place and they now find their support in salt water, until they acquire the power of spawning, when they enter fresh water rivers which now has no food adapted to them, ascend to the very place where they became alive, there deposit their spawn, and die on their way to the sea. Whatever the history and the habits of salmon may be, they form the principal support of the Indians of this river, from season to season.

At this village were Indians from several of the surrounding tribes, as a general rendezvous for news, trade, and settling disputes, in which these villagers acted as arbitrators as they never join any war party. Anxious to acquire knowledge of the country, its soil, forests, and animals, I spent a day conversing with them....



**Steller's jay**  
(*Cyanocitta stelleri*)

**Greek kuaneos** is dark blue and *kitta* means jay. Georg Steller (1709-1769) was the German naturalist who sailed on Vitus Bering's North Pacific voyage that led to Russia's claim to Alaska.

*cyan*: dark blue.

*cyanide*: a toxic blue-colored chemical compound.

**While virtually all natural food sources** were considered sacred to most Native Americans, water and salmon were held in special regard by Northwest tribes for providing the basis of sustenance. A respected elder in most villages along the Columbia River served as the Salmon Chief, who led the First Salmon Ceremony every spring to commemorate the sacrificial role these noble creatures served and who supervised the fishing and preparation of the fish according to custom.

**The Colville Salmon Chief** who met David Thompson was See-Whehl-Ken, grandfather of the first Native American novelist, **Mourning Dove**. The first salmon or deer taken by a boy, and a girl's first basket of roots or berries were ritually given away to elders who returned the favor with gifts and wise counsel. These actions recognized youthful achievement and regard for the wisdom and traditions of the tribe.

**While camped at the falls**, Thompson and his crew fashioned cedar canoes for the voyage downriver to the Pacific Ocean.

## Journey Update 2.5— The Columbia River and Pacific Salmon Treaties: “Matters of Common

*The terms of the 1964 international agreement attempted to reconcile decades of disagreement between the United States and Canada over sharing fish stocks but failed to effectively prevent habitat degradation and reservoir impoundment that limit the travel of young salmon to the ocean. In the 1984 agreement, new dams were authorized for the upper Columbia over objections from area tribes from which Canada would benefit from power production and provide greater flood control for British Columbia, Washington, and Oregon.*

*In contrast, a 2011 Ontario Superior Court case decided in favor of Canada’s Grassy Narrows Ojibway/Chippewa Indian trappers held that an 1873 federal treaty prohibits development of aboriginal hunting grounds.*

**The Columbia River Treaty (1964):** The Government of the United States of America and the Government of Canada,

Considering the interests of both Parties in the conservation and rational management of Pacific salmon stocks and in the promotion of optimum production of such stocks;

Recognizing that States in whose waters salmon stocks originate have the primary interest in and responsibility for such stocks;

Recognizing that salmon originating in the waters of each Party are intercepted in substantial numbers by the nationals and vessels of the other Party, and that the management of stocks subject to interception is matter of common concern;

Desiring to cooperate in the management, research and enhancement of Pacific salmon stocks;

Have agreed as follows:...

Article III: Principles

1. With respect to stocks subject to this Treaty, each Party shall conduct its fisheries and its salmon enhancement program so as to:

(a) prevent overfishing and provide for optimum production; and (b) provide for each Party to receive benefits equivalent to the production of salmon originating in its waters.

**The Pacific Salmon Treaty (1985):** The Governments of the United States and Canada

Recognizing that their peoples have, for many generations, lived together and cooperated with one another in many aspects of their national enterprises for the greater wealth and happiness of their respective nations, and...

Recognizing that the greatest benefit to each country can be secured by cooperative measures for hydroelectric power generation and flood control, which will make possible other benefits as well, have agreed as follows:...

Article II: Development by Canada

(1) Canada shall provide in the Columbia River basin in Canada 15,500,000 acre-feet of storage usable for improving the flow of the Columbia River.

(2) In order to provide this storage, which in the Treaty is referred to as the Canadian storage, Canada shall construct dams:

(a) on the Columbia River near Mica Creek, British Columbia, ...; (b) near the outlet of Arrow Lakes...; (c) on one or more tributaries of the Kootenay River in British Columbia downstream from the Canada-United States of America boundary with storage equivalent in effect to approximately 1,400,000 acre-feet of storage near Duncan Lake, British Columbia.

# Chapter Three



A Good and Safe Journey



## *Ceremony and Celebration*

*“Songs, dances, feasts, rites and other ceremonies recognize and commemorate relationships with one another, and connection within families, among generations, and between peoples and creation. Ceremonies offer thanksgiving and teach obligations to animals and plants, landscapes and waters, and the Creator to reveal our place and role in the web of life. Ceremonial presentation in the Sacred First Foods Feast show the creation order and hierarchy of creature chiefs: water > fish (salmon) > animals (venison) > plants (bitterroot) > fruits (huckleberries).”*



## Study Guide 3.1 - All The News

**Mapping:** Pacific Northwest Indian Tribes

**Problem Solving:** On July 3rd, the group traveled a total of 70 miles. On a line graph, chart their speed in mph, accurately noting when they sped up or slowed down due to the many obstacles they encountered along the way. Make sure you correctly label the x and y axis, and create a title that represents the information on the graph. Since you do not know the exact time they began and ended for the day, estimate a realistic start and end time that will allow for the group to travel at a reasonable average rate for 70 miles.

**Editing:** The meat of the Red Deer is not a favorite and it's fat hardens when cold. (3 errors)

**Discussing:**

- \_\_\_ 1. The term "embarked" relates to tree cutting.
- \_\_\_ 2. Area Indians contributed significantly to Thompson's success.
- \_\_\_ 3. Simpson asked for but did not need a local chief's support to build Ft. Colville.

**Constructing:** The area around the Spokane River was described in the following way. "Above and below the Spokane River the banks were often of perpendicular rock of trap and basalt of a black gray color, in places reddish. These banks had a curious appearance to the height of about three hundred and fifty feet, then a level table of ten to twenty feet from which rose another steep step, and the level table to the top of the bank." Construct a scale model of what this area looked like. Make sure you label the length, width and height of all of the banks. What would have made the basalt reddish?

**Connecting:** Maurice G. Hornocker, "The Secret Life of America's Ghost Cat," NGM (July 1992); Frederik Schodt, "Native American in the Land of the Shogun [Ranald McDonald]," CM (Fall 2005).

**Sidetripping:** The splendid **Cataldo Mission of the Sacred Heart National Landmark and Museum** east of Spokane on the Coeur d'Alene River was headquarters for the famous Catholic missionary Father Pierre DeSmet and the Jesuit's Northwest Mission Province. The splendid Greek Revival church was designed and built by Father Anthony Ravalli, and Italian who entered the Jesuit order at age 15 to become a lifelong student of religion, science, mathematics, and art. The massive 90' x 40' structure is framed with enormous square-hewed beams secured by wooden pegs and walls nearly a foot thick filled with mudded straw and grass.



Foothills of the Bitterroots  
(G. Sohon)

### Wordbuilding-

basalt-

exult-

agitate-

embark-

timid-

convex-

dexterity-



**Middle Columbia**

*The San Poil Indians lived somewhat aloof from both neighboring tribes and later European-American settlers, possibly because their peaceful ways sometimes led to hostile incursions by other groups. A prominent spokesman for their beliefs was the 19th century prophet-chief Skolaskin, whose defiance led to his imprisonment for a time in notorious Alcatraz Prison near San Francisco.*

*Basalt is a dark igneous rock that extends in layers across the entire Columbia Plateau and was formed from massive outpourings of lava from cracks in the earth's crust. Tens of thousands of years may have elapsed between these flows that took place during the Miocene Epoch before abruptly ending about 14 million years ago. The average flow produced a basaltic layer 50-100 feet thick to form a shield several miles thick between the Rockies and Cascades that is the largest of its kind in the Western Hemisphere.*

## 3.1 All The News

David Thompson: July 3rd [1811]. Having prepared ourselves and everything about us as well as circumstances permitted, and half a horse for our support, we got ready for our voyage to the Pacific Ocean. The river before us [was] wholly unknown to us, and all information only a day's journey of rapids direct before us. By observations I found the latitude of these, the Ilthkoyape Falls, to be  $48^{\circ} 38' 7''$  N Longitude,  $117^{\circ} 48' 49''$  West Latitude. The names of my men were Michel Bourdeaux, Pierre Pareil, Joseph Coté, Michel Boulard, Francois Gregoire, with Charles and Ignace, two good Iroquois Indians, and two San Poil natives for interpreters.

After praying the Almighty to protect and prosper us on our voyage to the ocean, early on the third of July we embarked and descended the river for nearly seventy miles. In the evening we came to the village of the San Poil Indians. In the above distance we had several strong rapids which required all our skill and activity. At one we had to carry everything for nearly  $\frac{3}{4}$  of a mile. The water is high in the river, the current very strong with many small whirlpools and eddies, but not dangerous. At fifty-six miles we passed the junction of the Spokane River....

The whole of this day the country has a pleasing appearance, in places thinly wooded, but the greater part meadows of short grass, very fine for sheep. The grounds are high and dry. Above and below the Spokane River the banks were often of perpendicular rock of trap and basalt of a black gray color, in places reddish. These banks had a curious appearance to the height of about three hundred and fifty feet, then a level table of ten to twenty feet from which rose another steep step, and the level table to the top of the bank.

George Simpson [May 1825]: ...I went to the chief's lodge about a mile above the carrying place. Had an interview with him and some of his principal followers and intimated my wish to form an establish



ment on his lands provided he undertook to protect it and assured us of his friendly disposition. He received the proposal with much satisfaction and offered me the choice of his lands.... And excellent farm can be made at this place where as much grain and potatoes may be raised as would feed all the Indians of the Columbia and a sufficient number of cattle and hogs to supply his Majesty's Navy with beef and pork. ...I have taken the liberty of naming it Ft. Colvile.

David Douglas: [June] 5th [1826]. Rose at half-past two o'clock and had all my articles give over in charge to Mr. Dease. My tent struck and breakfast before five when I took my leave, in company with Mr. William Kittson, of the wild romantic scenery of Kettle Falls. We went on horseback two miles from the new establishment where the boats had been laid up, and embarked at seven promptly. The river by the melting of snow is much swollen, fully twelve or fourteen feet where it six hundred yards wide. On getting into the current the boats passed like an arrow from the bow.

...On being visited by Mr. Pierre L'Etang, the guide, he observed the water was in fine order for "jumping the rapids," as he termed it. Good as it appeared to him, I confessed my timidity prevented me from remaining in the boat. Although I am no coward in the water and have stood unmoved, indeed with pleasure, at the agitation of the ocean raging in the greatest pitch, yet to descend such a place I can never do unless necessity calls for it. Therefore, Mr. Kittson and I walked along the rocks.

No language can convey an adequate idea of the dexterity show by the Canadian boatmen. They pass through rapids, whirlpools, and narrow channels where, by the strength of such an immense body of water forcing its way, it is risen in the middle to a perfect convexity. In such places, where you think the next moment you are to be dashed to pieces against the steep rocks, they approach and pass with an indescribable coolness, leaving it behind cheering themselves with an exulting boat-song. ...Camped at dusk opposite the San Poil River, forty miles further down on the south side of the river.



*"He received the proposal with much satisfaction"*



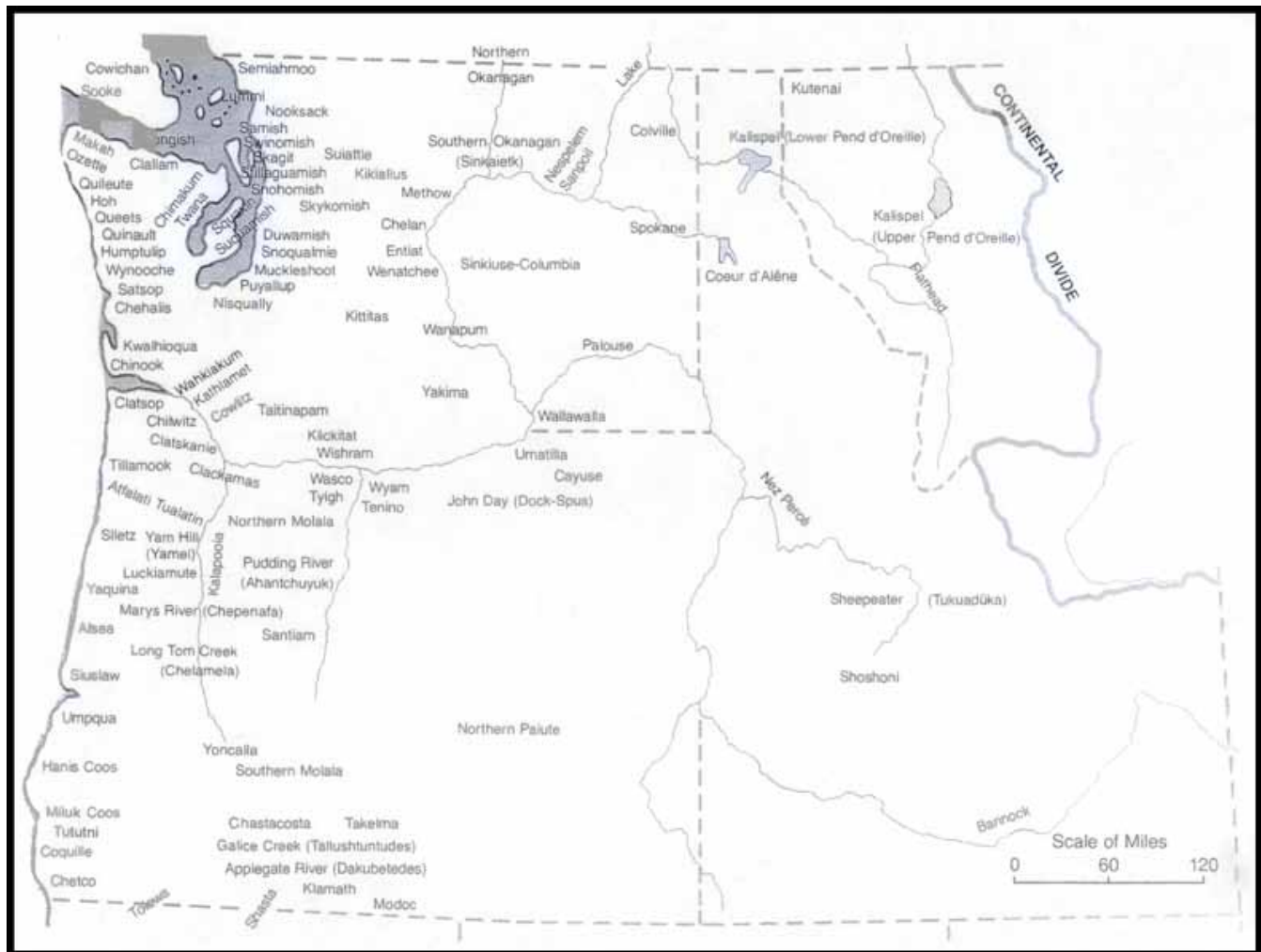
**Silver Salmon**  
(*Oncorhynchus kisutch*)

**Russian oncorhynchus** means "hooked snout," and *kisutch* is the name by which this species was known to the native Koryak people of Russia's Kamchatka Peninsula and recorded by naturalist Georg Steller. The several Pacific salmon species' scientific names are among the few that are Russian terms (from Koryak) rather than Greek or Latin.

**Sir George Simpson** (1787-1860) was the celebrated and ambitious governor of HBC operations in North America. A native of Scotland, Simpson rose to company prominence after his work as a teenager at his uncle's sugar company in London caught the attention of one of the company's founders, businessman Andrew Colvile.

**Simpson first journeyed across Canada** to the Columbia Department in 1825—sometimes pressing his crew to travel 100 miles per day by canoe and 50 on horseback. He is credited with reorganizing operations to generate significant profits both through the fur trade and agricultural production. He was knighted by Queen Victoria in 1841.

## Mapping 3.1 -- Mapping Pacific Indian Tribes



The Pacific Northwest's First Peoples have inhabited the region's varied landscapes for millennia. Among many significant archaeological discoveries are two that provided the oldest evidence of human habitation in North America—the Marmes Rockshelter at the mouth of the Palouse River (10-11,000 b.p.) and Kennewick Man (6-10,000 b.p.). Although areas of traditional habitation were recognized by the tribes, Northwest Indians traveled widely on annual seasonal rounds to fish, hunt, and gather roots and berries. Tribal boundaries, therefore, were loosely recognized and considerable intermarriage took place among neighboring groups which solidified alliances and extended family relationships.

Columbia Plateau Indians gathered each year at great intertribal fisheries at Kettle Falls on the upper Columbia, Tumwater Canyon near present Leavenworth, and at Celilo Falls on the lower Columbia River Gorge. The region's major language groups included Coast Salish including the Lushootseed speakers of Puget Sound; Interior Salish tribes of northeast Washington, north Idaho, and western Montana including the Colville, Coeur d'Alene, and Flathead; and the Sahaptin tribes of southeastern Washington, northeastern Oregon, and Idaho including the Yakama, Palouse, and Nez Perce.

## Study Guide 3.2 - Prayer For Safety

**Heading:** 48° 36' N. Latitude, 118° 3' W. Longitude (river town)

**Problem Solving:** If the average person today eats approximately 4 ½ pounds of food per day and there were a total of 420 people in the tribe that they encountered, how many pounds of food would be eaten per day? If two-thirds of that food was roots and berries, how many pounds would they need to collect on average per day to feed the entire tribe?



Kettle Falls  
(J. M. Stanley)

Find out how many pounds of food an average deer could provide. How many pounds would be needed to feed 420 people? Remember, 2/3 of the diet is roots and berries, so the deer would need to supply only one-third of the diet.

**Editing:** Bearings are all taken with a miners compass and no Iron was ever near it. (2 errors)

**Discussing:**

- \_\_\_ 1. Flint-headed arrows were the best to use for hunting.
- \_\_\_ 2. “Portage” means to carry canoes overland.
- \_\_\_ 3. The Indian settlement was a seasonal hunting camp and not a permanent village.

**Constructing:** In the familiar old tune, “Home on the Range,” both deer and antelope are mentioned. How are these animals different from one another? Make a poster illustrating a deer and an antelope. Also tell if the North American antelope is a true antelope.

**Connecting:** T. H. Watkins, “America’s Hard Rock Legacy,” NGM (March 2000).

**Sidetripping:** The **Kettle Falls Historical Center** interprets the ancient Kettle Falls Indian fishery which has been described as one of the most significant Native American history sites in the Pacific Northwest. The center also describes other area sites including the Hudson’s Bay Company’s Fort Colvile, St. Paul’s Mission, and the U. S. Army’s Ft. Colville. Points of interest along an adjacent interpretive trail include the old portage road, historic cemetery, and harpoon sharpening stone. The **Stonerose Fossil Interpretive Center** near Chewelah contains a remarkable deposit of Eocene Era fossils of plants, insects, and other organisms in a 50-million-year-old shale deposit.

**Wordbuilding-**

acquire-

stomach-

divinity-

conifer-

ravine-

sword-

portage-



### *Middle Columbia*

*The highly nutritious root of the blue-flowered camas (Camassia quamash) and the wild onion (Allium acuminatum) are members of the lily family gathered and dried in late spring and early summer for use throughout the year. Other roots vital to the Plateau Indian diet have been bitterroot (Lewisia rediviva), and the lomatiums, a genus of "Indian celery" including kouse (L. cous) and skokul (L. canbyi), two of the most important of some 40 that are native to the Plateau region.*

*Sharp digging sticks (kapon) fashioned from oak or elk antler were used to loosen the roots from the ground where they matured first on sunny, south-facing slopes. Black tree lichen (Bryoria fremontii) was baked in earth ovens and compressed into hard, dense pieces prized for their nutty, licorice flavor.*

## 3.2 Prayer For Safety

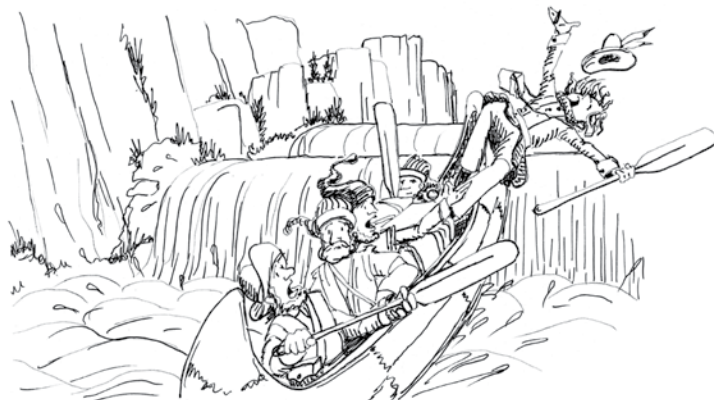
David Thompson: July 4th [1811]. ...To acquire a knowledge of the country, I remained until near noon. ...[T]he country around them was much the same as that we had passed, to the foot of the hills whither all the deer had gone for green grass and water. They there were not willingly confined to the banks of the river, but would follow the deer if they had guns, or if their arrows were shod with iron. In the hills the ground was too uneven to surround the antelope. In winter when they come to the low grounds, and when we surround them, the heads of our arrows break when they strike against a bone and they escape.

...For this purpose the least number required is thirty active men and lads, but the more the better. They scatter themselves early in the morning, and as much as possible guide the antelopes to the level plain agreed upon. The rude circle is gradually lessened in a gentle manner so as not to alarm them, and the deer meeting each other seems to give them confidence, until the signal is given.

When the weapons are flint-headed arrows, which more frequently wound instead of kill, the deer soon break through the circle of men and escape, and the same from the noise of the gun. But the iron-headed arrows carry silent certain death to the tender antelope. The numbers thus encircled are from twenty to sixty, out of which the flint-headed arrow kill but few, but the iron shod arrow more than half of the number. ...Their lodges are made of light poles covered with mats made of rushes, sufficient for this season but a poor defense against the weather of winter. Their wood for the fire and all other purposes is procured from the trees drifted down the river in freshets, and left on the shore. When too long they burn through the log or pole to the desired length....

This is the only village of this tribe; their language is the same as the Salish Indians. They are full sixty men of families, and the number of souls about 420. ...The women and children are treated with kind attention, and under all their wants they were cheerful and

*"he swam to keep himself  
above the waves"*



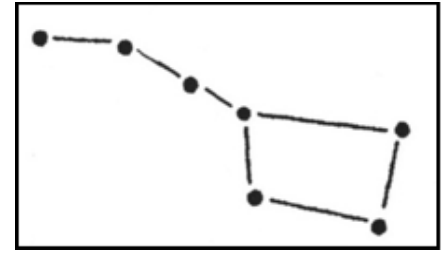
contented. I hope we shall soon be able to supply their wants for at present 2/3 of their food is roots and berries.

At noon we left this poor but friendly people and proceeded down the river for six hours. The first four hours the country was bold high grassy hills which at length came on the river in steep banks with isolated rocks and steep cliffs all having a ruinous appearance. The ravines were many, steep, narrow, and rocky. The descent of the rains had not left a grain of earth. These cliffs contracted the width of the river. The waves ran high with many whirlpools and eddies.

In one place the steersman who was standing to guide the canoe lost his balance and fell out of the canoe, but we recovered him. We carried along part of a dangerous rapid. At 6 PM we tried to find a place to pitch our cotton tents, but after an hour's search we had to sit on the rocks and leave the canoe in the water. To stem this current is impossible, and although the river is very high, yet some three years past, by the trees lodged among the rocks, the water must have been twelve feet higher than at present.

David Douglas: Wednesday, April 19th [1826]. The whole distance is very mountainous and rugged the nearer the Rocky Mountains, ... and more thickly wooded of three species of conifer. ... Larch is found in abundance in the mountains valleys, much larger than any I have seen on the other side of the continent or read of. I measured some thirty feet in circumference, and several that were blown down by the late storms 144 feet long, wood clean and perfectly straight. On the plains and valleys there is a thick sward of grass.

... On Friday at daylight continued our journey, and as we had gained a very rapid place where a portage had to be made, we took breakfast a little earlier than usual, being nine o'clock. This rapid, which nearly equals the Grand Rapids 150 miles from the ocean, ... I called Thompson's Rapids after the first person who ever descended the whole chain of the river from its source to the ocean.



*The Thompson Indians of southern British Columbia derive their name from the river named in David Thompson's honor by North West Company fur trader-explorer Simon Fraser. The Thompsons call the handle of the Big Dipper the Three Hunters, and Grizzly is the bowl. The second star in the handle, **Mizar**, is actually a white and emerald double star system with smaller **Alcor**, or a hunter and his horse. Ability to distinguish between them was a test of eyesight for many tribes.*

*The Milky Way is Star Trail that leads to Ghost Land, a beautiful realm of warmth, flowers, fruit, and berries. Mizar and Alcor were first described in detail by the great 18th century German astronomer **Maria Wincklemann Kirch**.*

*A weir (wēr) is a fenced trap of sticks set in a stream to catch fish.*

*Larch is a unique conifer tree that is also deciduous because it loses its needle-like leaves in the fall. Because the wood is highly waterproof it has often been used to build boats.*

## Literature 3.2 -- “Coyote and the Columbia River”

by Peter Noyes (Colville)

*Colville tribal elders have many stories of the region’s ancient appearance, and were not surprised to learn of recent geologic evidence that massive flooding during the Ice Age created vast lakes across parts of the Columbia Plateau. This story also relates to the lower Columbia’s famed “Bridge of the Gods” that formed Cascade Rapids near present Bonneville Dam.*

Long ago when Coyote was a powerful creature on the earth, this valley was covered by a big lake. At that time there was no Columbia River. West of us, between the lake and the ocean, was a long ridge of mountains. But the Columbia River did not go through it. That is what we believe today.

Coyote was smart enough to see that salmon would come up from the ocean to be food for his people here if he would make a way through the mountains. So he went down to a place near where Portland is now, and with all his powers he dug a hole through the mountains there. The water went through and on to the ocean.

The water in the big lake up here was drained, and the water flowing out of it made the Columbia River. Coyote got the Columbia to flow the way it does today. Then the salmon came up the river to this part of the country. His people after that had plenty to eat.

When he dug that hole through the mountains, Coyote made a kind of bridge. You have heard about it—a broad rock bridge that went across the river. People could walk from one side of the Columbia to the other. A long time afterward, an earthquake broke the bridge down. The rocks that fell into the water formed the Cascades of the Columbia where it is hard for boats to go up and down.



## Study Guide 3.3 - A Celebrated Horse

**Heading:** Columbia and Spokane rivers confluence coordinates.

**Problem Solving:** Horses are measured in “hands.” What is the height of Old Bleu in inches? You will need to find out how many inches one hand equals. If you were to stand next to Old Bleu, what is the height difference in inches?

**Editing:** Passed by some low knowls along the river and ponds I saw a few Ducks and Geese. (4 errors)

**Discussing:**

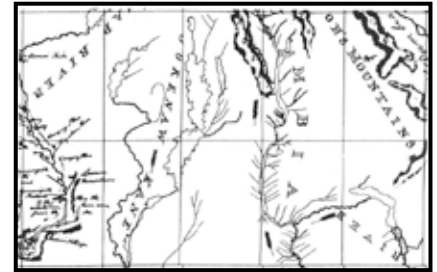
- \_\_\_ 1. The unit of measure for a horse’s height is called a “hand.”
- \_\_\_ 2. It was necessary to keep all of the horses at Ft. Spokane in a corral.
- \_\_\_ 3. Finlay and his family were very hospitable when they had visitors.

**Constructing:** David Douglas explained how to prepare the nutritious roots of *Phalangium quamas*. What is a traditional dish you or your family prepares? Write out the recipe. Also include the country of origin and a brief history of the dish. If your family does not prepare any traditional foods, then research a country of interest and write up a recipe and brief history of the dish.

**Connecting:** John Noble Wilford, “A Revolution in Mapping,” NGM (February 1998); John Soennichsen, “A Toe in the Water: J. Harlen Bretz’s First Field Exploration,” CM (Spring 2011).

**Sidetripping:** **Banks Lake** north of Moses Lake, Washington (named for Chief Moses of the Columbia-Sinkiuise tribe) is part of the **Columbia Basin Wildlife Area** which covers about 70 square miles. The lake is man-made with water pumped from the Columbia River’s **Franklin Roosevelt Reservoir** behind Grand Coulee Dam. Massive cliffs of layered basalt formations along the lake provide dramatic geologic testimony to a series of cataclysmic lava flows that took place over millions of years during the Miocene Period.

Banks’s 91 miles of shoreline and 23 islands provide important habitat for shorebirds, waterfowl, and wintering bald eagles. The reservoir also supplies water to the **Columbia Basin Reclamation District** to irrigate a half-million acres of land in central Washington through 2,300 miles of canals.



David Thompson’s  
1814 Columbia River Map  
(inset)

### Wordbuilding-

noble-

lichen-

prime-

compress-

terminate-

sward-

portage-



**Middle Columbia**

**John Clarke** (1781-1852) began his lifelong fur trade career with the North West Company but in 1810 joined the American (Pacific) Fur Company in which was founded by John Jacob Astor, a relative of his mother, Ann Waldorf Clarke. In 1810 John Clarke sailed from Boston to Ft. Astoria on the ship Beaver with young Ross Cox and other AFC traders. They established Ft. Spokane in 1812 in order to compete with Nor'Wester operations under Jacob Finlay at nearby Spokane House.

**The Columbia tribes' first horses** were likely obtained from Northern Plains tribes in the mid-1700s. Among the region's most celebrated breeds was the spotted Appaloosa, named for the Palouse Indians who inhabited the lower Snake River area of present southeastern Washington.

**sagacity:** good judgment.

**regale:** to provide entertainment, enjoy.

### 3.3 A Celebrated Horse

Ross Cox: [c. May, 1813]. While I was stationed at Ft. Spokane, ...Mr. [John] Clarke thought it was impossible for any horse to go a distance of 72 miles during the remainder of the day. ...[He] was about to give up on the idea as hopeless when I offered to undertake it on a celebrated horse of his own called La Bleu. ...He at once determined to sacrifice his private feelings to the interests of the company. Two men were selected to accompany me, and were given to catch La Bleu. He was a noble animal, being between fifteen and sixteen hands high, seven years of age, admirably built, and deriving his name from his color, which was a dappled white and sky blue. He was also a prime racer, and had beaten all competitors on the turf.

Owing to the delay occasioned by catching the horses, we did not start till twelve o'clock. I remained in company with the men for the first two hours at a slight canter, after which I took the lead in a hard gallop, and quickly lost sight of them. I followed an excellent well-beaten pathway for upwards of sixty miles through the plain, but late in the evening it brought me to a thick wood, through which it runs for a distance of ten miles when it terminates at the portage.

Shortly after entering the wood night overtook me, and I several times lost the pathway.... The sagacity of my horse, however, extricated me from the obstacles, and a little after eight o'clock I emerged from the forest, and was delighted at the cheery appearance of a range of fires along the banks of the river. La Bleu, ...on seeing the light, knew that his task was at an end, and galloped up in fine style to [Russell] Farnham's tent, when he was immediately let loose to regale himself on the prairie.



David Douglas: Thursday [May] 11th [1827]. Reached the establishment at Spokane [House] at eleven o'clock where I was very kindly greeted by Mr. Finlay. He regretted exceedingly that he had not a single morsel of food to offer me. He and his family were living for the last six weeks on the roots of *Phalangium quamas* (called by the Indians all over the country *camas*) and a species of black lichen which grows on the pines.

The manner of preparing it is as follows: It is gathered from the trees and all the small dead twigs taken out of it, and then immersed in water until it becomes perfectly flexible. Afterwards [it is] placed on a heap of heated stones with a layer of grass or leaves between it and the stones to prevent its being burned. Then [it is] covered over with the same material and a thick covering of earth and allowed to remain until cooked, which usually takes a night. Then before it cools it is compressed into thin cakes and is fit for use. The process is similar to the preparing of *Phalangium*.

...As the principal object of my journey was to get my firelock arranged by him, being the only person within the space of eight hundred miles who could do it, and being an item of the utmost consequence to have done soon, I lost no time informing me of my request. Unfortunately he did not speak the English language, and my very partial knowledge of French prevented me from obtaining information which I should have acquired. In the afternoon I made a walk up the river and returned at dusk, when I found he had obligingly put my gun in good order.... As I thought of bending my steps again towards the Columbia, Mr. Finlay offered that one of his sons should escort me, which I accepted.



**American badger**  
(*Taxidea taxus*)

**Latin taxus is badger**, *idea* is Greek for appearance, kind, or sort.

*ideal*: a standard of perfection, or conforming to a classical idea.

*ideology*: concepts and beliefs about human life and culture.

**A firelock is** the firing mechanism of a musket, or long-barreled single shot rifle.

**oblige**: to make grateful.

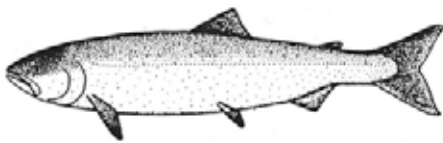
**The portage involved the arduous task** of taking canoes and cargo around the rapids of a river. Voyageurs routinely carried up to 75 pounds of supplies or pressed furs on their backs suspended from a rawhide tampline placed against the forehead.

*"Mr. Finlay offered that one of his sons should escort me"*

## Biome 3.3—Columbia River Salmon and Trout

The 18th century German scientist Georg Steller was among the first to describe the unique habits of anadromous fish like salmon that hatch in fresh water rivers before growing to maturity in the ocean and then returning to their native streams to spawn. Steller sailed with the Russian explorer Vitus Bering to Russian America (Alaska) and gave the various salmon species their Russian scientific names. (*Oncorhynchus* comes from a Russian word referring to the “hooked snout” of mature salmon.)

Fish biologists in the 1800s came to understand that the tendency for salmon to migrate began to develop hundreds of thousands of years ago when vast glaciated coastal masses of the Northern Hemisphere diluted the salinity of the coastal sea regions. Over time some salmon species began to venture further out into the ocean where they could find bountiful food resources. Those able to successfully return to their native streams were given a remarkable advantage over those unable to find such sanctuary for their offspring far from ocean predators. The process of selection and change over great periods of time separated out the various salmon species.



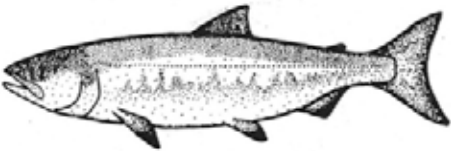
### **Humpback (pink)/*Oncorhynchus gorbuscha***

River lifetime: up to 6 months

Ocean lifetime: 18 months

Spawning season: June-October

Spawning ales with distinct hump



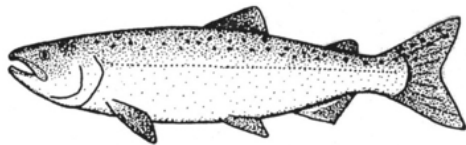
### **Chinook (king, tyee)/*O. tshawytscha***

River lifetime: 4 mos. (fall); 2 yrs. (spring)

Ocean lifetime: 1 to 2 years

Spawning season: August-February

Black gums, spotted tail fin



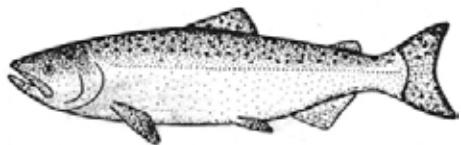
### **Sockeye (red)/*O. nerka***

River lifetime: 1+ years

Ocean lifetime: 1 to 4 years

Spawning season: August-November

small pupil, no tail fin spots



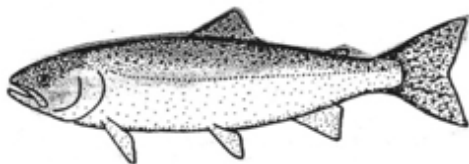
### **Coho (silver)/*O. kisutch***

River lifetime: 1 to 2 years

Ocean lifetime: 1 to 2 years

Spawning season: September-March

white gums, upper tail fin spots



### **Chum (white, dog, keta)/*O. keta***

River lifetime: several days

Ocean lifetime: 1 to 5 years

Spawning season: October-January

large pupil, no tail fin spots

## Study Guide 3.4 - Specimen Of Nature

**Heading:** 47° 56' N. Latitude, 119° 0' W. Longitude (river town)

**Problem Solving:** The group had to stay the night due to heavy rains. Find out the average annual rainfall your town gets. Find out the town in your state that gets the lowest amount of average annual rainfall. What town gets the most amount of average annual rainfall? Compare those three figures: your town, the town with the least and the town with the most. Describe these comparisons in three different ways, additive, multiplicative and as a ratio.

**Editing:** The river runs thru fine meadows where Paul the Iroquois paddle was lost. (2 errors)

**Discussing:**

- \_\_\_ 1. A “weir” is a fence used to catch fish.
- \_\_\_ 2. The Inspaelis (Nespelem) tribe made their clothing from reeds and tree bark.
- \_\_\_ 3. In the center of the Grand Coulee were submerged volcanic islands.

**Constructing:** This letter discusses the style of clothing, ornamentation and accessories the men and women wore in the Nespelem (“Inspaelis”) tribe. If you had to describe some “typical” ornamentation and styles of today, what are some things you would list and why?

**Connecting:** Fen Montaign, “A River Dammed,” NGM (April 2001).

**Sidetripping:** Spanning the Columbia River at a length of nearly one mile, **Grand Coulee Dam** is the largest concrete structure on Earth. Built during the time of America’s Great Depression in the 1930s, President Franklin Roosevelt sought to create jobs for millions of unemployed works through public works projects. One of the environmental impacts of high dams like Grand Coulee has been destruction of annual salmon runs on which area Indians upriver had depended for centuries.

The **Colville Tribal Museum** in Coulee Dam features exhibits on the culture of the dozen tribes that comprise the Confederated Tribes of the Colville Nation. The region’s relatively abundant electrical power and open land has fostered the location of some of the world’s largest computer data storage facilities including Microsoft and Yahoo in the Moses Lake-Quincy area.



The Grand Coulee  
(J. M. Stanley)

**Wordbuilding-**

dialect-

accustomed-

exert-

procure-

oblige-

vermillion-

vitrify-



### *Middle Columbia*

*Marmots* are large burrowing ground squirrels also known as rockchucks and groundhogs. The most common of several Northwest species is the yellow-bellied marmot (*Marmota monax*). The Olympic marmot is an endangered species unique to western Washington.

*Vermillion* is a bright red powder used as a coloring pigment and cosmetic. In this reference small quantities were stored in paper envelopes and used as a trade item. *Ochre* is a natural earth powder similarly used as a cosmetic ranging in color from yellow to dull red.

Thompson's "Inspaelis" are the Nespelem Indians, the Interior Salish-speaking tribe who inhabited the river valley that bears their name in present North Central Washington.

## 3.4 Specimen Of Nature

David Thompson: July 5th [1811]. A rainy morning, having broken two of our paddles from driftwood we split out four paddles and made two for present use, and then embarked. In a short distance we came to a heavy rapid, the high waves of which obliged us to put ashore, and carry everything full two miles. While we were doing this a chief with about sixty men, their women, and children came and helped us over the carrying place.

This being done, the chief for himself and his people made a present of five horses, five good salmon well roasted, a bushel of arrow wood berries which are sweet, wholesome, and nourishing, about two bushels of various roots, ...and the dried meat of four small, very fat animals I took to be marmots. ...For what we kept I paid three feet of tobacco, fourteen plain and stone rings, eighteen hawks bells, six feet of string with blue beads, nine feet of gartering, four papers of vermilion, four awls and six buttons, which they thankfully accepted. ...Heavy rain obliged us to pass the day here.

This tribe is called Inspaelis, as they procure the salmon from the river and not from a weir on the brook. The salmon are larger and in good condition, and from their clothing the deer are more plentiful. ...[S]everal of the men were six feet in height, ...on the whole their appearance is manly, mild, open, and friendly. The men were profusely ornamented with a few shells, the women more profusely, in their ears, round the neck, and hanging to their girdles. Some of the women daubed their faces with red ochre. Their language is a dialect of the Salish. My Canadian interpreter (Michel Bourdeaux) could not understand them, although they understood him.

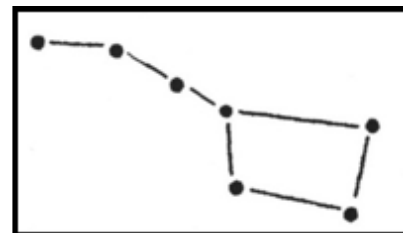
*"the horse reared up to defend himself"*



David Douglas: Monday, [August] 21st [1826]. Today I overslept myself; started at four o'clock. ...at eight passed what is called by the voyageurs the Grand Coulee, a most singular channel and at one time must have been the channel of the Columbia. Some places from eight to nine miles broad. Parts [are] perfectly level and places with all the appearances of falls of every extraordinary height and cascades. The perpendicular rocks in the middle, which bear evident vestiges of islands, and those on the sides in many places are 1500 to 1800 feet high. The rock is volcanic and in some places small fragments of vitrified lava are to be seen. As I am situated, I can carry only pieces the size of nuts. The whole chain of this wonderful specimen of Nature is about 200 miles, communicating with the present bed of the Columbia at the Stony Islands, making a circular curve  $1\frac{1}{4}^\circ$  further south....

The same plants peculiar to the rocky shores of the Columbia are to be seen here, and in an intermediate spot near the north side a very large spring is to be seen which forms a small lake. I stayed to refresh the horses, there being a fine thick sward of grass on its banks. The water was very cold, of a bitterish and disagreeable taste like sulfur. My horses would not drink it, although they had no water since last night.

...Coming to a low gravelly point where there were some small pools of water with its surfaces covered with Lemna, or duck weed, and shaded by long grass, one of the horses, eager to obtain water, fell in head foremost. My guide and myself made every effort to extricate it, but were too weak. As I was just putting some powder in the pan of my pistol to put an end to the poor animal's misery, the Indian ...struck the poor creature on the nose a tremendous blow with his foot, on which the horse reared up to defend himself and placed his fore-feet on the bank, which was steep. The Indian immediately caught him by the bridle and I pricked him in the flank with my pen-knife. Not being accustomed to such treatment, with much exertion he wrestled himself from his supposed grave.



*The Colville Indians knew the Big Dipper's handle as Four Hunters and the bowl as Three Sisters who chase Grizzly, the Little Dipper. To the nearby Coeur d'Alenes the Big Dipper is Three Brothers and Grizzly, who had been their brother-in-law. The two oldest brothers sought to kill Grizzly (the bowl), but the youngest brother (faint **Megrez**, closest to the bowl) shouted a warning that transformed all of them into heavenly beings.*

*Like many tribes, the Colvilles and Coeur d'Alenes believed most stars were people from Earth who had been changed into heavenly beings who inhabit the White Road (Milky Way).*

***vitrify:** to change into a glass-like substance, usually after being melted.*

*The Grand Coulee is the massive ancient channel through which the Columbia River flowed during times of Ice Age flooding after ice dams diverted the river's flow southward. **Thompson's Stony Islands** are the Columbia River's Rock Islands southeast of present Wenatchee, Washington.*

## Literature 3.4 -- "Mountain Goat's Race"

by *Mourning Dove/Christina Galler*

Coyote had a beautiful maiden daughter who was good and also a fast runner. She was able to outrun all the rest of the animals, because her father the tricky Coyote, had used his powers to help her swiftness, by watching her run from his tepee door or from the top of a large cliff, he would move his eyes ahead of her anytime that she got behind her opponent, and she would run faster and win the race.

Coyote soon began to scheme and he would challenge the warriors who came to court his daughter for their furs and skins against the forfeit of his daughter in marriage to whomsoever won her in a race with running the girl. She would become his wife, no matter how ugly or poor the man is, he had the equal chance with Coyote.

This made Coyote soon very rich. His daughter won many races. Soon the swiftest animals came, such as the eagle, wolf, hawk, deer, but all to no avail, she beat them all. Her race track stretched over a large flat at the end of a small knoll. This was her turning stake mark. She usually met her opponents still going toward the knoll, while she is reaching the tepee door of her father's lodge.

Among the big mountains where there is snow and ice lived Mountain Sheep. He was the chief of the mountain tribes of animals that roamed in the big peaks. His lodge was inside a big mountain and the doorway led to his home through a wonderful gorgeous canyon that seems to sink into the bowels of the earth. Mountain Sheep had two younger brothers who were big bellied and ugly. He called them one day to his side and said:

"Go and get the daughter of Coyote who is a fast runner to be my wife. She had outrun all the people and must be tired of running and will gladly settle down to a tepee fireside as a wife and mother."

Before the two brothers started for the home of Coyote, Mountain Sheep sang and danced his medicine-dance and gave his brothers powers to win from the girl foot racer. He knew that coyote was using powers and he overcame them, because he was stronger than Coyote.

One day the people saw the clouds rise over the big mountains and the fog turned white in the far distance. They remarked that "Mountain Sheep is coming to the encampment." Soon the two brothers came in view, ugly and big bellied, slim legged, and awkward. They entered the lodge of Coyote on their mission to challenge the race with the girl, as their brother directed them to do. As they entered Coyote began to laugh and make sport of their looks, and how slim their legs were by making measurements. The daughter of Coyote looked at her opponents with disgust. She thought that she would never let them win from her and was positive that she would not accept them as a husband.

When the race was made in preparedness the people were surprised to find that they two Sheep brothers had insisted on both racing with the girl at the same time. This made it an odd race and Coyote shook with laughter as he poked more fun at the slim legged creatures. They started far behind her, racing after the fleeing daughter. Coyote felt great glee, and did not see that his daughter was getting behind as they neared the knoll where the turn-stake was. When he did look and saw that the girl was falling behind he cast his eyes ahead of her without any effect. His powers refused to serve for him. He tried and tried, frantically, but his daughter seemed to stop on the track as though weighted down with some unseen hand. When the girl saw that the two big bellied Sheep was passing her, she begged them to stop and led her win. They only answered back as they passed by.

"It is the command of our brother the Chief of the mountains." The boys ran toward the tepee of Coyote with the people yelling in great joy. Many robes and furs were exchanged hands for bartering. The following day, the daughter prepared to leave for her new home in the great mountains to marry Chief Mountain sheep. A man that she had never seen nor known before, she went forward in company of the two brothers to meet her husband. She slowly followed with tears silently flowing, careful that no one take notice. Sadly, she left her beloved childhood home, among the land of her birth.

Coyote was very lonely after his daughter left, and to make known his grief he cut his long locks off. With charcoal he blackened his face, and throwing himself in the dirt by his tepee fireside, he laid there for days mourning his lost daughter.



## Study Guide 3.5 - Hands to Heaven

**Heading:** Columbia and Okanogan rivers confluence coordinates.

**Problem Solving:** While the group was at Ft. Okanogan they were to construct a new dwelling house for the person in charge. This house consisted of “four excellent rooms and a large dining hall, two good houses for the men, and a spacious store for the furs and merchandise to which was attached a shop for trading. . . . The whole was surrounded by strong palisades fifteen feet high, and flanked by two bastions.” Draw a blueprint of what this house may have looked like with specific dimensions, including the area and perimeter of each of the rooms.



Ft. Okanogan  
(J. M. Stanley)

One of the rooms was a large dining hall. If they needed to travel a far distance to get timber, they would want to use the least amount of timber possible. If the dining room was 360 square feet, what would the dimensions of the dining room be that would use the least amount of timber? The most?

**Editing:** I concluded therefore some accident had happened & wrote letters to the others. (3 errors)

**Discussing:**

- \_\_\_ 1. Thompson believed Northwest tribes would readily receive the missionaries’ messages.
- \_\_\_ 2. The safe voyage ceremony performed by Thompson’s Indian hosts was a joyous and comic event.
- \_\_\_ 3. The North West Company’s Houses were established only for trade.

**Constructing:** The San Poils described the middle Columbia region as “high, dry and hilly, with short grass, the rock showing itself in many places, with but few trees, and those of fir, stunted and scattered. Such a country appears fit only for sheep, deer, and horses, but has many brooks of clear water.” How would you describe the area you live? What types of animals are native to your area? Provide three references for your information.

**Connecting:** Luis A. Mazariagnos, “Flight of Fancy [Hummingbirds],” NGM (January 2007).

**Sidetripping:** Ft. Okanogan State Park and Visitor Center, located four miles east of Brewster, Washington, offers a sweeping view of the historic point along the Columbia River where the American flag first flew over Washington State. The Astorian fur traders Alexander Ross and David Stuart established a trading post at this location in 1811 that turned an enormous profit the first year. Pelts obtained from area Indians for trade goods valued at about \$160 sold in Canton, China for over \$10,000. Following the War of 1812, ownership of the fort passed to the North West Company. Continued rivalries brought about its transfer to the Hudson’s Bay Company which conducted regional trade there from 1821 to 1860.

**Wordbuilding-**

commence-

rational-

sufficient-

intercept-

flank-

palisade-

preeminent-



### **Middle Columbia**

**plaintive:** expressing sorrow, melancholy.

**rational:** relating to reason, sensible.

**“Redeemer of Mankind”** is a reference by Thompson to Jesus Christ.

**Ft. Okanogan** was established by American Fur Company traders on the southern tip of an island at the mouth of the Okanogan River.

**French-Canadian Pierre Pambrum** (1792-1841) worked for the North West and Hudson’s Bay Company and was known as a skilled horseman. James Douglas (1803-77) is sometimes called “Father of British Columbia” and was the first HBC governor of the district. He was born in British Guiana to a Scottish colonist father and black mother.

## 3.5 Hands to Heaven

David Thompson: July 5th [1811, continued]. My San Poils now became our interpreters, by whom I learned they have sufficient deer in winter for their support and clothing if they were better armed. ... They describe their country as high, dry and hilly, with short grass, the rock showing itself in many places, with but few trees, and those of fir, stunted and scattered. Such a country appears fit only for sheep, deer, and horses, but has many brooks of clear water.

After smoking some time, they prepared to give us a dance, that we might have a safe voyage to the sea and in like manner return to them. The chief made a short prayer, after which the dance commenced with the men and women, each separate, to the music of their singing which was pleasantly plaintive. Their voices [was] full and clear and not too loud. ...The whole was strictly a religious ceremony, every face was grave and serious, almost to sadness. The prayers of the chief were accompanied with holding up his hands to heaven.

So far as I have seen the people on the west side of the mountains, their religion appears simple and rational, without sacrifices or superstition, and offer a most extensive and hopeful field for labors of missionaries to bring them to the knowledge of the heavenly Redeemer of Mankind. They went to their lodges, and sent us a salmon for which I paid six inches of tobacco. The rapid of this carrying place is in several ridges, rushing down a descent of full thirty feet, and the salmon ascended to these.

*“I explained to the chief by means of the San Poil”*



Ross Cox: [May, 1816]. I had a long summer before me. It is the most idle season of the year. As it was intended [for me] to rebuild and fortify [Fort] Okanogan during the vacation, I lost no time in setting the men to work. The immediate vicinity is poorly furnished with timber, and our wood-cutters were obliged to proceed some distance upriver.... We also derived considerable assistance from the immense quantities of driftwood which was intercepted in its descent down the Columbia...

"Many hands make light work;" and our men used such dispatch that before the month of September we had erected a new dwelling house for the person in charge, containing four excellent rooms and a large dining hall, two good houses for the men, and a spacious store for the furs and merchandise to which was attached a shop for trading.... The whole was surrounded by strong palisades fifteen feet high, and flanked by two bastions.

...Immense quantities of sarsaparilla grow on Okanogan Point. There are also scattered over it a profusion of wildflowers.... Among them the sunflower, for height and luxuriance, is conspicuous. This is the favorite plant of the delightful little hummingbird, in the flowers of which it banquets nearly the livelong day.

David Douglas: Tuesday, [June] 6th [1826]. At one [o'clock] arrived at Okanogan establishment, where I found my old friend Mr. John Work, William Connolly, Esq., a Mr. Pierre C. Pambrum, and a James Douglas, with a party of men from Western Caledonia, and a Mr. Francis Ermatinger from Thompson's River, a brother of the young man who accompanied me in the spring. All [are] on their way to Fort Vancouver. I shall ever feel no small degree of pleasure on thinking of the kindness I had from these people.... Made a turn round the rocks west of Okanogan River, and again made some more additions.



**rufous hummingbird**  
(*Selasphorus rufus*)

**Greek selas means light**, brightness, phoreō is contain, carry; rufus is Latin for red, ruddy.

**selachian:** a phosphorescent fish.

**photon:** a unit of light intensity.

**Three hummingbird species** inhabit the Inland Pacific Northwest generally from May through September—rufous, calliope, and more rarely, the black-chinned hummingbird. Colorful Anna's and rufous hummingbirds are found seasonally west of the Cascades.

**French-Canadian Pierre Pambrum** (1792-1841) worked for the North West and Hudson's Bay Company and was known as a skilled horseman. **James Douglas** (1803-77) is sometimes called "Father of British Columbia" and was the first HBC governor of the district. He was born in British Guiana to a Scottish colonist father and black mother.

**New Caledonia** is present British Columbia and with the Columbia District was one of two areas west of the Rocky Mountains governed by the Hudson's Bay Company. According to tradition, it was named by explorer Simon Fraser

## Journey Update 3.5— The Mitchell Act (1938)

*With the prospect of significant negative impacts to historic Columbia River salmon runs in the wake of federal authorization to construct the series of hydroelectric dams recommended by the Army Corps of Engineers in 1931, Congress enacted legislation attempting to protect Columbia Basin salmon.*

BE IT ENACTED by the Senate and House of Representatives of the United States of America in Congress assembled, that the Secretary of Commerce is authorized and directed to establish one or more salmon-cultural stations in the Columbia River Basin in each of the States of Oregon, Washington, and Idaho....

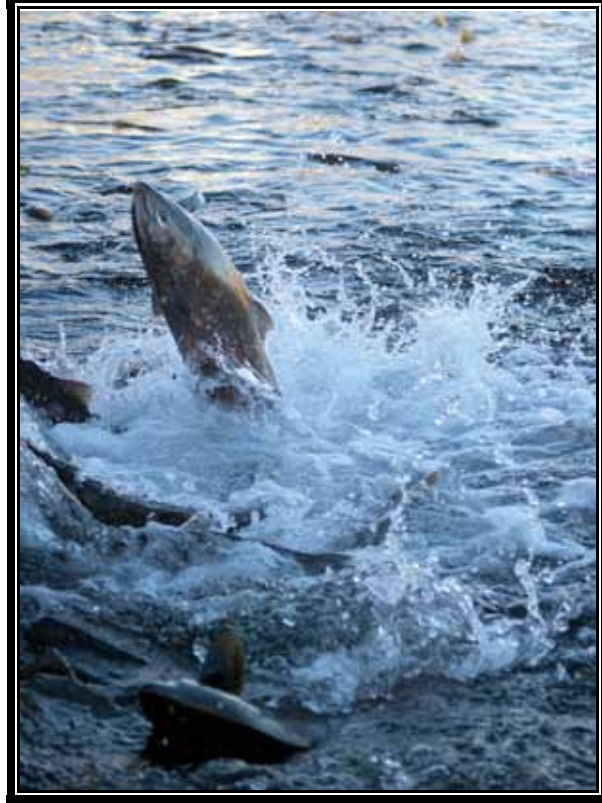
SECTION 2. The Secretary of Commerce is further authorized and directed (1) to conduct such investigations, and such engineering and biological surveys and experiments, as may be necessary to direct and facilitate conservation of the fishery resources of the Columbia River and its tributaries; (2) to construct, install, and maintain devices in the Columbia River Basin for the improvement of feeding and spawning conditions for fish, for the protection of migratory fish from irrigation projects, and for facilitating free migration of fish over obstructions; and (3) to perform all other activities necessary for the conservation of fish in the Columbia Basin in accordance with the law.

Indian leaders were skeptical of government efforts to mitigate damage to fish stocks authorized by the Mitchell Act in 1938 which led to extensive trapping and releasing of salmon between 1939-43 from the Grand Coulee Dam area to the Wenatchee, Entiat, Methow, and Okanogan rivers. As early as 1937 the federal commissioner of fisheries had warned of the need for “eternal vigilance in balancing the productive forces of natural growth and replacement against the destructive forces of man’s exploitation” and criticized undertaking such complex endeavors on a “trial-and-error basis” as was being demanded by schedules to complete the dams.

*The commissioner’s views would prove prescient as well-intended and expensive methods to perpetuate the stocks through fish ladders and hatcheries only temporarily interrupted the steady erosion from annual runs of up to 16 million salmon in the late nineteenth century. Unanticipated consequences of hatchery runs include competition for limited food sources, transmission of disease and parasites to wild fish, and loss of genetic integrity through interbreeding. Furthermore, recommendations by the U. S. Fish and Wildlife Service in the 1940s to prevent the building of dams on the Deschutes, Cowlitz, and Lewis rivers to compensate for damage to Columbia River habitat were simply ignored by developers.*

*Ten years after the completion of the high dams on the Columbia River, native salmon runs were less than 5% of historic levels. Subsequent development along the river has led to the virtual elimination of sockeye and chum in the Columbia and the risk of extinction in what was once the world’s most abundant salmon fishery.*

# Chapter Four



High Rocks and Strong Rapids



## Artistic Expression

*“Baskets, clothing, gear, and other goods are crafted from natural, renewable materials. They are typically decorated with motifs associated with their particular use, place of origin, or individual or family identity that impart a sacred influence beyond symbolic value. Specific practices are taught for the gathering and processing of plant materials often accompanied by songs and ceremonies. Through these preparations and in the actual crafting, we learn about culture, family and ancestors, and individual spirituality.”*

## Study Guide 4.1 - Salmon and Berries

**Mapping:** Northwest Trading Posts and Military Forts

**Problem Solving:** The river canoed by the group flows an average of 99,000 cubic feet per second. If the group traveled from 6:30 A.M. until 6:00 P.M. how many cubic feet of water passed through during that day? Since this volume is difficult to think about because it is a lot of water, find another body of water that you can use to compare it to and describe.

**Editing:** We have a Westerly wind thank Heaven all is well. (2 errors)

**Discussing:**

- \_\_\_ 1. Good relationships with the tribes along the route was important to the success of the journey.
- \_\_\_ 2. The Methow Indians had traded with distant Coastal tribes.
- \_\_\_ 3. Another word for land is “firmament.”
- \_\_\_ 4. Timber in this region was plentiful and used to build shelters.

**Constructing:** The San Poil tribe among others, have had a significant impact on the group, as shown in the letters. Choose a tribe that coincided (or lived) on the route the travelers took. Find at least three resources about this tribe and write a two to three page description of them. Include traditions they have, food they ate, what they wore, including jewelry and how they got their food, what they lived in, and any other interesting details you find. Include also a description of the type of land they lived on, including climate.

**Connecting:** Douglas Chadwick, “Mountain Goats—On the Edge of Earth and Sky,” NGM (August 1995); Fen Montaign, “A River Dammed [Columbia],” NGM (April 2001); “Empty Promises, Empty Nets (documentary film),” Columbia River Intertribal Fish Commission.

**Sidetripping:** As you would expect from its name, **Dry Falls State Park** used to be a colossal waterfall but is now a 400-foot tall cliff. During the Ice Age, ice dams on the Clark Fork River in present western Montana repeatedly burst and reformed, allowing glacial Lake Missoula to inundate much of Washington, Idaho, and Oregon with multiple catastrophic floods. During these inundations, Dry Falls was the thundering scene of 300 feet of water traveling at over 65 miles per hour. Ten times the size of Niagara Falls, Dry Falls was probably the largest waterfall that ever existed. The region’s rocky “**Channeled Scablands**” carved from violent tributaries cutting through the landscape created features that NASA scientists believe resemble the “canal” features on the surface of Mars.



Columbia Plateau Camp  
(J. M. Stanley)

### Wordbuilding-

hobble-

parchment-

gallery-

profuse-

avid-

plaintive-

firmament-



*Middle Columbia*

**fillet (fil-it):** a narrow band of decorative material bound around the head or hair for adornment, from the Latin filum (string).

**The “establishment” where Douglas camped at this time was north of the Methow Valley at Ft. Okanogan from which he explored area botany and geology. He noticed that the broad coulee channels seem to have been carved out by some cataclysm in the ancient past. His thinking anticipated the later theories of geologist Harland Bretz who hypothesized that the Grand Coulee and unique area landscapes were formed by raging floodwaters during the last Ice Age when a glacial lobe from the Canadian Ice Shield extended across the Columbia River.**

**An imposing glacial moraine is clearly visible today across the nearby Waterville Plateau. When an ice dam forming glacial Lake Missoula in the northern Rockies collapsed, a massive flood was released that carved a new channel for the river to form the Grand Coulee and dramatic Dry Falls near present Coulee City. Scientists believe the floods may have taken place over thirty times, with some releasing a greater volume of water than the combined flows of all rivers on the planet.**

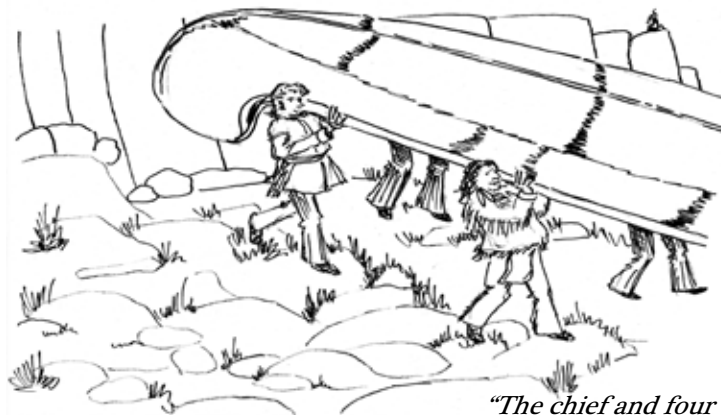
## 4.1 Salmon and Berries

David Thompson: July 6th [1811]. A rainy morning. Early several men with a few women came and smoked for a while. The women had bracelets of shells and fillets of the same round the head. At 6½ AM we embarked and in less than four hours came to a tribe and village called Methow. As usual we put ashore and I sent the San Poils to invite them to come and smoke with us. They found them consulting what they should make a present, for the stranger must have a present made to him or them. My reason for putting ashore and smoking with the natives is to make friends with them ...[for] my return.

...The men, women, and children now came dancing, and singing a mild, plaintive song to which they kept time. When close to us, they twice said, “Oy, Oy,” and sat down around us. One of them directed to women and children to sit near the men. The pipes were lighted, and they all smoked with an avidity; the men taking from three to six whiffs... but women were allowed only one whiff. They now gave us three well roasted salmon, and half a bushel of arrow wood berries, very acceptable to us, for which I paid them.

I learned that from the time of the arrival of the salmon, all the fish that are taken for a certain time must be roasted, not boiled. The chiefs then assemble, and after some ceremonies, the salmon are allowed to be boiled, or cooked for the rest of the season as the people choose. The appearance of this tribe is the same as the last, except the women being more profusely ornamented with shells. Their knowledge of the river extended no farther than to the next village where we would learn the state of the river beyond them.

At noon we left them and soon came to a bold river of two miles in length, the waves being too high for our canoe we had to carry. The chief and four young men came with horses and helped us to the foot of the rapid for which I gave them eight inches of tobacco, which was thankfully accepted. This carrying took us to 2½ PM We then descended a strong current for full three and a half hours, and camped



*“The chief and four young men came... and helped us”*



At noon we left them and soon came to a bold river of two miles in length, the waves being too high for our canoe we had to carry. The chief and four young men came with horses and helped us to the foot of the rapid for which I gave them eight inches of tobacco, which was thankfully accepted. This carrying took us to 2½ PM We then descended a strong current for full three and a half hours, and camped

The country and banks of the river [are] high, bold hills, very rough, with steep cliffs. We could have passed hours in viewing the wild scenery, but these romantic cliffs always indicated danger to us from the stream being contracted and forming whirlpools, very disagreeable companions on a river. On a cliff we saw a mountain sheep looking down on us, which we longed to eat, but could not be approached. We had to kill two rattlesnakes that would not get out of our way.

David Douglas: Tuesday, [August] 22nd [1826]. Last night being very warm, the whole firmament [was] in a blaze of sheet lightning.... My road being less mountainous, with little exertion I found myself on the Columbia at midday opposite the establishment. Seeing an old man spearing salmon, I had the horses watered and hobbled, and crossed in a small canoe with my guide. Here I found my old friends Messrs. McDonald and Ermatinger, who received me with every kindness. After washing and having a clean shirt handed me, I sat down to a comfortable dinner.

...As my time was of great consequence, I communicated them my wish and immediately they purchased a small canoe for me, and hired for me two Indians to go with me.... In the meantime, I wrote to Mr. Dease by my old guide, who behaved himself in every way worthy of trust and is to make a stay of two or three days to rest. I then put up a few seeds and changed some plants collected on the journey. As I felt somewhat wearied I went early to bed. The doors being left open by reason of the heat, and the windows, which are made of parchments being by no means close, gave the mosquitoes free access. I was under the necessity of abandoning the house at midnight and took myself to a sort of gallery over the door or gate, where I slept soundly.



**Prairie rattlesnake**  
(*Crotalus viridis*)

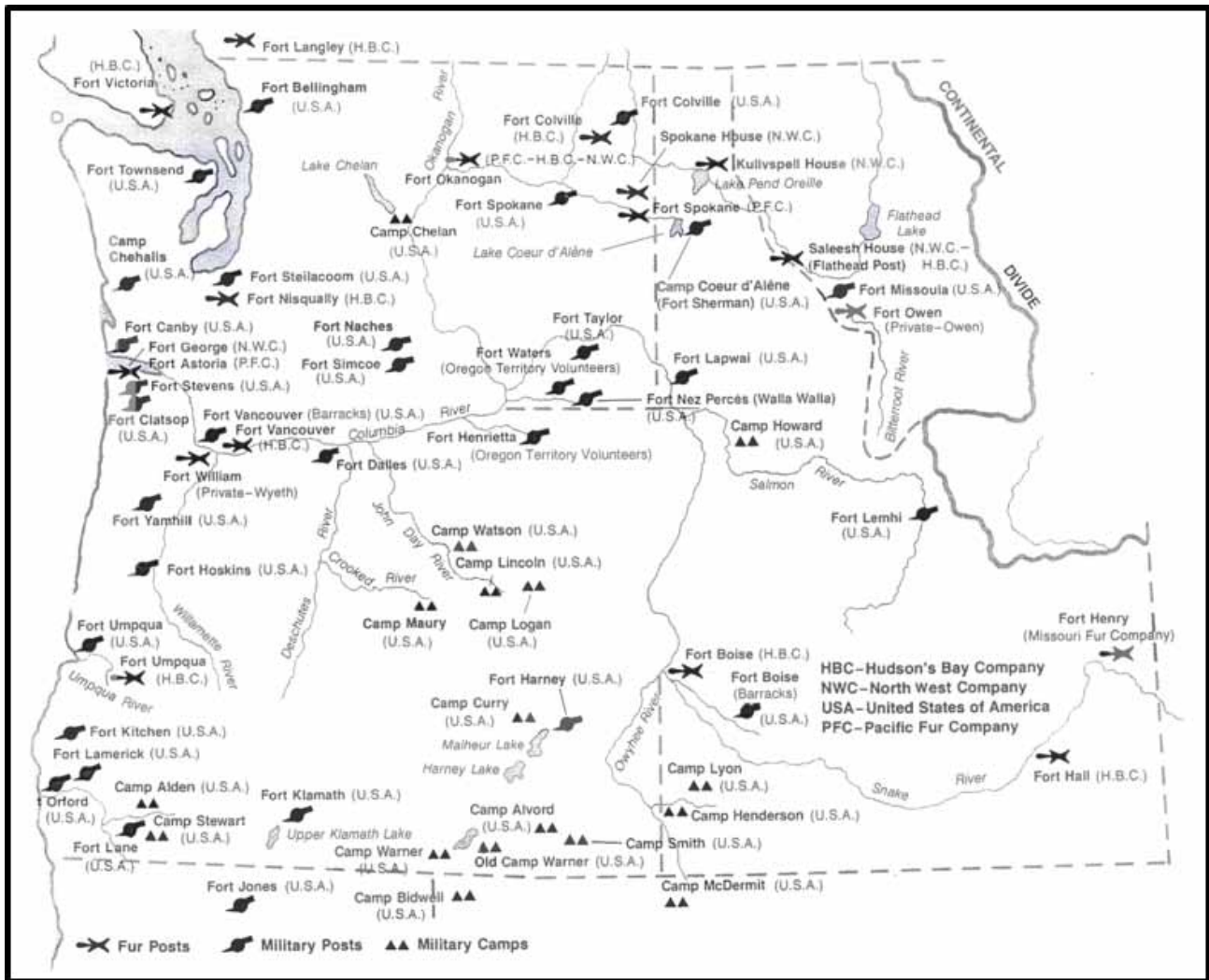
**Greek krotalon** is a small bell, rattle, *viridis* is Latin for the greenish shade that appears with rows of brown spots. *verdant*: green in color, or with growing plants. *viridian*: bright green.

**Francis Ermatinger (1798-1858)** was a Canadian fur trader who came to Hudson's Bay Columbia Department and married an Okanogan Indian woman. Their son, Lawrence, attended the first school in the Pacific Northwest at Ft. Vancouver.

**Francis Ermatinger (1798-1858)** was a Canadian fur trader who came to Hudson's Bay Columbia Department and married an Okanogan Indian woman. Their son, Lawrence, attended the first school in the Pacific Northwest at Ft. Vancouver.

**The Methow tribe** inhabited the river valley named for them in present North Central Washington and were known for their hospitality to visitors along the Columbia River.

## Mapping 4.1 -- Trading Posts and Brigade Routes



The normal schedule for the annual round-trip Columbia Express commenced westbound from York Factory on Hudson Bay as soon as weather permitted, usually in late March. The plan was to reach Ft. Vancouver via Athabasca Pass and Boat Encampment in early June and begin the return trip by month's end or early July in order to return in time to load the furs for transport to London. Furs from New Caledonia above Ft. Kamloops were taken south on the 1,500 mile "Brigade Trail" from Ft. St. James on Stuart's Lake in May and arrived at Ft. Vancouver in mid-June. The trail's northern third to Ft. Okanogan was an exceedingly winding overland packhorse route.

The colorful if arduous brigades typically numbered fifty to sixty individuals with crews of seven to ten per vessel which carried up to 1½ tons of cargo. Voyageurs routinely rose about 2 A.M. to work eighteen hour days en route and each man was expected to carry two pieces of eighty to ninety pounds each in a leather sling across the forehead so the hands could be used to clear the way.

## Study Guide 4.2 - Strong Curiosity

**Heading:** 47° 22' N. Latitude, 120° 16' W. Longitude (Washington State's geographic center)



Northwest Prairie Wildlife  
(J. M. Stanley)

**Problem Solving:** If there are about one hundred and twenty families, and in those 120 families, 800 of them are women and children, what is the average number of members in each family? Do not forget to include the men in your calculation. What is the ratio of average number of family members in this tribe to average number of (immediate) family members in the United States?

The houses were measured by taking steps and deciding that the average step was three feet long. With a partner, take ten steps and measure the average distance of each step. How does this compare with three feet? How close would your measurements be to the dimensions of the houses the group measured using their "stepping" strategy? Is this an accurate enough way to measure? Why or why not?

**Editing:** Sent beads with an old sahaptin and 2 other Indians. (3 errors)

**Discussing:**

- \_\_\_ 1. Pacing was a way to measure the size of a building or property.
- \_\_\_ 2. The smoking of tobacco was an important tribal greeting ceremony.
- \_\_\_ 3. The local chief was impressed with the quality of Thompson's gift of tobacco.

**Constructing:** The native peoples of the coastal region of the Pacific Northwest constructed long lodges covered with rush or tule (tu-lee) mats. Make a model of such a lodge using small dowels or straight twigs for frames and covered with small mats of long grass stems or similar natural materials.

**Connecting:** Peter J. Mehringer, Jr., "The Weapons of Ancient Americans," NGM (October 1988); Michael Parfit, "Dawn of Humans: Hunt for the First Americans," NGM (December 2000).

**Sidetripping:** The **Wenatchee Valley Museum and Cultural Center** in Wenatchee, Washington showcases important collections related to regional history and Asian art. The **Ritchie-Roberts Clovis Site** (~11,500 B. P.), one of the most significant archaeological discoveries on the continent, is featured as well as the story of the 1938 Pangborn-Herndon first trans-Pacific flight from Russia and Japan. The museum art gallery contains in international ceramic collection and a rare set of 18th century Japanese art prints.

The **Chelan County Museum and Pioneer Village** in nearby Cashmere features outstanding Native American art and cultural artifacts from the Middle Columbia region and a log cabin community of original structures.

**Wordbuilding-**

sufficient-

separate-

acquaint-

kindle-

suspicion-

apprise-

countenance-



**Middle Columbia**

**apprise:** to teach, inform.

**Plateau lodges were covered** with mats woven of tule or bulrush (*Scirpus acutus*, *S. validus*) which are common marsh plants that grow up to ten feet tall. Flexible mats were woven with Indian hemp twine using twig needles and placed in rows upon a pole to form insulating walls and floors. The enormous structures mentioned by Thompson were probably located near the mouth of Rock Island Creek near present Wenatchee.

**Thompson's "Sinkawarsin"** are one of seven bands of Wenatchee Indians who lived along the Wenatchee and middle Columbia rivers. The name "Wenatchi" comes from the Sahaptin language expression "Water Rushing Out," which referred to turbulent Tumwater Canyon at the famous inter-tribal fishery near present Leavenworth, Washington. The importance of the **Wenatchi Fisheries** led to its designation as a 36-square mile reservation in the landmark 1855 Yakima Treaty Council held in the Walla Walla Valley where the tribe was represented by Chief Tecolekun. Only in 2006 were the present Wenatchi Indians of the Colville Reservation again permitted to exercise their treaty rights to fish in the Wenatchee River.

## 4.2 Strong Curiosity

David Thompson: July 7th [1811]. Having descended ten miles, we saw several men on horseback proceeding to the westward. Two of them rode to the river side. We went too, and smoked with them, and each of us held our separate ways. I learned that they were sent from a village to apprise them of our coming. Having continued for four miles, we came to two long lodges of the same structure as those we have passed, sufficiently well covered with rush mats. One of these lodges was 240 in length, the other sixty feet in length, each by thirty feet in breadth.

All these measurements are by stepping the lengths at three feet each step. By their account the name of this tribe is Sinkowarsin. They are about one hundred and twenty families, and from the women and children must be about eight hundred souls. The language is still a dialect of the Salish, but my San Poil interpreters find several words they did not understand.

When we passed and put ashore below them, they were all dancing in their lodges to the sound of their songs.... We sent to them to come and smoke. Five steady looking men came, sat down near us and smoked. Although many of the Indians we passed viewed us with suspicion, as at a loss what to make of us, these men much more so. Nor could their countenances conceal that they did not know what to make of us. All other villagers had been apprised of us by some who had smoked with us. These had only heard of us by report, except what they learned from the two horsemen.

...The San Poil Indians who accompanied us explained to them all they saw with us after smoking a few pipes. I requested all the other men to come which they did, but in an irregular manner,



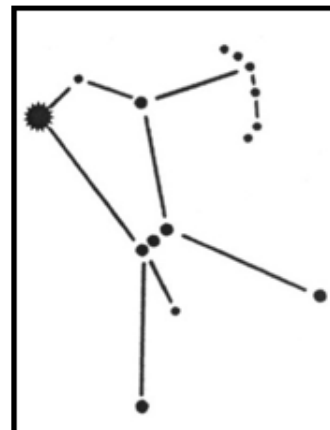
and it was twenty minutes before they could be made to sit down. Smoking commenced, and they offered us a small present of roots and berries. ... On our guns, axes, knives, and making of a fire, to which they paid great attention they appeared delighted [as] with the use of the axe in cutting and splitting of the driftwood.

I now explained to them by the interpreters the object of my voyage down the river, that it was to procure for them articles and clothing such as they saw with us, besides many other things equally wanted by them. All this passed in conversation with one and another. There was no chief to speak to them. A fine looking man came and sat close to me with strong curiosity in his face. After eyeing me all over, he felt my feet and legs to be sure that I was something like themselves, but did not appear sure that I was so. A very old man now came to thank me for visiting them, and that he had the pleasure of smoking good tobacco before he died. At length being satisfied that we came as friends, and [with] the intention of doing them good, they brought to us two salmon for which I paid them. They then lifted up their arms and hands towards the skies praying for our safety and to return to them.

David Douglas: Thursday [August] 24th [1826]. By eight o'clock gained the Stony Islands, an extremely dangerous part of the river where the channels are very narrow, not more than twenty to thirty feet broad. As my guides were little acquainted with this part of the river, I hired an Indian of the place to pilot my canoe and after landing her safe below, I paid with a few crumbs of tobacco to smoke from my own pipe. As I had nothing to cook I ate some crumbs of dried meat and salmon, and when I wanted to smoke kindled my pipe with my lens, so I was not under the necessity of making a stay to kindle a fire...



*“One of these lodges was 240 feet in length”*



*The Yakama Indians of the Columbia Plateau greatly depended on the annual salmon runs for their food supply. This fish is sacred to Plateau Indians who still hold ceremonial feasts every spring to thank the Creator. They tell a story in which Salmon is chased by one canoe carrying the Cold Wind Brothers (Orion's Belt), and another with the warm Chinook Wind Brothers (Orion's Sword). The myth also explains the origin and direction of the region's prevailing northeast (cold) and southwest (warm) wind patterns. Salmon is the faint star just below blue-white **Alnitak** (al-nih-tak') which is in the front of the Cold Wind Brothers' canoe.*

*Because the dramatic **Horsehead Nebula** is located within the glow of Alnitak, it can only be seen with a telescope. Orion's left shoulder is the red star **Betelgeuse** (be'-tel-jews), a supergiant so large that its diameter would extend from our sun to about the orbit of Jupiter!*

*The “Stony Islands” mentioned by Douglas were later known as the Rock Islands and located in the vicinity of present Rock Island Dam on the middle Columbia River.*

## Literature 4.2 -- “The Law of Nature”

by Smohalla and Kotiaquan

*The Wanapum Prophet Smohalla (c. 1820-95) lived with his followers at Priest Rapids south of present Vantage on the middle Columbia River where he instructed others in the ancient communal beliefs of the Washani “Longhouse” religion. Smohalla’s contemporary was the Yakama spiritual leader Kotiaquan (1837-99), who advocated “limited progress” through agriculture, and both men were visited by U. S. Army Major J. W. MacMurray in the summer of 1884 in order to settle disagreements among area Indians, settlers, and reservation officials. Through his meetings MacMurray came to appreciate the ideas of his Indian hosts and became an advocate for their rights to practice their religion and remain in their homelands. Although the Wanapums never signed a treaty with the U. S. government, they stubbornly clung to their ancestral village sites along the middle Columbia River well into the 20th century and entered into a unique agreement with state and county officials to remain. They continue to honor their traditional ways while given employment through the region’s public electrical utility district.*

**Smohalla:** Once the world was all water and God lived alone. He was lonesome, he had no place to put his foot, so he scratched up the sand from the bottom and made the land. He made the rocks, and he made the trees. He made a man, and the man had wings and could go anywhere. The man was lonesome, and God made a woman. They ate fish from the water, and God made the deer and other animals. He sent the man to hunt and told the woman to cook the meat and to dress the skins.

Many more men and women grew up, and they lived on the banks of the great river whose waters were full of salmon. The mountains contained much game and there were buffalo on the plains. There were so many people that the stronger ones sometimes oppressed the weak and drove them from their best fisheries, which they claimed as their own. They fought and nearly all were killed, and their bones are to be seen in the hills yet. God was very angry at this and he took away their wings and commanded that the lands and fisheries should be common to all who lived upon them. They were never to be marked off or divided, but that all the people should enjoy the fruits that God had planted on the land, and the animals that lived upon it, and the fishes in the water. God said he was the father and the earth was the mother of mankind, that nature was the law, that the animals, and fish, and plants obeyed nature, and that man only was sinful. This is the old law.

... You ask me to plow the ground! Shall I take a knife and tear my mother’s bosom? Then when I die she will not take me to her bosom to rest. You ask me to dig for stone! Shall I dig under her skin for her bones? Then when I die I cannot enter her body to be born again. You ask me to cut grass and make hay and sell it, and be rich! But how dare I cut off my mother’s hair?

**Kotiaquan:** The world was all water, and Saghalee Tyee [the Great Spirit] was above it. He threw up out of the water at shallow places large amounts of mud, and that made the land. Some was piled so high that it froze hard, and the rains that fell were made into snow and ice. Some of the earth was made hard into rocks, and anyone could see that it had not changed—it was only harder. We have no records of the past, but we have it from our fathers from far back that Saghalee Tyee threw down the mountains. It is all as our fathers told us, and we can see that is true when we are hunting for game or berries in the mountains.

He made trees to grow, and he made a man out of a ball of mud and instructed him in what he should do. When the man grew lonesome, he made a woman as his companion, and taught her to dress skins, and to gather berries, and to make baskets out of the bark of roots, which he taught her how to find. She was asleep and dreaming... and he breathed on her and gave her something that she could not see, or hear, or smell, or touch. It was preserved in a little basket, and by it all the arts of design and skilled handiwork were imparted to her descendants.

## Study Guide 4.3 - Respect and Attention

**Heading:** Coordinates for Vantage, Washington.

**Problem Solving:** In 1800 the populations of tribes A and B were 500 and 600, respectively. In 1810 the populations of tribes A and B were 800 and 900, respectively. Thompson claims that from 1800 to 1810 the two town’s populations grew by the same amount. Use mathematics to explain how Thompson might have justified his answer. Franklin claims that from 1980 to 1990 the population of tribe A had grown more. Use mathematics to explain how Franklin might have justified his answer.



Chief Owhi,  
Upper Yakama-Kittitas  
(G. Sohon)

**Editing:** We are carrying 32 lbs of dried Salmon. (3 errors)

**Discussing:**

- \_\_\_ 1. Useful baskets were made by the Indian woman from the wool of mountain goats.
- \_\_\_ 2. With a diet of mostly fish and roots, the Indians Thompson met seemed malnourished.
- \_\_\_ 3. A person who studies and cut stones is known as a “lapidary.”

**Constructing:** David Thompson writes that the native people in this area were in good health, “partly from using much vegetable food.” The new U.S. government symbol for a balanced diet is a dinner plate. Make a poster of one on which you draw examples of the four food groups.

**Connecting:** Michael Parfit, “Powering the Future,” NGM (August 2005); George Johnson, “Plugging into the Sun,” NGM (September 2009); Michael Allen, “John Ford Clymer: Pacific Northwest Illustrator and Artist,” CM (Fall 2006).

**Sidetripping:** The **Kittitas Valley Wind Power Project** is located east of Ellensburg Washington along the crest of a broad funnel-shaped canyon through which winds blowing across the Cascade Mountains move toward the Columbia River. The wind farm has about fifty massive wind turbines and can produce enough energy to power approximately 28,000 homes a year. The developers do not yet have a long-term power purchase agreement with any utility company, so power is sold on the region’s daily power market. After electricity sales, resulting energy credits are used by businesses to reduce the environmental impact of their operations.

### Wordbuilding-

subside-

dwarf-

temperate-

infirmity-

barren-

*pervade-*

*lapidary-*



*Middle Columbia*

*pervade*: to spread throughout.

**The mountain goat and bighorn sheep** are members of the Bovidae family. The finely woven goats' hair blankets of the Wenatchis were highly prized trade items throughout the Pacific Northwest. A popular legend set in the Camas Meadows near Blewett Pass in the Cascades cast legendary Mountain Goat as especially cunning and resourceful. While the antelope mentioned by Thompson were not common on the Columbia Plateau at this time, there were scattered herds in the region in the early 1800's.

**John Scouler** (1804-1971) was a Scottish naturalist and traveling companion of Thompson's who became a prominent European authority on zoology, botany, and mineralogy.

The "remarkable ravine" mentioned by Cox is probably Drumheller Canyon east of the Frenchman Hills in south central Washington.

## 4.3 Respect and Attention

David Thompson: July 7th [1811, continued]. They describe the country to the southward to be high, dry, and barren. To the northward the lands are good with antelope, mountain sheep, and goats, of which their clothing is made, and of the fine long wool of the latter they make good rude baskets. They had also a few bison robes which they must have traded from other tribes. All these things allowed them to be better clothed than any tribe we had yet seen. We saw not weapons of war with them, and like all the other tribes they may be said to be unarmed.

Their appearance was much the same as those we had passed, but having more nourishment their persons were more full in form. Many of the men were handsome, with a manly look. The women... good looking with mild features, the children well formed and playful, and respect with kind attention to each other pervaded the whole. Though at present poor in provisions, they were all in good health, and except for the infirmities of old age, we have not seen a sick person, partly from using much vegetable food and partly from a fine dry temperate climate.

As we were about to leave this people with their prayers for our safety, a fine looking man came to us and requested a passage in our canoe for himself and wife, to a tribe below of which he was a chief. He remarked to us that the San Poil Indians could not interpret for us much farther down the river, as the natives spoke a different language which both himself and his wife well understood, and that he would then become our interpreter. Glad of the offer, we gave them a passage with their little baggage.

After descending seven miles we put ashore to boil salmon, for while with the Indians our whole time is occupied in talking and smoking with them, and keeping guard on all that is passing. For with people to whom we are utterly unknown, a trifling accident might produce seri-





ous effects. Here was a place for a winter campment. It was of the form of a long lodge, the earth a dry light soil excavated to the depth of one foot, clean and level, the floor of earth over which the lodge is erected.

Having descended the current for twenty-one miles we camped for the night. To this distance the banks of the river have become much lower, but all the bays opposite the points of the river have steep banks of trap rock about forty to fifty feet. The points are of fine meadow and when the water subsides to its usual level must be extensive. The current [is] more moderate, yet has many whirlpools. On the whole this day the river and country has a more pleasing appearance than usual, but without woods except a few scattered dwarf red fir.

Ross Cox: [April 1815]. About forty miles above Lewis' [Snake] River, Messrs. [Alexander] Stewart, [James] McMillan, and I with three men ... proceed[ed] overland to Spokane House. .... Early on the morning of the second day we entered a remarkable ravine with high, bold, and rock sides, through which we rode upwards of twenty miles.... While we rode through it we passed several small lakes, round the shores of which I picked up some very fine pebbles of the agate species, extremely hard, and possessing great delicacy and variety of shading. ... They take a beautiful polish, and in the opinion of lapidaries far exceed the carnelian in value.

David Douglas to William J. Hooker, Glasgow, Scotland:

March 24, 1826

Dear Sir,

From Dr. [John] Scouler you must have obtained a good description of North West America, and be made acquainted with many of its treasures. He left me in fine spirits and when we were together, not a day passed in which you were not spoken of. His departure I much regret. We had always been friends and here our friendship increased. When botanizing along the shores of the Columbia River, and in the adjoining woods, we would sometimes sit down and rest our limbs and then the conversation often turned to Glasgow and Ben Lomond....



*“children well formed and playful”*



**golden eagle**  
(Aquila chrysaetos)

*Eagle is aquila in Latin, and aetos in Greek; khruos is Greek for gold. aquiline: curving like an eagle's beak. Croesus: a very rich man, from the name of a Greek king famed for his wealth.*

*Trap rock is talus, or broken shards of basalt that form massive stone piles at the base of canyons.*

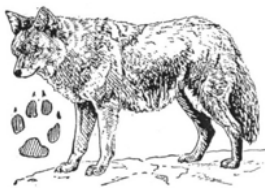
*Thompson's evening camp was near the mouth of Crab Creek. The native people knew the place as Hemp Gathering Place, for a highly valued plant used to fashion twine fishing nets and distinctive round root bags.*

*Agate is a semi-precious quartz gemstone of various colors found along this stretch of the river. The mineral's beauty and brittleness made it highly desirable for flaking into arrowheads, awls, and other stone tools.*

*The “remarkable ravine” mentioned by Cox is probably Drumheller Canyon east of the Frenchman Hills in south central Washington.*

## Biome 4.3—The Middle Columbia River Valley: A Shrub Steppe Biome

**Ginkgo Petrified Forest**--Located near Vantage, Washington, this state park features the remains of immense petrified trees and other fossils from the early Miocene Era. Twenty million years ago the Cascade Mountains had not risen so the present Inland Northwest was a vast expanse of swamps and lakes where large stands of walnut, ginkgo, maple, beech, hickory, and other deciduous species grew in a moister climate. Trees that became submerged in a lake were entombed by subsequent lava flows containing silica minerals that eventually replaced and preserved these trees.



**Coyote (*Canis latrans*)**—Coyotes vary greatly in size, ranging from 25 pounds in Mexico to 75 pounds in the mountains and the northern reaches of their range. On average, however, a coyote will be about five feet long and weigh about 40 pounds. Like dogs, coyotes have four canine teeth, two upper and two lower, for grabbing and holding their prey, which consists primarily of rabbits, rodents, sheep, and goats.



**Western Meadowlark (*Sturnella magna*)**—Common throughout the United States, this beautiful bird with its distinctive three-note song tends to live in open areas where food is plentiful and nest building materials, such as grass and straw, are abundant. It feeds principally off insects during the summer, but during the winter resorts to searching for seeds to consume. It is very territorial and will defend its home, which may consist of several acres.



**Western Rattlesnake (*Crotalis viridis*)**—This venomous snake has the distinctive triangular-shaped head and heat sensory organs of pit vipers and commonly reaches lengths of three feet. It is light brown with dark brown patches in a dorsal pattern. The western species prefers dry, rocky areas where it preys on mice, rats, prairie dogs, and others small mammals. It's rattling sound is a defensive, nervous reaction made by a rattle that increases whenever the skin is shed, which may be two or three times a year.



**Common Sagebrush (*Artemisia tridentate*)**—Broadly branching fragrant shrubs that commonly grow seven to nine feet high with narrow, wedge-shaped leaves about an inch in length. Small flowers appear in clusters at the end of stems and bloom from July to September. Sagebrush is common in arid areas and provides valuable food and habitat for sage grouse and other desert animals.

**Sand Lab**—Important clues about the ancient geology of your area await discovery. Collect some sand locally from stream sides, lake shores, or even construction sites. Observe each sample under a low-power microscope. What colors make up the sample? Can you identify what general types of rock this sand is made of? This tells you what kind of mountain existed upstream from you several million years ago. Because of its weight sand is carried very slowly in rivers. Often it travels only about six inches in a year. Now try this activity to simulate the formation of sand dunes. Place a thin, flat layer of dry sand in a shallow baking pan. Blow gently along the edge of the sand through a straw. Notice how the sand piles up. It will move away from the straw in a semi-circular pattern. The kinetic energy of the moving air carries the smaller sand particles farthest before they fall. Most lose their energy rapidly and fall nearer forming a low mound. Then this mound slows down or blocks the movement of more particles of sand, causing a dune to grow. If your sand is too coarse to move freely, try using a thin layer of flour instead. If you blow quite gently you will still be able to see the effects of dune formation.

## Study Guide 4.4 - Man on Horseback

**Seeking:** Origin of the Columbia River “Priest Rapids” name.

**Problem Solving:** Salmon is a very important part of the diet of the tribes along the river. Without salmon to catch, these tribes would be in danger of not having enough to eat. It is important to know how many fish are available for catching and eating in order to provide enough sustenance for the families. Go to <http://www.keymath.com/x6954.xml>. You will be able to experiment with catching and releasing fish as well as explore ratios in order to make predictions about the number of fish in the pond. Answer the questions on that page.

**Editing:** We arrived at Noon set off at 2:30 PM and went through a strong boiling current. (3 errors)

**Discussing:**

- \_\_\_ 1. Seine nets are weighted to hang vertically in the water.
- \_\_\_ 2. Thompson was cautious but appeared friendly when meeting new people.
- \_\_\_ 3. Area Indians were welcoming to those who came into their land.

**Constructing:** As described in this letter, being able to interpret one another’s language can be vital for communicating one’s needs. Choose a language other than your own to study.

You will learn to:

- 1. Count to ten;
- 2. Say five other words that you consider necessary for survival;
- 3. Say three other words you are interested in learning.

Be prepared to present and teach the class your selected language.

**Connecting:** William Albert Allard, “Chief Joseph,” NGM (July 1990); Paul D. McDermott and Ronald E. Grim, “Early Images of the Northwest: The Works of Gustav Sohon,” CM (Winter 2007-08).

**Sidetripping: Ginkgo Petrified Forest State Park and Interpretive Center** near Vantage, Washington, features one of the region’s most unusual trail hikes. Twenty million years ago the Inland Northwest was a vast expanse of swamps and lakes where forests of walnut, ginkgo, maple, oak, beech, hickory, and other deciduous species grew in a moister climate. Trees that became submerged in a lake were entombed by subsequent lava flows containing silica minerals that eventually replaced and preserved these trees.

Visible on the other side of the river along Interstate 90 is a striking metal sculpture based on a Native American myth, David Govedar’s, “**Grandfather Cuts Loose the Ponies.**”



Columbia River  
(J. M. Stanley)

**Wordbuilding-**

distinct-

gallop-

gallop-

agitate-

peculiar-

verdure-

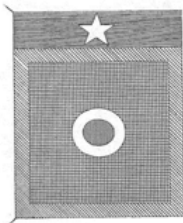
vestige-



*Middle Columbia*

*The camp was a Wanapum Indian village located in the vicinity of present Beverly, Washington. The prominent Wanapum Indian prophet-chief Smohalla (c. 1825-1895) lived in the nearby village of P'na (Fish Weir) south of the Columbia's Priest Rapids who named the area for a shaman who had great influence among area tribes.*

*Anthropologist Hartley Burr Alexander wrote that Smohalla's teachings represented "perhaps the most eloquent expression of Earth's motherhood in Occidental (Eastern) literature." The ideas he taught were similar to beliefs of other native Plateau peoples that came to be known as Washani, or the Dreamer religion.*



*Smohalla's Flag*

*"Red is my heart—in the center of my people. All around them is the yellow grass and green hills—going up to the sky which is blue. The star is the one that never changes." Smohalla*

*"The chief rode down to examine us"*

## 4.4 Man on Horseback

David Thompson: July 8th [1811]. Having proceeded seven miles we came to a village of sixty-two families. The rapid current drove us half a mile below the village before we could land. The chief, a middle-aged... man on horseback, now rode down to examine us. He appeared very much agitated, ... wheeling his horse backwards and forwards and calling aloud, "Who are you? What are you?" Our custom was to leave one or two men in the canoe to keep it afloat, the rest of us drew up near the shore about three feet from each other all well armed, myself in the front apparently unarmed. This chief sometimes appeared to make a dash at us. We then presented our guns and he wheeled his horse.

In about a quarter of an hour he became composed. My native interpreter who stood with us now spoke to him in a manly manner telling him who we were and what we came for, to which he listened with great attention, then called out, "Oy, Oy." He was now joined by a well made, short, stout old man, his hair quite white. He was on foot and came with a message. We invited him to come with his people and smoke, upon which he set off on a gallop, the old man on foot keeping near him. Having repeated to the people what he had said and to come forward and smoke, he returned at the same pace, the old man keeping close to him. ... The man came and smoking commenced, a present of four salmon, and two [fish] of a small species, ... [and] berries.

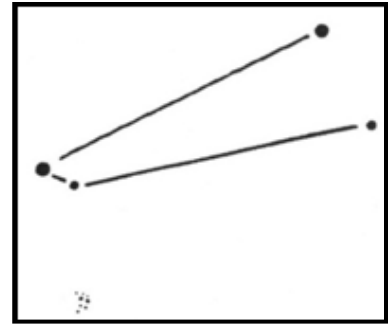
By the interpreter I told them what I had to say. The chief repeated the words in a loud voice, which was repeated by a man in a louder voice. The women now came forward, singing and dancing which they continued all the time the men were smoking. ... These people are altogether distinct from those we have seen, and are of the Shawpatin [Sahaptin] nation, of which there are several tribes, and speak a language peculiar to themselves. It appeared soft, with many



vowels, and easy of pronunciation. It is the native tongue of the interpreter. These people, as well as those of the last village, are making use of the seine net, which is well made from wild hemp, which grows on the rich low grounds. The net appeared about full six feet in breadth by about thirty fathoms in length. It was trimmed and worked in the manner we use it, which gave them a supply for the day, and a few to dry.

We left these people and proceeded forty miles to 5½ PM when seeing a large camp before us we put ashore. Four horsemen came to us, and having smoked I told them to invite the men to come and smoke. They came and sat down in an orderly manner. The pipes went round and the often repeated speech was made of my going to the sea. . . . They said somewhere near their campment would be a good place for us to make a lodge and trade with them, at the large review close below them led to a fine country and skirted the distant mountains we saw. They had a very mild winter, the depth of snow they showed was about eight inches. They . . . had plenty of deer, two of the species were very small, with small trout and other fish for the winter, with dried salmon. . . . After giving a dance for a safe voyage, at 9 PM they left us and we passed a quiet night.

David Douglas: April 1st [1826]. Here it becomes mountainous, of white clay, with scarcely a vestige of herbage of verdure can be seen, except in the valleys. The river here is much broader than lower down and makes a great bend running due east-south, parallel with the coast, and south-east. Camped on the Priest Rapids at seven o'clock in the evening. The river here is narrow, divided into two channels, with a narrow dall through the small rocky island in an oblique direction. The rocks are very rugged, of limestone, and this is considered one of the most dangerous parts of the whole river.



*In Yakama Indian myth, two sisters were transported to the sky where they married two Star Brothers. They eventually became homesick and returned to their terrestrial homeland on a long robe they had secretly woven from hazel withes. The eldest sister was killed when the rope was cut by one of the brothers, while the other safely returned and gave birth at Chief Mountain (Cowiche Mountain) west of present Yakima to a special boy, Star Child, son of Haslo (Star Man) and whose descendants became leaders among the Yakama-Kittitas people.*

*The Nez Perce Indians to the south-east knew the Pleiades near Taurus as the Seven Star Sisters, located just below the bright red star Aldebaran (al-deb'ah-run). The six main Pleiads are hazy because an unseen younger sister, Eyes in Different Colors, mourned the death of her beloved when he died on earth. Her veil of mourning still partially obscures her sisters.*

*Smohalla's personal totem was a wooden bird, Wowshuxkluh (Oriole), placed on top of a pole above the Washani flag. The colorful bird, Bullock's oriole, is among the last to arrive in spring, and its call symbolized nature's announcement to provide warmth and food.*

## Literature 4.4 -- “Two Sisters and the Star Husbands”

by William Poniah (*Yakama*)

There was a tribe of Indians where lived two young sisters. The oldest was Tah-pah-louh. The younger was Yas-lumas. Their mother told them to go dig cha-kum. The mother said: “Go dig all day and stop there for the night.” The girls went digging all day and stopped there for the night. When they lay down to sleep, they looked up at the sky.

The oldest sister said: “I see two stars! They are not far apart. The smallest and red star, I wish would be your husband. The big bright star, I wish would be my husband.”

The two stars heard what the girls said, and when the sisters slept, unconscious, they came down and took them up to their own country. After they were brought up there, the younger sister began to wake up. But she could not open her eyes very well. There was something like wax in her eyes. When she woke up, she knew that she and her sister were in a strange place. She found that she was sleeping by the side of a man. She then lay down again and went to sleep. She said nothing, made no noise of any kind. When it came daylight, the man got up and built a fire. When the sisters got up, they looked all around. They did not know where they were. They were in a strange country. They thought about it, studied about their conditions. The men knew their thoughts and said to them:

“It was your own wish! You wanted us!”

The man said to the oldest sister, said to Tah-pah-louh:

“You wished for him to be your husband! That is the reason we went down and brought you up here. Do not worry about anything anymore. By your own wish, your own will, you became our wives. So do not worry! Here are things to cook with. Here is food to cook. Do not worry any more.”

The girls then went ahead and cooked food. They had the same kind of roots as grow down here. When they were through eating, the men said: “In certain place you will find roots. Go dig them!”

The women went digging roots all day. The men went hunting. When evening came, the women returned home with lots of roots. The men brought in birds. The hunters had bows and arrows.

Down below the mother missed her daughters. She hunted for them but could not find them. She searched long. She had a great lamentation for her lost daughters. The girls stayed all summer and all winter with their star husbands, and Tah-pah-louh had a boy baby. The women went digging every day and brought in lots of roots. The husband of Yas-lumas, was an old man. That was why her eyes were fast shut in the morning. She caught illness of the eye from her husband.

The men said to the women: “When you find a long root, do not dig it up. Break it off!” The men told them this five times.

Tah-pah-louh said to her sister: “How is this? The men say do not dig the long roots all out.” The women laid plans to dig the long roots entirely out. They said: “We might as well dig them all out.” Tah-pah-louh found a long root and said: “I am going to follow it and dig it all out.” Tah-pah-louh followed the root and did not break it. When digging, she struck hard and pried with her digger. It went through the earth, and when she pulled it out, she felt a wind. A big wind came up through the hold made by the digger. Tah-pah-louh looked through with one eye and saw her own country.

The men came home, bringing birds and other game. The women cooked roots. They ate and slept. Morning came, and after they had eaten, the women went out and began braiding the bark rope. They peeled bark from the hazel-nut brush, Tah-pah-louh braiding the rope. With their power—thought—they made it to reach the earth. Afternoon, they went digging roots. They worked fast and took the roots home. But there was not so many roots as before. Five times they did this. Five suns they worked in this way. The men said: “How is this? You do not bring many roots! You used to bring lots of roots home.”

Tah-pah-louh said to them: “We are nearly done! We do not find many roots now.” This was how the women were delayed in digging roots. They were making the rope by which to escape. They kept the rope hid all the time where the men could not find it. There was a big pile of that rope.

Finally the women said: “We are going to try this rope now.” Tah-pah-louh opened the hole and said: “The wind does not come through any more.” They tried the rope, let it go down. The oldest woman said: “When the end of the rope hits bottom, when it hits earth, its top will tip over.”

But they could not make it tip over. They could not reach the earth. They started making more rope. Tah-pah-louh said: “When we reach bottom, when we reach land, we will be through. We will have rope enough.” Finally the rope touched bottom and tipped over. They knew that their work was done. It was now evening. Tah-pah-louh said to her sister Yas-lumas: “After we eat in the morning, we will start down the rope. We will dig no more roots.” When they got there the next morning, when they came to the hole, the oldest sister spoke to Yas-lumas: “I will let you down first. When you reach the earth, jerk the rope so I will know that you are on the land. I will then let the child down after you, and when he reaches you, you will take him.”

This they did. Yas-lumas went down the rope first. When she felt the rope jerk, Tah-pah-louh sent down her baby. The baby was just old enough to crawl around. After sending down the child, the mother started down. She plugged the hold so the men could not know where they had gone. When she reached earth, she found that they were where they had [dug] roots and camped when the stars came and carried them away. The women hurried home.

When they reached home, their mother was gone. She had died. The grandmother was glad when she learned that her granddaughters had returned to earth and that they had brought the baby with them. From all parts of the country the people came to see the returned sisters. They had a big time! It was a big time that the people had. They swung on the hazel-bark rope. That rope remained there quite a while, hanging down from the sky.

...The broken rope where the two sisters escaped with the baby is still there. You can see it, a pile of white rocks at Snoqualmie. From the older sister and the star sprang the race of Chief Weowicht, the first root of the Yakimas. Owhi, the War Chief, and Kamiakin, his son, were of this race.

## Study Guide 4.5 - Junction of the Rivers

**Seeking:** Name Washington’s three “Tri-Cities.”

**Problem Solving:** Draw a scale model of the junction of the Snake and Columbia Rivers using the dimensions from the letter. Be sure to show your calculations and include a key (with scale) on your model.

**Editing:** The rocks are steep in various ways down to the waters edge we passed this warm windy day (3 errors)

**Discussing:**

- \_\_\_ 1. Blue beads were a prized possession of the Shawpatin (Sahaptin) people.
- \_\_\_ 2. The local chief strongly discouraged the idea of a trading post at the junction of the two rivers.
- \_\_\_ 3. Timber in this region was plentiful and used to build shelters.

**Constructing:** This letter described how delighted the women were with what was being traded. If we lived in a society where valuables were traded with goods instead of purchased with money, what do you think would be some of the materials you would trade? What would you not be willing to part with? Why? What would be important for you to have? Why?

**Connecting:** Peter Miller, “Our Electric Future—A Comeback for Nuclear Power?” NGM (August 1991); Richard Rhodes, “Living with the Bomb: Sixty Years after Hiroshima...,” NGM (August 2005); Richard Rhodes, “Hanford and History [B Reactor],” CM (Fall 2006).

**Sidetripping:** The **Hanford Reach National Monument** is located northwest of Pasco, Washington, along the last free-flowing stretch of the Columbia River. The area’s imposing White Bluffs takes its name from the massive deposits of sand, chalk, and diatomaceous earth visible for miles that flank the eastern bank of the river. These formations are the silted remains of prehistoric Lake Lewis that spread across the lower Columbia region during the Ice Age.

Because of its proximity to the **Hanford Nuclear Reservation**, the area was closed to public access for many years which to the growth of extensive riverbank willow habitat for deer, beaver, coyotes, muskrat, and waterfowl. The shuttered remains of the world’s first plutonium-producing nuclear reactor, **Hanford’s B1**, are located nearby and occasional open for public tours.



“Snake River Crossing”  
(G. Sohon)

### Wordbuilding-

discourse-

seine-

junction-

turbid-

destitute-

magnitude-

courier-



*Middle Columbia*

**Thompson called the Snake River the “Shawpatin” for the Sahaptin-speaking Indians of the region. Although the Columbia Plateau native peoples shared many aspects of culture, a major language boundary separated the Interior Salish-speaking tribes of the north like the Wenatchi, Colville, and Spokane, from such southern Sahaptin tribes like the Yakama, Walla Walla, and Nez Perce. This linguistic difference suggests two distinct groups entered the region at some ancient time.**

**turbid:** having sediment, muddy.

**A confluence** is where two rivers join together, a junction; from the Latin con- (together) + fluens (flow).

**The Indian leader met by Thompson** was Chief Yelleppit of the Walla Walla. He showed the explorer the Jefferson Peace Medallion presented to him by Lewis & Clark. Near the confluence of these two great Northwest rivers were several important villages of Walla Walla, Yakama, Wanapum, and Palouse peoples. To the northwest was Wasatos (Spirit Mountain), which Indian youths ascended on their spirit quests.

*“the women were most delighted with the kettles, the awl, and the needle”*

## 4.5 Junction of the Rivers

David Thompson: July 9th [1811]. Having gone half a mile we came to the junction of the Shawpatin [Snake] River with the Columbia. ...[T]he former is about five hundred yards in width [with] strong current and turbid water. The Indians say when the water is low it is a series of rapids. Close below the confluence of the Columbia is between eight and nine hundred [yards] in width. In the distance of three miles we passed twenty families seineing of salmon.

At two miles lower down we came to about twenty families with whom was the chief of all the Shawpatin tribes. He received us in manners superior to all other chiefs. He appeared about forty years of age, say six feet in height of a mild, manly countenance... and every way a handsome man, clean and well dressed. We found him an intelligent, friendly man. He made no speeches, but discoursed with us as man with man. I found my interpreter to be a person much noticed by him. He had several active men about him who acted as couriers to other tribes, others as soldiers without arms. While we were there two old chiefs made their appearance upon which he sent some of them about one hundred yards to meet them.

Upon explaining to him the object of our voyage, he entered into all our views in a thoughtful manner. ...He requested that we make a lodge for trading at the junction of the rivers and many Indians would readily find their way to that place. He viewed all we had with great attention, but the women were most delighted with the kettles, the axe, the awl, and the needle. I remarked that in all their speeches they never mentioned tobacco or woolen clothing as necessaries although highly desired, yet they were pleased when anything was paid for to see blue beads....

Hitherto the country has lowered much, and along the river when the water is low there must be much fine meadow. But on the upper banks





and to the foot of the hills the land is too dry, the grass short and not tender, a hard soil with trap rock in places. How far it is fit for the plow I cannot say. The climate is very fine and even. In the month of July the heat of the day is always tempered by the westerly winds which rise about 10 AM.... I remarked to the chief the utter want of forest trees, nothing to be seen but a chance dwarf fir. ...He said they had no forests, that is was only in the countries of Salish tribes he had seen forests of one or two days' journey. It had been more than three winters since he had been there, [and] ...the south part of that country belonged to them.

Here I erected a small pole, with a half sheet of paper well tied about it, with these words: "Know hereby that this country is claimed by Great Britain as part of its Territories, and that the N. W. Company of Merchants from Canada, finding the Factory for this people inconvenient for them, do hereby intend to erect a factory at this place for the commerce of the country around."

David Douglas: April 26-28th [1826]. At three o'clock arrived at the Walla Walla establishment, where I was very friendly received by S. Black, Esq., the person in charge. The whole country... is nearly destitute of timber. Dry gravelly and rocky soils, with extensive plains. The largest shrub to be seen on the plains is *Tigarea tridentate*, which we invariably used as a fuel in boiling our little kettle, also several very curious species of shrubby *Artemisia*, and other shrubs which to me were perfectly unknown.

...As the whole country was an extensive plain, I walked on the north side of the river till ten o'clock, when we stopped for breakfast opposite to Lewis and Clark's River, a stream of considerable magnitude, 100 to 150 yards wide at many parts and likewise rapid. Salmon are caught in great abundance as far up as the Falls, and on some of its branches in the immediate vicinity of the Rocky Mountains, passing through a tract of country not less than 1500 miles.



**ground squirrel**  
(*Urocyon columbianus*)

**Latin uro** means tail (from Greek ouro), **citellus** is squirrel. **Columbia** is the poetic name for the Americas of the Western Hemisphere; from the explorer's Latin name Columb with the suffix **-ia** for land or country.

**urologist**: a doctor who specializes in urology, the science of the urinary tract.

**Columbian**: relating to the United States or to the explorer Christopher Columbus.

**Tigarea tridentate** is antelope bitterbrush, a plant native to the Columbia Plateau that provides forage to deer and other animals. The species name is derived from a typical shape of its branches; the Greek god Poseidon's "trident" in classical literature was his three-pronged spear. The genus *Artemisia* includes several species of sagebrush.



## Journey Update 4.5— The 1967 *Udall v. Federal Power Commission* Decision: Halting “So-called ‘Improvement’”

*In the 1950s a group of electrical utilities sought government permission to construct High Mountain Sheep Dam just below the confluence of the Salmon and Snake rivers in Idaho’s Hells Canyon, the deepest canyon in North America. The project would have destroyed the state’s last spawning streams of the Snake River including the famous river named for the species.*

*In 1964 Secretary of Interior Stewart Udall took the unusual step of suing another federal agency, the Federal Power Commission (now the Federal Energy Regulatory Commission), to prevent construction of the dam it had recently licensed. A federal court upheld the commission which prompted Udall to appeal to the U. S. Supreme Court. In a remarkable decision written by Justice William O. Douglas, a Washington state native, the commission’s license was overturned and the prevailing definition of “public interest” brought into question.*

The objective of protecting “recreational purposes” means more than the reservoir created by the dam will be the best one possible or practical from a recreational viewpoint. There are already eight lower dams on this Columbia River system and a ninth one authorized; and if the Secretary is right in fearing that this additional dam would destroy the waterway as spawning grounds for anadromous fish (salmon and steelhead) or seriously impair that function, the project is put in an entirely different light.

The importance of salmon and steelhead in our outdoor life as well as in commerce is so great that there certainly comes a time when their destruction might necessitate a halt in so-called “improvement,” or “development” of waterways. The destruction of anadromous fish in our western waters is so notorious that we cannot believe that Congress through the present Act authorized their ultimate demise.

*William O. Douglas’s 36-year Supreme Court tenure (1939-75), the longest in American history, yielded over 1,200 written opinions and 32 books on topics ranging from world travel to conservation. Born in 1896, Douglas lost his Presbyterian missionary father at a young age, and grew up in difficult circumstances in Washington’s Yakima Valley where his devoted mother nurtured her son’s intellect. He sought to compensate for the effects of infantile paralysis by hiking in the rugged Cascades and he forged lifetime friendships with Yakama Indian elders who acquainted him with their culture and regard for the natural world.*

*Douglas became the court’s leading authority on conservation and Indian treaty rights cases. He authored two key majority opinions on Northwest fishing rights, in which the court finally clarified 19th century treaty language regarding traditional off-reservation fishing sites, to be held “in common with the citizens of the Territory.” Douglas used the opportunity to affirm his vital interest in conserving wild fish runs consistent with his controversial “Wilderness Bill of Rights,” and in restoring recognition of treaty rights contrary to erroneous state supreme court interpretations.*

*Throughout this often stormy era of the 1960s and ‘70s, Douglas regularly returned to the Northwest when the Supreme Court was in summer recess, to again dwell in the places of his youth and further explore Cascade wilderness areas.*

# Chapter Five



*A Vast and Sandy Plain*



## *Cyclical Time*

*“Aspects of physical and spiritual experience reoccur in a cyclical process that transcends time and circumstance and is not bound by linear progression. Time exists in a dimension beyond the course of chronological incidents. Events from the time of myth and personal qualities of persons from former generations are sometimes revealed in dreams or in the sounds of nature for those who listen, and lived out in contemporary experience. Hemp string calendar “time balls” were tied with tiny markers of colored stones, bones, beads, and cloth to record significant events throughout one’s lifetime. Just as events from an individual’s “season” might touch upon another from a different time and place, so humanity’s wisdom and experience should recurrently connect to our lives through power of stories, creatures, events, and sacred words.”*

## Study Guide 5.1 - Warned to Beware

**Mapping:** Pacific Northwest Indian Reservations

**Problem Solving:** This letter described how delighted the women were with what was being traded. If we lived in a society where valuables were traded with goods instead of purchased with money, what do you think would be some of the materials you would trade? What would you not be willing to part with? Why? What would be important for you to have? Why?

**Editing:** The woods along the river have only Tamarac, Pine and Aspen, but not in large quantities. (4 errors)

**Discussing:**

- \_\_\_ 1. Salmon fishing has long been a traditional way of life for Columbia River tribes.
- \_\_\_ 2. Traditional ceremonial dancing was a private matter not shown to outsiders.
- \_\_\_ 3. Besides salmon, the Columbia River was known for sturgeon and trout.

**Constructing:** The aurora borealis or Northern Lights was described in the letter from David Douglas to William Hooker. Describe this phenomenon, including where and when you can best see it and why?

**Connecting:** Timothy Ferris, “Cosmic Vision,” NGM (July 2009); “Hubble Renewed,” NGM (February 2010); William L. Lang, “Great River of the West: Reflections on “an Officially Designated Cultural Landscape,” CM (Spring 2000).

**Sidetripping:** Due to its location and generally favorable viewing conditions, Goldendale, Washington, was chosen by astronomers in 1918 to test German physicist Albert Einstein’s revolutionary Theory of Relativity. They sought to photograph the sun’s corona in an attempt to determine the effect of the sun’s gravitational pull on starlight. Although the initial effort was inconclusive, subsequent experiments around the world confirmed Einstein’s theory that light is affected by gravity.

Today’s **Goldendale Observatory State Park** features an impressive 24.5 inch Cassegrain reflecting telescope and extensive astronomical library open to the public. Stiff prevailing westerlies from the coast blast through the gorge at Hood River, Oregon, which has given rise to a series of electricity-generating wind machines and its reputation as the “**Windsurfing Capital of America.**”



Ft. Nez Perces/Old Ft. Walla Walla  
(J. M. Stanley)

### Wordbuilding-

fatigue-

apparent-

phenomenon-

magnificence-

regulate-

vortex-

diligent-



*Lower Columbia*

**Peter Skene Ogden** (1794-1854) was a tough-minded trader-explorer who worked for the North West Company and then for Hudson's Bay after the companies merged in 1821. He was later assigned to the Columbia Department and undertook far ranging explorations of the Bitterroot Mountains, Blue Mountains, Snake River, and Great Salt Lake region.

**Thompson camped** on the evening of July 10 on the north bank of the Columbia, opposite the mouth of the John Day River—named for American fur trapper **John Day** (1770-1820) who nearly perished on an overland trip to the Northwest in 1812. The following day the party reached thundering Celilo Falls where they visited a Klickitat Indian village. The rigid "Klickitat baskets" were woven of moist cedar root that hardened when dry. These containers protected delicate berries and were highly prized for their usefulness, form, and beauty.



*Klickitat basket*

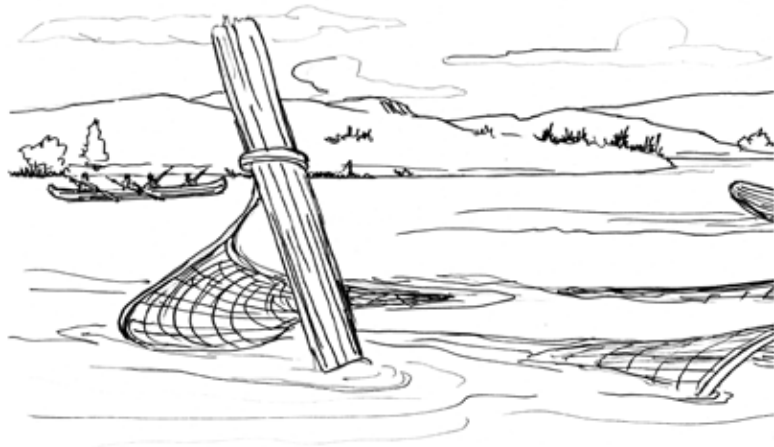
## 5.1 Warned to Beware

David Thompson: July 10th [1811]. A fine morning. Having gone twenty-one miles, we came to eighty-two families. They were well arranged for the salmon fishery. Their seine net was about eight feet in width with strong poles at each end and good lines, and about fifty fathoms in length. They had also dipping nets with strong hoops, and about five feet in depth. Their canoes, as usual with all the tribes, [are] made of the hollow trees drifted down the river. I measured one of them thirty-six feet in length by three feet in width. We stayed about an hour with them smoking and talking....

Proceeding seven miles we put ashore at two lodges containing eighty families with whom we stayed two hours. After smoking had commenced they made us a present of three salmon, for which I paid two feet of tobacco. They then gave us a dance to their singing.... [T]he dancers kept time with an easy graceful step, for which all the Indians are remarkable. The youth formed a separate curved line, the elderly people behind them. The dancing and the singing were regulated by an old chief, and ended by a short prayer for safe return.

On inquiring why they always preferred the curved to the straight line in dancing, the answer was that the curved line gave them the pleasure of seeing each other, and that everyone behaved well, which a straight line did not allow. ...At the end of each dance, which may last a few minutes, they sat down [and] in doing so with an easy motion sunk to the ground. None of us could do the same; we were too stiff. ...Shortly after 6 PM we put up very much fatigued, with a heavy gale of headwind which drifted the sand like dust.

July 11th. A fine morning, having proceeded three miles we came to a village of sixty-three families.... [W]ent on our way over



many strong rapids. Some of them required all our skill to avoid being upset, or sunk by the waves. We passed two villages but could not put ashore. At 2 PM we came to a village of about three hundred families. We put ashore close below them. [T]hey informed me they had heard of white people from the sea, and warned us all to beware of the Dalles and Falls which were close below us. The soil was light and like what we had passed.

...[A]fter I passed in 1811, Mr. Peter Ogden, one of the partners of the Hudson's Bay Company, on his way to Fort Vancouver, came to these Dalles in a canoe with eleven men. Mr. Ogden put ashore and walked down. He advised his men to carry the canoe with the baggage over the carrying place, the road of which is near the bank. The water being low, they preferred running the Dalles. They had not gone far when to avoid the ridge of the waves, which they ought to have kept, they took the apparent smooth water, were drawn into a whirlpool which wheeled them round into its vortex. The canoe with the men clinging to it went down end foremost, and all drowned.

David Douglas to William Hooker (Jr.), Glasgow, Scotland

October 24, 1832

Dear William,

Your kind letter dated just two years ago gives me great satisfaction, as containing accounts of th health and prosperity of yourself, brothers, sisters and parents.... Your description of the late excursions to Ben Lomond and Killin delights me highly. I only wish I could have been of the party, whether to fish, shoot, or botanize. By this time I trust you are almost another Isaac Walton, whose book you should study diligently. ...This mighty stream [the Columbia] is incomparably the noblest in the world for salmon, trout, and sturgeon, whether for quality or abundance.

...I have never seen the Aurora Borealis, about which you inquire, particularly splendid, except occasionally near Hudson's Bay; but as I hope shortly to go so far to the north as to see [the] phenomenon in all its magnificence, you shall perhaps hear of it in my next letter.



*"They had dipping nets with strong hoops"*



**white pine**  
(*Pinus monticola*)

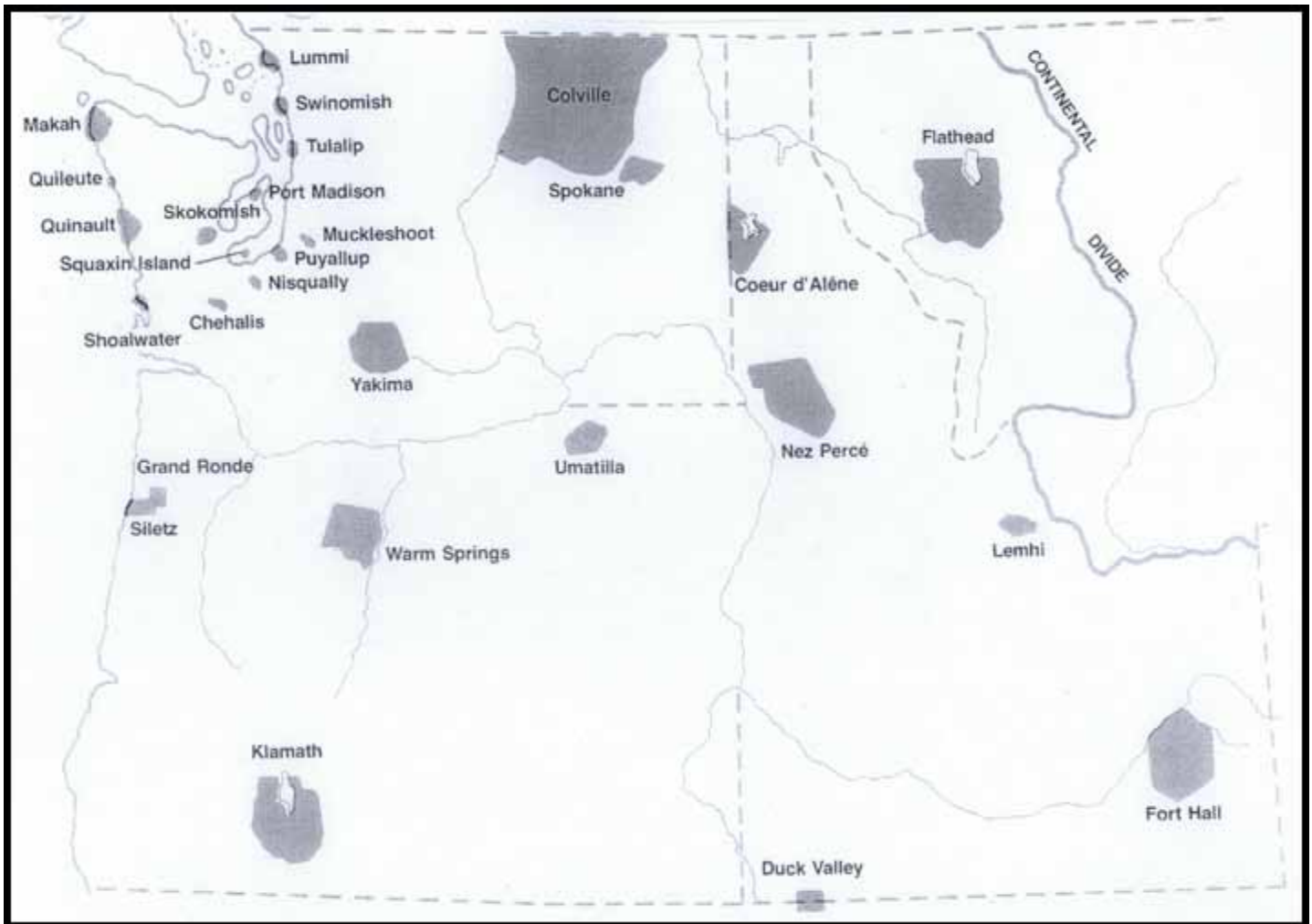
**Greek pitys** is pine; Latin *monticola* means inhabiting mountains.  
*montane*: relating to forested slopes of mountains.  
*intermontane*: an area situated between mountains, a basin.

**The "white people from the sea"** were European and American traders who had explored the Pacific Coast by ship.

**vortex**: a swirling mass, a whirlpool or whirlwind.

**William Hooker, Jr.** was the 16-year-old son of a prominent Scottish botanist who taught at the University of Glasgow. Young William's brother, **Joseph Hooker** (1817-1911), followed in their father's footsteps to become the director of England's famed Royal Botanical Gardens at Kew. **Isaac Walton** (1593-1683) was a popular English writer whose most well-known work, *The Compleat Angler*, celebrated the art and spirit of fly fishing.

## Mapping 5.1 -- Pacific Northwest Indian Reservations



Most of the Pacific Northwest's Indian reservations were established in the 1850s through negotiations conducted by the Washington and Oregon territorial governors, Isaac Stevens and Joel Palmer. The U. S. Supreme Court had ruled early in the 19th century that Indian tribes were to be treated as sovereign nations, so federal government negotiators sought agreements with tribal leaders to relocate Indians to designated areas away from anticipated White settlement. Treaties establishing reservation boundaries included Medicine Creek, Point Elliott, Walla Walla, Hellgate, and Warm Springs.

The areas of many reservations, however, were significantly reduced by the end of the century as miners, farmers, and developers lobbied state legislatures and Congress to allow greater access to tribal lands. In one of the most extreme examples, the Nez Percé Reservation in northern Idaho covered approximately 7.7 million acres when established in 1855, but was reduced to nine-tenths of its original size in 1867. The latter agreement, known to many Nez Percés as the "Thief Treaty," led to the Nez Percé Indian War of 1877 in which Chief Joseph, Looking Glass, and other tribal leaders led their people on a tragic 1,700-mile attempt to escape to Canada. Most members of the fleeing bands who survived the ordeal were captured near the border in northern Montana and exiled to Indian Territory (present Oklahoma) before being allowed to return to the Northwest in the following decade.



## Study Guide 5.2 - Water As If Alive

**Seeking:** Namesake for The Dalles Dam and the French term’s meaning.

**Problem Solving:** Thompson mentions “steep high walls of basalt rocks with sudden sharp breaks in them which were at right angles to the direction of the wall of the river.” Take a walk around the grounds of your school and find an area approximately 100 x 100 feet. Find objects in your area that contain angles (right, obtuse, acute) and sketch these objects. After you finish your sketch use a protractor to record the actual angle measures from your sketch. You must have at least one of each type of angle.

**Editing:** The river here continues to the West and has a strong current. Very many musketoes are about & very troublesome. (3 errors)

**Discussing:**

- \_\_\_ 1. Because of the current and whirlpools, Thompson and his companions kept their canoes near shore.
- \_\_\_ 2. Thompson treated the Indians along the Columbia warily because they appeared threatening.
- \_\_\_ 3. Collecting samples of various flora species was a daunting task due to the traveling conditions.

**Constructing:** The native people told David Thompson that five different species of salmon swim up the Columbia River from the Pacific Ocean. What are they and how do they differ from each other?

**Connecting:** Michael Parfit, “When Humans Harness Nature’s Forces,” NGM (November 1993); Robert C. Carriker, “Ten Dollars and a Song [Woody Guthrie],” CM (Spring 2001); Carol Craig, “Wy-am: Echo of the Falling Waters—Celilo Falls,” CM (Spring 2007).

**Sidetripping:** The Maryhill Museum of Art south of Goldendale, Washington, is situated on a high bluff to provide a grand panorama of the lower Columbia River Gorge. Built in Flemish chateau style as a residence for financiers Sam and Mary Hill, the mansion today contains impressive collections of European and Northwest Indian art. It was dedicated by Queen Marie of Romania who donated gilded furniture from her throne room and a priceless collection of Russian icons. Hill was a pacifist and nearby Stonehenge War Memorial, a replica of Britain’s ancient structure, was built by him to commemorate the dead of World War I.



Wife of Til-au-kite, Cayuse  
(P. Kane)

**Wordbuilding-**

immense-

aggression-

durable-

flora-

decent-

*perseverance-*

*ardor-*



*Lower Columbia*

*The Dalles was the great lower Columbia inter-tribal fishery along the long and treacherous rapids downstream from Celilo Falls, from French “dalle” meaning “flagstone” or “sluice.” The area was usually too dangerous to travel by water so canoes and supplies had to be portaged. A Methodist mission was established by **Jason Lee** (1803-45) at this strategic location in 1838.*



*Celilo's Tsagaglatal*

*“She saw me before I saw her, of course. Tsagaglatal's red-paint gaze found me from flat vertical basalt ten feet above my head. ...Her eyes were raccoonish concentric rings, and a queer exaggerated grin spread from a small square mouth. Like any image of face in two dimensions, but more so, her eyes followed my movement. ... Her rock face was weather-worn and pocked with bullet holes, but Tsagaglatal was still watching, just as she had when Celilo was the center of the world.” –Robin Cody*

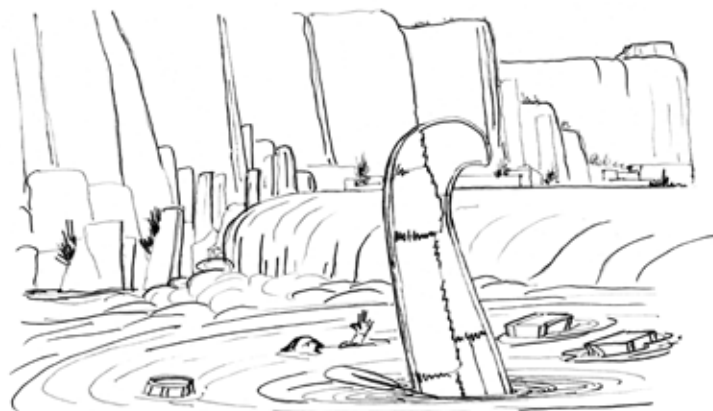
## 5.2 Water As If Alive

David Thompson: July 12th [1811]. We were now at the head of the Dalles, ...steep high walls of basalt rocks with sudden sharp breaks in them which were at right angles to the direction of the wall of the river. These breaks formed rude bays, under each point was a violent eddy, and each bay a powerful, dangerous whirlpool. These walls of rock contract the river from eight hundred to one thousand yards in width to sixty yards, or less. Imagination can hardly form an idea of the working of this immense body of water under such a compression, raging and hissing, as if alive.

Last evening when the old men [left] us, they promised to send us men and horses to take everything over the carrying place, but after waiting for them some time, we set to work and crossed over a tolerable good path to a small sandy bay. Here we had the pleasure of seeing many gray colored seals. They were apparently in chase of the salmon. ...My interpreter with his wife left us at the great village, but his own people are higher up on the river. I paid him as well as I could for his services, where were of great service to us.... He is a fine, steady character, cheerful [and] often smiling but never laughing.

...I may remark in justice to the Indians we have passed, that however numerous and poor, not a single insult or aggression was attempted. Everything we had was highly valuable to them, yet not a single article was stolen from us. ...[E]verything and every part of their conduct was with decency and good order.

David Douglas: June 20th [1826]. At the rapids an almost incredible number of salmon are caught... in the following manner: Before the water rises on the approach of summer, small channels are made among the stones and rocks, two feet broad and running out into various branches over which is placed a platform for the person to stand. Several channels are made, some higher, some lower, so as to suit the water as it falls or rises.



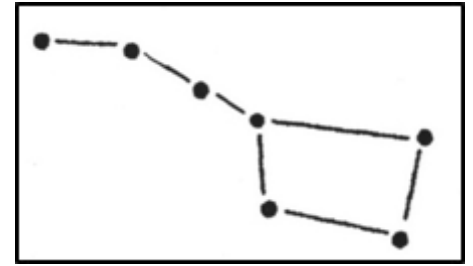
A scoop net or net fastened round a hoop at the end of a long pole, twelve to fifteen feet, is all that is used.

The person stands on the extremity of the stage or platform and places his net at the top of the channel, which is always made to fit it exactly, and it is carried down on the current. The poor salmon, coming up his smooth and agreeable road as he conceives it to be, thrusts himself in the net and is immediately thrown on the stage. The handle or pole of the net is tied to the platform by a rope lest the pressure of water or strength of the fish should snatch it out of the hands of the fisher.

The fish are of good quality, much about the same size of those caught in the rivers of Europe, fifteen to twenty-five pounds generally, some more. I measured two, the one three feet, five inches from the snout to the extremity of the tail, ten inches broad at the thickest part, weighing about thirty-five pounds; another three feet, and nine inches broad, a little lighter.

John Townsend: September 12th [1834]. Mr. Nuttall's large and beautiful collection of new and rare plants was considerably injured by the wetting it received. He has been constantly engaged since we landed yesterday in opening and drying them. In this task he exhibits a degree of patience and perseverance which is truly astonishing. He sits on the ground and steams over the enormous fire for hours together, drying the papers and rearranging the whole collection, specimen by specimen, while the great drops of perspiration roll unheeded from his brow.

Throughout the whole of our long journey, I have had constantly to admire the ardor and perfect indefatigability with which he has devoted himself to the grand object of his tour. No difficulty, no danger, no fatigue has ever daunted him, and he finds his rich reward in the addition of nearly a thousand new species of American plants... to the teeming flora of our vast continent.



*The Wasco and Wishram Indians of the Lower Columbia knew the stars of the Big Dipper's handle as Five Wolf Brothers and their Little Dog. Coyote led them along a ladder of arrows that Chickadee had shot to pierce the sky in order to hunt the Two Grizzlies, or the two side stars of the Dipper. Because the stars were massing along the Great White Trail (Milky Way), Coyote made and climbed a second arrow ladder to spread the stars into constellations like the good luck Knife of Stars that appeared in the west. The Knife is probably the front of the constellation Leo, location of the spectacular Leonid meteor showers every November.*

*Young Philadelphia ornithologist John Kirk Townsend (1809-1851) traveled overland to the Northwest in 1834 with fur trader Nathaniel Wyeth and Harvard naturalist Thomas Nuttall. Townshend and Nuttall collected and described many birds and plants unknown to American science and many of their specimens were used by famed artist-author John James Audubon in his spectacular book, Birds of America.*

*19th century Columbia River Chinook salmon migrating upstream commonly weighed as much as 80 pounds. Sturgeon often lived for over a hundred years and the largest have reached lengths of 16 feet and weighed 1 ½ tons.*

*"The canoe with the men clinging to it went down"*

## Literature 5.2 -- "The Creatures of Cloudy Mountain" by Mary Jim Chapman

Two boys named Bearcub and Yellow Bird  
traveled with their families in the fall time  
to pick berries and hunt by down in the mountains.  
One morning they got ready to gather huckleberries  
among the pines of Kooskie Canyon.  
The boys asked their fathers  
if they could go hunting instead.  
Before leaving, Yellow Bird's grandmother warned them,  
"Don't climb up Teham-teham, Cloudy Mountain."  
Cloudy Mountain was a mysterious place,  
different than all the other mountains,  
a forbidden high place.

Bearcub and Yellow Bird had seen it in the distance  
when they rode their horse several days before.  
The top could be clearly seen in the distance  
but clouds appeared at its top when one came too close.  
That was the time to go some other way!  
The elders spoke of strange beings on Cloudy Mountain  
who were not of this world.  
The ancient ways respected these creatures  
who guarded the mountainside.

The boys walked with their bows  
in search of rabbits and other small game.  
Bearcub wondered  
why the mountain needed to be guarded.  
"Because it is the home of the Animal People,"  
said Yellow Bird.  
But Bearcub wanted to take a look.  
The two boys turned from the trail  
and Bearcub led toward Teham-teham.  
Soon they could see it in the distance,  
great wisps of gray clouds  
forming above on the higher slopes.

After walking at length through the pines,  
Bearcub stopped and drew his bow.  
Yellow Bird looked not far in the distance  
and saw a slight movement in the bushes.  
The furry face of a timber rabbit appeared.  
But something was strange;  
its body was red like ocher.  
Neither boy had ever seen a red rabbit.  
Bearcub paused, but released his arrow  
and it seemed to head straight for the rabbit.  
But it jumped front of the bush unharmed,  
and stood up in full view of the boys.  
They were so startled  
that neither reached for another arrow.  
The creature sniffed with its nose,  
seemed entirely unafraid and spoke.  
"You have wandered from your path;  
you do not belong here.  
Return at once to the people."

Then it ran away.  
Yellow Bird told Bearcub  
he was going back.  
Bearcub ridiculed his younger friend,  
"No warrior was afraid of rabbits!"  
So they continued up the misty trail,  
into fir and cedar forest  
and the path seemed to disappear.  
As their way wound around a big rock,  
they stopped in their tracks.  
An large white grizzly bear sat  
on the side of the trail.  
Before they could run  
Tutwit'aya loudly growled another warning:  
"You do not belong here!  
Turn back while you can!"  
He then crawled off into the darkening mist.

Yellow Bird was scared.  
He turned back and told Bearcub  
they must not go any farther.  
Bearcub started back as well  
but then shouted for his friend to stop.  
"These are only disappearing animals," he said,  
"and mean us no harm.  
We must be close to the top."  
"I have seen enough of this place,"  
Yellow Bird answered  
and continued down the stony slope.  
Bearcub paused,  
turned around,  
and continued up alone.

The climb became steeper with no pathway  
but the boy continued with strength from his excitement.  
A stand of tall evergreens near the top  
moved with the swirling fog.  
As Bearcub approached the trees,  
a tall creature appeared from the mist  
clad entirely in blue feathers.  
"You have come too far,"  
he scolded the boy,  
"and you must turn back here.  
Do not go beyond these trees!"  
The birdman raised his arms  
and flew off over the meadow.  
But Bearcub had made up his mind,  
and was going to the end.  
He started up again and disappeared.

The families remained in the area for many days  
waiting and waiting.  
But Bearcub never came back.

## Study Guide 5.3 - Grand Beyond Description



Columbia Cascades  
(J. M. Stanley)

**Heading:** Coordinates for Portland, Oregon.

**Problem Solving:** Fifteen chum salmon were randomly caught in the Columbia River. Their lengths measured (cm): 74, 71, 88, 77, 74, 82, 75, 68, 76, 72, 74, 72, 74, 76, and 82. What is the mean length of the salmon? What is the median? What is the mode? If you were to describe the “average” length of salmon caught, what would you say? Why would you say that is average? Explain your thinking.

**Editing:** Wild Geese, in a gale of wind can fly at the rate of 60 miles per hour. (3 errors)

**Discussing:**

- \_\_\_ 1. The Indians knew a salmon only spawns in a river with the same species of salmon.
- \_\_\_ 2. The tribes were proud of their culture, homes, and lifestyles.
- \_\_\_ 3. Much of the Columbia River from mouth to source had already been surveyed by Thompson’s time.

**Constructing:** People did not have to worry about species becoming extinct in 1811. Now, there are thousands of animals on the threatened or endangered species list. Choose an animal on this list preferably from your state (you will have to do some research) and write a persuasive letter to your state representative explaining what should be done to help save this animal. Include some background knowledge about this animal, including where it lives, what it eats, what is killing off the population.

**Connecting:** Kevin Krajick, “Solace in the City [Portland],” NGM (September 2003); Joel Achenbach, “The 21st-Century Grid,” NGM (July 2010); Weldon W. Rau, “Through the ‘Magnificent Country’: The Columbia Gorge and Early Emigrant Travel,” CM (Winter 2001-02).

**Sidetripping:** The American West Steamboat Company operates the paddle-wheeler Queen of the West along the spectacular vistas of the **Columbia River Gorge National Scenic Area**. The four-story Queen is a modern ship based in Portland, Oregon. She is outfitted with 19th century interiors and also tours portions of the historic upriver routes followed by David Thompson and David Douglas. Portland’s **Oregon Museum of Science and Industry (OMSI)** is one of the nation’s premier science and technology exhibitions. It features the Murdock Planetarium, one of the largest in the country, and the fully operational USS Blueback, a fast-attack submarine.

### Wordbuilding-

grandeur-

intolerable-

culinary-

profusion-

surpass-

melancholy-

aperture-



### Lower Columbia

*The stands of ash and aspen commence near present Lyle, Washington. Thompson proceeded downstream to camp near the rapids of The Cascades (present North Bonneville) where the legendary “Bridge of the Gods” was located. According to the local Chinookan peoples, a gigantic stone bridge once spanned the Columbia River at this point. The bridge was the remnant of a mountain that was destroyed during a battle in which Coyote defeated Thunderbird in the time of the Animal People.*

*Geologic evidence indicates that the Columbia River may have been dammed at this place several centuries ago when a portion of nearby Table Mountain collapsed. A natural bridge may have formed as the river cut a new channel through the barrier.*

*A “cutaneous disorder” (ku-tá-ni-us) is a skin disease; from the Latin cutis (skin) + the suffix of quality -eous.*

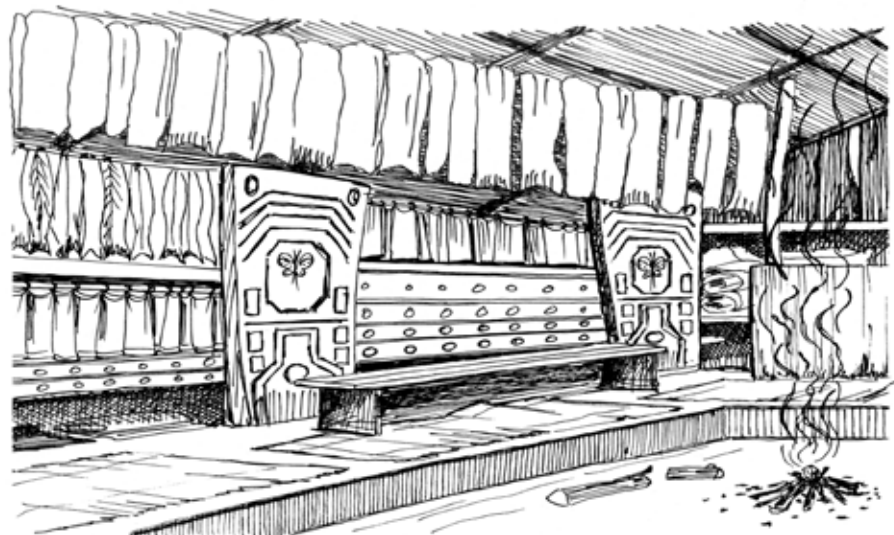
## 5.3 Grand Beyond Description

David Thompson: July 12th [1811, continued]. Having proceeded sixteen miles, we saw the first ash trees with willow and aspen.... Continuing nine miles we saw two mountains to the westward, each isolated and heavily capped with snow. On each side of the river high hills are seen, their summits covered with snow. Both sides of the river have woods of aspen, cedar, ash, and willow.... Having descended forty miles, the greatest part fine steady current, we came to a village of houses built of logs. ... On the left bank is a village of log houses... At the desire of the chief we camped near his village at 5 PM and bought two good salmon....

The chief came and invited me to his house, which was near to us. It was well and strongly built of logs, the inside clean and well arranged, separate bed places fastened to the walls, and raised about three feet above the floor which was earth and clean. A number of small poles were fixed in the upper part on which were hanging as many salmon drying and smoking as could be placed, for the salmon are fat and good on their first arrival....

The salmon that enter the Columbia are of five species as pointed out to me by the Indians. The smallest are about five pounds in weight, and the largest from fifty to fifty-five pounds. The Indians say that no two species enter the same stream to spawn, and that each species enters a separate river for that purpose. One of the smaller species is named quince sous, which amused the fancy of my men, it being the name of small silver coin.

I stayed about an hour in the house, he kept talking to me, pointing out the arrangements of his house, and making use of as many English words as he had learned from the ships when trading with them, some of them not the best. The fireplace was on the left-hand side of the



door, for which some earth had been taken away to keep the wood steady on the fire. There was no aperture for the smoke, in order to give the salmon the full benefit of it. The fireplace was surrounded with rush mats, the whole appeared comfortable... but to me was intolerably close and warm. I was glad to breathe fresh air and get to my men.

The last five or six villages we have passed, as well as these people, appear to live wholly on salmon, without berries, roots, or any other vegetable, yet all appeared healthy and no cutaneous disorders were perceived. For the first time since we entered this river we had the pleasure of cutting standing trees for fuel. The driftwood was good, but so much sand adhered to it as blunted the edges of our axes, and to sharpen them we had only a file....

July 13th. We stayed till 9½ AM but could not procure a guide for the rapids and falls. We proceeded three miles of which we carried one mile of a steep rapid. We continued our course and camped at 8 ½ PM. We passed several houses on each side of the river. ...[An] Indian in his canoe came to us and gave us a salmon. We camped a short distance above Point Vancouver, from which place to the sea the river has been surveyed....

David Douglas: Monday, March 20th [1826]: The scenery at this season is grand beyond description. The high mountains in the neighborhood... are for the most part covered with pines of several species, some of which grow to enormous size, [and] loaded with snow. The rainbow [forms] from the vapor of the agitated water, which rushes with furious rapidity over shattered rocks and through deep caverns producing an agreeable although... melancholy echo.... The reflections from the snow on the mountains, together with the vivid green of the gigantic pines, form a contrast of rural grandeur that can scarcely be surpassed.



*white salmon*  
(*Oncorhynchus keta*)

*Russian oncorhynchus* means "hooked snout," and keta is the Koryak name by which this species was known when first described by the 19th century naturalist Georg Steller during his travels in the Russian Far East in the 1700s.

The "quinze sous," named for a French coin, was probably the steelhead trout (*O. mykiss*). Members of the salmon family, steelhead trout are a form of rainbow trout that lives for a considerable time in the ocean before migrating upstream to spawn in freshwater streams. Fish that migrate upstream from the sea to spawn are called anadromous (*a-nád-ra-mus*); from the Greek prefix *ana-* (again) + *dromos* (run).

**Point Vancouver** is located approximately 130 miles upstream and was named for famed British explorer **George Vancouver** (1757-98) who served on James Cook's Third Pacific Voyage from 1776-78. Vancouver went on to lead two expeditions in the 1790s to chart the coastlines of the Pacific Northwest and named many locations in present western Washington and British Columbia including Whidbey Island, Puget Sound, and Mt. Rainier.

*"The chief came and invited me into his house"*

## Biome 5.3—The Lower Columbia Valley: A Temperate Grassland Biome

**Columbia (Mark O. Hatfield) Wilderness Area**—This protected area covering 65,000 acres of grassland and forest is located on the northern slopes of Oregon’s Mt. Hood along the Columbia River Gorge. The region abounds in waterfalls and in the higher elevations hosts old growth stands of Douglas fir, hemlock, and cedar. It is named for former Oregon governor, senator, and conservationist Mark O. Hatfield.



**Canada Goose (*Branta Canadensis*)**—Known most definitely for its high or low pitched honk and its v-shaped flock flying pattern, the Canada goose is usually around 3 ½ feet with a wingspan of about 5 ½ feet. Its back and wings are gray and brown while the bill and feet are black. A goose will mate for life, and the male goose, or gander, will always assume the responsibility of protecting the nest of his mate. When flying, the goose seems deceptively slow, but may actually fly at speeds up to 80 miles per hour.



**American Toad (*Bufo americanus*)**—The American toad can be found in virtually any place that provides a damp environment and considerable concealment. It is usually approximately 4 inches, but is commonly found to exceed a length of 5 ½ inches. It may be easily identified by its warty, rough skin and pairs of dark spots on its back. Its diet is composed of worms, beetles, ants, slugs or any other small animal that can be easily caught.



**Tiger Swallowtail (*Papilio glaucus*)**—Common in most of the United States and southern Canada, this butterfly spends the winter in the pupal stage as a caterpillar and, by May, has changed into an adult butterfly. It relies much on the leaves of birch, poplar, ash, cherry, mountain ash, willow, and brasswood for food. Males are yellow with a black border, and females, usually larger than males, have broader black stripes and lack the claspers present on the male’s abdomen. Both have a wingspan of about 5 inches.



**Mountain Laurel (*Kalmia latifolia*)**—Commonly growing in rocky and sandy soil, this shrub is known for its ability to survive in places that others could not. It is usually found in dense thickets that are typically about 20 feet high, but have been known to reach heights of 40 feet. When they bloom, the buds of this shrub become beautiful pink and white flowers usually ¾ inches in diameter. Mountain laurel is sometimes even harvested as a cash crop.

**Animal Adaption**—Numerous spectacular waterfalls and other riverine features are located along the south (Oregon) side of the Lower Columbia River Valley west of the Cascade Crest. These areas have provided ideal habitat for migratory waterfowl for thousands of years. While humans use technology for eating and drinking, making utensils such as knives and forks, these birds must use their beaks and feet. Shape, size, and even color of their “tools” are important adaptations birds have evolved in order to survive. Make a chart listing the various waterfowl encountered by David Douglas and his contemporaries. Research each species’ special environmental niche and its feeding behaviors. Draw some from life or find a good picture and make a sketch of each kind. Note especially the type and shape of beaks and feet. List as many functions on the chart for both beaks and feet.



## Study Guide 5.4 - The Pacific Ocean

**Seeking:** Namesake of the Columbia River.

**Problem Solving:** If the average person walks 5 km/hr, how long would it take the group to travel the seven miles from the sea to the trading post and back again?

**Editing:** He said latin is the only language the devil does not understand & cannot learn. (3 errors)

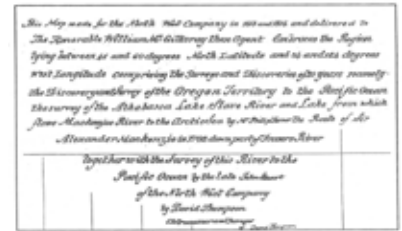
**Discussing:**

- \_\_\_ 1. The men were thrilled to have finally reached the Pacific Ocean.
- \_\_\_ 2. The old chief of the Chinook Indians, Comcomly, was a feeble man.
- \_\_\_ 3. The famous Fort Astoria was a bit of a disappointment for the Thompson group.

**Constructing:** Finally! The group saw the Pacific Ocean for the first time. Can you picture seeing the ocean for the first time? Perhaps you even remember it. Write a descriptive essay that details what you might have experienced during your first visit to the ocean. Think about the beach, driftwood, ocean, weather, smell, and anything else you can think of.

**Connecting:** Patricia N. Limerick, “This Perilous Situation, Between Hope and Despair [Columbia River],” CM (Fall 2000); André Peñalver, “Private Republic: The Hudson’s Bay Company in the Pacific Northwest,” CM (Spring 2010).

**Sidetripping:** **Ft. Canby State Park** on Cape Disappointment near Ilwaco, Washington, offers dramatic views of the Pacific surf and outstanding exhibits at the Lewis and Clark Interpretive Center. **Lewis and Clark National Historic Park (Ft. Clatsop)** is located across the river in Astoria, Oregon. The cape’s name was given by the English explorer-trader John Meares in 1788 after seeking to enter the area’s rumored “great river” but was prevented from doing so by inclement weather. Four years later the American Robert Gray became the first mariner to enter the Columbia River and helped secure the nation’s claim to region drained by its waters.



David Thompson’s Northwest Map Legend (1814)

### Wordbuilding-

isthmus-

terminate-

proprietor-

civil-

surmount-

undulate-

commodious-



### ***Middle Columbia River***

**Chinook Chief Comcomly** (1754?-1830) befriended Lewis & Clark and other early Northwest explorers. His daughter, Princess Sunday (Raven) married Hudson's Bay Company trader Archibald McDonald and their son was **Ranald McDonald** (1824-94) who became fascinated with Japanese culture after a boyhood encounter with three Japanese fisherman who shipwrecked on the Pacific coast. McDonald learned the rudiments of the Japanese language from the men and ventured in the 1840s to become the first foreigner to teach English in Japan through special arrangement with the Japanese shogun since contact with outsiders at the time was strictly forbidden.

**Dr. John McLoughlin** (1784-1857) was directed by Hudson's Bay Company Governor James Simpson to establish Ft. Vancouver as the Columbia Department's headquarters in 1824. McLoughlin's capable leadership and respect for the native peoples advanced the region's fur trade and led to a larger European-American presence in the Northwest, which earned him the nickname "Father of Oregon." McLoughlin also encouraged agricultural development and the area's first wheat and barley crops were planted there in 1826 as well as an apple tree the oldest in the Pacific Northwest, that is still living.

## 5.4 The Pacific Ocean

David Thompson: July 14th [1811]. We continued our journey, amused with the seals playing in the river. ...[W]e arrived at Tongue Point, which at right angles stretches its steep, rocky shores across the river for a full half a mile, and brought us to a full view of the Pacific Ocean which was to me a great pleasure. But my men seemed disappointed. They had been accustomed to the boundless horizon of the great lakes of Canada, and their high rolling waves. From the ocean they expected a more boundless view, something beyond the senses which they could not describe. My informing them that directly opposite to us, at the distance of five thousand miles was the Empire of Japan added nothing to their ideas, but a map would.

The waves being too high for us to double the point, we went close to the river bank where there is a narrow isthmus of one hundred yards. [We] carried across it... near two miles to the fur trading post of Mr. J. J. Astor of the city of New York, which was four low log huts, the far-famed Fort Astoria of the United States. The place was in charge of Messrs. [Duncan] McDougall and [David] Stuart who had been clerks of the North West Company, and by whom we were politely received. They had been here but a few months, and arriving after a long voyage around Cape Horn in the rainy season without sufficient shelter from tents, had suffered from ague and low fever....

The place was about seven miles from the sea, and too much exposed to the undulations of the waves. The quality of their goods for trade was very low.... The next day in my canoe with my men I went to Cape Disappointment, which terminates the course of this river, and remained until the tide came in.

...On the east side of Cape Disappointment is a bay ...in which is situated the village of the Chinooks whose Chief is the noted Comcomly. [He] is a friend of the white men, and by influence and example

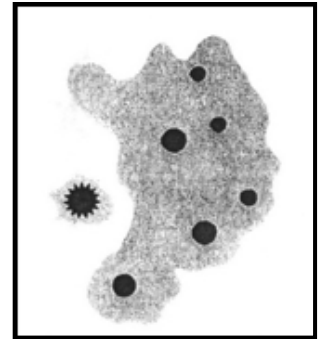


kept order as much as possible. He was a strong, well made man; his wife was a handsome woman, rosy cheeks, and large hazel eyes, and being well dressed with ornaments of beads and shells, had a fine appearance. Both were in the prime of life.

Ross Cox: In the month of July [1811] Mr. David Thompson, astronomer to the Northwest Company, of which he is also a proprietor, arrived with nine men in a canoe at Astoria from the interior. This gentleman came on a voyage of discovery to the Columbia, preparatory to the North West Company forming a settlement at the entrance of the river. He remained at Astoria until the latter end of July, when took his departure for the interior. Mr. David Stuart, with three clerks and a party of Canadians, accompanied him for the purpose of selecting a proper place on the upper parts of the river for a trading establishment.

We also visited Fort Clatsop, the place where Captains Lewis and Clark spent the winter of 1805-1806. ...The logs of the house were still standing, and marked with the names of several of their party.

David Douglas: Monday, April 11th (1825). We went up the river to the Company's establishment, distant from the entrance about seven or eight miles. We learned that they had nearly abandoned their fort there and had made one seventy miles up the river on the opposite side, to which all persons in their employ were to repair in a few days. I went on to shore... and was very civilly received by a Mr. McKenzie, the other person in authority. He informed me they were about to abandon the present place for a more commodious situation 90 miles up the river on the north side. The Chief Factor, John McLoughlin, was up the river at the new establishment....



*Oregon's Klamath Indians knew the Pleiades as Children Who Announce Dawn. The young blue-white giant star **Maia** (my'-a) is located in the haze of a nebula near the center of the Pleiades cluster. The month of May its namesake since the Pleiades appear in spring across much of the Northern Hemisphere and signaled a new season of hunting and gathering. The Klamath's Northern Paiute neighbors called the Pleiades Coyote's Daughters. The Milky Way was the Dusty Trail that was taken south by departed souls to a beautiful land in the Sky World.*

*In the summer of the "Great Migration" of 1844, McLoughlin welcomed many American immigrants who had traveled westward for 2,000 miles on the Oregon Trail. Among them were the first American settlers who would settle including the families of **Samuel Crockett, Michael T. Simmons, James McAllister, and former fur trapper George W. Bush** (1779-1863), a Black from Missouri barred from owning land in Oregon Territory. According to family accounts, Bush had worked with American Fur Company trader Joseph Robidoux on the Great Plains before trapping for the Hudson's Bay Company on the Pacific Slope in the late 1820s.*

*"the far-famed Fort Astoria  
of the United States"*

## Literature 5.4 -- "Salmon's Journey" by Andrew George/White Eagle (Palouse-Nez Perce)

In the time of the Animal People  
there was a big village  
down along the river.  
Salmon Man lived there.  
Many maidens wanted him  
'cause he was strong and brave.  
But Salmon only had eyes for  
the beautiful sister,  
the sister of the Wolf Brothers.

Salmon Man thought it over  
when the Wolf Brothers were away.  
They were away,  
gathering firewood for sweatbaths.  
Salmon made up his mind  
to go to their sister's lodge.  
He wore a fancy headdress,  
feathers green and red.  
He stood outside, and she knew.  
She could tell by the sound of his walk  
and his pleasing scent.

Salmon Man waited outside.  
He stood at the Wolf Sister's door  
for a while.  
Then he decided to leave.  
But the Wolf Sister knew he was there.  
She pulled back the door.  
"Do you want to visit me?" she asked.  
Salmon told her, "I want you  
to come with me. If you want to  
come,  
then get ready to leave."  
The Wolf Brothers were jealous  
of Salmon Man.  
He knew they would try to get him.

The Wolf Sister gathered her things  
while Salmon Man watched outside.  
Soon she was ready to go  
and called for his help  
to carry the bundles.  
But one of the Wolf Brothers returned,  
came along the river with firewood.  
He saw her clothing wrapped in hides.  
"Are you planning to go with him?"  
"You belong with us," her brother said.

Salmon Man says,  
"She's comin' downriver with me."  
And they loaded the bundles in a canoe.  
"They won't get far!"  
the Wolf Brother told the others.  
He ran off to tell his brothers.

The Wolf Brothers made plans,  
they wanted to kill Salmon Man  
for taking their sister.  
They ran to Old Lady Spider,  
all of them, and said to her,  
"You can do anything;  
your poison can kill Salmon."  
But the old lady said,  
"How can I do this to my friend?"  
So they went to Grandfather Coyote.  
They said, "You must help us,  
Salmon Man took our sister."  
"You're all my relatives," he said.  
"How can I hurt anyone in my family?"

The Wolf Brothers went on,  
they traveled faraway  
to Rattlesnake's lodge.  
"You can kill Salmon Man  
with a single bite," they told him.  
He thought it over, he told them,  
"Why hurt someone  
who does not bother me?"  
The Wolf Brothers told Rattlesnake  
that Salmon had wronged them.  
They told him, that is why.  
They offered him warm furs  
for winter, and other goods.  
He agreed to help.  
The Wolf Brothers put Rattlesnake  
in the front of Salmon's canoe  
where it rested by large rocks.  
Salmon Man did not see.

Salmon Man stepped into the canoe.  
He was carrying a bundle  
of the Wolf Sister's belongings.  
He felt a sharp sting,  
the pain of Rattlesnake's bite.

Salmon Man turned around;  
he fell onto a flat rock.  
A Wolf Brother drew his bow.  
He shot Salmon Man in the head.  
That is how a tiny piece  
fell in the water, and floated away.  
The others fell upon him,  
cutting with flint knives,  
and threw the pieces onto the sand.

Rain fell for five days and five nights.  
The little piece of Salmon Man  
that fell during his death struggle  
was carried down the river.  
Life soon moved inside.  
A smolt grew and began to swim.  
Faraway it went and became stronger,  
faraway beyond the mountains.  
Young Chinook grew in the ocean.  
One day he was ready to return home.

He knew his father had been killed.  
He swam past Celilo and found  
the familiar waters of the big river.  
Sometimes he walked along the shore,  
and then returned to the water.  
He came to the lodge of Old Lady Spider  
and saw her spinning in the corner.  
"What are you doin' there?"  
"Just makin' clothes," she said.

Young Chinook reached  
his father's old home.  
He stepped ashore and  
onto Sandpiper's nest.  
He broke Sandpiper's leg.  
"Tell me where the Wolf Brothers live;  
I'll fix your leg."  
Sandpiper told him  
and warned of Rattlesnake  
living in a high canyon cave.  
Young Chinook fashioned a leg  
from a twig for Sandpiper.  
He traveled a long time  
and saw Rattlesnake's home.

## Study Guide 5.5 - Strong to Live

**Heading:** 46° 11' N. Latitude, 123° 49' W. Longitude (river town)

**Problem Solving:** Astoria, Oregon, is in the Pacific Time Zone. The distance from Astoria to Greenwich (nine time zones away) is calculated at 50 miles per degree of longitude. This is because each degree of longitude at 45° North Latitude is approximately 74% as wide as it is at the Equator. Therefore, approximately how far is it from Astoria to Greenwich? Using the information given here, could you calculate the circumference of the Earth?

**Editing:** Armed with Iron, man becomes Lord of the Earth no other metal can take it's place. (3 errors)

**Discussing:**

- \_\_\_ 1. Whites brought disease to the less immune Indian nations.
- \_\_\_ 2. Douglas could be also considered a pioneer mountaineer.
- \_\_\_ 3. The Vancouver plain was ideal for cultivating grain and vegetable crops.

**Constructing:** One of the common wild plants of the Pacific Northwest is the Oregon grape, the state flower of Oregon. Do some research to find out if the fruit of the Oregon grape is edible. Work with several other students to create a bulletin board display of certain edible wild plants of the Pacific Northwest.

**Connecting:** James Darling, "Whales: An Era of Discovery," NGM (December 1988); Mark Miller, "Oregon's Lovely, Lonely Coast," NGM (December 1979); William Moreau, "David Thompson's Claims [Ft. Astoria]," CM (Summer 2001).

**Sidetripping:** **Ft. Vancouver National Historic Site** in Vancouver, Washington, is a restoration of the Hudson's Bay Company's established by Dr. John McLoughlin in 1829 as headquarters for the far-flung Columbia District's twenty-eight trading posts. The fort features extensive vegetable and flower gardens with heritage botanical specimens and the first apple tree grown in the Pacific Northwest that continues to bear. Prominent American army leaders including Ulysses Grant and George Marshall served at nearby **Vancouver Barracks**, which is located adjacent to **Pearson Air Museum**.



Ft. Vancouver  
(G. Sohon)

### Wordbuilding-

acquire-

dread-

dense-

summit-

provision-

accompany-

smallpox-



### Lower Columbia

**John Coxe** (c. 1779-1850) was a royal retainer at the court of **Hawaiian King Kamehameah I** and later worked for the North West and Hudson's Bay companies with other Hawaiians (Kanakas) who were highly regarded for their seafaring skills and as laborers. He was noted for his strength and reliability and accompanied the Hawaiian king on his visit to George IV in England in 1823. Coxe returned to the Kanaka village at Ft. Vancouver.

**Dr. McLoughlin** also organized the **first school** in the Northwest at the fort during the winter of 1832-33 for children of company employees and local Indians, both girls and boys, including Ranald McDonald and David McLoughlin. Their teacher was Dartmouth College graduate **John Ball** who had ventured west on the Oregon Trail with Astorian **Nathaniel Wyeth** in 1832. With 24 students who spoke Chinook, Cree, Klickitat, Gaelic, French, and English, Ball taught English, arithmetic, and manual training using a motto unusual for the time—"to make it [learning] pleasant." Catholic, Anglican, and Hawaiian Christian church services were also held weekly at the fort.

**David Stuart** (1765-1853), a native of Scotland, was one of the founders of Ft. Astoria who also helped build Ft. Okanogan and Ft. Spokane for the American Fur Company on his 1811 return journey with David Thompson.

## 5.5 Strong to Live

David Thompson: July 22nd [1811]. Having procured a few articles to assist me in buying provisions, for which I gave my note, and having found the latitude of Astoria to be 46° 13' 56" North Latitude, 123° 36' 16" West [Longitude] of Greenwich, we prepared for our return up-river. With Mr. McDougall I exchanged a man by the name of Michel Boulard, well versed in Indian affairs, but weak for the hard labor of ascending the river, for a powerful, well made Sandwich Islander whom we named [John] Coxe, for his resemblance to a seaman of that name. He spoke some English, and was anxious to acquire our language.... We left Astoria with a prayer to all merciful Providence to grant us a safe journey. With the exception of Coxe, my men were as before two Iroquois Indians, four Canadians, ...seven men.

...Having proceeded half a mile up a rapid, we came to four men who were waiting for us. They had seven salmon, the whole of which they gave us as a present. ...At the head of the rapid we put ashore and boiled them. While this was doing, the four men addressed me saying, "When you passed going down to the sea, we were all strong in life, and your return finds us strong to live. But what is this we hear? Is it true that the white men have brought with them the smallpox to destroy us? And also two men of enormous size who are on their way to us, overturning the ground and burying all the villages and lodges underneath it. Is this true and are we all soon to die?"

I told them not to be alarmed, for the white men who had arrived had not brought smallpox, and the Indians were strong to live.... "You ought to know that the Great Spirit is the only master of the ground, and such as it was in the day of your grandfathers it is now, and will continue the same for your grandsons."

David Douglas: Tuesday, June 20th, 1826. As usual started at daylight with a view of reaching the height of land against dusk. The further I went the more difficult I found my undertaking.



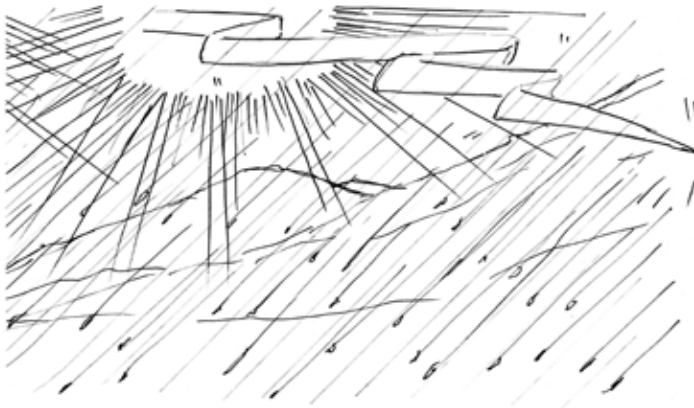
*"then commenced a most dreadful storm"*

At midday I made a short stop, where I passed the first snow and collected several plants. ...In the meantime I selected camp under a projecting rock, saw the horses hobbled, and it appeared to me my guide seemed somewhat alarmed.... I set out on foot with my gun and a small quantity of paper under my arm to gain the summit... The height must be great—7000 to 7500 from the platform of the mountain, and on the least calculation 9000 above the level of the sea.

...I had not been there above three-quarters of an hour when the upper part of the mountain was suddenly enveloped in dense black cloud. Then commenced a most dreadful storm of thunder, lightning, hail, and wind. I never beheld anything that could equal the lightning. Sometimes it would appear in massive sheets, as if the heavens were in a blaze; at others in vivid zigzag flashes at short intervals with the thunder resounding through the valleys below. ...I hastily bent my steps to my camp below.

John Townsend: September 1834. Fort Vancouver is situated on the north bank of the Columbia on a large level plain, about a quarter mile from shore. The space comprised with the stockade is an oblong square of about 100' x 250' feet. The houses built of logs and framework to the number of ten or twelve, are ranged around in a quadrangular form, the one occupied by Dr. McLoughlin being in the middle.

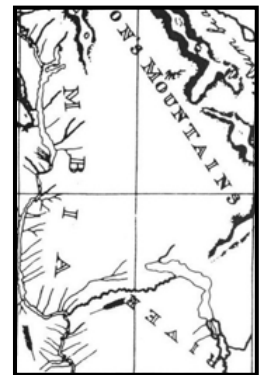
...He has several hundred acres fenced and under cultivation. It produced abundant crops, particularly of grain, without requiring any manure. Wheat thrives astonishingly; I never saw better in any country, and the various culinary vegetables, potatoes, carrots, parsnips, & etc. are in great profusion and of the fist quality. ...The greatest curiosity, however, is the apples, which grow on small trees. So profuse is the quantity of fruit that the limbs are covered with it. On the farm is a grist mill, a threshing mill, and a sawmill; besides many minor improvements in agricultural and other matters.



*great blue heron*  
(*Ardea herodias*)

*Latin ardea and Greek erōdias are the terms by which herons were known in the ancient world.*

*Thompson's travels at this time were along Bald Mountain east of Tollgate, Oregon. The intrepid explorer remained at Ft. Astoria for just one week before setting out to return to the upper Columbia and cross the Rockies to Montreal. His enormous 7' x 14' "Map of the North-West Territory, 1792-1812" was displayed in the Great Hall at Ft. William, and is now at the Ontario Provincial Archives.*



*David Thompson's 1814 "North-West" map (inset)*

## Journey Update 5.5— The 1974 Boldt Decision: “50% of Harvestable Fish”

*The landmark 1974 United States v. Washington “Boldt Decision” resolved the controversial issue of how the 19th century treaty language regarding tribal fishing rights negotiated by Washington Territorial Governor Isaac Stevens for a “fair share” of the annual catch should be interpreted. Judge George H. Bold, a tough-minded jurist of the federal court for western Washington, ruled in a 203-page opinion full of detailed legal history that the tribes which were party to the treaties had the right to take up to 50% of the region’s salmon runs.*

Although there is no evidence of the precise understanding the Indians had of the treaty language, the treaty commissioners probably used the terms “usual and accustomed” and “in common with” in their common parlance, and the meaning of them as found in a contemporaneous dictionary would most likely be what was intended by the government representatives....

By dictionary definition and as intended and used in the Indian treaties and in this decision “in common with” means sharing equally the opportunity to take fish at “usual and accustomed grounds and stations”; therefore, non-treaty fishermen shall have the opportunity to take up to 50% of the harvestable number of fish that may be taken by all fishermen at usual and accustomed grounds and stations and treaty right fishermen shall have the opportunity to take up to the same percentage of harvestable fish, as stated above.

*“That judge listened to all of us. He let us tell our stories, right there in federal court. He made a decision, he interpreted the treaty, and he gave us a tool to help save the salmon. That judge went through a lot. ... His own society didn’t want to have anything to do with him.... They ridiculed him. But he made a decision and it’s intact today. He gave us the opportunity to make our own regulations, our own management systems. We have to think about what he did for us; that’s the responsibility we have. We can’t ever forget that responsibility.”*

*--Billy Frank, Jr., Nisqually Indian elder and fishing rights activist*



# Chapter Six



The Cowlitz-Ft. Nisqually Trail



## *Pervasive Spirituality*

*“Human experience is deeply linked to sacred obligations and kinship within nature. Reliance upon Mother Earth for sustenance does not assume we exist apart from our ‘place’ within the environmental system. Human beings are to be stewards or proprietors (vs. owners) of creation. Humanity exists in a covenant relationship, or sacred trust, with the Creator through which sustenance is provided to people, animals, and plants.”*

## Study Guide 6.1 - The Face of Nature

**Charting:** Grain Fields and Grist Mills

**Problem Solving:** William Tolmie described Mt. St. Helens as cone-shaped when he saw it. In 1980, Mt. St. Helens erupted as a mighty volcano. Its former height was 9677 feet. But after the eruption it is presently 8,364 feet in height. How many feet shorter is it today than it was before the eruption? What percentage of its height was lost because of the eruption?

**Editing:** He came to exculpate himself (i e make the best excuse possible for taking a gun and axe) (4 errors)

**Discussing:**

- \_\_\_ 1. McLoughlin's permission was needed for employees to travel to Ft. Nisqually.
- \_\_\_ 2. Mt. St. Helens was a traditional Indian name for the Cascade peak.
- \_\_\_ 3. "Conical" means shaped like a cone.

**Constructing:** Make a salt and flour map showing the major rivers of the Northwest, including the Columbia, Willamette, Cowlitz, Snake, and Lewis rivers.

**Connecting:** Rowe Findley, "Mount St. Helens: Nature on Fast Forward," NGM (May 2000); "A Matter of Trust (documentary film)," Columbia River Intertribal Fish Commission.

**Sidetrapping: Mt. St. Helens National Monument** contains the landscape that was catastrophically altered during the May 1980 eruption that violently blew off the top 1300 feet of the mountain. The **Windy Ridge Visitor Center** south of Randle, Washington, offers spectacular views of the forming lava dome and debris-filled Spirit Lake. A visitor center in Castle Rock features a walk-through model of the mountain. Native American oral histories and Hudson's Bay Company reports from the 1800s make several references to eruptions of lava and ash from this most active Cascade volcano.



Yah-vo-ta-wit, Chinook  
(G. Sohon)

### Wordbuilding-

strata-

intermittent-

vengeance-

dispel-

cordial-

calabash-

sanctum-



### **Puget Sound Lowlands**

*European-American settlement in the Puget Sound Lowlands began in 1833 when Dr. McLoughlin directed venerable Archibald McDonald (1790-185) to establish Ft. Nisqually along the shore southwest of present DuPont, Washington and on the edge of Nisqually Plain's 20- by 30- mile scenic "Grand Prairie." The area's first wheat was sown the following fall. McDonald was appointed Chief Trader and built a small fir log enclosure for his young family the first step in opening the strategic area cradled between the Cascades and Coastal Range to the fur trade and agriculture.*

*Soon after McDonald had commenced operations at the fort, twenty-one-year-old William Fraser Tolmie (1812-1886), Glasgow University medical graduate and newly enlisted company physician from Inverness, Scotland arrived from Ft. Vancouver to serve at Ft. Simpson north of Vancouver Island. Soon after his arrival at Ft. Nisqually, however, an axe-wielding worker seriously injured himself, and Dr. Tolmie remained to treat the wound. The incident combined with subsequent reassignments of company personnel eventually led to Tolmie's appointment in 1842 as Nisqually's Chief Trader, a role in which he would capably serve for nearly two decades.*

*A calabash is a large, woody gourd that can be carved to use as a drinking vessel.*

## 6.1 The Face of Nature

William Tolmie: Friday, May 17. Up at 7 1/2, [Archibald] McDonald having proposed that I should accompany him by land to Nisqually in Puget's Sound. I cordially agreed & having obtained Dr. McLoughlin's sanction set about making the necessary arrangements with which... the day was occupied. We are to ascend the Cowlitz River to its source, proceed thence on horseback to the bottom of Puget's Sound, and hold afterwards [to] a northwest course to arrive by land at Nisqually. Our journey will probably occupy eight or ten days & I will have frequent opportunities of botanizing & collecting birds.

Saturday, May 18. Up at 7. Putting firearms in order till breakfast time & engaged till 10 in packing. Gave Dr. McLoughlin the acacia seeds got at Oahu & also the drinking calabash. Took a last look at the dahlia bed—the plants are nearly an inch high & numerous. At 11 1/2 bade adieu to all at the fort & accompanied by G[airdner] followed Mr. McDonald to strand where our canoe was lying. The day was beautiful, sky cloudless. Majestic Columbia rolling smoothly along & its wooded & winding banks rejoicing in the noonday sun. The fact of Nature wore a most engaging aspect & I could not help feeling regret at leaving such a beautiful spot. In particular the Governor I have met with much kindness.

Our crew consisted of four Kanakas, stout fellows, who paddled lustily. ...Landed at 1 1/2 to dine at the western extremity of Vancouver Plain. I sallied out while dinner was preparing & crossed plain through groves of oak and aspen.... Arrived at the mouth of the Calipooia River, ...had some fine glimpses of Mount St. Helens—its summit is conical & sides more rounded than those of Mt. Hood. It is invested with a pure sheet of snow, unspotted by either rock or tree. As seen in relief against the deep azure sky immediately over a gloomy ridge of pine trees produced a fine effect.

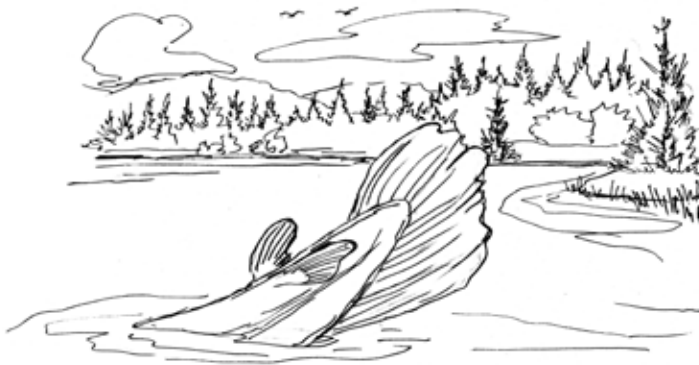


Sunday, May 19. Slept soundly & rose at 5 ½. Morning fine—low strata of fog overlay plain & river but the unclouded sun is rapidly dispelling them & the birds are cheerfully warbling their morning carol of praise to the Creator.

...Paddled across to the right bank & entered Jolife River. On its lower bank is the site of an Indian village, which a few years ago contained two or three hundred inhabitants. At present only its superior verdure distinguished the spot from the surrounding country. Intermittent fever which has almost depopulated the Columbia River of the Indians committed fullest ravages & nearly exterminated the villagers. The few survivors deserted the spot where the pestilence seemed most likely to wreck its vengeance.

David Douglas [June 19-July 19, 1825]. I resumed in the vicinity of Ft. Vancouver procuring seeds of early-flowering plants and adding others to my collection. ...A sturgeon was caught by one of my chief's fisherman which measured 12 feet, 9 inches from the snout to the point of the tail, and 7 feet round at the thickest part. The weight might on a moderate calculation exceed 500 pounds. ...Before taking leave of my Indian friend, I purchased from his people several articles of wearing apparel, gaming articles, and things used in domestic economy.

John Townsend: October 14th, 1834. I walked today around the beach of Young's Bay to see the remains of the house in which Lewis and Clark's party resided during the winter they spent here. The logs... are still perfect, but the roof of bark has disappeared and the whole vicinity is overgrown with thorn and wild currant bushes. One of Mr. [James] Birnie's children found, a few days since, a large silver medal which had been brought here by Lewis and Clark and had probably been presented to some chief who lost it. On one side was a head with the name "Th. Jefferson, President of the United States, 1801." On the other, two hands interlocked, surmounted by a pipe and tomahawk, and above the words, "Peace and Friendship."



"A sturgeon was caught by one of my chief's fisherman"



**wild currant**  
(*Ribes sanguineum*)

**Ribes** is likely derived from the Danish word for red currant; Latin *sanguineus* means bloody.

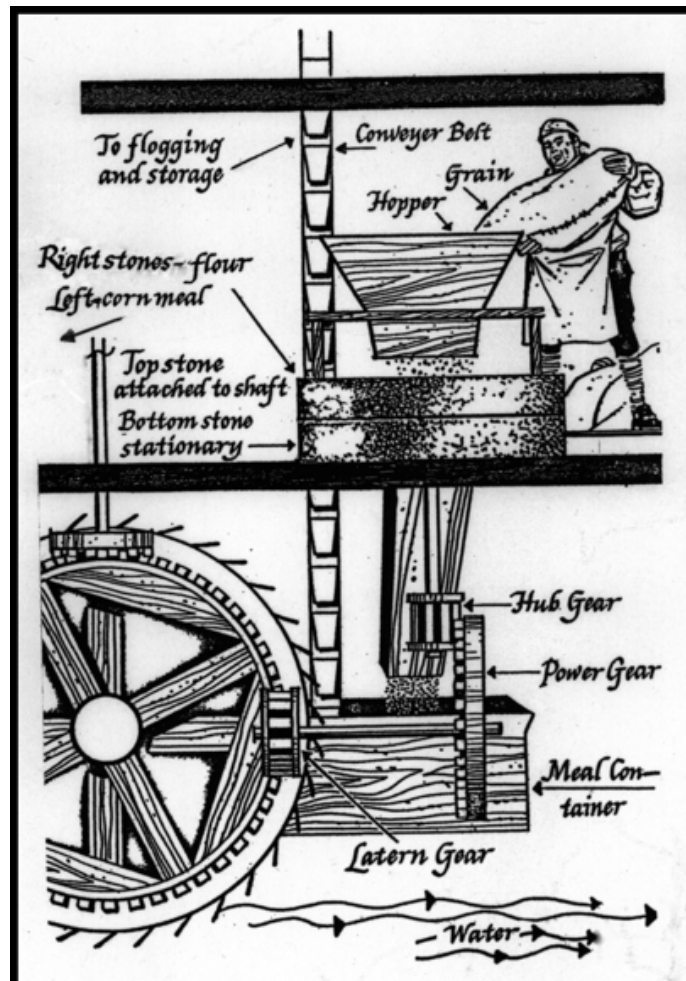
*sanguine*: sturdy, cheerful; having a ruddy, reddish complexion.

**The Jolife River** is likely the tributary of the Columbia in present southwestern Washington known today as the Lewis River.

**Scotsman James Birnie** (1800-64) began work at age 16 as a Nor'Wester but later transferred to the Hudson's Bay Company and served as a clerk for many years at Ft. George and Ft. Vancouver.

**Lewis & Clark medallions** featuring an image of Thomas Jefferson were distributed to notable Indian chiefs by American explorers as a goodwill gesture along their 1803-05 transcontinental route to the Pacific Northwest and a few originals can be found today in museums. The American Fur Company soon followed with a similar version until federal authorities prohibited its private minting of medallions to represent a U.S. president.

## Charting 6.1—Grain Fields and Grist Mills



Hudson's Bay Company officials expressed significant interest in Northwest agriculture and grain milling as the most cost effective means to provision trading posts and supply frontier communities. Overtures were made in the 1830s by Governor George Simpson to Russian-America Company representatives in St. Petersburg to establish spheres of influence on the Pacific Slope and to provide commodities their remote Alaskan outposts. The expense of bringing supplies from eastern Russia contributed to recurrent shortages for the Russians who traded as far south as Ft. Ross in California.

For this reason the HBC incorporated the Puget Sound Agricultural Company (PSAC) and developed new tracks of land for farming at Ft. Nisqually and Cowlitz Farm near present Toledo, Washington. With the growth of wheat, barley, and livestock production in the 1840s, British traders transported provisions via their growing fleet of Pacific vessels that included the barques *Columbia* and *Ganymede*, brigs *Columbia*, *Dryad*, and *Isabella*, and schooner *Vancouver*. Wheat soon became legal tender to British authorities in the Northwest with 1 bushel = \$1.

## Study Guide 6.2 - Unexpected Difficulty

**Seeking:** Date of the Mt. St. Helen’s volcanic eruption.

**Problem Solving:** William Tolmie “had some fine glimpses of Mt. St. Helens.” He described that shape of the mountain as conical with sides more rounded than Mt. Hood, which has a sharp point. Make a drawing of a cone. Form a cone out of paper. How do you describe the shape of a cone? In 1981 Mt. St. Helens changed its shape. Can you solve this mystery to explain how that happened?

**Editing:** Some of Mr. Douglas’ gear for his and the others horses has been lost. (2 errors)

**Discussing:**

- \_\_\_ 1. Kanakas were originally from Canada.
- \_\_\_ 2. Tolmie was interested in the region’s flora and fauna.
- \_\_\_ 3. Lewis & Clark’s Ft. Astoria had already disappeared by John Townshend’s time.

**Constructing:** What is a camas root and how can it be used as food? What food plants native to the Pacific Northwest are commercially raised today?

**Connecting:** Douglas H. Chadwick, “The Harlequin Duck—Bird of White Waters,” NGM (November 1993); W. R. Swagerty, “Indian Trade Blankets in the Pacific Northwest,” CM (Summer 2002).

**Sidetripping: St. Francis Xavier’s Mission** near Toledo, Washington was founded in 1838 by pioneering Catholic missionaries Francois Blanchet and Modeste Demers to meet the needs of Hudson’s Bay Company employees on Cowlitz Prairie, but the priests soon started serving area Indians as well. They developed a unique illustrated chart called the “Catholic Ladder” to explain church history and doctrine. The church is now maintained by the Cowlitz Indian tribe.



Mt. St. Helens Erupting  
(P. Kane)

### Wordbuilding-

procure-

strenuous-

imminent-

capital-

gallant-

*succulent-*

*plait-*



***Puget Sound Lowlands***

***Young Anawescum McDonald*** was among the original party of Hudson's Bay Company workers to construct and work at Ft. Nisqually on Puget Sound.

*"Viz"* is an archaic expression meaning, "that is to say" or "namely."

***plait***: interlacing strands, braid.



***Coastal basket***

## 6.2 Unexpected Difficulty

William Tolmie: Tuesday, May 21st. Ascended Jolife River which owes its name to the gallantry of some passing voyageurs who admiring the beautiful form of one of the villagers bestowed her name on the river & now depopulated village. ... Having agreed to meet cattle on Thursday at the forks of the Cowlitz, descended Jolife. Chatted with [Anaweskum] McDonald about the Company. Their capital was originally £100,000, afterwards being £400,000 at the coalition with the North West Company, their capital being estimated at £200,000. The shares are chiefly possessed by the Governor & Committee, nine in number and the late agents of the North West Company.

5% is paid on the shares by semiannual installments & at the conclusion of a year a bonus equal to 5% more is given, so the stockholder at present receives 10% for his money when the yearly expenditure is defrayed. The surplus funds derived from that year's sale of furs is divided into 100 shares—sixty of which go to the stockholders & the remaining 40 are subdivided into 85 shares whose value varies from £500 to £600 & which are received by the "Winterers;" viz one share to a Trader and two to a Factor....

Wednesday, May 22nd. McDonald got the start of me this morning & had the tent struck before I had finished dressing and we embarked immediately after breakfast about 7. At 55°—clear. ... There is greater variety of wood all along than I have yet observed—cedars, pines, maple, plane, and alder please the eye by their diversity of shade and the grove resounds with the music of the "feathered songsters."

Shot a large partridge roused by the dog & which perched on a tree close to the bank. Had a long conference with four canoes of Indians just as we passed the forks.... [They] were bound for the Willamette to procure salmon. In the different canoes the women were engaged in plaiting baskets of stained straw, with their children huddled around their feet. Gave them a little tobacco for camas, a bulbous root on which with the young succulent stems of the sweet briar they subsist at this season...



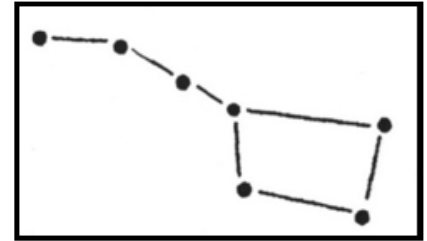
*"at length caught hold of the canoe"*



Thursday, May 23rd. ...The river was now a continued rapid and it was only by the most strenuous efforts that the canoe could be urged on. ...MacDonald continued poling and the men were deep in the stream straining every nerve to get the canoe past the embarrass, where there was an imminent risk of it being swung round by the current and dashed to pieces broadside against the highest of the colossal trees which lay against the stream. Mac jumped out to assist and I who was yet a spectator followed his example by leaping off the trunk nearest the stern, about six feet from it. But I met with some unexpected difficulty, being hurried down the embarrass, unable to obtain footing.... By swimming strongly, at length caught hold of the canoe, ...and by our united efforts we got into comparatively smooth water.

John Townsend: October 15th, 1834. This afternoon I embarked in a canoe with Chinamus, and went with him to his residence at Chinook. The chief welcomed me to his house.... His two wives were ordered to make a bed for me, which they did by piling up about a dozen of their soft mats, and placing my blankets upon them. A better bed I should never wish for. I was regaled ...with sturgeon, salmon, wappatoos, cranberries, and everything else that the mansion afforded.

The chief's house is built in the usual way, of logs and hewn boards with a roof of cedar bark. The floor is boarded and matted, and there is a depression in the ground about a foot in depth and four feet in width, extending the whole length of the building in the middle, where the fires are made. In this, as in almost every house, there is a large figure, or idol, rudely carved and painted upon a board, and occupying a conspicuous place. To this figure many of the Indians ascribe supernatural powers. ...[T]hey acknowledge a great and invisible spirit who governs and controls, and to whom all adoration is due.



*Some Puget Sound tribes like the Snohomish believed the Big Dipper's handle was Three Hunters who were pursuing Four Elk (the bowl) when these creatures jumped into the Sky World. The middle hunter has his dog, the faint object nearby which is actually the spectacular Pinwheel Galaxy. Its majestic arms are visible even at a distance of fifteen million light years. To the Snohomish the Milky Way was River in the Sky, the abode of Sky Chief.*

**succulent:** flavorful, tender.

An **"embarrass"** is a rocky obstruction along the course of a river that could threaten a canoe and its passengers.

*The Chinook Indians were famous traders with both the European-Americans who visited the region and upriver tribes that fashioned a variety of native trade goods and trapped for furs. The Chinook inhabited the strategic lands near the mouth of the Columbia River and also have their name to a trade jargon used throughout the Northwest composed of Indian, French, English, and Spanish words to facilitate communication among the various peoples.*

**conspicuous:** attracting notice, standing out.

## Literature 6.2 - "The Origin of Puget Sound and Cascades"

by Clarence Pickernell (*Cowlitz-Chehalis*)

One time when the world was young, the land east of where the Cascade Mountains now stand became very dry. This was in the days before rains came to the earth. In the beginning of the world, moisture came up through the ground, but for some reason it stopped coming. Plants and trees withered and died. There were not roots and no berries for food. The water and the streams became so low that salmon could no longer live there. The ancient people were hungry.

At last they sent a group of their people westward to ask Ocean for water.

"Our land is drying up," they told him. "Send us water lest we starve and die."

"I will send you my sons and daughters," Ocean promised the ancient people. "They will help you."

Ocean's sons and daughters were Clouds and Rain. They went home with the messengers from the dry country. Soon there was plenty of moisture. Plants and trees became green and grew again. Streams flowed with water, and many fish lived in them again. Roots and berries grew everywhere. There was plenty to eat.

But the people were not satisfied with plenty. They wanted more. They wanted to be sure they would always have water. So they dug great pits and asked Clouds and Rain to fill them. Clouds and Rain stayed away from their father, Ocean, so long that he became lonely for them. After many moons, he sent messengers to ask that his sons and daughters be allowed to come home.

"Let my children return home," he said to the ancient people. "You have enough water for the present, and I will see that you have enough in the future." But the people were selfish and refused to let Clouds and Rain go. The messengers had to return to Ocean without his sons and daughters.

Then Ocean told his troubles to the Great Spirit. "Punish the people for their evil ways," prayed Ocean. "Punish them for always wanting more and more."

The Great Spirit heard his prayer. He leaned down from the sky, scooped up a great amount of earth, and made the Cascade Mountains as a wall between Ocean and the dry country. The long and deep hole left where the earth had been, Ocean soon filled with water. Today people call it Puget Sound.

The people east of the mountains are still punished.... Ocean sends so little moisture over the range that they do not have all the plants that grow along the coast. Ocean still grieves for his sons and daughters who did not come home. All day and all night along the beach he calls to them and sings his mournful song: "Ah', tah lah'! Ah' tah lah' tah lah'! Ah' tah lah' tah lah'! Come home! Come home! Come home!"

## Study Guide 6.3 - Immaculate Whiteness

**Seeking:** Meaning of the word “Chehalis.”

**Problem Solving:** What birds does David Douglas describe in this reading? List them in order from largest to smallest. Do so research to determine the size of the average adult silver eagle and the average adult Canadian goose. Which is larger? By what percentage is it larger?

**Editing:** Malo a Sandwich islander is continuing north to Vancouver island. (4 errors)

**Discussing:**

- \_\_\_ 1. Essential tools for an explorer were a compass and sextant.
- \_\_\_ 2. The Chehalis Indians had not traded with Whites before Tolmie and his party traveled through their homeland.
- \_\_\_ 3. David Douglas could only compare the birds he had found with those species that lived in Europe.

**Constructing:** William Tolmie writes that he found ripe strawberries growing on a sunny brae. What is a brae? Is it a hillside, stream, or mountain top? One of these is correct. Which one? Strawberries belong to the rose family. Identify two other members of the rose family and make a drawing of their leaves, flowers, and fruit. What is the fruit of a rose called?

**Connecting:** Joel L. Swerdlow, “Biodiversity: Taking Stock of Life,” NGM (February 1999); John L. Eliot, “Bald Eagles: Majesty in Motion,” NGM (July 2002).

**Sidetripping:** Eatonville, Washington’s **Pioneer Farm and Ohop Indian Village** recreates area 19th century subsistence agricultural life in the scenic Ohop Valley amidst an enclave of original log structures that include cabins, barns, outbuildings, and a one-room country school. A season-themed tour of the village provides lessons in livestock tending, pioneer food preparation, carding wool, and storytelling, as well as Salish Indian loom weaving and canoe-making. Nearby **Cheney Discovery Center** and 435-acre **Northwest Trek Wildlife Park** offer close-up views of elk, bison, bighorn sheep, and other animals in natural meadow and mountain forest habitat.



Nukane/John Coxe  
(P. Kane)

### Wordbuilding-

migrate-

fleece-

margin-

dapple-

capot-

*Sabbath-*

*immaculate-*



**Puget Sound Lowlands**

“**Brae**” is a Scottish word for a hillside.

**Kekane** was one of the many Hawaiians recruited by the Hudson’s Bay Company for service at Northwest posts and as Columbia Express paddlers.

**Francois-René Chateaubriand** (1768-1848) was a French writer and poet whose works reflect the scenery, legends, and heritage of his isolated Breton homeland in northern France. He journeyed to America in the 1790s on a quest to discover the fabled Northwest Passage across the continent. His travels introduced him to many Native Americans and these experiences greatly influenced his writing.

**William Blackwood** (1776-1834) was apprenticed to a Scottish publisher at age 14 and later established the popular periodical, *Blackwood’s Edinburgh Magazine*, also popular in British North America.

“Visited in the evening  
by several chiefs”

## 6.3 Immaculate Whiteness

Saturday, May 25th. Up at 6. Wrote yesterday’s journal, collected and packed some plants before breakfast. ... Arrived at a beautiful prairie extending NE & SW at least 4 miles—nearly a mile broad and very level for two-thirds of its breath.... Bearing east the pyramidal St. Helens appeared in immaculate whiteness piercing the fleecy clouds. A long range of snow dappled summits stretches away to the northward, and a lower series of wooded summits to the southward. The foreground is occupied with groups of pine-clad hills. The tops of the highest cedars and pines rise out of the deep valley in which the rapid Cowlitz flows to the westward. ... The soil of the prairie seemed fertile; it was covered with a luxuriant grass and adorned with a great variety of flowers.... Found ripe strawberries on a sunny brae with an eastern exposure.

Sunday, May 26. Slept till the sun was high above the trees on eastern bank and since breakfast have been writing log. At daybreak Kekane and an Indian departed to look for the cattle party up at the point where they are to cross near the Indian lodge. It is now about noon [and] Kekane, Rosie, and an Indian are lolling in the shade and I am reclining in tent... southern margin of Cowlitz prairie. Reading an able critique on Chateaubriand’s *Genie de Christianisme*, during the day in Blackwood and also in one of Christopher’s flights to the lakes. His description of the Sabbath in one of the lone glens at the Cumberland Lakes [is] written in his own animated and peculiar style. The account of the village church and kind greeting of friends assembled on the green sward in front at the conclusion of the service brought Ardersier to my recollection.

...[We] are now a four day journey from Nisqually and the roads are reported good. But if we do not find the Vancouver there we will be on short commons as the men there have no provisions.



Tuesday, May 28th. Encampment on Grand Prairie. ... Breakfasted on boiled peas and started about 8—on foot—from the brow of a hill flanking prairie to [the] north. Had an extensive view—the broad flat plain of green & yellow hues spread out beneath, encircled with wood and in the distance a large extent of low waving hills all blackening with tall pines. In descending [a] hill on [the] opposite side frequently up to knees in mud. Crossed two lower ridges, occasionally meeting with new plants which afforded encouragement to continue walking.

The evening was serene & clear and the king of the day setting behind a wavy ridge of pine clad hills achieved the somber aspect of the surrounding forest. The Chehalis River, a rough broken stream, ... appeared in a few spots through openings in its wood-fenced banks. Visited in the evening by several chiefs, the most important of whom was dressed in a blanket, capot, blue vest and trousers, English hat & Blucher boots.

David Douglas: January 2nd to March 1st [1826]: The following birds came under my notice during the season: [The] silver-headed eagle is abundant all over the country where there are rivers containing fish. They perch on dead trees and stumps overhanging the water, and are invariably found near falls or cascades. It is a very wary bird and difficult to obtain. [The] common magpie is a rare bird in the lower country. ... They appear not to differ specifically from the European species except in size, and the tail feathers of the male a brighter azure-purple. Two species of crow, one large and one small; the small one is less abundant and more shy, generally seen on the sides of rivers. Of the hawk tribe I have seen four species.

The common Canadian wild goose, the grey goose, and the small white goose are very plentiful in all lakes, low plains, and on sandbanks. They migrate northward in April and return in October. Of swans there appear to be three species. All three are seen together in flocks frequenting the same spots as the wild geese and migrate at the same time. In ducks there are ten or twelve species.



**Grasses and Grains**

**The genus *Triticum*** (*wheat*) is a Greek term referring to cereal grains originating in the Mediterranean region, *Hordeum* (*barley*) is from the Latin word for the ancient Roman gladiators since they consumed this nutritious grain, and *Phleum* (*grasses*) is likely from a Greek word meaning to teem, or abound.

*triticale*: an ancient, nutritious hybrid of wheat and rye.

**The Chehalis and Cowlitz** are Lushootseed (Coastal Salish) speaking tribes who inhabited their namesake rivers in the Puget Sound Lowlands and frequently traded at Ft. Vancouver and Ft. Nisqually.

**Magpies** are highly intelligent members of the *Corvus* family with stunning black iridescent and white feathers and the only birds with a greater body length than wingspan. These highly social creatures construct substantial circular nests of mud and sticks with a side entrance.

## Biome 6.3—Nisqually Plain and Forest: A Deciduous Woodland Biome

**Tolmie State Park and Nisqually National Wildlife Refuge**—These important areas for migratory waterfowl are located on the Nisqually River delta area in southern Puget Sound. The refuge covers 3,000 acres of salt and freshwater grasslands and mixed forest habitats that host also a variety of songbirds, raptors, and wading birds. Tolmie State Park near Olympia, a day-use marine park with 1,800 feet of shoreline, is named for Ft. Nisqually’s longtime Chief Trader.



**Northern Raccoon (*Procyon lotor*)**—Located in wooded and well-watered areas across North America, adult raccoons may reach a yard in length, have foot-long bushy, ringed tails, and weigh up to 35 pounds. They have a conspicuous black mask across the face and eyes and long gray, brown, and black fur. Raccoons are highly inquisitive animals but desperate fighters when cornered.



**Blue Jay (*Cyanocitta cristata*)**—This common bird can be found in virtually any wooded area in the world with a moderate temperature. Usually about a foot long, the blue jay will most often nest on the branches of a tree which are closest to the trunk. It can fly fairly fast at a speed of 20 mph. It is blue, white, and black, and has a sharp beak, which is used to rob nests of their eggs, hunt down small fish, insects and snails, or pick up nuts or seeds.



**Western Thatching Ant (*Formica obscuripes*)**—This ant species, also known as “mound ants,” is common in prairies and forested areas where they build large mounds from grass stems, leavens and pine or fir needles containing colonies that may number in the thousands. They are medium to large (4-8 mm) and bicolored red and black. Thatching ants keep aphids for their sweet honeydew and protect them against wasps and more serious insect predators so in spite of the threat of aphid infestations are beneficial.



**Common Cattail (*Typha latifolia*)**—Found in temperate marshlands and wet areas throughout North America, the common cattail is most recognizable. Its height is usually 6 feet or more, and the leaves typically resemble a 1 inch wide ribbon. Cattails provide excellent shelter for waterfowl and other animals but are not considered to be a source of food. However, some animals may seek small insects in the leaves. For humans, however, a young cattail may be harvested and the peeled stem used as food. Even the fruits themselves are commonly eaten as “Cossack asparagus.”

**Plant Palette Field Trip**—David Thompson, David Douglas, and John Townshend were keen observers and careful recorders of the environments they encountered. Select a wooded site to explore, preferably near your school. Avoid damage the site by following a good trail. Collect 10-12 different plant specimens. Tape each one on a palette (2 ft. square cardboard sheet). Identify each plant using a good plant/tree guide book. Most science departments and local libraries can provide a good selection. Label each specimen with its common name, genus, species, and key characteristics. When completed share your palette in class, explaining what you have learned about plant identification. You can also make your own guidebook. Preserve your best specimens using a plant press or simply place them between absorbent paper and press between pages in an old book. Mount and laminate along with descriptions in a loose-leaf notebook or binder.

## Study Guide 6.4 - The Shores of Puget Sound

**Heading:** 47° 2' N. Latitude, 112° 53' W. Longitude (city)

**Problem Solving:** William Tolmie describes a small garden at the Fort Nisqually site as being “about 40 yards square.” If one side of such a garden is 8 feet in length, how long are the other three sides? Make a drawing of your solution and indicate what you would like to raise.

**Editing:** We planted 14 bu of potatoes in swampy land followed by hail & rain. (3 errors)

**Discussing:**

- \_\_\_ 1. Owyhees who worked in the Nisqually area were people of Polynesian ancestry.
- \_\_\_ 2. The small stream near the proposed fort was large enough to provide water power for a mill.
- \_\_\_ 3. Tolmie had enough geographical information to know that the Olympic Mountains were located on a large peninsula.

**Constructing:** William Tolmie mentions cedar, pine, maple, and alder trees among those he observed growing in the region. Make a large poster illustrating each of the trees with details about them.

**Connecting:** Spencer J. Howard, “Capitol Challenge : The Olmstead Brothers’ Landscape [Olympia],” CM (Summer 2011); Cary C. Collins, “In a Familiar yet Foreign Land [Puyallup Tribal Elder Henry Sicade],” CM (Summer 2005); Robert Keller, “Paul Robeson at Blaine,” CM (Winter 2005-06).

**Sidetripping:** Visitors experience the fur trade era first-hand at the **Fort Nisqually Living History Museum** at Point Defiance Park in north Tacoma, Washington overlooking Puget Sound. The original fort was built by the Hudson’s Bay Company in 1833 near present DuPont and was the first European settlement on Puget Sound. The fort was relocated to Tacoma as a Works Progress Administration project during Franklin Roosevelt’s administration in ambitious undertaking to painstakingly reassemble the original **Chief Trader’s House** and the **Post Granary**, believed to be the oldest building in the Pacific Northwest.



Ft. Nisqually on Puget Sound

**Wordbuilding-**

devious-

aristocracy-

motley-

elector-

motley-

sequester-

accoutrement-



### **Puget Sound Lowlands**

*In spite of popular portrayals of the fur traders as uneducated frontiersman, many were highly literate and prodigious journal keepers. American Fur Company employees had earlier established a non-circulating library at Ft. Astoria containing works by Robert Burns and Walter Scott, biographies of Napoleon and William Pitt, travel accounts by Alexander Humboldt, the Bible, and the first American edition (1816) of the Koran.*

*In addition to such works that were transferred to Ft. Vancouver, books in Dr. Tolmie's personal collection at Ft. Nisqually—which he freely lent as the circulating **Columbia Library**, included poetry and stories Isaac Watts and Samuel Johnson, books on religion, history, medicine, and botany, Shakespeare's plays, and the William and Robert Chambers educational course volumes on science, history, and geography.*

**accoutrements:** clothing and equipment.

**Millseats** are stable stone foundations along streams and rivers where gristmills and sawmills might be built. the oldest in the Pacific Northwest, that is still living.

## 6.4 The Shores of Puget Sound

William Tolmie: Thursday, May 30th. At 5 AM I started in advance at a brisk canter and arrived at Nisqually shortly after noon, having crossed several plains intersected with belts of wood and two steep hills.... Passed some pretty green hills, sprinkled with young oaks and winding away to the westward. Continued along the same plain which extended still as far as the eye could reach to northward. Descending a steep bank arrived at the proposed site of Nisqually Fort on a low flat about 500 paces broad on the shores of Puget's Sound.

The most conspicuous object was a store half finished next [to] a rude hut of cedar boards. Lastly a number of Indian lodges [are] constructed of mats hung on poles in the shape of a cart shed. Welcomed by a motley group of Canadians, Owhyhees & Indians. Entered the hut and therein deposited [my] accoutrements. M[acDonald] conversed with the servants. Bathed in the sound which was smooth as crystal & bordered by a sloping beach... Went up to the prairie with M[acDonald] and saw the proposed site of the fort & farm. The fort is to be erected along the bank of a streamlet which in its devious course through [the] plain presents points well adapted to millseats. The most fertile spots in the comparatively barren prairie are to be plowed for a crop of potatoes and peas this season.

Friday, May 31st. Up about 6 and occupied till 10 or 11 in changing plant papers. Went out in a canoe, endeavoring to come within shot of two enormous herons who were stalking about in the shallow water at the mouth of the Nisqually River but betook themselves to flight upon my approach. They are much larger than any I have ever seen. Went up the hill to prairie where Mr. M[acDonald] and the men were felling

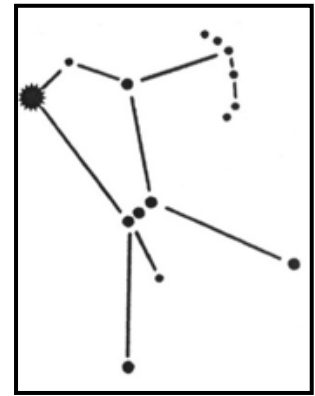
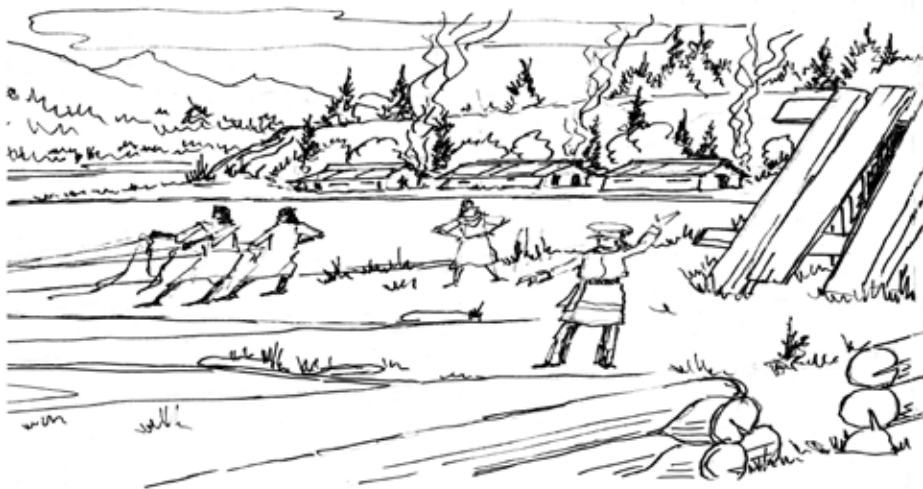




trees where with to erect a temporary dwelling. A small garden about 40 yards square had been formed five weeks ago and sowed with onions, carrots, turnips, and cabbage which all appeared above the surface, but seemed to suffer from drought. Some rows of potatoes planted at the same period looked well.

Saturday, June 1st. Up about 6 and writing yesterday's journal before breakfast. M[acDonald] being busy writing. [I] remained in hut, reading some Montreal [news]papers in French... [and] an address to the future electors of Great Britain from the powerful pen of Christopher.... I think he strives to stem the tide of revolutionary thinking by showing the lamentable consequences... from altering materially the present state of things as regards any of the great questions that agitate the political world—the Church, Corn Laws, etc. The writer displays a contemptuous spirit, talking of the Conservatives as possessed and the Whigs as destitute of every virtue. In these times democracy is much more to be dreaded than aristocracy or monarchy.

Sunday, June 2nd. Up about 8 and had an excellent view of a long range of snow speckled mountains in the peninsula opposite. They run in a north & south direction and to the highest summit the classical name of Mount Olympus has been given. The foreground is filled with a densely wooded island indented with one or two bays about a mile in length of which there are several in this part of the sound. Had a solitary walk in the prairie in the afternoon before dinner. Came to a beautiful lake, nearly circular and about ¼ mile round. ...Lay musing for nearly an hour on its bank, soothed by the melodious harmony of the grove and feeling the holy influence of the Sabbath stealing over me in this beautiful sequestered spot.



*Among some Coastal tribes like the Kwakiutl, Orion is Harpooner of Heaven who carried fog in a cedar box to let fall upon Earth while he hunts for Otter, whose image is seen in nearby Pleiades. To the Haida, the Pleiades are Seven Brothers in a Boat. They had harpooned a whale that dragged them into a great ocean whirlpool. The swirling force caused their line to break and the Seven Brothers were cast out into the sky.*

*The famous green-glowing gas cloud called **The Great Nebula**, located near the tip of Orion's Sword, is a swarm of stars and gas containing enough mass to form 10,000 stars.*

*Periodicals widely read at frontier posts included the Quebec Gazette, Montreal Herald, Blackwood's Magazine, Albion, and Patriot. 1850s pathfinder John Mullan called John Owen's substantial collection at Ft. Owen in the Bitterroot Valley of present Montana "the finest library I have seen on the north Pacific Coast." Although no complete list of Owen's volumes is known to exist, his titles are known to have included the novels of Washington Irving, Charles Dickens, and Scott, Lingard's History of England, Plutarch's Lives, and The Writings of Thomas Jefferson.*

*"welcomed by a motley group of Canadians, Owhyees & Indians"*

## Literature 6.4 -- "Sacred to My People": Chief Seattle's Speech

You folks observe the changers  
who have come to this land.

And our progeny will watch and learn from them now,  
those who will come after us,  
our children.

And they will become just the same  
as the changers who have come here to us  
on this land.

You folks observe them well.

Your religion  
was written on tablets of stone  
by the iron finger  
of an angry God  
lest you forget.

The red man could never comprehend  
nor remember it.

Our religion  
is the tradition of our ancestors,  
the dreams of our old men,  
given to them  
in the solemn hours of the night  
by the Great Spirit  
and the visions of our leaders  
and it is written in the hearts of our people.

Your dead cease to love you  
and the land of their nativity  
as soon as they pass the portals of the tomb;  
they wander far away  
beyond the stars  
and are soon forgotten and never return.

Our dead  
never forget  
this beautiful world that gave them being.

They always love  
its winding rivers,  
its sacred mountains  
and its sequestered vales,  
and they ever yearn in tenderest affection over  
the lonely-hearted living  
and often return to visit  
guide and comfort them.

We will ponder your proposition,  
and when we decide we will tell you.

But should we accept it,  
I here and now make this the first condition  
that we will not be denied the privilege, without interference,  
of visiting at will the graves,  
where we have buried our ancestors,  
and our friends and our children.

Every part of this country is sacred to my people.  
Every hillside,  
every valley,  
every plain and grove  
has been hallowed by some fond memory  
or some sad experience  
of my tribe.

Even the rocks which to lie dumb  
as they swelter in the sun  
along the silent seashore  
in solemn grandeur thrill with memories  
of past events connected with the lives of my people.

And when the last red man shall have perished  
from the earth  
and his memory among the white men  
shall become a myth,  
these shores will swarm with  
the invisible dead  
of my tribe.

And when your children's children shall think themselves along  
in the fields, the store, the shop,  
upon the highway, or in the silence of the pathless woods,  
they shall not be alone.

In all the earth there is no place dedicated to solitude.

At night when the streets of your cities  
and villages will be silent  
and you think them deserted,  
they will throng with returning hosts  
that once filled and still  
love this beautiful land.

The white man will never be alone.  
Let him be just  
and deal kindly with my people  
for the dead are not powerless.

Dead—did I say?  
There is no death,  
only a change of worlds.

## Study Guide 6.5 - An Excursion to Mt. Rainier

**Seeking:** Mt. Rainier’s namesake and its original Coastal Indian name.

**Problem Solving:** Today we know that at 14,410 feet in height Mt. Rainier is the highest peak in the Cascades. How much taller is it than the second tallest mountain in the Cascades?

**Editing:** Our ship Cadboro arrived and is to be at Ft Nisqually to take goods at the beach store. (2 errors)

**Discussing:**

- \_\_\_ 1. Medicine could be obtained from trading ships that traveled along the coast.
- \_\_\_ 2. The barter system was an ineffective way to trade with local tribes.
- \_\_\_ 3. Tolmie discovered on his expedition to the mountain that Mt. Rainier was a volcano.

**Constructing:** Mt. Rainier’s varied botanical landscape changes with altitude. The weather, climate, and soils change as one ascends the mountain. Make a drawing showing the different plants found on the mountain at various altitudes.

**Connecting:** Rick Gore, “Cascadia: Living on Fire,” NGM (May 1998); Gerry L. Alexander, “Abe Lincoln and the Pacific Northwest,” CM (Winter 2002-03); Sara A. Porterfield, “Mount Rainier National Park,” CM (Winter 2010-11).

**Sidetrapping:** **Tacoma’s North Slope Historic District** is a residential neighborhood where most homes were built prior to 1930. The district also includes the Washington State History Research Center which is the principal repository for the over 90,000 items in the collections of the **Washington State Historical Society and Museum** which is located in the heart of the city. Recently the WSHS loaned animal totem masks and a ceremonial drum to the world renown **Seattle Art Museum** as part of an exhibition contrasting the wolf mythology depicted in the Twilight movies with cultural associations the animal possesses for the Quileute tribe.



Mt. Rainier from Whidby Island (J. M. Stanley)

**Wordbuilding-**

intersperse-

canter-

amphitheatre-

preipice-

glacier-

*troglo-dyte-*

*swarthy-*



### **Puget Sound Lowlands**

**Francis Heron** (1794-1840) joined the Hudson's Bay Company at age 18 and rose to the rank of Chief Trader to serve at Ft. Colville and other Northwest posts.

**Lachelat**, or Lachalet, a Nisqually Indian, and **Nuckaltat**, a Puyallup, were familiar with the route Tolmie sought to follow along the Puyallup River to Mt. Rainier. Area tribes' name for the majestic mountain was Tacobet, Lushootseed for "Mother of Waters." Its present name was given by the British seafaring explorer **George Vancouver** who extensively mapped Puget Sound in 1792 and named it for naval admiral **Peter Puget**.

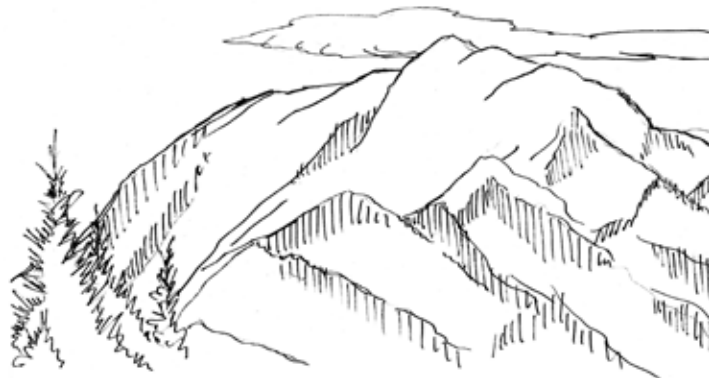
## 6.5 The Shores of Puget Sound

William Tolmie: Tuesday, August 27th. Obtained Mr. Heron's consent to making a botanizing excursion to Mt. Rainier for which he has allowed ten days. Have engaged three horses from a chief living in that quarter who came here tonight & Lachelet is to be my guide. Told the Indians I am going to Mt. Rainier to gather herbs of which to make medicine, part of which is to be sent to Britain & part retained in case intermittent fever should visit us.

Thursday, August 29th. Prairie eight miles north of the fort. Sunset. Finished all the letters this forenoon & made a packet of them for Vancouver in case an opportunity occurs before my return. Started about 3—mounted on a strong iron grey stallion—my companions disposing themselves on the other two horses, except one who walked. We were six in number. I have engaged Lachalet for a blanket & his nephew, Lashima, for ammunition to accompany me & Nuckalkat, a Puyallup (whom I took for a native of Mt. Rainier) with two horses to be guide on the mountain.

After leaving the horse track Quilniash, his relative, a very active, strong fellow has volunteered to accompany us. ...Cantered slowly along the prairie & are now at the residence of Nuckalkat's father, under the shade of a lofty pine in a grassy amphitheatre beautifully interspersed and surrounded with oaks. Through the gaps we see the broad plain extending southwards to Nisqually. In a hollow immediately behind is almost one sheet of water lilies about to flower.

Friday, August 30th. Sandy beach of the Puyallup River. Slept ill last night & as I dosed was aroused by a stroke across the thigh from a large decayed branch which fell from the pine overshadowing us—a drizzling rain fell during most of the night. Got up about dawn and finding thigh still & painful thought a stop was put to the journey, but after moving about it felt easier. Started about sunrise, I mounted on spirited



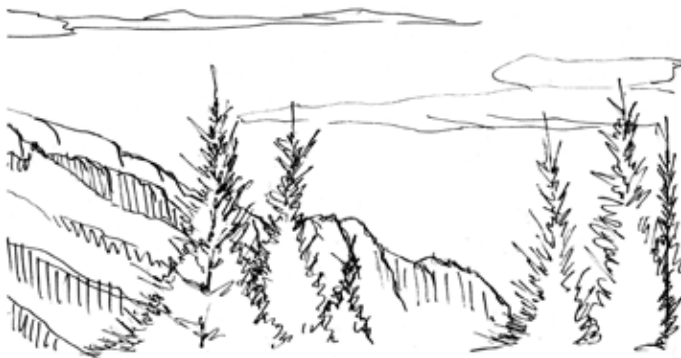
brown mare and the rest on passable animals except Nuckalkat, who bestrode a foal.

Monday, September 30th. Summit of snowy peak immediately under Rainier. Passed a very uncomfortable night in our troglodytic mansion. Ascended river... to where it was shut in by an amphitheatre of mountains & could be seen bounding over a lofty precipice above. ...Followed gully to near the summit and found excellent berries in abundance. It contained a very few alpine plants—afterwards came to a grassy mound where the sight of several decayed trees induced us to encamp. After tea I set out with Lachelet & Nuckalkat for the summit which was ankle deep with snow for  $\frac{1}{4}$  mile downwards. The summit terminated in an abrupt precipice direct northwards & bearing north-east from Mt. Rainier, the adjoining peak. The mists were at times very dense but a puff of southwest wind occasionally dispelled them.

Tuesday, September 3rd. Lay shivering all night—roused my swarthy companion twice to rekindle the fire. At sunrise, accompanied by Quillash, went to the summit and found the temperature of the air  $33^{\circ}$ . The snow was spangled and sparkled brightly in the sunshine. It was crisp & only yielded a couple inches to the pressure of the foot in walking. Mt. Rainier appeared surpassingly splendid and magnificent.

The snow on the summit of the mountain adjoining Rainier on the western side of Puyallup is continuous with that of the latter. The southwestern aspect of Rainier seemed most accessible. By ascending the first mountain through a gully in its northern side you reach the eternal snow of Rainier....

Its eastern side is steep—on its northern aspect a few small glaciers were seen on the conical portion. Below that the mountain is composed of bare rock, apparently volcanic which about fifty yards in breadth reaches from the snow to the valley beneath.



**bald eagle**  
(*Haliaeetus leucocephalus*)

**Greek hals (sea) with aetos (eagle)** denotes a sea-eagle; Greek *kephalē* means head.

*halcyon*: calm, peaceful; a legendary bird of the sea.

*cephalic*: relating to the head.

**The highest peak in the Cascades, Mt. Rainier** is a enormous stratovolcano that rises to 14,410' and is girded by 26 major glaciers, or massive bodies of ice.

**Alpine biomes** are located at elevations above 10,000' where severe weather conditions prevail during most of the year restricting alpine plants worldwide to only about 200 species. Many are fragile wildflowers that contribute to the spectacular scenery of Northwest high country throughout summer and are accessible by branches from the Pacific Crest Trail.

*"Mt. Rainier appeared splendid and magnificent"*

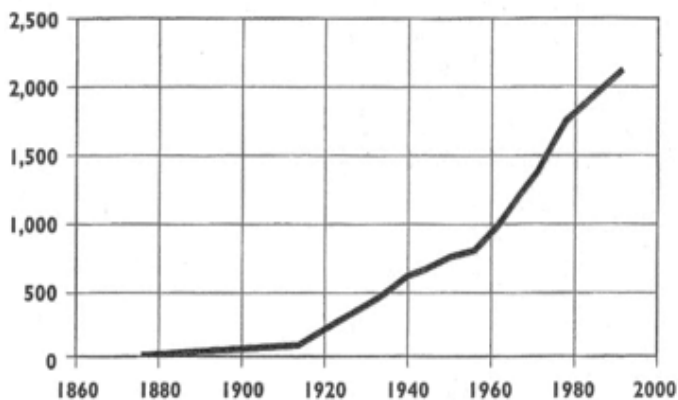
## Journey Update 6.5— The 1986 “Failed Promise” Article: “An Increasingly Lukewarm Attitude”

*“The Failed Promise of the Fish and Wildlife Program” was the title of an article that appeared in the November 1986 issue of the journal, Anadromous Fish Law Memo. It pointed out the inadequacies of government attempts to properly mitigate damage to salmon habitat caused by decades of hydroelectric development along the Columbia River, and by the Northwest Power Planning Council’s decision in 1986 not to increase spill levels at the major dams to improve survival of migrating juvenile salmon in spite of recommendations from fish agencies and Indian tribes.*

It is now evident that the Columbia Basin Fish and Wildlife Program, promulgated by the Northwest Planning Council to satisfy the mandate of the Northwest Power Act, is failing to make significant progress restoring upriver salmon and steelhead runs. That was the nearly universal sentiment expressed by fishery managers at a public workshop on the Columbia Basin Program implementation held on September 27, 1986 in Portland.

Repeatedly throughout the day-long workshop, fishery agency and tribal representatives catalogued instances in which federal project operators and regulators failed to implement program measures “to the fullest extent practicable.” Worse, the Council has exhibited an increasingly lukewarm attitude toward such implementation failures. Moreover, the Council has tentatively rejected a number of program amendments recommended by the fishery agencies and tribes to make the program more effective and more enforceable.

Thus, 6 years after Congress made it national policy to preserve and restore the Columbia Basin’s anadromous fish runs, 5 years after the fishery agencies and tribes made detailed program recommendations, 4 years after program promulgation by the Council, the program has yet to deliver on many of its promises.



Left: Columbia and Snake River System Dams and Major Obstructions  
Right: Number of Snake River Basin Redds (Salmon Nests)

# Instructional Resource Appendices



- A. Leading Questions of Discovery
- B. Principles of Sustainability
- C. Quality Writing Attributes
- D. Correlated Science Projects
- E. Correlated Literature Readings
- F. Correlated Art Projects
- G. Correlated Musical Selections
- H. Fir Trade Tall Ships Today
- I. Glossary of Journey Terms

## Appendix A - Leading Questions of Discovery

**Questions of knowledge, comprehension, and evaluation** form the basis of understanding others and the world around us. Informed persons of all ages and times have been those who maintain an abiding spirit of curiosity and seek through inquiry to find answers to leading questions that arise from experience.

\* **Knowledge questions** are about subject area facts and skills.

Science: What color, size, age, sound, taste, etc.?

Mathematics: What total, distance, shape, location, probability, etc.?

Social Studies: What time, person, event, reason, etc.?

Language Arts: What author, method, purpose, genre, descriptions, etc.?

Arts: What form, image, mood, media, melody, etc.?

\* **Comprehension questions** relate and apply knowledge to experiences, ideas, and concepts.

Cause and Effect: What is this action and change in conditions?

Commonality and Diversity: How are these same or different?

Systems and Patterns: How is this organized or arranged?

Scale and Symmetry: How does the size and shape compare to others of its kind?

Cycles and Change: Is this effect repeated over time?

Interaction and Relationships: How do these relate or influence each other?

Time and Space: When, where, and why did this happen?

Equilibrium and Order: Is there a balance or stability to this arrangement?

\* **Evaluative questions** involve judgments about the value of ideas, objects, creations, and actions.

Utility: Is this useful? Aesthetics: Is this beautiful? Sustainability: Is this renewable?

Truth: Is this meaningful? Morality: Is this right?



## Appendix B - Quality Writing Attributes

1. Ideas and Content are to be fully developed through the presentation of your main topic. Pick something that is important or interesting to you. Keep your topic small enough to handle well with supportive details and make your ideas crystal clear. Avoid general statements like, “Our trip in the Rockies was exciting.” Instead, say, “We woke up to find two very hungry black bears snooping through our camping supplies.”

“We don’t want (the writer) to describe every ride at Disneyland or tell that the Grand Canyon is awesome.... If one of the rides at Disneyland got stuck, or if somebody fell into the Grand Canyon, that would be worth hearing about.”

--William Zinsser

2. Organization allows your writing to flow together with a natural sequence of information or action. Organization gives your writing direction and it helps the reader move through the ideas in a purposeful way. Use clever openings to hook the reader right from the beginning and provide a sense of ending. Don’t start by saying, “I am going to tell you about whales.” Rather, try something like “Whales are amazing animals, not only for their size but also for their music.”

“It takes a little time to think of a creative leader that captures the reader’s attention. Effective ones can begin with a quotation from somebody, a bold statement, or reflection on personal experience.”

--Clifford Trafzer

3. Sentence Fluency relates to the rhythm and structure of your writing. Sentence beginnings should not be repetitive, nor should sentences generally be the same length. Read aloud what you write to see if there is an effective variation in your sentence patterns. Avoid beginnings that are repetitive and avoid sentence lengths that drift on too long or that are short and choppy: “We explored the beach. We had fun. We saw petrels flying. Petrels are common on the coast.” Combine short sentences: “We explored the beach and watched petrels soar overhead in search of food.”

“Clarity. Clarity. Clarity. When you become hopelessly mixed in a sentence, it is best to start fresh.”

--Strunk and White, *The Elements of Style*

4. Word Choice invites the use of a variety of words to create original and interesting expressions. As you read and listen to what others write and say, you cultivate a rich vocabulary of precise and colorful words that let you say exactly what you want. This is the essence of good word choice. Carefully chosen words create vivid pictures. Don’t say, “The big dog was mean.” Say, “A hundred pounds of snarling yellow fur launched itself from the porch, straining at a rope as thin as spaghetti.”

“Words are to writing what colors are to painting. Make a personal thesaurus of favorite expressions that captivate your imagination.”

--Anita Deyneka

5. Voice is the communication of your personality coming through your writing. Think about your reader as your write. Write directly to that person just as if he or she were standing there talking to you. Be yourself. Readers respond to sincerity, honesty, and conviction.

“Voice separates writing that is read from writing that is not read.... voice is the writer revealed.”

--Donald Murray

6. Conventions are the rules of language involving proper grammar, spelling, punctuation, and presentation in your writing. Without attention to convention, others may not be able to understand what you wish to communicate. Problems with spelling and grammar interfere with the reading process and diminish the cleverness of your ideas, unique voice, and vibrant word choice. You must be the first editor of your writing, by proofreading to ensure the text is as error-free as possible.

“The first editor of any piece is always the writer...”

-- Nancie Atwell

# Appendix C - Principles of Environmental Sustainability



## 1. Environmental Knowledge

We are to respectfully use and manage natural resources which require intimate understandings of environmental systems, native species, and agricultural practices. The desire to get more than one needs leads individuals, groups, and even nations to harm land and life. The health of individuals and culture is related to the health of the environment—plains and forests, streams, rivers, beaches, and oceans.

## 2. Balanced Innovation

Change can be beneficial when promoting the well-being of humans within the natural world system and among cultures throughout the world. Conflicts with others have often arisen when such constraints are ignored in the name of short term gain or perceived higher needs. Many Native American political leaders (“chiefs”) like welcomed missionaries and adopted such agricultural and pastoral innovations the raising of grains and livestock. Spiritual leaders (“medicine men”) spoke of the family of all mankind and for technological progress within the limits of moral obligations to creation.

## 3. Language and Moral Literature

Words contain special force implicit in sounds associated with natural forces, life forms, and landscapes, as with the wind, animals, and even personal names. Storytelling fosters understanding of experience. Cultural knowledge transmitted through myth (ancient), tale (experience), lore (anecdotal), and history provides practical and symbolic means to meaningfully relate to place and culture. These experiences develop moral sensibilities for respect, stewardship, generosity, cooperation, cleanliness, and hospitality.

## 4. Ceremony and Celebration

Songs, dances, feasts, rites and other ceremonies recognize and commemorate relationships with one another, and connection within families, among generations, and between peoples and creation. Ceremonies offer thanksgiving and teach obligations to animals and plants, landscapes and waters, and the Creator to reveal our place and role in the web of life. Ceremonial presentation in the Sacred First Foods Feast show the creation order and hierarchy of creature chiefs: water> fish (salmon)> animals (venison> plants (bitterroot)> fruits (huckleberries).

## **5. Artistic Expression**

Baskets, clothing, gear, and other goods are crafted from natural, renewable materials. They are typically decorated with motifs associated with their particular use, place of origin, or individual or family identity that impart a sacred influence beyond symbolic value. Specific practices are taught for the gathering and processing of plant materials often accompanied by songs and ceremonies. Through these preparations and in the actual crafting, we learn about culture, family and ancestors, and individual spirituality.

## **6. Cyclical Time**

Aspects of physical and spiritual experience reoccur in a cyclical process that transcends time and circumstance and is not bound by linear progression. Time exists in a dimension beyond the course of chronological incidents. Events from the time of myth and personal qualities of persons from former generations are sometimes revealed in dreams or in the sounds of nature for those who listen, and lived out in contemporary experience. Hemp string calendar “time balls” were tied with tiny markers of colored stones, bones, beads, and cloth to record significant events throughout one’s lifetime. Just as events from an individual’s “season” might touch upon another from a different time and place, so humanity’s wisdom and experience should recurrently connect to our lives through power of stories, creatures, events, and sacred words.

## **7. Pervasive Spirituality**

Human experience is deeply linked to sacred obligations and kinship within nature. Reliance upon Mother Earth for sustenance does not assume we exist apart from our ‘place’ within the environmental system. Human beings are to be stewards or proprietors (vs. owners) of creation. Humanity exists in a covenant relationship, or sacred trust, with the Creator through which sustenance is provided to people, animals, and plants.

## D.1 - Science

### The Salmon Life Cycle: Anadromy's Ancient Past



**Fossilized salmon**

The story of anadromous fish fresh water-salt water transformations has long been a matter of fascination and dispute. The fossil record indicates that salmon species emerged in freshwater lakes at least 40 million years ago and that the *Oncorhynchus* species from which modern Pacific Northwest salmon came diverted about 24 million years ago. Other varieties in that time included the massive saber-toothed salmon—actually a plankton eater could weigh hundreds of pounds. The 19th century German ichthyologist Albert Günther first proposed the theory now accepted by most scientists that the species evolved the habit of migration to the sea about one million years ago in order to find more abundant food supplies before returning to spawn in the safer waters of their natal streams.

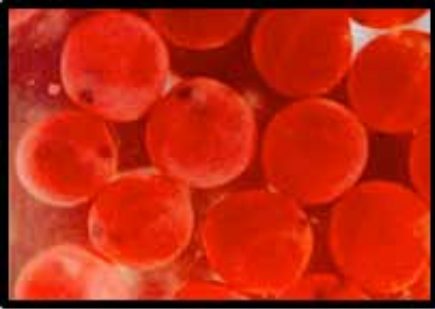
During that period vast glaciated coastal masses covered much of the Northern Hemisphere that diluted the salinity of coastal seas. Important fossil evidence of similarity between prehistoric to modern species was recently found by two Skokomish Indian fishermen on a sandstone bank of the Skokomish River where the remains of about 100 prehistoric salmon may be several thousand years old. The process of selection and change over several hundred thousand years of continental glaciation separated out several species of salmon including the five *Oncorhynchus* members native to the Columbia River.

The beginning of a significant regional warming trend some 7,500 years ago, continuing until about 2,000 B.C., was accompanied by the appearance of salmon fishnets and tackle assemblies along the lower Columbia and Snake rivers. Since humans began occupying these areas as early as 12,000 years ago, archaeological evidence indicates that the sophisticated technology needed to catch salmon slowly emerged among the native peoples. Semi-permanent fishing villages appeared on these rivers around 3,000 B. C.—a thousand years before biblical Abraham and Lot left Ur for the Promised Land. By the beginning of the 19th century, Northwest Native Americans were sustainably catching approximately one million pounds of salmon each year.



## D.2 Science

### The Salmon Life Cycle: Headwaters Birth



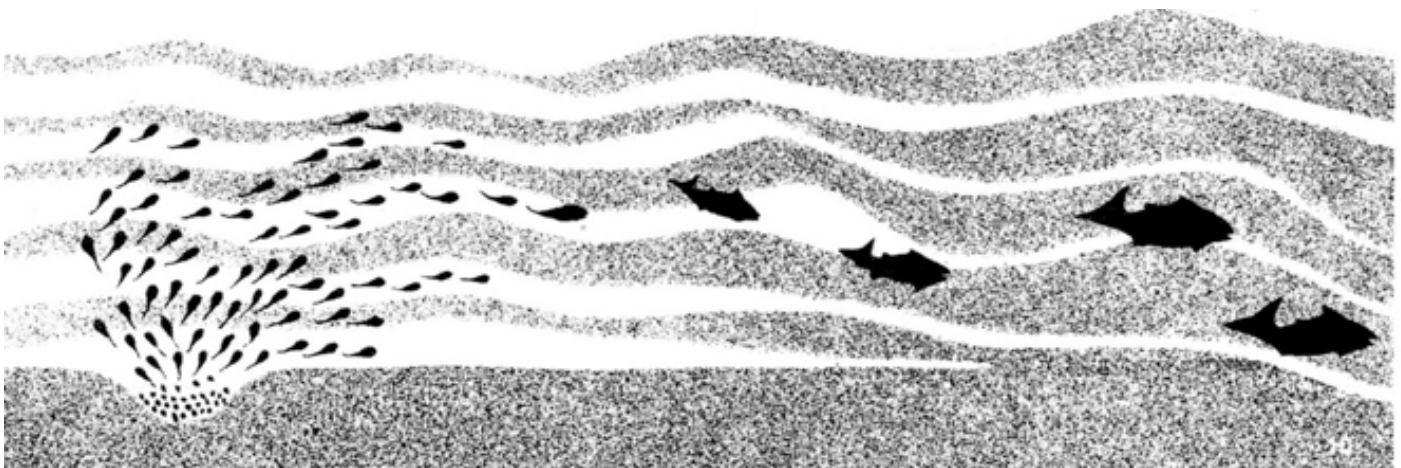
**Wild Salmon Eggs**

Wild Pacific salmon have used the Columbia and Snake rivers and their extensive tributaries for over ten thousand years to travel from the gravels of their hatching streams to the ocean and back. A century ago some 12 to 15 million returned in an incredible journey often involving thousands of miles from the Pacific to spawn in the very streams of their birth as far inland as the Columbia's high mountain origins in the Northern Rockies. The remarkable life cycle of these sea-going, or anadromous, species has long been celebrated by the Native Americans. They honor the creature's endurance and the promise of a valued returning food supply for which they offer cer-

emonial thanks to the Creator.

The Columbia-Snake wild salmon population has declined to less than one million that return annually and survival of some species is now threatened. Completion of Grand Coulee Dam in the 1930s has prevented salmon migration to the upper Columbia. The fish remain an important indicator species providing evidence on environmental conditions in their extensive habitat of ocean, rivers, and streams. They are vulnerable to many threats along the way by both humans and other animals, and only the strongest survive the journey to reproduce. Salmon play a crucial role in the region's complex ecosystem by providing prey for bears, eagles, and other mammals and birds, and their carcasses deposit ocean-rich nutrients to upland freshwater environments.

Salmon hatch from nests of reddish-orange eggs formed in shallow substrate gravel beds of the freshwater streams where their parents were born. These areas are located from 10 to 1400 miles along the Columbia-Snake river systems and often in streams covered in high mountain areas by several feet of ice and snow. Of the 3,000 to 7,000 eggs in each nest, an average of only one will survive to maturity to return and reproduce. Clean, cold water must flow through the gravels surrounding nests to provide adequate oxygen for the salmon embryos to form throughout the winter. The eggs hatch into young, translucent alevins after about two months of incubation.



## D.3 Science

### The Salmon Life Cycle: Hatchlings to Juveniles



**Salmon alevins**

When salmon eggs hatch in late winter or spring after about seven weeks of incubation, they emerge as small translucent fish with protruding eyes called alevins. They remain protected under the shallow nest gravels and are nourished by an orange yolk sac attached to their bellies. For some two to three months the yolk provides balanced nutrition with proteins, carbohydrates, vitamins, minerals, and sugars.

When the sac is substantially absorbed by late spring or summer, the hatchlings have developed into slender inch-long fry with dark vertical bars along their sides. They swim up from their nests into the slow, clean current and begin foraging for food. When the tiny fish increase in size to about two inches, they are called parr, or fingerlings, and actively consume microscopic plants, tiny worms, snails, and small insects in the river or nearby lake. The decimation of Northwest beaver populations by fur traders in the early 1800s severely damaged ancient salmon spawning grounds since the low dams they constructed across high mountain streams provided protective habitats and an abundant backwater food supply.

During the juvenile phase of their existence, parr are a favored prey of birds, mammals, reptiles and amphibians, and other fish that share riparian habitats with salmon. Predators that depend on the small fish during this four to twenty-four month salmon stage are kingfishers, raccoons, frogs, and trout. Following this phase, parr begin moving downstream to river estuaries.



## D.4 Science

### The Salmon Life Cycle: From Estuary to Ocean

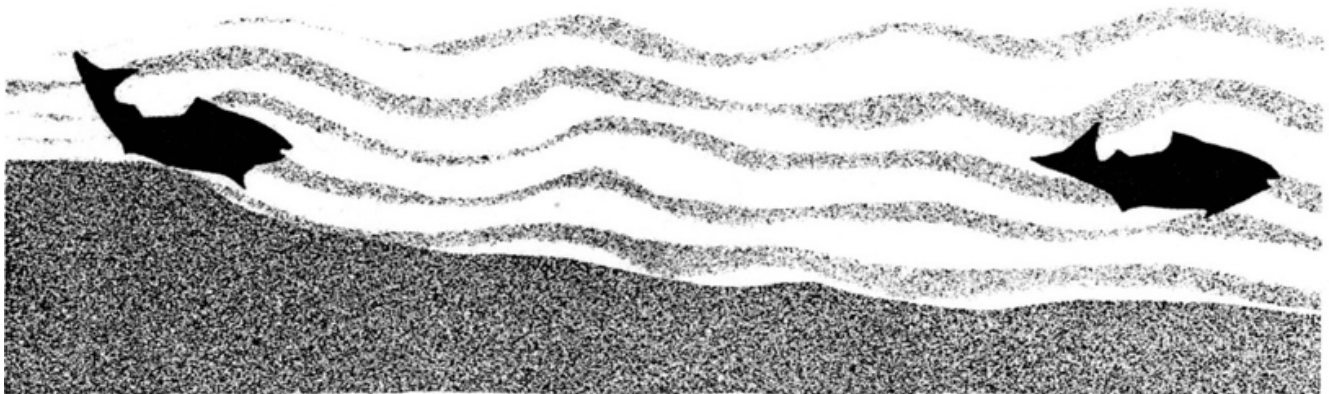


**Salmon smolts**

When juvenile salmon reach four to six inches in length they are known as smolts and undergo a complex physical change adapting them to downstream migration to mixed fresh- and saltwater estuary environments near the ocean. By this time their parr marks have disappeared and the fish allow the springtime freshets to carry them downstream tail first. They generally move at night to better avoid predators.

During this phase the dependable flow of clean water is a critical factor to species survival. When water in large reservoirs behind dams moves too slowly, the additional time taken for smolts to reach the ocean interferes with their saltwater adaptation process and increases susceptibility to disease which causes high mortality rates.

Estuary life for young salmon triggers another significance biological transition as the body and scales become much larger. They also develop two-tone silver coloring for protective camouflage in the ocean where they blend with the sky when viewed by predators from below, and darker when seen from above. Estuaries provide ideal habitat for smolts to mature as lush salt marsh growths of grasses, rushes, cattails, and other plants help protect them from predators. These areas also provide an ideal environment for the organisms on which smolts feed. Depending on the species, juvenile salmon may spend from several days to several months in estuaries.



## D.5 Science

### The Salmon Life Cycle: The Five Ocean Houses

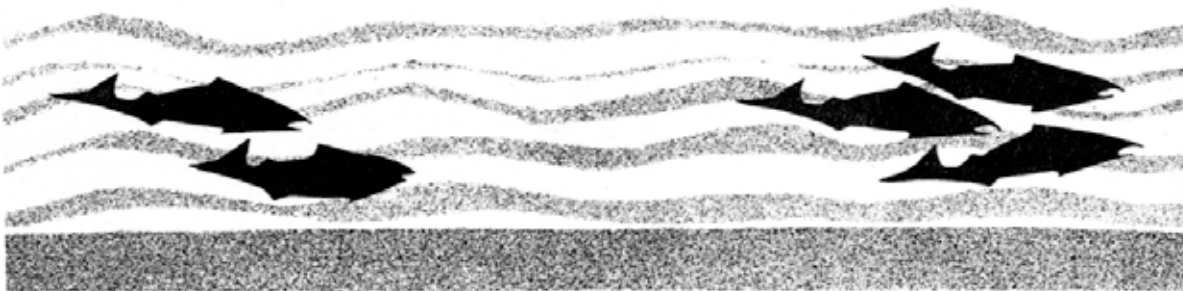


**Chinook salmon**

Several Northwest Coastal Indian myths tell about the Five Salmon Houses located beneath the Pacific Ocean where the Salmon Chiefs live with their Chinook, Sockeye, Chum, Silver, and Pink tribes. Only recently have scientists conducted sufficient research to understand the territorial preferences of the various species. While there is some overlap in their North Pacific feeding grounds that extends along the Continental Shelf off the coast of Canada and the Alaskan panhandle, each species is also known to have distinct ocean migration patterns that tend to follow the counter-clockwise direction of the North Pacific's Alaska Current.

For sockeye, chum, and Chinook, their ranges can go for thousands of miles—often traveling in schools, or runs, up to thirty miles a day, and extend west of Alaska into the southern reaches of the Bering Sea. (Salmon species native to the rivers of Japan, Korea, and the Russian Far East range across distinct territories in the eastern Pacific and Bering Sea.)

A steelhead trout tagged in the western Aleutian Islands was recovered about six months later in southwestern Washington's Wynoochie River—about 2,200 miles away, and a Chinook tagged in the central Aleutians was found 3,500 miles distant a year later in Idaho's Salmon River. Considerable mystery still surrounds salmon migration patterns as questions remain about why certain species prefer particular areas, and how ocean conditions affect their survival rates.





## D.6 Science

### The Salmon Life Cycle: Upstream Migration and Spawning



**Spawning salmon**

After extended time and distance in the Pacific Ocean, salmon return to estuaries and natal streams in order to spawn, or reproduce, through a mysterious process known as homing. Scientists hypothesize that their navigation involves a complex combination of magnetic forces, awareness of day length, and seasonal signals. As these influences direct salmon to their native regions, their incredibly keen sense of smell draws them toward the waters known from their juvenile phase. Salmon chemical perception through their noses is so sensitive that they can detect the signature dissolved compounds in water from their native streams

in parts per 3,000,000,000,000,000,000 (quadrillion)!

Time of arrival in their rivers of origin takes place at specific times and places depending on the species, followed by swimming a gauntlet of challenges from wildlife predators and commercial fishers to downstream torrents and waterfalls. As salmon re-enter freshwater rivers in runs, or groups, to begin their journey to upstream spawning grounds, they again undergo a biological transformation, lose their desire to eat, and live off accumulated body fat. Evolutionary processes have shaped generalized watershed spawning distributions with pink and chum usually locating in lower streams, Chinook in the mainstream and larger tributaries, and coho in upper, smaller tributaries. Sockeye generally spawn in the upper watershed and upon emerging migrate to a nearby lake to complete their freshwater growth.

Upon reaching their home gravels, females use their tails to dig redds, or nests, and their urge to spawn quickens as their egg sacs loosen. By this time the males who have survived the journey have humped backs and hooked jaws with sharp canine teeth used to fight off competitors. Eventually the female deposits up to 7,000 eggs in a series of cone-shaped redds up to sixteen inches deep, and the successful male releases milt, or sperm, to fertilize the nest which is then covered with gravel by the female. Salmon that have spawned are called kelts, which die within days or weeks of spawning. Their nutrient-rich carcasses provide substantial amounts of oxygen and nitrogen for streamside plants, and an important food source for bears, otters, gulls, and eagles.



## Science Epilogue

### The Salmon Life Cycle: Challenges and Commitments



**Salmon carcasses after spawning**

*Artist-author Jeannette C. Armstrong is a fluent speaker of Okanagan who grew up on the Penticton Indian Reservation in British Columbia. She holds a degree in fine arts from the University of Victoria and directs the En'owkin International School of Writing.*

“Habitat loss of spawning streams on both sides of the 49th Parallel has reached an acute level as a result of the cumulative and combined effects from widespread sources. Urbanization and municipal planning, some of the major culprits along with road and rail construction, impeded and altered water levels and flow, and created artificial watercourses and concrete canals. Industrial and urban wastes from huge city and rural populations filled lakes and rivers with a myriad of unpredictable contaminants, particles, and excessive phosphates. Their excessive effluent encouraged the proliferation of alien plant forms and choked out important freshwater estuaries and lakes.”

“... Power dams blocked spawning migration and killed fry and smolt in their turbines. Damming created huge alterations in river current, speed, and depth, resulting in obliterated estuaries and non-viable or unattainable spawning areas. ... Salmon farming, once thought to be the answer to declining stocks, is now a major risk and competitor. While remaining a marginally viable option, the high incidence of disease in farmed fish results in low survival rates. Additionally, natural salmon stock genes are seriously threatened from interbreeding with farmed, genetically altered salmon. ... Most disturbing is a general decline in size and weight of all five wild Pacific salmon species and the disappearance of whole salmon runs.”

“... We must forge something new, a new course chosen for the right reasons—a course ensuring the preservation of the precious gifts of life to each of us and our generations to come as true caretakers of these land.”

--Jeannette C. Armstrong, “Unclean Tides,” in *First Fish, First People*

\* \* \* \* \*

*Alexander McGregor of Pullman, Washington is president of The McGregor Company, one of Washington's oldest businesses providing crop seed, fertilizer, equipment, and other services to Northwest farmers through several dozen outlets in Washington, Idaho, and Oregon. He has written extensively on regional heritage and agricultural topics and holds a doctorate in history from the University of Washington.*

“Northwest farm families and businesses like ours that serve them care deeply about the stewardship of lands and water quality. These values have sustained a vital way of life over many generations for the 97% of



### **Minimum-Tillage Equipment in Palouse Hills Wheat Stubble**

regional farms and ranches that remain under family management. Bill Gates reminds us that the differences between those who advocate support for increased productivity and those promoting sustainability offer a ‘false choice’ in an age that demands commitment to both perspectives. The world’s population will likely reach 9.5 billion by 2050 and anything other than approaches to increase production for meeting basic global needs would be a disservice to the hungry. Moreover, high productivity enables the long-term preservation of vast natural landscapes that otherwise would be used for food production should sufficient supply from conventional sources be unavailable.

Companies like ours have been working hard and creatively for decades to meet these challenges. Through partnerships with agronomists, plant geneticists, and equipment fabricators, we have entered an era of minimum tillage agriculture. This approach has reduced soil erosion by 85% through the use of deep furrow drills and other equipment that substantially preserves surface residue from previous crops. Moreover, fewer tillage operations consumes less fuel which contributes to significant reductions in greenhouse gas emissions. Yet crop yields have increased 250% over the last hundred years.

Improvements in water quality through minimum-tillage approaches, the federal Conservation Reserve Program, and other farmer initiatives have greatly improved salmon habitat in Northwest watersheds. According to a recent United Nations report, in many other parts of the world water is becoming more polluted, more salinized, and scarcer while a quarter of all land has been highly degraded. But that is not the case here. We remain committed to working with university scientists, tribal officials, and local farmers so the strategic goals of productivity and environmental preservation benefit the region’s fish and wildlife while continuing to provide food for domestic needs and the world beyond.”



## Literature E.1 - “Genuine Americans’ - The Story of My Life” by Mourning Dove (Christina Galler)

There are two things I am most grateful for in my life. The first is that I was born a descendant of the genuine Americans, the Indians; the second, that my birth happened in the year 1888. In that year the Indians of my tribe, the Colvile (Swhy-ayl-puh), were well into the cycle of history involving their readjustment in living conditions. I was born long enough ago to have known people who lived in the ancient way before everything started to change. The wildlife, staple food for natives, was slowly and surely vanishing each year; all the game was disappearing. The first invaders were the fur traders selling firearms to the Indians who enthusiastically adopted their use.

My father, Joseph Quintasket (originally T-quin-task-et, or “Dark Cloud”), was born about 1864 in a kwat-zee (pit dwelling) in the upper or Lake Okanagan community of En-hwx-kwas-t’nun (Arrow Scraper), located a short distance south of present Kelowna, British Columbia, on the east side of Lake Okanagan. Arrow Scraper was a winter village, visited in 1842 by the famous Father De Smet, who blessed the ground and left a cross standing where, twenty years later, Father Pandosy built a church.

Father’s mother was a Nicola Indian, with a strain of [Canadian] Okanagan in her family. His father was a white man, a Scot named Andrew, who at one time was in the employ of the Hudson’s Bay Company. When Father was nine years old, his mother died in a Colvile Indian camp near Pinkney City (the earlier name for the present town of Colville) where they were visiting. His mother’s husband died two months later, leaving him an orphan. Father was always respected, known for his openhanded hospitality to the hungry and the needy. His home was at Pia, also called Kelly Hill, near Boyds, Washington, where he raised cattle and chickens—a contented farmer into his old age.

Father’s mother’s mother was Pah-tah-heet-sa, a famous Nicola medicine woman. Quite frequently this old woman would make up a pack of dried venison and salmon and go visit her two daughters, both of whom married among the Okanagan. One day the people at her village were getting ready to go over the Nicola Trail, which was infested with mean cougars and grizzly bears. The old woman recalled that this trail had huckleberry bushes that would be about ripe with luxurious food. She hurried ahead of all the armed warriors, who led the women and children to protect them from attack by wild animals.

When this brave woman drew near the berry patch, she saw a grizzly feeding. This did not stop her. She took her digging stick of dogwood and prepared to fight if the bear meant to charge at her, which the bear did not hesitate to do. With a howl that would have frozen the blood of any coward, it charged. She threw off her pack and held her stick to challenge the brute, saying, “You are a mean animal and I am a mean woman. Let us fight this out to see who will get the berry patch.”

The bear did not answer her but opened its mouth wide and came at a leap. She watched for her chance and drove the sharp stick into the animal. The bear fell back in pain, then jumped at her, even more angry. The fight went on long enough that the warriors approached, not expecting to see such a sight. When they drew their arrows to shoot, she commanded them, “Don’t shoot. Wait! We are fighting this to the finish. He is a mean animal and I am a mean woman. We will see who is strongest and conqueror in this battle.”

The people watched the fight until the sun lay low in the western sky. Only then did the grizzly walk away, broken and bleeding. The old woman had only a few scratches. She picked up her basket and gathered the berries she had won, while the people stood in wonderment. She died very old when she and her buckskin horse rolled down a steep embankment near Oroville. She and the horse drowned and were both buried on the bank of the Similkameen River in an unmarked grave.

My mother, Lucy Stui-kin (Sna'itckstw), was a full-blood. She was born about 1868 at Kettle Falls, which we call Swah-netk-qhu, meaning Big Falls or Big Water, also our name for the Columbia River. Her father was Stui-kin (Beaver Head) of the Trout Lake (Sin-na-aich-kis-tu) band of the Arrow Lakes people, with a strain of Kootenay ancestry. Her mother was Soma-how-atqhu ("Power From Water"), youngest daughter of head Chief See-whelh-ken of the People of the Falls (Swhy-ayl-puh), the true Colvile tribe, also known by the white name of Maria. She came to visit when I was a girl.

It was summer, and we saw two horsemen galloping toward our tipi at Pia. I was riding the pinto my uncle Louie Stui-kin had given me. I was fat, with glossy hair in black, yellow, and white. To please me, Father kept him saddled until I was in bed each night. That way he was always ready to ride. ...Our toys were buckskin dolls, dishes made from broken bottles in pretty colors, and fresh flowers.

Grandmother once came to visit us from her home in Tobacco Plains, the main Kootenay camp in British Columbia. She was rich in robes, horses, and trade goods, so the pack became a source of countless surprises after she finished her greetings and handshakes. She handed out gifts, saying, "Saved all of these things for you. Here are shawls, handkerchiefs, beads, bright cloth for dresses, and a wonderful cape." All of us got something special, but I got the cape. It was velvet, tight along the back, decorated with blue and purple brocade, and trimmed with jet beads on silk tassels. For years I wore it only to church, but I was so proud and vain about it that I am sure I broke many commandments doing so. When the girls my age were watching, I would whirl around to show it off and make the beads jingle to attract their attention.

I loved my grandmother greatly. Her dignity and low, musical voice showed that she was the daughter of a chief. She was plump, straight as an arrow, and had gray-white hair in two braids, a slightly square chin, pretty but worn teeth, long fingers, and small feet. I could wear her moccasins until I was eleven. She would only dress in buckskin and eat native foods. When her father, Chief See-whehl-ken, died his nephew Kinkanawah succeeded him. ...I remember when I first met Chief Kinkanawah at Kettle Falls. He lived in one of the log cabins on the west side of the little draw near Goodwin Mission.

I was born in the Moon of Leaves (April) in the year 1888, ...the oldest of seven children. Until I was four years old I had all the attention given to an only child. The care lavished on me by my parents, my dotting grandmother, and other relations surely spoiled me. I had everything I wanted— toys, dogs, tame ground squirrels, and chipmunks. My whims were many and, as I have been told, I always got my way about things. If anyone rebuked me I would throw myself down, scream, and kick until I was humored. This willfulness only amused my parents, and I had everything my own way. This changed when my parents had other children.

When I was four, my sister Sulee was born. I did not like it when all the affection that had been bestowed upon me now was heaped upon the bundle in the papoose cradle. ...Although our children seldom receive physical punishment, it was my lot to be spanked many times before I realized that there was room for more than one child on my mother's lap and that I must show respect for my little sister. I naturally turned to my father for affection, and he, with his generous, understanding nature, encouraged my love and confidence. We became very close to each other.

...I have always had a good memory, and so I learned these teachings most carefully. My earliest childhood recollections involve learning to obey the wisdom of my elders. In the first [memory], my mother's voice comes to me as a hazy, uncontrolled "brain of thought." She is using the agitated tone of our dialect. "Put your head down! Put your head down!" But I was unable to obey her commanding voice. The horse I was riding was running wild, and a large tree limb was coming at me. My tiny fingers gripped the saddle horn, and I kept staring straight ahead over the ears of my pony. Moments before, I had been slowly following after my mother, going through the woods searching for huckleberries. Then things became a rush and the limb was coming closer and closer. It would not get out of the way! It pushed against the pony's head and then, with an awful swish, swept me over the rump onto the ground. Oh, how it hurt, and how I cried.

Mother picked me up and wiped the blood from my nose and mouth. "Kee-ten," she spoke my name gently, "have you no ears?" She touched one of them. "Your ears are made to listen through. You must listen to your elders. If you do not mind when they speak, you will always get hurt." I think I was about four when this happened, the first of three times that were so painfully unpleasant because of my own disobedience and willfulness.

My own spiritual, moral, and traditional training was supervised by a woman called Teequalt, whom we came to adopt as a grandmother. She was my tutor during her later years. I had come upon an old woman sitting all by herself. I came up to her full of eagerness. Seeing me, she gathered up her heavy load and got to her feet with the help of a cane. In a loud tone she scolded me, on the verge of sobbing, "Leave me alone. I am walking, walking until I die. Nobody wants me." She waved me away and cried, "Leave me alone." She left our trail and wandered into the chokecherry thicket on the hillside.

I stood there embarrassed. I just could not understand why this woman wanted to die when the land was beautiful, covered with flowers in the many hues and shapes. The songs of the meadowlarks mingled with the robins scolding from the treetops, where their nests were. Crickets added their own tunes. It was wonderful to be alive and inhale the clear spring air. My childish mind saw the large world as all happiness. But this woman was sad, weeping and wanting to walk until she died.

Abruptly, I turned on my heel and ran uphill to tell Mother. Reaching the door, almost out of breath, I said, "Mother, I have found a new grandmother, and she wants to die." This so startled Mother that she almost dropped the new baby she was lacing into the cradleboard. Without a pause, she handed me the baby and went swiftly down the trail to find the old woman. She did find her and offered her our home for as long as she wanted to stay. Thereafter Teequalt was always with us, and we stayed closer to home because she could not travel very far.

Teequalt was a wonderful storyteller. She was twelve when she first heard of the new people (whites) coming into our country in boats (bateaux) instead of canoes. When my parents went for game or berries, we children took care of her. We prepared meals according to her instructions, then we would sit at her feet and listen to her wonderful stories. With our adopted grandmother, we became like the other children. Our own grandmother lived far off, and we had always envied other children who were blessed by having elders in their home. The first home I remember was a tipi. The cover – of long strips of unbleached muslin that my mother had arranged on a level spot and sewed together by hand – was stretched snugly around a conical framework of peeled poles and "buttoned" down the front of wooden pins. The bottom was pegged to the ground with sharpened stakes, and the door was a flap that opened outward. ...The left side of our tipi was where my father and mother customarily sat and slept, and the right side was for the children. The oldest and dirtiest robes covered this spot, where I played with my pets without interference from my elders. It might be likened to a child's play corner or

in a white home.

We slept with our feet toward the fire in the center. Every morning Mother took the bedding outside and shook it, then she folded the robes and blankets before placing them near the wall. Just inside the doorway, on each side, we kept our food, cooking utensils, water pails, and some firewood. The rear section of the tipi was reserved for visitors, and the floor there was covered with the best robes. We had a beautiful tanned buffalo robe that always was spread for our guests to sit upon. The women who came to cal generally refused this place of honor, but the men who came as visitors invariably sat there and leaned back on the painted rawhide parfleches stacked along the back.

We stored clothing, preserved foods, and other odds and ends in these. My mother was noted for the number and quality of her parfleches, many of which she bought from the Kootenay, who were said to make especially good ones. All were painted with pretty designs in red, black, blue, green, and yellow. The paints were prepared from certain plants and finely powdered mineral earths.

When Sulee and I were children, the family did not remain long in any one place in the summertime. We traveled with other families in search of food to be preserved for winter use. These expeditions sometimes took us far into the mountains where there were many grizzly bears and cougars, but my mother and the other women never seemed to be afraid of meeting these dangerous animals. Some of our trips were only into the lower mountains, where deer were plentiful.

Often we went to Okanogan country to gather bitterroot (spit-lum), which grew abundantly on the sagebrush flats close to the Okanogan River. The women dug up this plant with pointed dogwood digging sticks, called pee-cha. The points often were hardened by charring. Digging sticks used in hard ground almost straight, while those used in soft ground were curved. The handles for both were crossbars made of elk horn. In recent years the wooden sticks have been replaced by sharp-pointed iron rods.

The flowers of the bitterroot plant are dainty and attractive, in various shades of pink. The plants grow low to the ground on rocky slopes and gravel flats. The thin, twisted roots are dug when the plant is in bud. They are peeled immediately while they remain moist. The inner white rinds are dried, they keep a long time. While the root is very bitter and unpalatable when raw, it is healthful and nutritious after it is cooked. It is boiled by itself or mixed with serviceberries.

...Mother fulfilled her pledge to Father De Rouge in the fall of 1898 when I was about eleven. I was eager to learn more English and do more reading. I first went to Goodwin Mission School in 1895, but I did not stay long. When my father told me I had better start at school, I was scared. It took much coaxing, and buying me candy and nuts along with other luxuries at the log store at Marcus, before I consented to go. Father was holding my hand when we went through the big white gates into the clean yard of the school. A high white-washed fence enclosed all the huge buildings, which looked so uninviting. I hated to stay but promised Father I would not get lonesome. I walked at his side as he briskly entered a building to meet a woman in a long black skirt, with a roll of stiff white, oval cloth around her pale face. I looked away from her lovely, tapered fingers. I loved my mother's careworn hands better.

Since I could not understand English, I could not comprehend the conversation between Father and the kind woman in black. Later I learned she was the superior at the school. When my father was ready to leave, I screamed and clung to him, begging to go home. This had always worked before, but now his eyes grew dim and he gently handed me to the sister and shamelessly ran out the door. When the sister tried to calm me, I screamed all the louder. She picked me up off the floor and marched me into a dark closet under the long stairway to scream as loud as I could. She left me to sob myself to sleep. This cured my temper. I was too young to understand. I did not know English, and the other girls were forbidden to speak any native language. I was very much alone. Most of the time I played with wooden blocks and the youngest girls. Each

morning the children got up and dressed to attend church before breakfast. We walked in a double row along the path that climbed the slope to the large church, where my parents came for feast days. We entered the church from the west side door as the boys entered from the east one. The few adults came through the front double doors. There was also a small school chapel that we used when the weather was too bad to march outside. Our dormitory had three rows of single iron beds, covered every day with white spreads and stiff-starched pillow shams that we folded each night and laid on a small stand beside the bed.

Our dining hall, called the refectory, looked big to me, perhaps because I was used to eating in a cramped space. I was afraid of falling off the chair and always waited for others to sit first. The tables were lined up close to the walls, and the sister in charge had her table in the center, where she served our food on white enamel plates. We brought them up to her empty and carried them back full. Then we all waited until she rang the bell to begin eating. The school ran strictly. We never talked during meals without permission, given only on Sunday or special holidays. Otherwise there was silence, a terrible silent silence. I was used to the freedom of the forest, and it was hard to learn this strict discipline. I was punished many times before I learned.

I stayed at the mission for less than a year because I took ill and father had to come and take me to the family camp at Kettle Falls. People were catching late salmon and eel. I returned to the mission again until my mother died and I went home to care for my siblings. After a few days of eating and relishing the fish my father caught, I was well enough to try to ride the new pony my parents gave me on my return. He was a surefooted buckskin cayuse with a black mane and tail. I at once named him Pep-pa-la-wh, (Cream Color) for his markings. He was the wildest little pony to catch, so after he was brought down from the hills, I kept him staked close to our camp until he became more gentle. I would climb on large stumps or rocks to get on him, helped along by the saddle strings.

My second stay at the school was less traumatic. I was anxious to learn more English and read. The school had been enlarged, with much larger buildings adjoining the new ones. The old chicken yard was moved farther away from the hospital windows. There was a fine white modern building, with a full veranda along the front, for the white students who paid fifteen dollars a month to board there. Although they were next door, we never met them; it was as if we lived in different worlds. They had their own playroom, refectory, classrooms, and dormitory. We only saw them in church, when they filed in ahead of us and sat in front of the guardian sisters. Our own teachers sat on long benches behind our rows. The only white girls we got to know were the charity orphans who boarded with us.

...I promised the sisters and girls I would come back in the fall. We were dismissed in June on the feast of Corpus Christi, always a big event in our year. I never got back to Goodwin, however. Mother had a son, christened Jonny, whom I had to take care of because the duties of the ranch took much of her time. Fifteen years later, after I was married, an old Wenatchi shaman and his wife asked my husband, Fred Galler, to drive them into Similkameen territory. Since it was my new car, I went along on the trip while the Indian doctor made a lot of money. When the season of Winter Dancing began and the spirits were strongest, the local Similkameen doctors tried to find a way to hurt the old man. As they sent their spirits south, they flew over our home while Fred and I were asleep. One was a Dwarf and the other a Bluejay. I dreamed of their passing and took ill. This was enough to warn the old man, who cured me as thanks.

Both Catholicism and shamanism have been part of the beliefs and experiences of my entire life. Together these were part of my experiences and made me resolve to help my people record their traditions and gain all the rights they are entitled to. My memories as a child remain with me yet, influencing all that I do, say, or think. ...Whatever I dreamed or imagined, I always bore in mind the teachings of my parents that truthfulness and honesty must be the objective in future life. This was the measure of a successful person. It was the foundation of all my teachings as a child.



## Literature E.2 - “How Beaver Brought Fire to the People”

*Nez Perce elder Gordon Fisher was a gifted storyteller and historian of the Nez Perce and Snake River peoples. He was a highly decorated army veteran of the Vietnam War and completed a degree in forestry management from the University of Washington before returning to serve his people on the Nez Perce Reservation in Idaho. Mr. Fisher was known as Yosyos Tulekasin, or “Blue Man,” an honored name passed down in the Fisher family from the time a brave ancestor appeared in blue face paint to fight against a party of invaders from the south in the 1700s. Mr. Fisher’s great uncle, Chief Hush-hush-kute, was one of the first casualties in the Nez Perce War of 1877. He related this ancient tale in 2006.*

Long ago, before there were people,  
the Creator made fire.  
He gave its power to the Conifers,  
who lived high in the mountains.  
They selfishly guarded its secret,  
and kept it inside their bodies to stay warm  
while other creatures shivered when it was cold outside.

One winter it was so cold  
that Pik’úunen froze completely across.  
The Animal People were suffering,  
and thought they would freeze to death  
if they couldn’t get fire.  
Coyote called a meeting at Wawáwih  
and sent out Mourning Dove, Robin, and Eagle  
to spread the word all across the land.

The Animal People came from all around  
and Coyote asked, he asked;  
“How can we get fire from the Trees?”  
Finally Beaver had an idea.  
“The Cedars and Pines are soon gathering  
for a great council along Wel’íwe.  
I will hide along the riverbank  
and get their fire.”  
The Conifers gathered just like Beaver said.  
The Cedars built a huge warming fire,  
and gathered around it after bathing  
in the icy waters of the river.  
They knew the Animal People wanted their fire,  
so they posted Pines as sentries all around  
to guard their secret.

But Beaver was hiding  
under a clump of earth and roots along the bank,  
and when a hot coal rolled down from the fire,  
he grabbed it, held it tight to his chest,  
jumped up and sped away.

The Pines screamed the alarm  
and started chasing after Beaver.  
He lunged back and forth to escape them,  
and then raced straight ahead,  
so the Grand Ronde River is crooked in some places,  
and straight in others.

The Pines chased Beaver along the river  
until they became exhausted,  
and gathered in dense clumps still scattered along its banks.  
Strong Red Cedar had joined in the pursuit  
and continued running until he reached Léewikees  
at the mouth of the river.  
He knew he would not catch swift Beaver  
but went to the top of the hill to see where he was going.  
From this lookout he saw Beaver reach the Snake River  
and head further downstream.  
“We cannot reach him now,”  
he shouted the Trees below.

Beaver safeguarded the fire as he swam across the river  
and gave it to a group of Willows  
who had gathered along the shore.  
He continued downstream and shared it  
with other trees and creatures.  
When Beaver returned to the council grounds at Wawáwih,  
Coyote took two pieces of wood from a willow.  
He put the flat one on the ground  
and twisted the sharp point of the other into it,  
which caused the one below to flame up.  
All the Animal People were amazed  
to see fire made this way,  
and Coyote and Beaver gave each of the visitors  
pieces of the wood to take home.  
Today Old Man Cedar still keeps watch  
where he stopped on the hilltop  
overlooking the confluence of the rivers.  
The closest stand of cedars is far away upstream.  
That shows how far he ran from the Conifers' camp  
when Beaver stole their fire.

## Literature E.3 - “Skolumkee’s Dream”

*Travelers along a highway southwest of Spokane, Washington in the spring of 1941 encountered the peculiar sight of an elderly couple slowly traveling in a wagon. Although the occupants were not fluent in English, area news reporters learned of their long trek from the Colville Indian Reservation en route to Rock Lake and published brief stories about their progress in area newspapers. One account identified the man as one of the last surviving sons of legendary Chief Kamiakin. The famed Yakama-Palouse leader, who died at Rock Lake in 1877 only to have his remains desecrated a year later by grave robbers, was among the principal leaders of tribal resistance during the Northwest Indian wars of the 1850s. His son, Skolumkee, had lived in the vicinity of Rock Lake until relocating to the Colville Reservation a half-century earlier.*

When he arose at dawn that morning, Skolumkee told Pemalks this would finally be the day. After washing themselves in the waters of nearby Elatsaywitsun (Sprague Lake), the old couple returned to their canvas-covered wagon and finished dressing. Pemalks put on a loose fitting, tan gingham shift with orange flower print and fastened her leather dalpas money pouch around her ample waist. She combed her long black hair while her husband put on a dark evergreen shirt with ruffled sleeves. Even around their Johnson Lake place on the reservation, Skolumkee often wore such fancy shirts. He was a proud, aloof man and how peculiar that this was the one luxury he allowed himself.

Accommodations in the wagon were not much different from their one-room shack back home. The unpainted frame structure where they had lived for years featured a single square four-paned window and was devoid inside of even a single piece of furniture—no table, no chairs, not so much as a footstool. They needed only a steamer trunk for Skolumkee’s shirts, an apple box of pine slats to hold an extra blanket, bottle of his liniment, and a small corner closet to hang her things. The same wool blankets they were using on the trip covered a straw mattress on the floorboards for a bed back home. What more was really needed there? Skolumkee could hang his wide-brimmed felt hat from a nail next to the roots she dried every spring.

The trip from Nespelem to Rock Lake, 175 miles to the southeast, was only a few hours’ quiet drive by automobile through gently rolling hills south of the Columbia River. But the old couple had been on their peculiar pilgrimage for over two weeks now by horse and wagon and the last stretch from Edwall to Sprague had incited more roadway chaos than usual. Seeing a decrepit vehicle crawling along the blacktop in June 1941 was enough to slow most drivers down and Skolumkee’s wife was not eager to head back to the highway past Sprague’s two downtown blocks of stately brick buildings. For a few moments Pemalks thought about how proud she was of Skolumkee. He was still handsome now in his seventy-fourth year and Pemalks was not much younger. She had not seen him wear this particular shirt during the trip, but she liked the smart look of the narrow lines connecting tiny red spangles that ran the length of the sleeves.

As she finished combing her hair, Skolumkee fastened the brass buttons on his red-brown leather vest that fit tightly against the slight hump of his back. His shoulder-length braids of gray-streaked black hair dangled onto the two orange and purple stars Pemalks had deftly beaded on the vest. She risked commenting on her husband’s fine looks that morning as she gazed upon his lean face. “So Khwe’sat (Old Man),” she said raising both eyebrows. “Your grandfather’s waters have restored your youth.” Skolumkee slightly smiled and shook his head.

“Sma’wic! (Old Woman!), I still feel like a grandfather,” he said. Skolumkee left the tent and gathered their cooking gear from the fire pit while Pemalks neatly folded their blankets. They then worked together to take down the canvas tent in a familiar routine and loaded their belongings into the box wagon.

The previous evening Skolumkee had built a fire from wood and dry tules scavenged along the water’s edge and they had consumed the last morsels of tasty camas cakes she had hoarded in recent days. They still had plenty of dried salmon stored in large cedar root baskets in the wagon but the camas flour was almost gone. She had not expected the trip to take so long and now their supplies were running low. Pemalks knew that her husband kept a small bag of bitterroots in a pine box with some dried berries and a steel-strike and matches that he had packed with his things. She also remembered his curt response when asking him about using the roots for their next meal. “You may have all that is left when we are finished!” he scolded. “You brought the money. You can buy White man’s flour at the Ewan store tomorrow.”

Pemalks was hoping they could move along and she wanted to avoid driving back through the middle of town. She watched as Skolumkee threw some hay from a broken bale in the back of the wagon to their two sway-backed mares whose patient labor had somehow brought them this far. They looked tired even in the morning and she wondered how they would fare the rest of the trip. As the horses munched on the tender stalks in the brisk morning air, Skolumkee threw the black leather harness across their backs and soon had connected them to the trace chains.

The old couple could see the town folk beginning to stir and worried that their presence might become something of a spectacle. A band of low gray clouds brushed against the horizon to the north, but the early morning sunlight brilliantly shone off the white steeple of Mary, Queen of Heaven Catholic Church that towered even higher than the town’s grain elevators. Shortly after they started moving through town, Skolumkee turned the team left to avoid Main Street and passed by the imposing brick edifice.

“The windows are beautiful,” Pemalks whispered, just as a young boy rushing from an alley stopped in front of them. A look of wonder filled his eyes and he hesitated to cross until Skolumkee jerked the reins with a “Hup-hey!” and waved the startled lad by with a smile. In a few moments they reached the gravel road leading east toward open prairie and the horses settled into their familiar plodding tempo.

Nearly an hour later they came to a railroad crossing located five miles beyond town. Skolumkee drew the lines to one side and led the team along a dirt trail that followed the track for a mile to the northeast. At the end of the trail he pulled back on the iron lever brake and handed the lines to Pemalks. “We need to make the lake by nightfall so I will not be long,” he said. “Stay here with the horses.” He then reached behind to the pine box he stored near his feet and took out two small bags. He slowly crawled down the side of the wagon and walked ahead toward a small aspen grove.

In a couple of minutes he disappeared beyond the trees. Pemalks pulled out a large canvas bag she kept behind the seat and brought out a tangled pile of steel knitting needles and thick gray thread she was using to repair a large wool stocking. In twenty minutes Skolumkee returned to the wagon and pulled himself up into the seat. He returned the bags to the box and grabbed the reins without saying a word.

Soon they were back on the way headed southeast and in another hour they approached a rise in the road. A meadowlark perched precariously on a barbed wire fence sang its familiar song of springtime welcome. The jolting cadence of the iron-rimmed wheels slowed and the horses began to breathe more heavily, but Skolumkee snapped the lines as he exclaimed, “Akailu!” Pemalks felt a stiff breeze hit her face and was surprised that the ancient creatures seemed to take on new life. In a moment the grade leveled and a broad expanse of green and yellow pasturelands bisected by deep basaltic coulees, appeared before them.

Far to the east the pyramidal shape of Steptoe Butte rose prominently from the surrounding hills. Skolumkee knew he was finally home. “Yáamuštas, my power mountain! The Wolf Brothers will not get us now,” he said with obvious delight, pointing so she would know. “Yes, I see it” she said, “and I shall have a special meal for us tonight.” She clutched her money pouch. “I have saved more than you think,” Pemalks continued, “and you said we will find a store by the lake.” Skolumkee raised his eyebrows and nodded with a smile just as a pickup truck passed them and honked which flushed a white-tail jack rabbit from the fenceline brush.

“How long has it been since you were here?” Pemalks asked. “Only last night,” Skolumkee replied matter-of-factly. “I came in a dream and met an old boyhood friend I had long forgotten.” Then he explained to Pemalks what he had seen. Skolumkee had been wandering along the trail where a cluster of willows grew near his family’s Rock Lake camp of long ago. He turned a corner and saw a bald-headed man clad in ragged buckskin staggering along a short distance ahead. Skolumkee hollered something and the man turned and hobbled back a few steps. Then Skolumkee noticed he had no feet. The man grinned a great toothless smile of recognition and began shouting and waving his arms. Skolumkee saw one hand was also missing but ran to embrace his old friend. Then the dream had ended.

“So who was this pitiful creature?” Pemalks asked. “Atween,” sighed Skolumkee as if she should have known. “He lived with us here in the old days; helped our mothers tend the children.” Without thinking, Pemalks said, “Well, at least he had a head.” But she no sooner had spoken the words than pursed her lips with regret, and they rode the rest of the way in silence.

The old couple was bone tired when they finally glimpsed the windswept surface of Rock Lake beyond a row of rocky defiles to the east in late June 1941. The pink light of summertime dusk danced upon the worn piles of green lichen-stained basaltic columns scattered across the shallow coulees. Finally Skolumkee broke the prolonged silence of the day. “We will find the store tomorrow,” he informed Pemalks. “Night will soon fall and I must tend to the horses.” Their loosely jointed wagon turned around the final bend leading to the southern shore of the lake. Far to the east, they saw a slowly moving dust cloud hovering over a yellow caterpillar tractor as a farmer headed home after laboring in a nearby summer-fallow field.

Exhausted by the long ride in the afternoon sun, the horses kept to their slackened pace in spite of the prospect of finding fresh water. “We have enough for a fine dinner,” Pemalks reassured her sullen husband as they both leaned while Skolumkee diverted the horses onto a dirt trail. The team had no sooner left the road than Skolumkee reined them to a halt. Three strands of barbed wire strung across a long row of cedar posts blocked access to the lake and suspended from the top line was a peeling black and white sign bearing the familiar words, “No Trespassing.” Skolumkee paused a moment and then shouted “Hup-hey” to command the horses backward.

The forlorn creatures awkwardly retraced their steps several feet when Skolumkee reined them right to continue along the road and two marmots scurried ahead along the fence. Skolumkee squinted down the ribbon of gray-blue gravel and struggled to comprehend the peculiar appearance of an enormous rock wall that seemed to obscure the entrance to the grassy defile where he had once lived with his family. He passed by the trail to the boat launch and continued eastward to examine the formation.

The couple soon saw a rail line crowning the mountain of basalt detritus and in several minutes they passed through a narrow concrete viaduct to enter the familiar landscape of Skolumkee’s youth. He drove the team past the old Henderson home, still white and bearing the original frontier Gothic gables and casements, and saw a man clad in overalls walking from an adjacent machine shed toward the house. Skolumkee turned into the place and asked the rancher in broken English if he might walk up the draw behind the house to view his family’s former campsite.

The kindly stranger smiled upon recognizing the name “Kamiakin” in Skolumkee’s words, obliged the old man’s request, and looked on curiously as Skolumkee and Pemalks slowly got down from the wagon and walked up the lane behind the house. Skolumkee showed his wife the area where they had lived during the summers of his youth but noted that their spectacular view of the lake was now obscured by the massive stone trestle.

They returned to the wagon and retraced their route for a mile back to the familiar flat at the southern end of the lake where a short trail led to the launch and public campground. A green pickup truck pulling a silver boat was just exiting just as Skolumkee drove into the small fenced enclosure. He stopped the horses near a stony promontory that rose several feet above the surrounding prairie and traded stares with the other fishermen who were also preparing to leave.

Skolumkee stepped down onto the edge of the slight formation. “I played here as a child,” he said casually before wincing in pain as he leaned backward. Skolumkee’s beaded leather vest arched outward behind the slight hump on his back and Pemalks turned around to fetch the bottle of liniment. “But this was a mountain then,” he said with a laugh, “and I was chief of my brothers!”

Pemalks smiled with comfort that her husband’s ancient memories seemed to dispel the gloom that periodically descended upon him. Skolumkee walked around the wagon from his childhood outpost and raised his hands to help Pemalks down from the seat of the spring-wagon. “We’ll camp over yonder,” he said with a nod of his head toward two small hawthorn trees twenty feet to the southwest. He led the horses ahead and as Pemalks set about preparing their evening meal, Skolumkee unhitched the team and led them to the lake where he also drew a sip of water. He hobbled the animals near the wagon and broke more hay from the bale for their feed. “Hey, my kwetala’ma,” he whispered as he patted their heads, “you have brought me home and I thank you.”

Skolumkee opened a crumpled burlap gunnysack near the hay in the wagon and drew a faded red coffee can full of oats to pour it upon the animals’ fodder. “My travelers have brought me home,” he repeated to Pemalks, who had begun a special dinner of vegetable stew from dried salmon with potatoes, carrots, and beans she had kept for this moment. “Are you expecting others?” Skolumkee asked as he hovered over the savory concoction’s ample portions that began to warm in the iron kettle. “Maybe Atween,” Pemalks suggested, and they both chuckled.

Later that night the old couple feasted and Skolumkee told his wife about the adventures of his youth in the vicinity. Never before had she heard him speak so much about Chief Kamiakin, the legendary figure who had existed only in the imagination of Pemalks and their many nieces and nephews. But tonight’s tales were not those she had heard from others about Chief Kamiakin in battles with soldiers or meetings with governors and generals.

Skolumkee’s recollections were of a father teaching his son ways to stalk skittish mule deer with bow or rifle, about solemn preparations for a youth’s vision quest, and about his mother’s mysterious ability to transform roots and berries into white shells and red beads. These and other stories were life lessons from beloved elders that Skolumkee now recalled. Only late that night when Pemalks worked the clear liquid into Skolumkee’s curved spine did he close his eyes and fall silent lost in other thoughts of this hallowed place.

Skolumkee silently arose in the predawn darkness of the following morning while Pemalks slept beside him. He quietly dressed himself in the green shirt of red spangles with ruffled sleeves and put on his leather vest and round felt hat. He stepped down from the back of the wagon and instantly recognized a pleasant breeze coming off the water that was fresh but not cold. The stooped old man stepped on top of the low rock rise and heard the familiar wesla’yawau cry of the wind from his youth. He watched the sky gray in the east as dawn came behind a thin fog and he soon saw pines and aspens emerge from obscurity in the distance.

When the wind died, Skolumkee walked back to the wagon, reached into the storage box behind the seat where Pemalks stored the dried roots and berries, and took out a small sack. He then turned to walk along the road in the direction they had come and returned to the narrow lane that had been blocked by the fence. Skolumkee pushed against the top of the gate post to release it from the wire loop and stepped across. He left the gate down and walked intently for several minutes to a place where the trail led eastward back to the water. He paused for a moment, turned to the left and continued along a small path used by cattle and coyotes, and disappeared into the distance.

Pemalks had prepared a meager breakfast of coffee and biscuits with the last of the camas root flour and dried berries when her husband returned to the camp. "Maybe that store will have some of your peppermints or licorice," she said as he walked up to the fire. "Perhaps," Skolumkee replied, "but it will not taste as good as the k'unch you make. Look around here," he continued, "nobody has gathered the moss in these pines for years." They both stood in silence near the dying embers. "Did you find him?" Pemalks finally asked softly. "Much has changed," he whispered, "more fences, cattle trails, even an orchard there now. But I am sure I walked next to him." Skolumkee sipped his coffee from a chipped white enamel cup and said, "Come, I will show you where our mothers and brothers rest." Pemalks followed her husband's lead along the lakeshore to the east before ascending a stony slope in the shadow of a steep brown-black basalt bluff.

The trail led to a secluded bunchgrass covered flat. Pemalks watched as Skolumkee paused with ambassadorial dignity and remove his hat. He then looked skyward and spoke in whispers she could not understand. Pemalks quietly stepped beyond her husband among the slight mounds of earth and wandered toward a cluster of serviceberry bushes in the distance where a nest of tiny wrens suddenly darted about. As she looked back toward the lake, Pemalks glimpsed the swift motion of her husband's hand as if casting seeds in the wind. She was close enough to see him reach into the bag and spread its contents in a great arc that glistened as it fell in the morning sunlight. A few moments later he limped back down the trail and Pemalks slowly followed. When she came near the place where Skolumkee had been standing, Pemalks looked down on a scattering of lustrous white shells and crimson glass beads.

## Fine Arts F.1 - Journal Binding

**Background:** Among the most talked about, studied, and dramatized frontier era journeys were those by British explorers David Thompson and David Douglas, and their American contemporaries Lewis & Clark. The most likely reason for this is because we have their invaluable journals since all wrote extensively during their trips. There have been books, films, and re-enactments of their struggles because we have such complete knowledge of the saga. Lewis and Clark were admonished by President Jefferson to make observations and these were to be made with “great pains and accuracy, to be entered distinctly and intelligibly.”

The oldest examples of books are on stone. We don't know for certain how soon people began to make what we would consider a book; that is, something written of considerable length meant for circulation, which requires being portable. Probably the most direct ancestors of the modern book are the papyrus scrolls of Egypt, which date back 2500 years. The first Chinese books were probably done as early as 1300 B.C. It is the codex that is the modern form of the book. Instead of having pages fastened together to extend in a strip, the codex was made from folded leaves bound on one side, or in some cases at the top. Codex and roll books existed at the same time, but there are references to codex books in the first century B.C. Vellum and parchment are made from animal skins. Early printing and illustrations were done with wooden blocks but it was for the German printers to cast metal type, develop an oil based ink, and construct the printing press. Today the publication of books is essential to our civilization.

Bookbinding began with the codex form. (The word codex is from the Latin word caudex which means tree trunk. Some early book bindings were made of wood. ) The first really beautiful book binding were of decorated leather. Later wooden boards were covered with tooled leather and fitted with metal clasps, gilt decoration, gold tooling, and inlaid patterns. Early books were considered works of art. Modern books are produced and bound by machinery.

### Materials:

- Cardboard
- Tag board
- Glue (but not superglue)
- A masonite surface (needed for cutting)
- Strong thread
- Paper
- Craft knife
- Metal ruler
- Poster paint
- Felt-tip pens
- Colored pencils
- Strips of strong tape or bias binding
- Scraps of ribbon
- Colored fabric
- Spring clips
- Brushes



**Planning:** It might be wise before you begin this project to take a close look, a really close look, at a “real book.” Notice the construction and how the pages are held at the spine. In the preparation of a book or journal, the first step is to decide the size of your book and the number of pages you wish to include.

**Procedures:** An easy way to begin to make a book is to fold pieces of copy paper in half. Fold and crease the pages. If you are using light tag or heavy paper for your book of pages, you might score the paper before you fold it. (This means you run a used-up ballpoint pen or the back of a craft knife over the line on which you wish to fold. The paper will then fold easily and crisply.) Select cardboard (from a gift box, or card stock) for the cover. Measure the paper pages and then allow at least ½ inch all the way around extra for the cardboard cover. It might be best for an adult skilled with a craft knife to cut the covers.

Here are two ways to make a journal or blank book: Take six or more of folded paper, open them and stack the pages. Then fold together and lay to one side. You will need to make a cardboard sheath to hold the pages securely. To make the sheath: Cut a strip of tagboard the same length as your pages, and trim the top and bottom diagonally (these cuts will leave arrow points on each end of the cardboard piece. This cut piece will resemble an elongated diamond). Score down the center of this cardboard sheath and fold. Place your stacked and folded pages inside this cardboard sheath. Open and in the center of the pages, make a pencil dot in the middle of the pages, and two other pencil dots on each side, making them the same distance apart. Then make a hole through the dots with the darning needle. Thread the darning needle with strong thread and sew the spine in and out and back and forth. If you don’t want to sew, you can staple the pages into the sheath.

An easy way to make a cover for the pages is to cut two pieces of cardboard, 3/16 inches bigger than the pages, and glue the cardboard pieces flat onto a strip of paper, or cloth, being sure to leave a space of about 1½ inches wider than the covers including the spine space. Fold over the extra “overhang” and glue it down to the cardboard cover sheets. Complete the cover (including the spine) by hiding the raw, rough edges with another piece of cloth or heavy paper which has been cut precisely and neatly to fit over the space. Fold a piece of good heavy paper for end pages and lay this paper on the cloth covered cardboard, and slip in the pages sewn to the sheath. Glue the end pages and the sheath of sewn pages into the spine space. Clip together and weight down to dry.

### **Extensions:**

Write poetry and with calligraphic printing put them in your book.

Collect plant specimens, dry them, and place them in your book.

Make hand-made paper for a book.

## Fine Arts F.2 - Paper Salmon

**Background:** David Thompson reached the Columbia River in the summer of 1811 and saw salmon throughout the course of his travels from the river's source in the Canadian Rockies. The Columbia Plateau tribes fished at Kettle Falls near present Colville, Washington, the Wenatchi Fisheries at what is today Leavenworth, and at spectacular Celilo Falls on the lower Columbia. At each of these places they erected wooden platforms over the river to spear and net fish as they returned to the rivers of their birth to lay their eggs and die.

Fish have always been important to Northwest Native Americans. A beautiful totem pole at Ketchikan, Alaska, passes down the story of the origin of the annual runs of salmon and pays respect to this life-giving resource. The art of fishing has been a powerful force in human history. Fishing has been depicted by Paleolithic people who drew the pictures of fish on the walls in their cave pictures. Somewhere between 1500 and 900 B.C. the Chinese wrote about fishing with the silk from the cocoon of a silk worm as line, iron for a hook, and split grain for bait. The hook might have been one of the earliest tools used by human beings, but no one knows for sure which came first—the spear, the net, or the hook.

In identifying the fishes of North America, remember the differences between trout and salmon. Salmon have strong teeth and they are anadromous, or venture in the sea and return to fresh water to spawn. The majority of trout varieties spend most of their lives in fresh water, but in the far north they live in both salt and fresh water, often moving back and forth in their habitat. Varieties of salmon include the king, silver, sockeye, and chum, while rainbow and cutthroat are trout.

### **Materials:**

- Two 12 x 18 sheets of construction paper any color, for the body of the fish
- scissors                      glue                      pencils
- Something with which to stuff a paper fish—shredded paper, gleanings from the hole-punches, tissue paper shredded newspapers, anything that will make nice plump fish.
- Lots of colors of construction paper. You may use scraps left over from other projects, or ask other teachers for their scraps.
- Photocopy pictures of fish showing details and shapes and/or a real fish from which to draw.

**Planning:** If possible, purchase a whole salmon at the store or market in order for others to see up close. Some parents are avid fishers, or you may live near a fishery where securing a real fish, wither frozen or fresh, is not impossible.

Online and print media have many pictures of fish as well as complete descriptions of the anatomy of fishes. Don't expect to construct and draw from imagination. You may end up with a stilted, cliché-ridden work not worth spending a great deal of time working on. You may wish to limit your fish construction project to local fish, North American fish, or fresh-water fish.

**Procedure:** Draw the fish, using the photograph as their guide. Use the largest size paper available; usually construction paper 12 x 18 inches will suffice. The color of this paper is not important because it will be covered before you are finished with scales and pieces of paper. Draw the fish so the nose is at one end of the horizontal placement of the paper and the tail at the other end. When you have achieved a pleasing and accurate drawing of the fish, put two pieces of paper together, staple the edges, and then cut the fish, thereby cutting two fish. When it is cut out, staple around the fish leaving a place in the belly which can be stuffed with toilet paper, shredded paper from the office paper shredder, left-overs from the hole punching machines, or shredded paper towels or newspapers. When the fish is moderately stuffed, staple the holes shut.

Now is the time to really think. Do you want this to be an accurate portrayal of a fish? Do you want to make your fish an unnatural fish? Let's suppose you are making a rainbow trout. You would need a top fin, two bottom fins, and two side fins. You might want to draw in where the gills are, but you also might want to add a piece of paper depicting gills that would be on top of the flat part of your fish. If you are going to use realistic colors you would need several shades of green for the top of the fish, enough rosy pinks and reds for the center of the body, slightly greenish-yellow for the part of the fish under the pink stripe, and grey for the bottom of the fish. You will need to think about where you are going to start putting scales on the fish.

You will also need to plan ahead. It is easier to cut all the scale pieces, and organize them into envelopes before gluing. Start at the back of the fish, and lay the fish scales in rows, covering the glued end with the next row of scales. When fish are in the water and swimming head first through the lake or sea, the scales would lay flat and the fish could be speeding on its way. You may opt to make these fish in unnatural colors, in which case, you should think in terms of three, five, seven or nine colors.

Consider hanging the fish so put scales on both sides of your fish. The scales should be large enough so the work can be completed in a reasonable amount of time, but small enough to shade in the colors. A good rule of thumb with fish scales is to use your thumb! Your thumb is a good pattern for cutting a scale, but be sure to overlap them when you glue them down. Last, you need to add the cut paper gills, eyes, and string to hang the fish.

### **Extensions:**

Cut your fish from scrap-wood to paint and display; make a fabric fish pillow.

## Fine Arts F.3 - Plant Sketches

**Background:** Wild plants were an important part of the Native American diet, and were extensively studied by frontier naturalists like David Douglas and Thomas Nuttall. Native Americans also domesticated many plants. Wild plants were a seasonal crop so the tribes learned to follow a nomadic “seasonal round” and gained extensive knowledge of nature. Food preparation often had to involve little water and food preservation, and transportation was sometimes challenging. We still use many Native American food processing techniques like sun-dried fruits and stone ground grain, for example. Pemmican was a nutritious, high energy combination of dried berries.

The carrot-shaped roots of the bitterroot and bulbous camas plants were considered so delicious that Native Americans might trade a horse for a sackful of them. Food is fuel, measured in calories, and a young adult requires approximately eighteen calories a day per pound of body weight. Strenuous exercise, such as climbing a mountain would require 5,000 calories a day. Native Americans became skillful at managing their diet as well as being excellent conservators of plants. They did not take all the grains in a harvest, but left some to produce next year’s crop. Certain plants have also long been used as medicines. For example, Indians boiled the flowers of the Penstemon for treating burns.

Try to imagine the challenges of maintaining a healthy diet in the frontier era in the absence of grocery stores and restaurants. Sometimes while attempting to identify plants that were non-toxic, the explorers met with failure. Not one with David Thompson or Lewis & Clark party died from this kind of poisoning but the symptoms were very disagreeable. On their journeys, Thompson, Douglas, and Nuttall identified over 200 species that had been previously unidentified in the scientific community. Douglas’s description of an Oregon grape leaf and other species included measurements accurate to a fraction of an inch.

### Materials:

- drawing paper      pencils, erasers      colored pencils      water colors
- a real, living plant to draw, and possibly a container for this plant

In case your school situation makes it nearly impossible for you to have wild edible plants, you might think about sprouting something in a small glass baby food jar and draw the results, possibly in a series beginning with the first day and continuing for the time it takes for the plant to sprout and grow roots. This is a life-drawing lesson. Dandelions are easy to find and while they don’t last long, they can be a source of several lessons: the curled buds, blooming flower, the white feather-like seed tuft (pappus) as well as the beautifully shaped leaves.

**Planning:** If possible, try to go into a wooded area near your home and find plants. If that is not possible, you might have to go to the grocery store or look at trees in the park. It is possible to see pictures of edible plants in field guides. For this lesson, drawing from life is a necessary part of the lesson. If you can’t find any wild plants, try to secure from the vegetable market something like leeks, parsley, asparagus, or potatoes so everyone has something to draw. If you select carrots and potatoes you might want to sprout them so that there is some foliage and stems to draw. In fact, sprouting might provide several drawing lessons as you watch the leaves and roots begin to grow. In the spring, wild or nodding onion, wild leek, and wild asparagus are particularly beautiful.

Do not attempt to eat wild plants unless you are absolutely sure of their identities. For example, there are two camas plants. A meadow of Northwest blue camas looks like the sea gleaming in the sun. There are fields that have been scenes of legend for Native Americans, but these breathtaking fields can be deceptive, for there is an edible camas and a death camas. Do not eat anything until you have a positive identification. Dandelions appear in the spring and can be eaten. Buttercups also appear in the spring but are toxic. Autumn is the time for fruits and nuts, which are gorgeous to draw. If you have a nut tree in your yard you may want to select a small branch with leaves and nuts to draw. Asparagus is excellent to draw. They should draw multiple stems from the same example so there is a group of stems in the finished drawing.

**Procedure:** Whatever you select to draw, place it on your desk and look at it. This may sound obvious, but this step is often overlooked. A branch is not a straight line. A berry is not just a round ball. A drawing takes a lot of looking before you ever put your pencil on paper. Arrange your branch or stem by placing it across some rocks, or putting it into a clear glass jar; try to make the arrangement pleasing to you. This will be a small still life. Draw slightly larger than life if possible.

When you have drawn a branch or flowering stem across your paper, make sure you are creating a work of art, not just a line drawing of a plant that has no relation to the setting. If you put your branch or plant into a jar, draw the jar. Draw the jar sitting on something. Even a line drawn across the back of the jar will define the space and prevent the still life from “floating.” Fill your paper with a variety of shapes.

You may wish to use ink in your drawing and put some watercolor or colored pencil color into the drawing.

**Extensions:**

Frame your drawing by mounting the drawing on a colored sheet and display.

Create an art exhibit by hanging the drawings on a school wall. Be sure to include some examples of the materials from which you drew, like a branch in a Mason jar. If you hang an exhibit, be sure to include a table with an easel, and a statement of your purpose.

Create a book. Photocopy everyone’s drawings and put them together so everyone has a book.

## Appendix G - Correlated Musical Selections

Singing and dancing were popular pastimes during the long winter nights for the British, French-Canadian, and American fur traders. Frontier journals contain many references to the era’s folk music traditions and most voyageur brigades included someone who could break out a fiddle around the campfire for evening entertainment. David Thompson and his guests at Kootenay House enjoyed a variety of musical selections on a remarkable instrument he described known as a barrel organ. The device was similar to a large wooden music box about one cubic foot in size that contained a metal frame, small pipe rack, and leather bellows. Round wooden “barrels” of brass pins, bridges, and wire were inserted into the device like player piano rolls and when the machine was cranked the barrel turned to play the music.

Barrel organs were popular instruments in Thompson’s day and two prominent London manufacturers were located close the Grey Coat School he attended as a boy. A similar instrument was popular among European residents at New Archangel (Sitka), Alaska, headquarters of the Russian American Company which employed many Finns and Baltic Germans as well as Russians and area Indians. The company’s governor in 1846, Baron Arvid Adolf Etholén and his Finnish wife, Margareta, are believed to have contributed an 1844 barrel organ and Kessler pipe organ to the Lutheran congregation in Sitka. The Kessler instrument had been built in Estonia and shipped to Russian America to become the first pipe organ in the American West.

### Music G.1 - Scottish Folk Reels

Scottish Reels are one of four traditional folk dance tunes that also include the jig, waltz, and strathsprey. David Thompson’s roster of organ barrel tunes included many reels including the “Duke of Firth,” “Mr. Robertson,” “Lord McDonald,” and “Princess Charlotte’s Favorite.”

#### Princess Charlotte’s Favorite

*Astor's 24 Country Dances for the year 1804*

The musical score for "Princess Charlotte's Favorite" is presented in three staves. The key signature is G major (one sharp) and the time signature is 2/4. The melody is written in treble clef. Chord markings are placed above the notes to indicate the harmonic accompaniment.

Staff 1: A D A E A D A E A

Staff 2: A E A E A Bm E A

Staff 3: A Bm A E A Bm E A

## Music G.2 - English Sacred

The seventh and eighth barrels of music listed by David Thompson contained sacred, or religious, music composed by the well-known English composers George Friedrich Handel and John Darwall.

### Rejoice, the Lord is King

Charles Wesley, 1746

John Darwall, 1770

1. Re - joice the Lord is King; your Lord and King a - dore! Re -  
 2. Je - sus, the Sav - ior reigns, the God of truth and love; when  
 3. His king - dom can - not fail, he rules o'er earth and heav'n; the  
 4. He sits at God's right hand till all his foes sub - mit, and  
 5. Re - joice in glo - rious hope! Our Lord, the Judge, shall come, and

joice, give thanks and sing and tri - umph e - ver - more.  
 he had purged our stains He took his seat a - bove.  
 keys of death and hell are to our Je - sus giv'n.  
 bow to his com - mand, and fall be - neath his feet.  
 take his ser - vants up to their e - ter - nal home.

Lift up your heart, lift up your voice! Re - joice, a - gain I say re - joice!

## Music G.3 - German Classical

Although the Sitka Kessler organ had deteriorated by the 20th century, a complete restoration was undertaken in 1995 by Martin Pasi, of Pasi Organ Builders in Roy, Washington, near Tacoma. Pasi identifies several composers of the era including Bach, Mendelsohn, and Georg Telemann who wrote classical religious works likely heard at New Archangel and in Northwest fur trade posts and Indian missions. Telemann (1681-1767) was virtually self-taught and noted for his prolific output—some 3,000 works, and influenced by the folk melodies of Moravia, Poland, and other Eastern European peoples. As a young court musician of the Polish Count Erdmann II, Telemann enjoyed visiting places where the common people gathered to sing and tell folk stories which provided rhythms, sounds, and melodies for many of his “mixed taste” works.

### Gavotte-George Tellman

The musical score for the Gavotte by George Telemann is presented in five systems, each consisting of a treble and bass staff. The piece is in 4/4 time and has a key signature of one flat (B-flat major or D minor). The notation includes various rhythmic values such as quarter, eighth, and sixteenth notes, as well as rests and dynamic markings like *f* (forte) and *p* (piano). The piece concludes with a double bar line and repeat dots.



## Appendix H - Fur Trade Tall Ships Today

**The Pacific Northwest's 18th century maritime fur trade era** was made possible because of global trading routes linking Europe and Asia with North America. Commercial enterprises like the Hudson's Bay Company and American Fur Company provisioned vessels in Europe or in eastern American ports like Boston and New York with Indian trade goods for Northwest posts and then sold furs from the region to the Asian and European markets. Porcelain, fabrics, and other manufactured items were then obtained from those regions to be sold in Europe and the United States.

British, Canadian, American, and Russian traders maintained substantial fleets for their far flung trading networks. Hudson's Bay Company vessels that plied the coastal waters of the Pacific Northwest from Spanish America (California) to Russian America (Alaska) included the majestic brig Columbia and schooner Cadboro. The company's paddlewheeler, Beaver—also brigantine-rigged with sails, arrived in 1835 as the Northwest's first steamship. Many tall ships are still maintained in Pacific ports to promote an appreciation for adventure during the world's great Age of Sail.



**The Ketch** is a cargo vessel that was used to ferry supplies, personnel, and messages between larger naval fleet vessels, but large enough to be sometimes outfitted with armament. **Registry:** Cutty Sark (gaff, 52' long, Coupeville, Washington), Hawaiian Chieftain (square topsail, 103' feet long, Sausalito, California, and Grays Harbor Historical Seaport, Aberdeen, Washington; 18th century British trading vessel replica).



**The Galliot** is a vessel originally of Dutch design characterized by a nearly circular bow with nearly flat sides. 19th century galliots were usually rigged with two masts and several jibs extended on long bowsprits.

**Registry:** Three Heirarchs (Kodiak, Alaska; 1785 Russian ship replica).



**The Brig** is a two-masted design that dates back at least to the 16th century. The aft mainsail is rigged with a main-yard brace leading to the extreme front of the vessel. Brigs were widely used for European trade with Asia and were favorite pirate vessels because of their speed and maneuverability.

**Registry:** Lady Washington (112' long, Grays Harbor Historical Seaport, Aberdeen, Washington; 1780s American Revolutionary era privateer replica).



**The Schooner** is an elegant ship of at least two masts with gaff topsails and headsails rather than the square variety commonly used for larger vessels. They were widely used for trade and racing in the eastern Canadian maritime provinces and in the Great Lakes region during the 19th and 20th centuries.

**Registries:** Zodiac (two-masted, 160' long, Seattle, Washington); Mallory Todd (staysail, 65' long, Seattle, Washington); Adventuress (gaff topsail, 135' long, Port Townsend, Washington); Robertson II (two-masted, 130' long, Victoria, British Columbia; 1940 Grand Banks fisherman); Pacific Swift (two-masted, square topsail, 111' long, Victoria, British Columbia); C. A Thayer (three-masted, 219' long, San Francisco Maritime National Historical Park; 1895 Pacific lumber fleet).

## Appendix I - Glossary of Journey Terms

Contained in this glossary are terms commonly used by explorers to describe methods of travel, measurement, geography, weaponry, and other subjects like monetary values and titles of rank. Important archaic terms included in Journeys of Discovery travelogue readings that are no longer in common use are also listed for ready reference.

**absolute:** The location of a point on Earth's surface which can be expressed by a grid reference as in latitude and longitude.

**acculturation:** The process of adopting the traits of a cultural group.

**alluvial fan:** A semi-conical land form that occurs when a canyon exits a mountain range. It is composed of streams and debris flow materials, which are deposited as flow spreads out and slows down once it exits the canyon.

**altitude:** Height above sea level.

**annual:** Plant that completes its life cycle in one growing season, so that each individual lives for only one year.

**Antarctic Circle:** Latitude 66.5° encircling the continent of Antarctica. From this latitude to the South Pole, daylight lasts for twenty-four hours on the winter solstice, usually December 22; whereas on the summer solstice, usually June 22, continuous darkness prevails.

**antipodes:** The area of the earth exactly opposite to any other given point.

**aquifer:** An underground permeable rock layer within which water is stored and can flow, and from which water can be extracted for use at the surface.

**arboreal:** Tree-dwelling.

**arroyo:** A small stream with steep banks, or gulch, usually dry except after heavy rains.

**arthropod:** Member of the most numerous animal group, which includes insects, spiders, crabs and centipedes. Their bodies have pairs of jointed limbs and are usually covered with a hard skeleton. The word arthropod literally means "joint-legged."

**artifacts:** The material objects of a culture such as tools, clothing, and foods.

**aurora:** The phenomenon of light radiating from the northern and southern magnetic poles and caused by electrons bombarding atmospheric atoms; also called the Northern and Southern Lights.

**assimilation:** The acceptance by one culture group or community of cultural traits normally associated with another.

**atmosphere:** The envelope of gases, aerosols, and other materials that surrounds Earth and is held close by gravity. The gases are dominated by nitrogen (78 percent), oxygen (21 percent), and argon (0.1 percent), and include much smaller percentages of carbon dioxide, helium, methane, and hydrogen. Water vapor, clouds, dust, meteor debris, salt crystals, and pollutants mass and are concentrated within a layer that extends above twelve miles from Earth's surface.

**barkentine:** A sailing vessel of at least three masts on which the fore-mast sails are square-rigged.

**barque:** One of the most popular vessels during the 18th-19th century Age of Sail with at least three masts but smaller and more maneuverable than taller full-rigged ships.

**basin:** An area of low land surrounded by higher land.

**bay:** An arm of ocean or lake that reaches into the land.

**bio-:** prefix used in a number of terms, including biology, the study of living things, and biomass, the total weight of all the living things in a given area.

**biomes:** Very large ecosystems made up of specific plant and animal communities interacting with the physical environment (climate and soil). They are usually identified with the climate and climax vegetation of large areas of Earth's surface.

**biosphere:** The realm of Earth which includes all plant and animal life forms.

**botany:** The study of plants.

**boundary:** The limit or extent within which a system exists or functions, including a social group, a state, or a physical feature.

**brigantine:** A two-masted vessel designed to be sailed or rowed.

**butte:** A steep-sided hill that stands alone.

**cape:** A point of land extending into a body of water.

**caravel:** A small, fast ship first developed by the Portuguese and built so the side planks were flush with each other, as opposed to the overlapping planks of a clinker ship.

**cardinal directions:** The four main points of the compass—north, east, south, and west.

**carrack:** A large cargo ship commonly used in Europe in the 15th and 16th centuries.

**carrying capacity:** The maximum number of animals and/or people a given area can support at a given time under specified levels of consumption.

**cartographer:** A person who designs and creates maps and other geographic representations.

**celestial:** That which refers to the skies or the invisible heavenlies.

**chronometer:** A highly accurate timepiece.

**class:** Grouping of living things, made up of a number of orders. Several classes together form a phylum.

**climate:** Long-term trends in weather elements and atmospheric conditions.

**climate graph:** A graph which combines average monthly temperature and precipitation data for a particular place.

**colony:** A group of people or territory in a distant land ruled by a mother country.

**community:** Group of organisms living and interacting within a given area. The community and the nonliving environment together make up the ecosystem.

**continent:** A very large land mass of which the earth has seven.

**Continental Shelf:** A rock shelf in the ocean, which surrounds the continents.

**contour map:** A representation of some part of Earth's surface using lines along which all points are of equal elevation above or below a fixed datum, usually sea level.

**cordillera:** A group of mountain ranges.

**country:** A political unit of space, often referred to as a state.

**culture:** Learned behavior of people, which includes their belief system and languages, their social relationships, their institutions and organizations, and their material goods—food, clothing, buildings, tools, and machines.

**cultural diffusion:** The spread of cultural elements from one culture to another.

**cultural hearth:** The place of origin of a cultural group or a series of material and nonmaterial innovations.

**cultural landscape:** The human imprint on the physical environment; the humanized landscape as created or modified by people.

**database:** A compilation, structuring, and categorization of information for analysis and interpretation.

**deforestation:** The destruction and removal of forest and its undergrowth by natural or human forces.

**deciduous:** Plants that shed their leaves at a certain season. A familiar example is the oak tree.

**delta:** The eroded soil that is deposited at the mouth of a river.

**demographic change:** Change in population size, composition, rate of growth, density, fertility and mortality rates, and patterns of migration.

**density:** The population or number of objects per unit area (e.g. per square kilometer or mile)

**desertification:** The spread of desert conditions in arid and semiarid regions resulting from a combination of climate changes and increasing human pressures, such as overgrazing, removal of vegetation, and cultivation of marginal land.

**developing country:** An area of the world that is changing from uneven growth to more constant economic conditions and that is generally formerly characterized by low rates of urbanization, relatively high rates of infant mortality and illiteracy, and relatively low rates of life expectancy and energy use.

**diffusion:** The spread of people, ideas, technology, and products among places.

**dynasty:** A series of rulers who belong to the same family.

**ecology:** The study of interactions of living organisms between themselves, their habitats, and the physical environment.

**entomology:** The study of insects.

**environment:** Everything in and on Earth's surface and its atmosphere within which organisms, communities, or objects exist.

**Equator:** Latitude 0°. An imaginary line that running east and west around the globe and dividing into two equal parts known as the Northern and Southern Hemispheres; that place on Earth which always has approximately twelve hours of daylight and twelve hours of darkness.

**equilibrium:** The point in the operation of a system when driving forces and resisting forces are in balance.

**equinox:** The two days during the calendar year (usually September 23 and March 21) when all latitudes have twelve hours of both daylight and darkness, and the sun is directly overhead at the equator.

**ethnocentrism:** The belief in the inherent superiority of one's own group and culture; a tendency to view all other groups or cultures in terms of one's own.

**family:** Grouping of living things, made up of a number of genera. Several families together form an order.

**fathom:** A measure of six feet used to report the depth of water.

**fauna:** The animal life of an area or region.

**fjord:** A narrow inlet of the sea that cuts into the coast between steep cliffs or slopes.

**floodplain:** A generally flat valley area bordering a stream or river that is subject to inundation; the most common land area for human settlement.

**flora:** The plant life of an area or region.

**flowchart:** A chart or diagram showing a series of interconnected events, actions, or items that indicate the progressive development of a theme, product, or other objective.

**flyboat:** A small, fast sailing vessel.

**force:** The power or energy in a process, such as weather, which activates both movement and friction.

**fossil fuel:** Energy source formed in past geological times from organic materials (e.g. coal, petroleum, natural gas).

**frigate:** A swift warship of two or three square-rigged masts.

**galleas:** A large ship powered by both oars and sails.

**galliot:** A small boat swiftly propelled by one or two masts or oars.

**genetics:** The study of heredity and the variations and resemblances of different generations of organisms.

**Geographic Information System (GIS):** A geographic database that contains information about the distribution of physical and human characteristics of places or areas. In order to test hypothesis, maps of one characteristic or a combination can be produced from the database to analyze the data relationships.

**glacier:** A large body of ice formed over a great period of time, which moves very slowly.

**global warming:** The theory that Earth's atmosphere is gradually warming due to the buildup of certain gases, including carbon dioxide and methane, which are released by human activities. The increased levels of these gases cause added heat energy from Earth to be absorbed by the atmosphere instead of being lost to space.

**globe:** A scale model of Earth that correctly represents area, relative size and shape of physical features, distance between points, and true compass direction.

**greenhouse effect:** The ability of certain gases in the atmosphere to absorb heat energy released from Earth's surface.

**grid:** A pattern of lines on a chart or map, such as those representing latitude and longitude, which helps determine absolute locations and assists in the analysis of distribution patterns.

**groundwater:** Subsurface water that saturates the soil and bedrock; constitutes most of the world's freshwater.

**gulf:** A very large bay.

**gundaloe:** A small boat attached to a ship.

**habitat:** A place where an animal or plant is naturally found. It is determined by distinctive and characteristic surroundings, such as a deciduous woodland or pond. A habitat is determined chiefly by vegetation.

**harbor:** A sheltered part of an ocean or lake where ships anchor.

**hemisphere:** Half a sphere. Cartographers and geographers, by convention, divide Earth into the Northern and Southern Hemispheres at the Equator, and the eastern and western hemispheres at the prime meridian (longitude 0°) and 180° meridian.

**herpetology:** The study of amphibians and reptiles

**horizon:** The line where the earth and the sky meet.

**hurricane:** Severe tropical storm or low pressure cell of limited area/extent in the Atlantic and eastern Pacific with accompanying torrential rains and high velocity winds—usually in excess of 80 miles per hour. These storms are known as typhoons in the western Pacific and cyclones in southern Asia.

**hydrological cycle:** The continuous circulation of water from the oceans, through the air, to the land, and back to the sea. Water evaporates from oceans, lakes, rivers, and the land surfaces and transpires from vegetation. It condenses into clouds in the atmosphere, which may result in precipitation returning water to the land. Water then seeps into the soil or flows out to sea, completing the cycle.

**hydrosphere:** The water realm of Earth, which includes water contained in oceans, lakes, rivers, ground, glaciers, and water vapor in the atmosphere.

**hypothesis:** A possible answer or explanation to a question.

**ichthyology:** The study of fish.

**industrialization:** The growth of machine production and the factory system. The process of introducing manufacturing into countries or regions where most of the people are engaged in primary economic activities.

**infant mortality rate:** The annual number of deaths among infants under one year of age for every 1,000 live births; it usually provides an indication of health care levels. The United States, for example, has a 1994 rate of 8.3 infant deaths per 1,000 live births, while Angola has a rate of 137 infant deaths per 1,000 births.

**interdependence:** People relying on each other in different places or in the same place for ideas, goods, and services.

**intermediate directions:** The points of the compass that fall between north and east, north and west, south and east, and south and west (e.g. NE, NW, SE, SW).

**international Date Line:** An imaginary line that roughly follows the 180° meridian in the Pacific Ocean. West of this line the calendar date is one day ahead of the calendar date east of the line. People crossing the date line in a westward direction lose a calendar day, while those crossing eastward gain a calendar day.

**invertebrate:** Animals without a backbone. Invertebrates make up over 90 percent of all animals species.

**keelboat:** A shallow boat or barge used for carrying freight along rivers.

**lagoon:** A body of calm water surrounded by an atoll.

**landform:** The shape, form, or nature of a specific physical feature of Earth's surface (e.g. plain, full, plateau, mountain).

**latitude:** Assuming that the Earth is a sphere, the latitude of a point on the surface is the angle measured at the center of the Earth between a ray lying on the plane of the Equator and a line connecting the center with the point on the surface.

**league:** A distance at sea of about three miles.

**life expectancy:** The average number of remaining years a person can expect to live under current mortality levels in a society. Life expectancy at birth is the most common use of this measure.

**lithosphere:** The uppermost portion of the solid Earth, including soil, land, and geological formations.

**longitude:** The position of a point on Earth's surface expressed as its angular distance, east or west, from the prime meridian to 180°.

**map:** A graphic representation of a portion of Earth that is usually drawn to scale on a flat surface.

**map projection:** A mathematical formula by which the lines of a global grid and the shapes of land and water bodies are transferred from a globe to a flat surface.

**map legend:** An explanation of the symbols used on a map.

**map scale:** A way of measuring how much area a map shows.

**map symbol:** Colors, lines, or other markings on a map that represent something about the earth.

**mental map:** A map which represents the mental image a person has of an area, including knowledge of features and spatial relationships as well as the individual's perceptions and attitudes regarding the place; also known as a cognitive map.

**meridian:** A north-south line of longitude used to measure both time and distance east and west of the prime meridian or longitude 0°.

**mesa:** A hill with a flat top and steep sides.

**metropolitan area:** The Federal Office of Management and Budget's designation for the functional area surrounding and including a central city. It has a minimum population of 50,000; is contained in the same county as the central city; and includes adjacent counties having at least 15% of their residents working in the central city's county.

**microclimate:** A small, localized climate area within a larger climate region, which has significantly different atmospheric elements. Microclimates can be caused by human interventions or by local landform configurations (e.g. "heat islands" in central city's areas of high skyscrapers or sheltered south facing slopes of hills).

**migration:** The act or process of people moving from one place to another with the intent of staying at the destination permanently or for a relatively long period of time.

**monoculture:** The practice of growing one cash crop for export to one or more countries.

**monsoon:** A wind system that changes direction seasonally, producing distinct wet and dry seasons; used especially to describe the low-sun and high-sun seasonal wind systems of South, Southeast, and East Asia.

**moraine:** Ridge composed of an unsorted mixture of boulders, sand, silt, and clay that is deposited in contact with a glacier. Moraine usually reflect a period where the glacier has remained stationary, as opposed to advancing or retreating.

**mountain:** High elevation landform features composed mostly of steep slopes and large amounts of local relief within a specified area (e.g. the Alps of Europe).

**nation:** A cultural concept for a group of people bound together by a strong sense of shared values and cultural characteristics, including language,

**natural hazard:** An event in the physical environment, such as a hurricane or earthquake, that is destructive to human life and property.

**natural resources:** Products of the earth that people can use, such as plants, water, and minerals.

**natural vegetation:** Plants originally found together in an area. Little of the world's vegetation is entirely unmodified by human activities.

**navigation:** The science of determining a ship's location and direction of travel.

**Nonrenewable resource:** A finite resource that cannot be replaced once it is used (e.g. petroleum, minerals).

**north Pole:** The geographic point farthest north on Earth. The northern end of Earth's axis. On globes and most maps, that place in the Northern Hemisphere where meridians converge.

**ocean currents:** The regular and consistent horizontal flow of water in the oceans, usually in response to persistent patterns of circulation in the atmosphere.

**order:** Grouping of living things made up of a number of families. Several orders together form a class.

**ornithology:** The study of birds.

**overpopulation:** A situation in which the existing population is too large to be adequately supported by available resources at current levels of consumption. This should not be confused with dense population.



**Pacific Rim:** Countries bordering the Pacific Ocean.

**parallel:** An east-west line of latitude used to measure angular distance north and south of the Equator or latitude 0°.

**pass:** A low place in the mountains through which people may cross.

**peninsula:** Land that is surrounded on three sides by water.

**phylum:** Grouping of living things made up of a number of classes. Several phyla together form a kingdom.

**physical feature:** An aspect of a place or area that derives from the physical environment.

**physical process:** A course or method of operation that produces, maintains, or alters Earth's physical systems, such as glacial processing eroding and depositing landforms.

**physiography:** The study of Earth's surface and its physical features, including relationships between air, land, and water.

**pinnace:** A small, light vessel with sails and oars and sometimes attached to or carried by a larger ship and used for landing operations.

**places:** Locations having distinctive characteristics which give them meaning and character and distinguish them from other locations.

**plain:** Landform feature characterized by a maximum of gentle slope and minimum local relief within a specified area.

**plateau:** Landform feature characterized by high elevation and gentle upland slope.

**plate tectonics:** The theory that Earth's surface is composed of rigid slabs or plates. The divergence, convergence, and slipping side-by-side of the different plates is responsible for present-day configurations of continents, ocean basins, major mountain ranges, and valley systems.

**polar regions:** The frigid areas within the Arctic and Antarctic Circles.

**pollution:** The direct or indirect process resulting from human action by which any part of the environment is made potentially or actually unhealthy, unsafe, or hazardous to the welfare of the organisms which live in it.

**population density:** The number of individuals occupying an area, derived from dividing the number of people by the area they occupy (e.g. 2,000 people divided by ten square miles = 200 people per square mile).

**prairie:** Flat or rolling land covered with grasses but with few trees.

**prevailing wind:** The direction from which the wind usually blows at a particular location (*e.g. the westerlies in the middle latitudes of North America*).

**primary source:** A firsthand report or eyewitness account of an event.

**Prime Meridian (Greenwich Meridian):** 0°; the standard meridian from which longitude is measured. The prime meridian crosses Greenwich in London, England, the site of the Royal Naval Observatory.

**principal meridians:** The prime meridian (Greenwich Meridian) and the International Date Line.

**principal parallels:** The Equator, the Tropics of Cancer and Capricorn, and the Arctic and Antarctic Circles.

**rain shadow:** Areas on leeward sides of mountain ranges characterized by much lower precipitation and humidity than windward (rainy) side.

**reef:** A ridge of coral or rock in shallow water that is hazardous to ships.

**region:** An area with one or more common characteristic or features, which give it a measure of homogeneity and make it different from surrounding areas.

**relative humidity:** The amount of moisture actually in the air compared to the amount the air can hold at a given time at the same temperature (e.g. 85 percent).

**remote sensing:** Information gathered about Earth's surface from a distance.

**renewable resource:** A resource that can be regenerated if used carefully (e.g. fish, grain).

**resource:** An aspect of the physical environment that people value and use to meet a need for fuel, food, industrial product, or something else of value.

**salinization:** The process by which high salinity soils are formed in arid areas where evaporation rates are high.

**satellite image:** An image produced by a variety of sensors, such as radar, microwave detectors, and scanners, which measure and record electromagnetic radiation. The collected data are turned into digital form for transmission to ground receiving stations. The data can be reconverted into imagery in a form resembling a photograph.

**scientific method:** Solving a problem by first stating the problem, then forming a hypothesis or possible explanation, and finally experimenting to see if the hypothesis is correct.

**secondary source:** A source that is based on a primary source or sources.

**shallop:** A small rowboat.

**sidereal:** Referring to or determined by the stars, as in sidereal time measured by star movement.

**sloop:** A sailboat with fore-and-aft rig attached to a single mast.

**species:** The smallest grouping of living things, whose members can interbreed to produce fertile offspring. The members of a species all look very similar. Several species together form a genus.

**strait:** A narrow channel of water connecting two large bodies of water.

**taxonomy:** The study of the classification of living things.

**temperate zone:** The region of middle latitudes between each of the tropics and the polar circles.

**tidewater:** The coastal area upriver affected by ocean tides.

**tributary:** A river or stream that flows into a larger river.

**tropic zone:** The humid region lying between the Tropic of Cancer and Capricorn, formerly called the torrid zone.

**tundra:** A large treeless plain in the polar regions.

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