

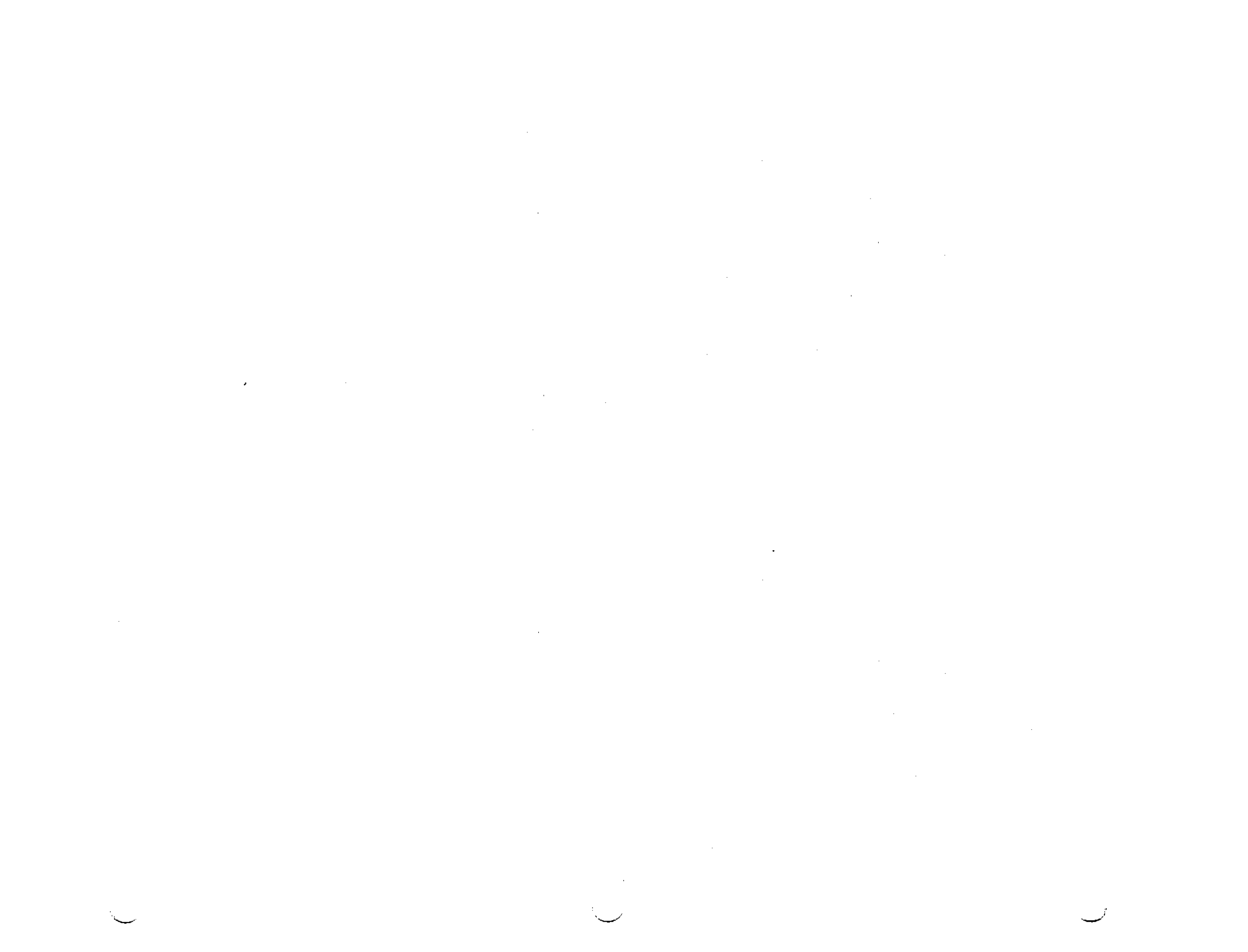
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# **Alaska Studies Connection**

## **Unit One**

### **"Alaska, the Great Land"**



# CHECKLIST

1.1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

You will need to send the following to your advisory teacher after completing Lessons 1-4 and Assessment 1.

\_\_\_\_ **Assessment 1**

\_\_\_\_ **Lesson 1**

\_\_\_\_ Learning Log

\_\_\_\_ 1 Extension Activity (list)

\_\_\_\_ **Lesson 2**

\_\_\_\_ Learning Log

\_\_\_\_ 1 Extension Activity (list)

\_\_\_\_ Sourdough Lingo

\_\_\_\_ Southeast Map  
(Send with Assessment 2)

\_\_\_\_ Sourdough Lingo

\_\_\_\_ **Lesson 3**

\_\_\_\_ Learning Log

\_\_\_\_ 1 Extension Activity (list)

\_\_\_\_ **Lesson 4**

\_\_\_\_ Learning Log

\_\_\_\_ 1 Extension Activity (list)

\_\_\_\_ Southcentral Map  
(Send with Assessment 2)

\_\_\_\_ Southwest Map  
(Send with Assessment 2)

\_\_\_\_ Sourdough Lingo

\_\_\_\_ Sourdough Lingo

\_\_\_\_ Any extra credit



# Unit 1, Lesson 1

# Tour of Seward's Icebox

Here is your lesson plan for Lesson 1.

It will take you 5-6 class periods to complete the minimum requirements.

**COMING UP:** Look through the extension activities in Lesson 4 and 5 now to see if you need to order any materials. Good resources are "Science Nuggets" by N. Davis and the Alaska Geographic books listed in the Teacher's Guide.

**WARM-UP:**  
Complete this first.

- On the Map, p. 5

**INFORMATION:**  
Complete this next.

- Geography of Alaska, reading, pp. 7-9

**EXTENSION ACTIVITIES:**

- 1. Alaska's on the Maps, map study, p. 11\*
- 2. Introduction to Ecosystems, video, p. 16\*
- 3. Geographic Regions of Alaska, audio, p. 20
- 4. You're a Geographer, writing, p.21\*
- 5. Time Zones, map, p. 22\*
- 6. Extended Reading, p. 27
- 7. Contrasts and Extremes, computer, p. 28\*
- 8. Geographic Database, computer, p. 29\*

Complete at least one.

\* May be sent via e-mail if student has access.

**SOURDOUGH LINGO\*:**

Complete this as you study the lesson.

- |  |  |
|--|--|
| <p><input type="checkbox"/> geography region topography tundra permafrost sparse</p> | <p>peninsula continental shelf basin climate weather plate tectonics</p> |
|--|--|
- p. 30

**ALASKA TRIVIA\*:**  
Optional

- East and West, p. 31

**ASSESSMENT:**

No test this lesson, but review the objectives to make sure you have learned them.

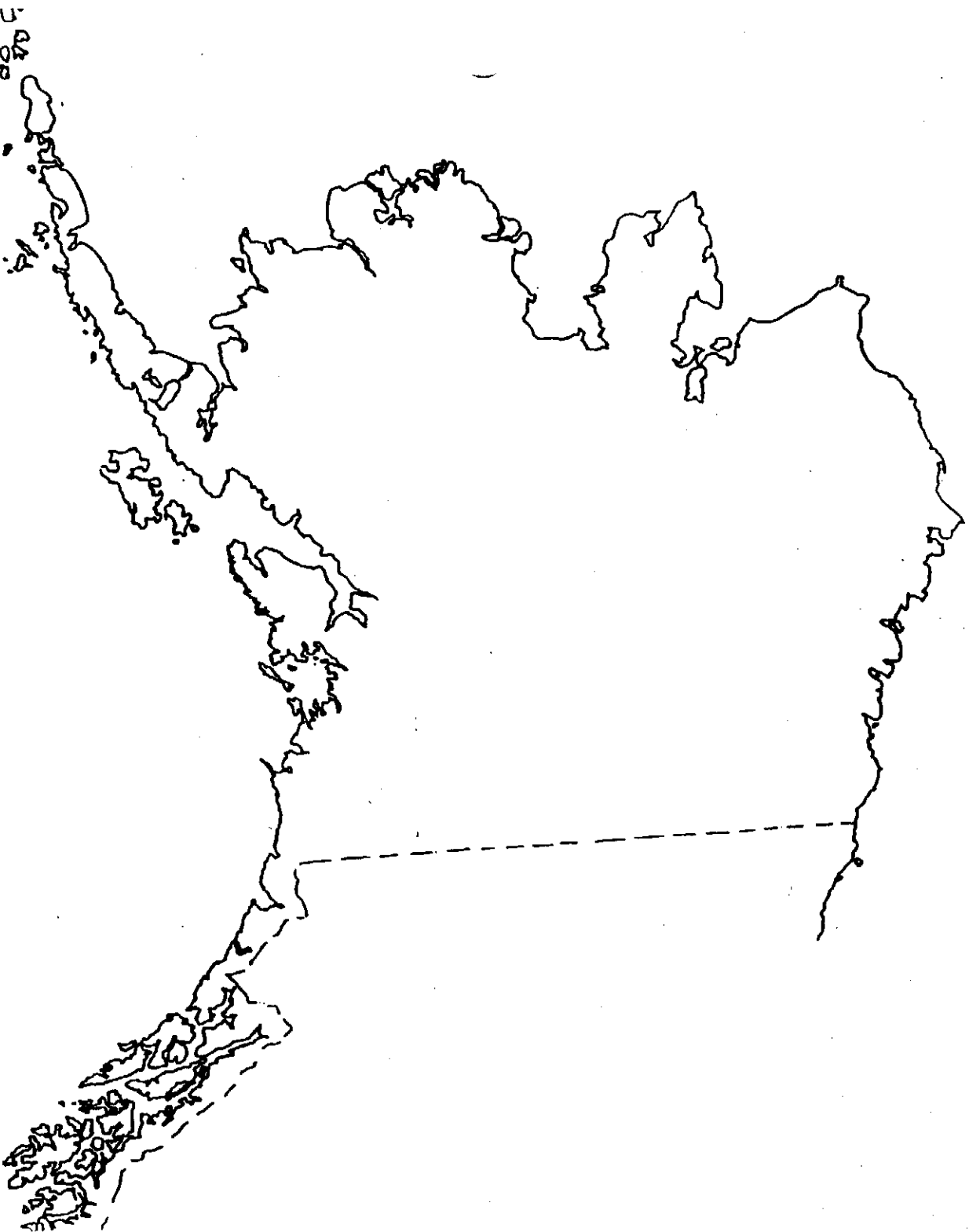


# WARM UP

1.1

## On the Map

Fill in the map to show what you know about Alaska. Your map may include geographic and natural features, political, social, economic and perceptual knowledge of Alaska.



When you have completed the map, turn this page over and read the objectives for this lesson.

## **OBJECTIVES**

**1.1**

### **Seward's Icebox**

Here's what you will be studying in lesson 1. Upon completion, you should be able to answer these questions:

- How do scientists explain the geologic creation of Alaska?
- How does Alaska measure up in size and location to some other parts of the world?
- What latitudes and longitudes define Alaska's position in the Northern Hemisphere?
- What are the time zones in Alaska?
- What are the six main geographic regions of Alaska?
- What are the major Alaska climates?
- What are three different topographical features in your region?



Examine the map on page 10 as you read the following introduction.

**Geography** is the study of the earth's surface, continents, climates, plants, animals, and resources. You are probably thinking that you'd rather not study anything so boring. No problem. It won't be boring. The next few chapters are going to introduce you to the beautiful and great land of Alaska. In a way, studying Alaska will be like studying yourself. Alaska is unique like you. She is complex and only allows those who take the time to get to know her to be her friend.

**HOW DOES ALASKA'S SIZE AND LOCATION COMPARE WITH THAT OF OTHER STATES AND COUNTRIES?**

Alaska is the largest state in the United States. It is almost a fifth as large as all the rest of the United States, and more than twice the size of Texas, the second largest state. Alaska's area is 591,004 square miles (1,518,800 square kilometers), or 345 million acres.

**FYI (for your information)**

**Alaska gains 4,592 sq. miles**  
 A recalculation of the land area of the United States showed that geographers previously underestimated the land area of Alaska by 4,592 sq. mi., an area larger than Rhode Island (1,214 sq. mi.) and Delaware (2,057 sq. mi.) combined. According to Dr. Robert Durland, a geographer with the U.S. Census Bureau, the recalculation was done using modern computer technology. The newly calculated area of Alaska is 591,004 sq. mi., including 20,171 sq. mi. of inland lakes and waterways. The old figure was 586,412 sq. mi.

ALASKA'S SIZE & CLIMATE

Even Alaskans are awed by the sheer size of their state. Here is a single state whose borders embrace more land than is claimed by California, Oregon, Washington, Nevada, and Arizona combined. Approximately 500,000 people live in Alaska, less than one person per square mile. By comparison, New Jersey has nearly 1,000 people per square mile and California has more than 150.

Of Alaska's people, half live in one city, Anchorage. Anchorage is the most heavily populated city in Alaska.

**WHERE IS ALASKA?**

Alaska lies between 130° and 172° west longitude and 52° and 72° north latitude. Alaska's shorelines stretch in a great arc for 3,200 miles west toward Asia. The western end of this area is known as the Aleutian Island chain. The most western point on Alaska's mainland is only 51 miles (82 kilometers) from the Soviet Union. Alaska's Little Diomedes Island in the Bering Strait is about 2.5 miles (4 kilometers) from the Soviet Union's Big Diomedes Island. No other part of North America is closer to Asia.

Almost a third of Alaska is north of the Arctic Circle. But Point Barrow, the northernmost point in Alaska, is almost 1,300 miles (2,090 kilometers) from the North Pole.

**HOW MANY CLIMATIC ZONES DOES ALASKA HAVE?**

Alaska has a wide range of temperatures--from -80°F (-62°C) to 100°F (38°C). These temperatures vary through four general climatic

zones: maritime, transitional, continental and arctic. To find out more about our climates, stop now and read pages 28-29 from the Alaska Almanac.

WHAT ARE THE SIX MAIN GEOGRAPHIC REGIONS OF ALASKA?

Within the Pacific Mountain System stand the Chugach Mountains, Kenai Mountains, Talkeetna Range, St. Elias Range, Alaska Range, Wrangell Mountains, and the Aleutian Chain. In the Alaska Range stands Mt. McKinley at 20,300 feet, the highest peak in North America. These mountain ranges are natural barriers that divide the state into six regions, which we will explore later. The regions are: Southeast, Southcentral, Southwest, Northwest, Arctic, and the Interior/Yukon. Read PGA pp.132.

WHAT ARE SOME OF THE TOPOGRAPHICAL FEATURES OF ALASKA?

The topography, the actual shape of the earth's surface, is significant to our study of Alaska. Topography determines where people settle. Mountains tend to be inhospitable; wide river valleys are more liveable. Gouges made by glaciers and rivers make useful travel corridors. The land constantly changes.

Earthquakes, volcanic eruptions, tsunamis, and glaciers cause drastic changes in the shape of the land. Annual break-up of river ice, rain, or daily winds can also cause changes in the topography. To find out more about topographical features in your region as well as other Alaskan regions, stop now and study the maps on pages 13, 35, 59, 79, 97, and 117 in A Photographic Geography of Alaska.

HOW DO SCIENTISTS EXPLAIN THE CREATION OF ALASKA?

Geology is the study of the earth and its integral parts. Alaska's geologic history is very complex and difficult to summarize. Most geologists give credence to the theory of **plate tectonics**. They believe the earth's outer crust is made up of 12 huge plates. Continental plates are composed of thick, lighter material and oceanic plates are composed of a thinner, dense material. As the plates move they collide with each other, slide beneath or along one another, or separate.

By studying Alaska's earthquakes, volcanoes, and topography, some scientists argue that Alaska was formed when two continental plates collided. When this occurred the plates fused into a single, much larger continent. Other scientists argue that Alaska was pieced together from parts of at least seven plates that collided and merged over a long time. They believe the parts from the seven different plates were added at different times. Both groups of scientists believe Alaska's major features were formed approximately 125 million years ago.

Geologists state that present-day Alaska is influenced by the movement of two plates: the Pacific oceanic plate and the North American plate. This theory holds that the northward moving oceanic plate is colliding with and then sliding under the continental plate. The area of collision is known as the Aleutian Trench, an underwater trough more than 2,000 miles long, 20 to 100 miles wide, and as much as 25,000 feet deep.

The Aleutian Trench is an area where the oceanic plate begins to submerge. At a depth of approximately 60 miles, there is enough heat and pressure to begin melting the crustal material. This

molten material under pressure rises through cracks to the earth's surface and erupts as volcanoes. This accounts for the chain of active volcanoes that can be traced from the Aleutian Islands east toward Anchorage.

An excellent source of information is Alaska Science Nuggets by Neil Davis of the Geophysical Institute, University of Alaska, Fairbanks.

## HOW DO ALASKA'S TIME ZONES COMPARE TO OTHERS?

In 1983 Alaska's time zones were reduced from four zones to two. You may remember what it was like when Alaska was under four different time zones. It seemed that all the major cities were doing business at different hours and this made routine business difficult and inefficient.

If you look at Alaska's time zones you will see that most of us are in the Alaska time zone. The far reaches of the Aleutian Island chain and St. Lawrence Island are in the Hawaii-Aleutian time zone. The Yukon Territory and British Columbia of Canada are in the Pacific time zone, which is one hour ahead of the Alaska time zone. You will notice the strange shapes of the four time zones in the Lower 48. These time zones, known as Eastern, Central, Mountain, and Pacific, were established in the late 1800's when the railroad wanted more consistency in its schedule. (That is why the Department of Transportation has the power to regulate time zones today.) At that time each town kept its own clock, resulting in a patchwork of unrelated time "zones" across the continent. Now each zone is based on a meridian of longitude 15° apart. You can see on page 19 of the Student Guide that the time zones are not straight lines. Why do you suppose this is? Most of the zones try to follow state boundaries but also must allow for geographical barriers such as river basins and mountain ranges.

World time zones begin at the Prime Meridian at Greenwich, England, and continue in both an east and west direction. There are 24 world time zones. As you go east, you would add one hour per zone. As you go west you would subtract one hour per zone.

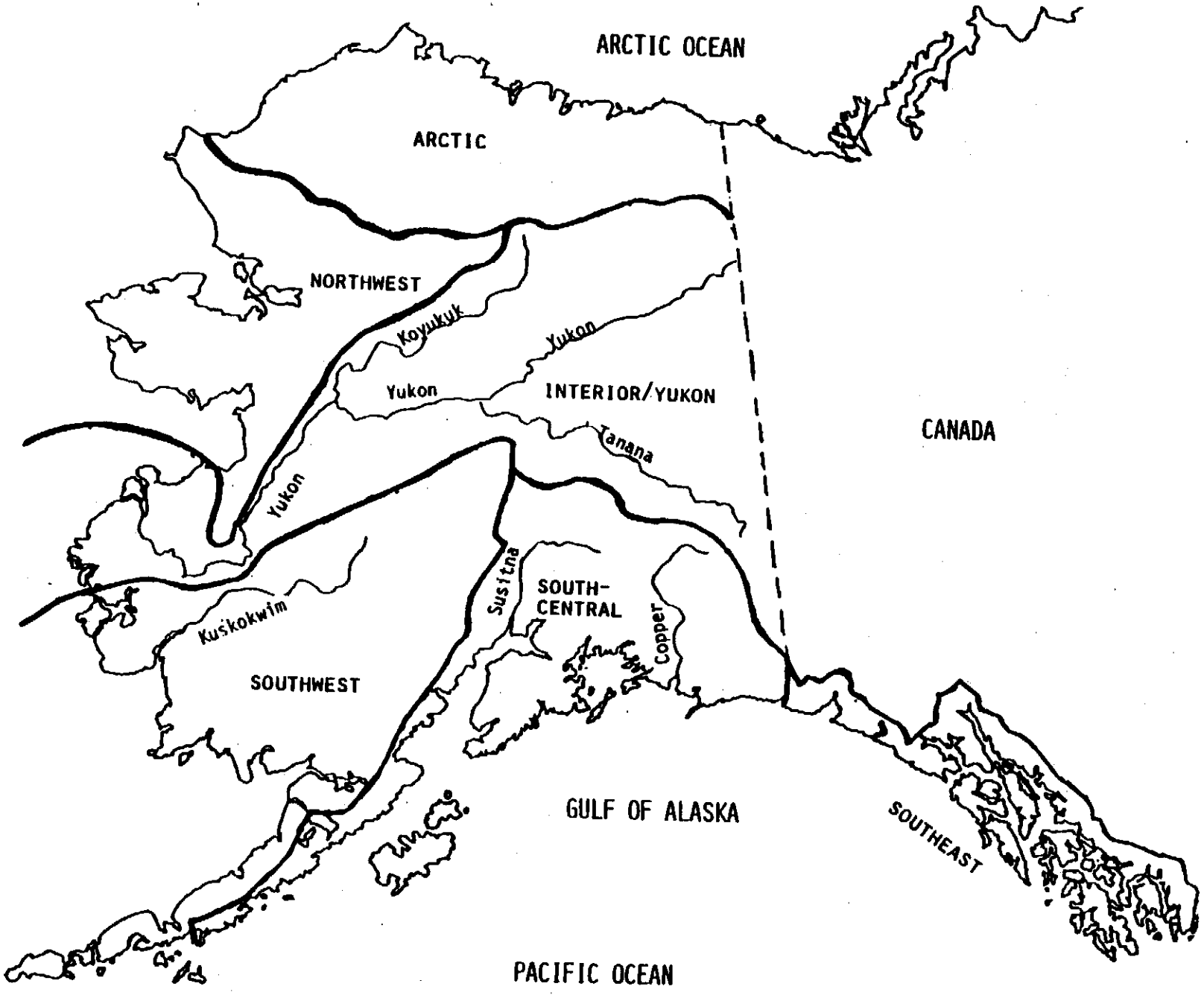
## TO DO: LEARNING LOG

Follow the description on page 6 of the Teacher's guide in preparing your learning log. Answer the following questions with as much detail as possible:

1. Here are some things I know now that I did not know before:
2. Here are some things I would still like to know:

BERING SEA

10



ARCTIC OCEAN

ARCTIC

NORTHWEST

Koyukuk

Yukon

Yukon

INTERIOR/YUKON

Tanana

CANADA

Yukon

SOUTH-CENTRAL

Susitna

Copper

Kuskokwim

SOUTHWEST

GULF OF ALASKA

SOUTHEAST

PACIFIC OCEAN

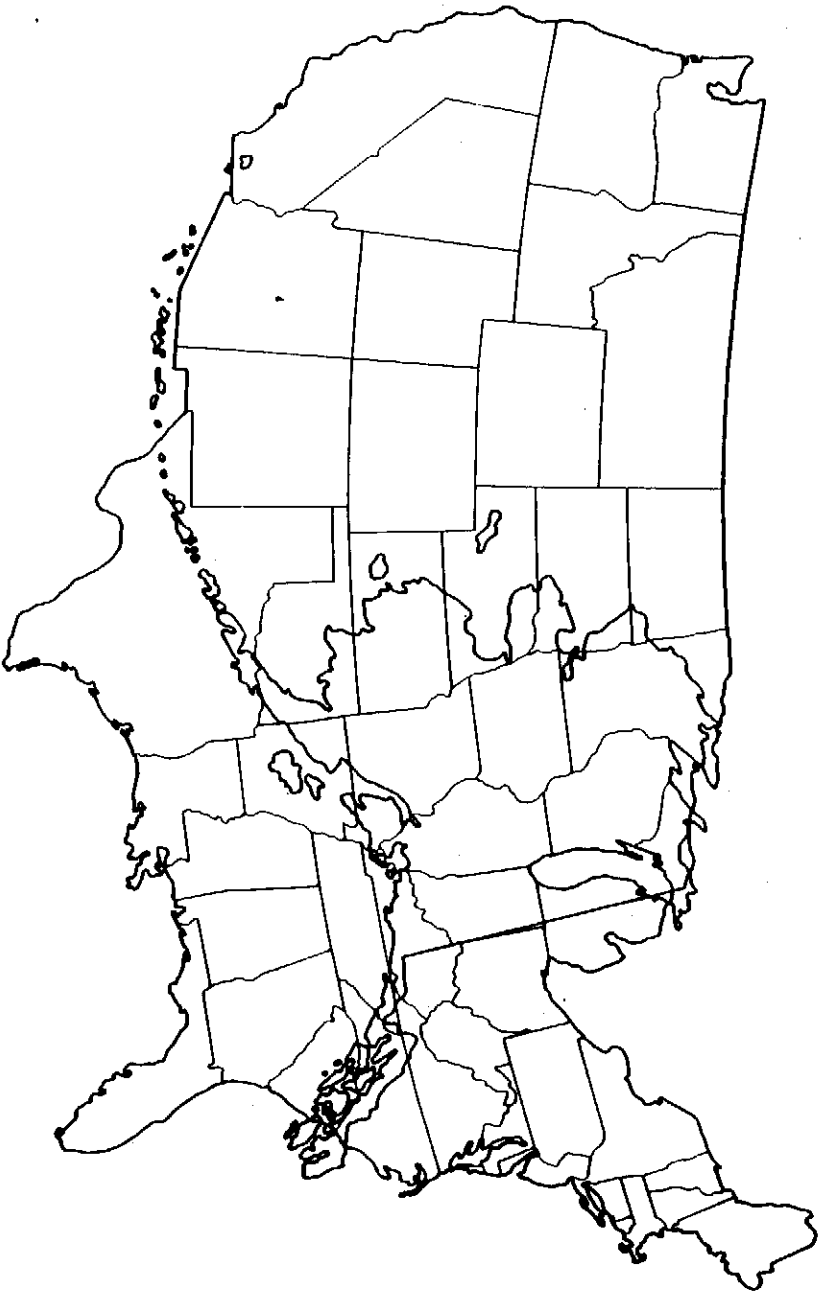
## EXTENSION ACTIVITY 1

1.1

### MAP STUDY: Alaska's On the Maps!

Directions: Write or tape your answer to the following question.

Alaska is one-fifth as large as the rest of the U.S. Here is a map of Alaska superimposed on a map of the continental U.S. Pick three different communities in Alaska and explore where you would live in the "Lower 48." (Example: If I lived in Quinhagak, Alaska, 70 miles south of Bethel, I would live in southwestern Kansas. If I lived in Juneau, Alaska, I would live in North Carolina.) What are some of the differences between the three areas in the Lower 48 states and the communities of Alaska? i.e. agricultural, population, climate, etc. How long would it take you to drive from one to the other in the lower 48? How many states do you cross? Alaska is pretty big, isn't it?



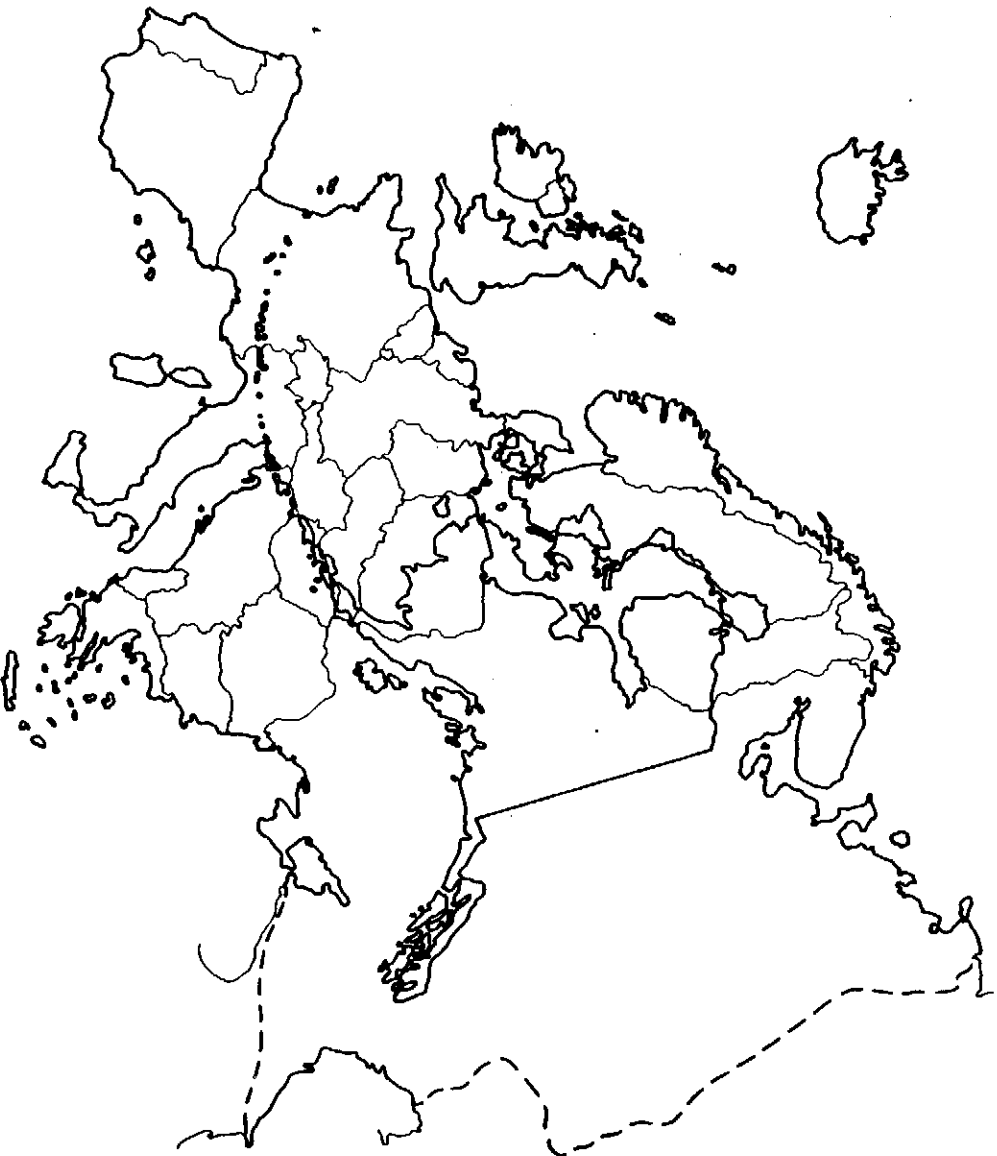
## **EXTENSION ACTIVITY 1 (continued)**

**1.1**

### **MAP STUDY: Alaska's On the Maps!**

**Directions:** Write or tape your answer to the following question.

Here is a map of Alaska superimposed on a map of Europe. Pick two communities in Alaska and explore where you would live in Europe. What languages would you speak? What are some of the similarities and differences between each of the European countries and Alaska? (Language, culture, fashions, government, etc.)



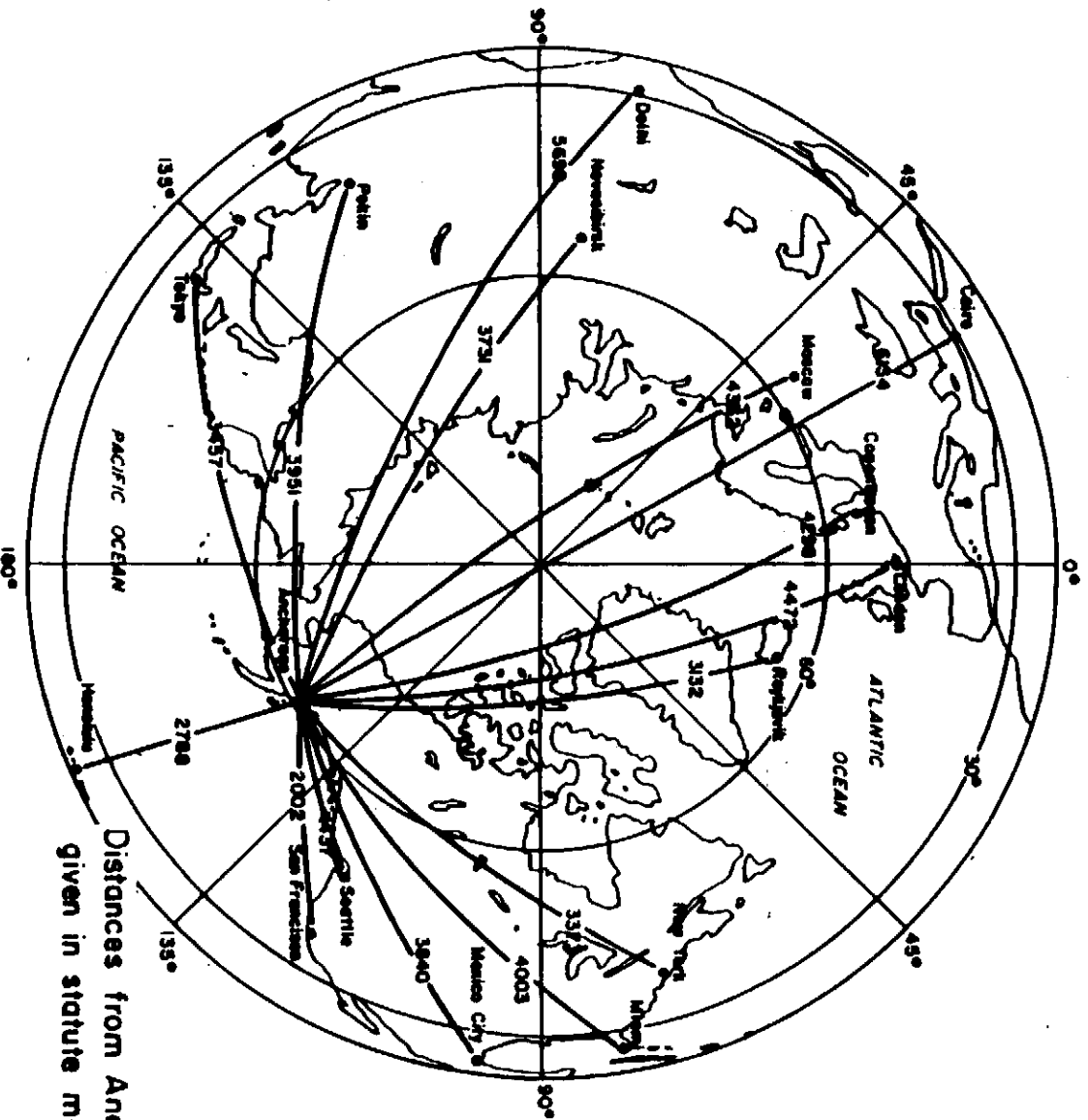
## EXTENSION ACTIVITY 1 (continued)

1.1

### **MAP STUDY: Alaska's On the Maps!**

**Directions:** Write or tape your answer to the following question:

Use this map to compare the distance from Anchorage to a destination in the Lower 48 with the distance to a destination in a Pacific Rim country. Then make another comparison with a Lower 48 destination and a European destination. Write down the four mileage comparisons. What comparisons can you make or conclusions can you draw about Alaska's position on the earth and her role as part of the U.S.? (Hint: Great Circle Routes - Stretch a string between two cities on a globe. If you continue your string all the way around the globe to form a complete circle, you discover that it divides the earth in half. Any line which goes all the way around the earth cutting it in half is called a great circle. Navigators on airliners and ships use great circles. They know that the shortest route between any two places on the earth's surface is on the path of the great circle joining them.)



**Distances from Anchorage  
given in statute miles**

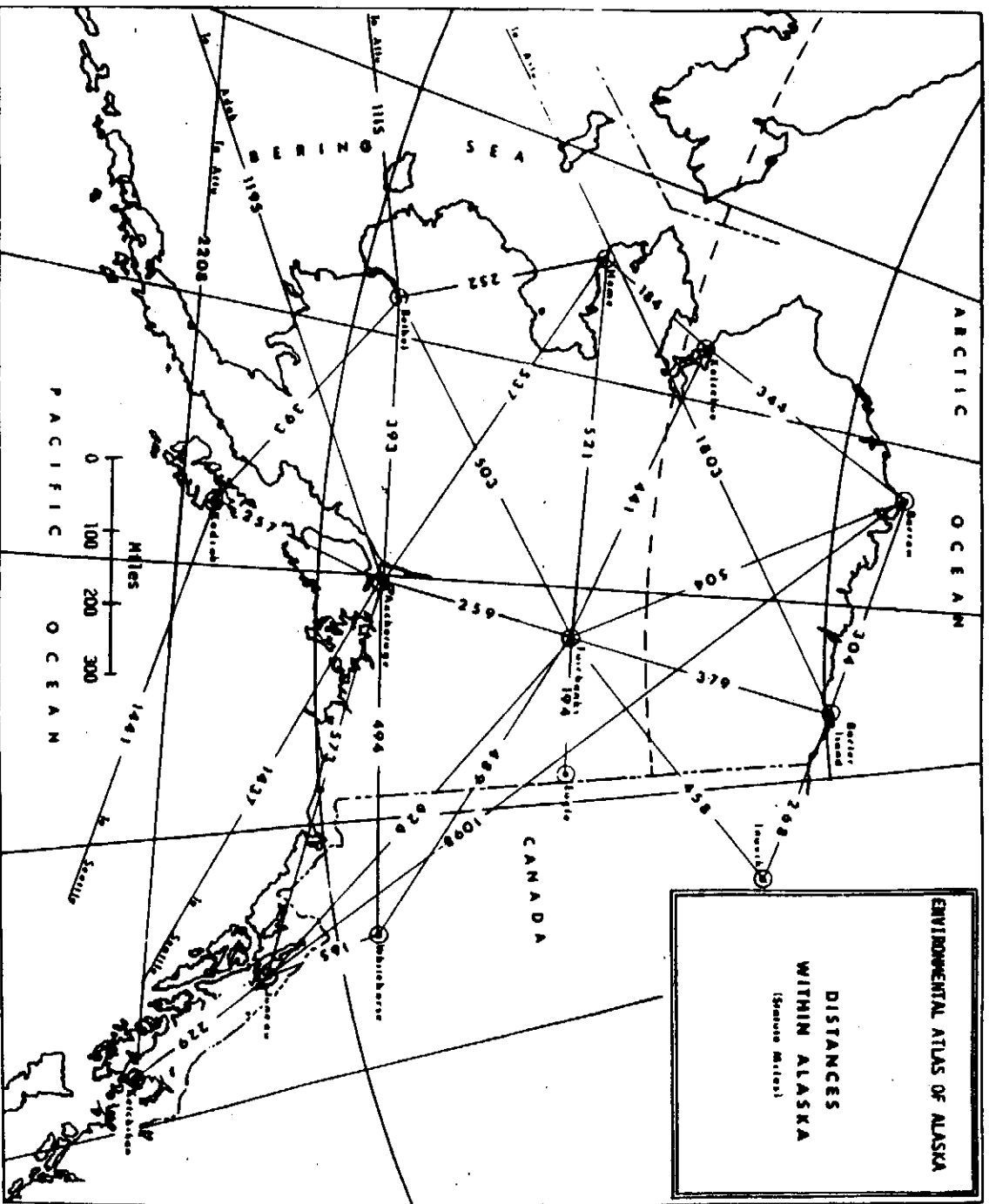
## EXTENSION ACTIVITY 1 (continued)

1.1

### MAP STUDY: Alaska's On the Maps!

Directions: Write or tape your answer to the following question.

Discuss or write about Alaska's physical location as a geographic concept. How does Alaska's relative isolation affect travel time, cost of travel and shipping, delays in news and T.V. programs, and fashions and movies? Do you think Alaska is isolated? Support your answer.





**EXTENSION ACTIVITY 1 (continued)**

**1.1**

**MAP STUDY: Alaska's On the Maps!**

**Directions:** Write or tape your answer to the following question.

**Mystery country.** Can you guess what country this is? (Hint: The country lies between  $44^{\circ}$ - $64^{\circ}$  E longitude and  $24^{\circ}$ - $40^{\circ}$  N latitude.) What is this country's major export? How is this country related to Alaska?

## EXTENSION ACTIVITY 2

1.1

### **VIDEOTAPE: "Introduction to Ecosystems"**

Note: This extension activity deals with the ecosystems of Alaska. Ecosystems are a result of the climate, geography, and topography aspects of a region. If you choose this extension activity, you should continue with it for other lessons in Unit 1. If you are interested in science, you may find this set of activities a way to pull together information about the geography of Alaska in a slightly different way.

#### MATERIALS:

VCR and monitor  
Videotape 1, "Introduction to Ecosystems,"

#### TO DO:

##### **BEFORE**

Look at a map of the world on the next page and the circumpolar map from page 10. See how the two maps are different perspectives of the same earth. Identify Alaska on both maps.

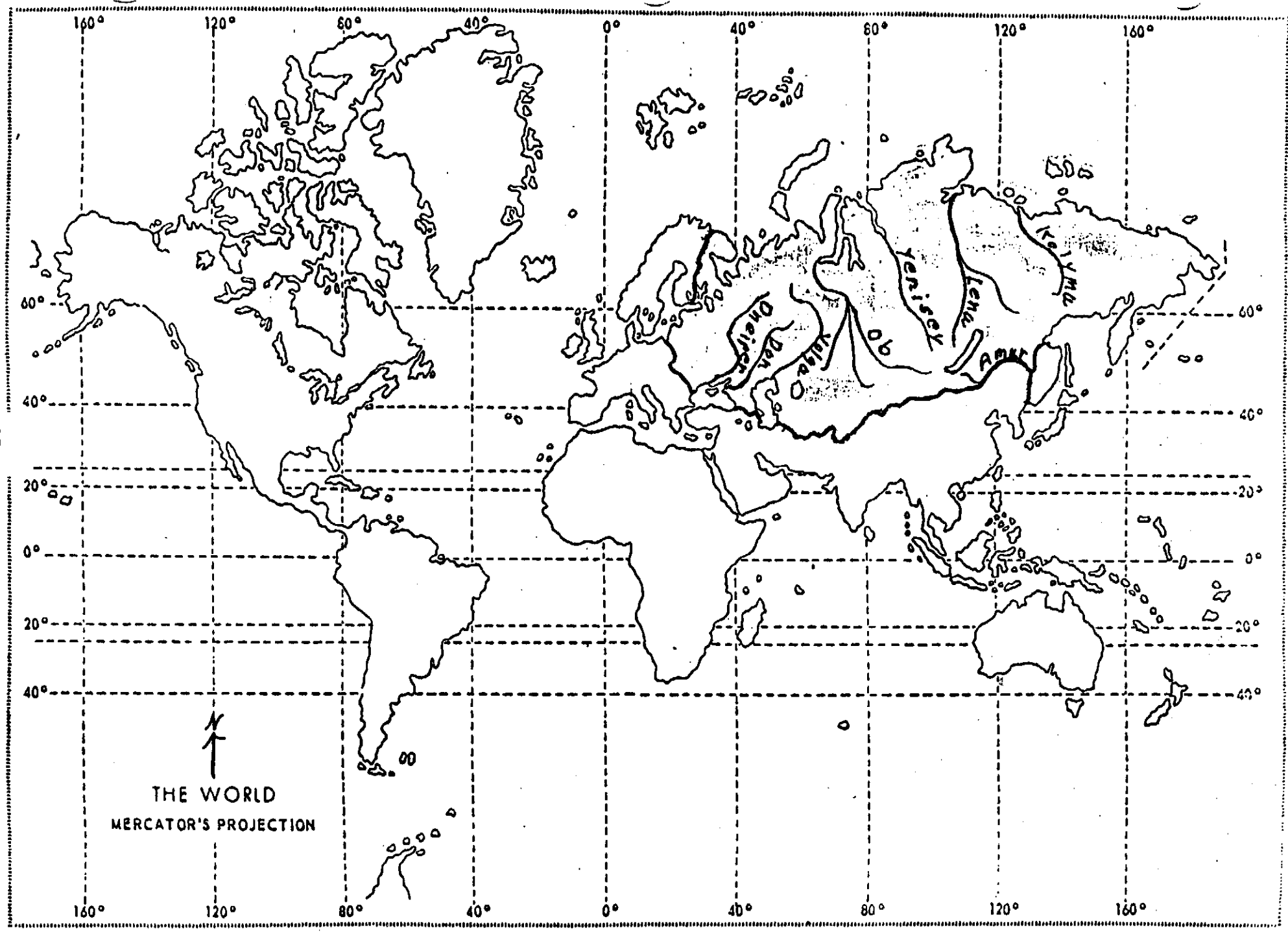
Identify on the map of Alaska where you live. Identify other places of interest (Anchorage, Fairbanks, Juneau, the Yukon River, Mt. McKinley, Brooks Range, etc.) Hypothesize about where tundra, taiga, coastal forest, and ocean ecosystems may be found.

Review this list of terms you will hear in this video.

chain	coastal forest
cycle	ecology
lichen	mineral
ocean	photosynthesis
taiga	tundra

##### **DURING**

Watch program 1, "Introduction to Ecosystems" from the Ecosystems of the Great Land series (videotape 1, program 1). You may jot down unfamiliar words or questions you may have while you are watching. Don't forget to use the pause button on the VCR machine if you need more time to write. Watch this program as many times as necessary to understand the information.



↑  
THE WORLD  
MERCATOR'S PROJECTION

**EXTENSION ACTIVITY 2 (continued)**

**1.1**

**AFTER**

Answer the following questions and submit your answers to your teacher.

1. After looking at the world and circumpolar map, describe Alaska's location.

\_\_\_\_\_

\_\_\_\_\_

2. What are the four major ecosystems of Alaska?

\_\_\_\_\_

\_\_\_\_\_

3. In which ecosystem do you live?

\_\_\_\_\_

\_\_\_\_\_

4. What are two characteristics for each of the four ecosystems?

\_\_\_\_\_

\_\_\_\_\_

5. What ecosystem(s) are found in the climate zones of Alaska?

Maritime - Transitional

Continental - Arctic

6. What ecosystem(s) are found in the six geographical areas of Alaska?

Southeast - Northwest

Southcentral - Interior/Yukon

Southwest - Arctic

**EXTENSION ACTIVITY 2 (continued)**

**1.1**

7. List one plant and animal species for each of the four ecosystems.

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8. What are three ways humans adapt to the environment?

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9. Write definitions for these terms:

chain: \_\_\_\_\_

ecology: \_\_\_\_\_

photosynthesis: \_\_\_\_\_

cycle: \_\_\_\_\_

## **EXTENSION ACTIVITY 3**

1.1

### **Geographic Regions of Alaska**

#### **MATERIALS:**

Tape Recorder  
Activity map of Alaska - on pg. 10  
Alaska Rand McNally map  
Paper and pencil  
Audiotape; Unit 1, Side 1

#### **TO DO:**

You will need to take notes while you are listening to the tape recording.

Locate on your Alaska Activity map: the geographic regions and places mentioned on the tape. You might have to listen to the tape recording a second time to accomplish this task. The Alaska Rand McNally map is also a good resource in helping you accomplish this activity.

This activity gave you a general overview of the geographic regions of Alaska. Now find a short news or human interest story from a newspaper that takes place in three of the six geographic regions. The story should be related to some aspect of geography.

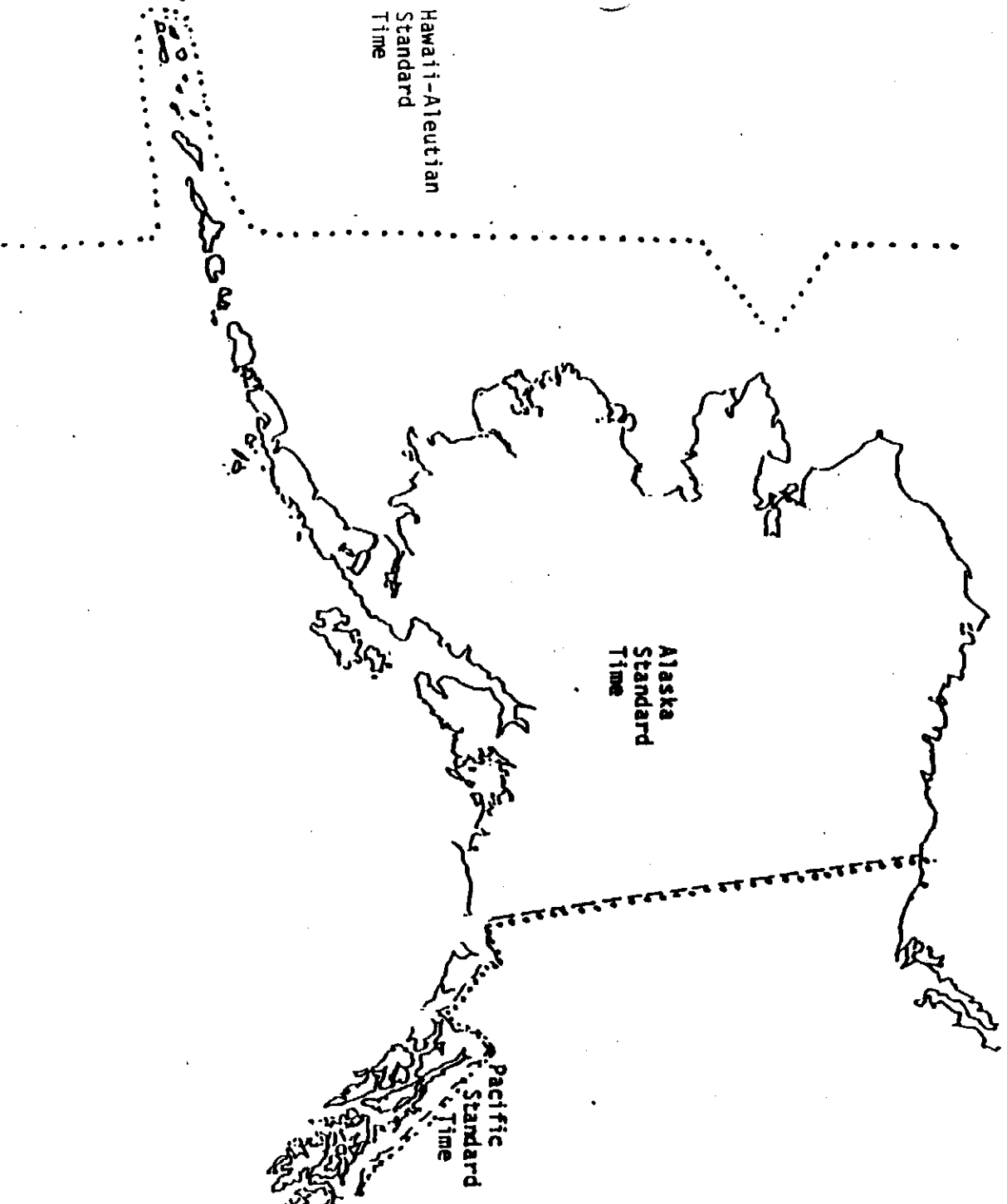
Example: News article "Boy Scout Troop 716 Floats the Yukon."

## EXTENSION ACTIVITY 5 (continued)

1.1

### Time Zones

Here are the time zones used in Alaska. Even though the world is divided into time zones of roughly 15° longitude, Alaska, for the convenience of its residents, has only one major time zone which stretches over 40° of longitude! Read more about our time in the Alaska Almanac: "Time Zones" now.



## EXTENSION ACTIVITY 5 (continued)

1.1

### Time Zones

Directions: Fill in the blanks.

YOU SHOULD USE THE TIME ZONE CHART TO ANSWER THE FOLLOWING QUESTIONS.

1. How many time zones are used in the lower 48 states? \_\_\_\_\_
2. How many time zones are used in Alaska? \_\_\_\_\_
3. How many time zones are used in all fifty of the United States?  
\_\_\_\_\_
4. When it is 8:00 a.m. in New York City, what time is it in Anchorage? \_\_\_\_\_
5. When it is 8:00 p.m. in New York City, what time is it in Juneau?  
\_\_\_\_\_
6. How many hours difference is there between Washington, D.C., and the following locations?  
Nome \_\_\_\_\_ Juneau \_\_\_\_\_ Chicago \_\_\_\_\_
7. When a New York City worker leaves her office at 5:00 p.m., how long will she have to wait to call her friend, who works until 5:00 p.m. also, in the following locations?  
Chicago \_\_\_\_\_ Missoula \_\_\_\_\_ Juneau \_\_\_\_\_ Fairbanks \_\_\_\_\_
8. When an office worker begins his day in Adak, how many hours has the office worker in the following locations already worked? (assume that all office workers work from 8:00 a.m. to 5:00 p.m.)  
Anchorage \_\_\_\_\_ Sitka \_\_\_\_\_ Miami \_\_\_\_\_
9. Assume the office day is 8:00 a.m. to 5:00 p.m. When it is time to start the office day in Fairbanks, what time is it in:  
Washington D.C. \_\_\_\_\_ Chicago \_\_\_\_\_  
Denver \_\_\_\_\_



**EXTENSION ACTIVITY 5 (continued)**

**1.1**

**Time Zones**

10. If an airline passenger leaves Washington, D.C., at 10:00 a.m. and arrives in Portland, Oregon, at 5:00 p.m., how many hours did it take to make the trip west? \_\_\_\_\_
11. Mr. Brown flew from Chicago to Washington, D.C., in three hours. If he left Chicago at 8:00 a.m., what time was it when he arrived in Washington D.C.? \_\_\_\_\_
12. A jet flew from Anchorage to New York City in 9 hours. If it left Anchorage at 1:15 p.m., when did it arrive in New York City? \_\_\_\_\_
13. The jet left New York City at 8:30 a.m. to return to Anchorage. The flight took 8 hours. When did it arrive in Anchorage?  
\_\_\_\_\_
14. List the two time zones used in Alaska.  
\_\_\_\_\_

**Extra Credit**

15. When crossing the International Date Line from Alaska to Japan, you would: (Circle one)
  - A. cross three time zones
  - B. stay the same
  - C. move ahead an hour
  - D. move ahead a day
16. The world is divided into \_\_\_\_\_ time zones beginning at \_\_\_\_\_.

# EXTENSION ACTIVITY 5 (continued)

## Time Zones

STANDARD TIME BELTS OF THE UNITED STATES  
Showing Conflicts in the Business Day

THE FORTY-EIGHT CONTIGUOUS STATES				ALASKA-HAWAII	
Eastern	Central	Mountain	Pacific	Alaska	Hawaii/ Aleutian
Wash DC	Chicago	Denver	Seattle	Anchorage	Hawaii
New York	Omaha	Missoula	Portland	Fairbanks	Adak
Miami	Birmingham	Phoenix	Yukon T.	Juneau	Nikolski
8:00 am	7:00 am	6:00 am	5:00 am	4:00 am	3:00 am
9:00	8:00	7:00	6:00	5:00	4:00
10:00	9:00	8:00	7:00	6:00	5:00
11:00	10:00	9:00	8:00	7:00	6:00
Noon	11:00	10:00	9:00	8:00	7:00
1:00 pm	Noon	11:00	10:00	9:00	8:00
2:00	1:00 pm	Noon	11:00	10:00	9:00
3:00	2:00	1:00 pm	Noon	11:00	10:00
4:00	3:00	2:00	1:00 pm	Noon	11:00
5:00	4:00	3:00	2:00	1:00 pm	Noon
6:00	5:00	4:00	3:00	2:00	1:00 pm
7:00	6:00	5:00	4:00	3:00	2:00
8:00	7:00	6:00	5:00	4:00	3:00
9:00	8:00	7:00	6:00	5:00	4:00
10:00	9:00	8:00	7:00	6:00	5:00
11:00	10:00	9:00	8:00	7:00	6:00
Midnight	11:00	10:00	9:00	8:00	7:00
1:00 am	Midnight	11:00	10:00	9:00	8:00

## **EXTENSION ACTIVITY 6**

**1.1**

### **EXTENDED READING: A Photographic Geography of Alaska**

This is an activity especially for readers. A Photographic Geography of Alaska is one of the texts for our course. Skim this book. When you have completed your overview, use your camera or pictures from magazines and newspapers to report on the photographic geography of your own community.

**Alternate:** Use one of the suggestions for reporting on extended readings that are included in the teacher's guide.

**\*In future extended reading assignments there will not be a special page, and you will use the reporting instructions from the teacher's guide.**

## **EXTENSION ACTIVITY 7**

**1.1**

### **Contrasts and Extremes**

#### **MATERIALS:**

Computer  
Appleworks  
Data Disk #1  
Printer

(If you do not have a printer you will need to send your data disk to the advisory teacher.)

#### **TO DO:**

#### **BEFORE:**

1. Read pages of the Teacher Guide that describes the computer activities in this course.
2. Load Appleworks into the computer.
3. Now load Data Disk #1 into the computer. From the main menu, choose "Add Files to Desktop," then the wordprocessing data file, Activity 1, from the data disk.

#### **DURING:**

Follow the directions on the screen.

#### **AFTER:**

Save the file on the data disk by typing OPEN APPLE S. You may also print out this activity by typing OPEN APPLE P.

If you have access to the electronic mail system, you must convert your Appleworks file to an ASCII file. (See Appleworks Reference Manual) Upload your file to the advisory teacher.

## EXTENSION ACTIVITY 8

1.1

### Geographic Database

#### MATERIALS:

Computer  
Appleworks  
Data Disk #1  
Printer

(If you do not have a printer you will need to send your data disk to the advisory teacher.)

#### TO DO:

##### BEFORE:

1. Load Appleworks into the computer and insert Data Disk #1.
2. Load the file, Activity 2.1.
3. Read the directions for Activity 2.
4. Optional--Make a hard copy of the directions by printing out this file. To do this type OPEN APPLE P.

##### DURING:

You are creating six records by entering the name of each region on the first category of each record. You will continue this activity during the next lesson. The remainder of the information will be entered later.

##### AFTER:

Save all six records on the Data Disk by typing OPEN APPLE S.

If you have access to the electronic mail system, you must convert your Appleworks file to an ASCII file. (See Appleworks Reference Manual) Upload your file to the advisory teacher.

# **SOURDOUGH LINGO**

**1.1**

## **A Tour of Seward's Icebox**

Use this sheet throughout your study of Lesson 1. As you come across these terms, please provide a definition on this sheet. Add at least three other terms that are new or difficult for you.

1. geography
2. region
3. topography
4. tundra
5. permafrost
6. peninsula
7. continental shelf
8. basin
9. climate
10. weather
11. sparse
12. plate tectonics
- 13.
- 14.
- 15.

We've provided the page for you in this lesson. For the rest of the course you will use your own notebook paper, or you could keep a data base of terms on the computer or send your Sourdough Lingos via the electronic mail system, if you have access.

## **ALASKA TRIVIA**

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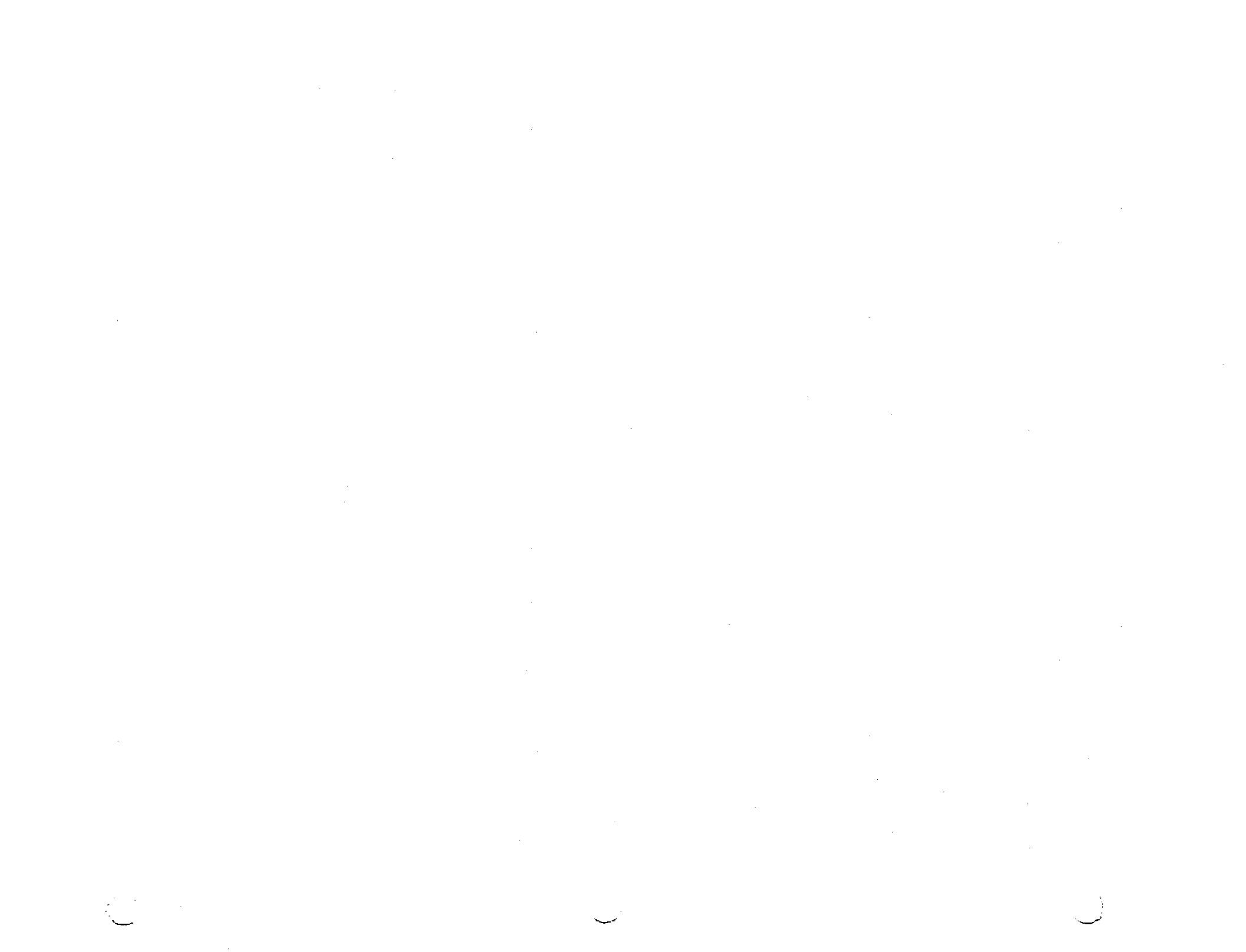
**1.1**

### **East and West**

**Why is this statement true?**

**Alaska has the EASTERNMOST POINT and the WESTERNMOST POINT in the U.S.**

**For the rest of the course, you may answer Alaska Trivia's in a variety of ways. You may write your answer, tape it, or send it to your teacher over UACN computer mail.**





# Unit 1, Lesson 2

# Alaska's Panhandle

<p>Here is your lesson plan for Lesson 2.</p> <p>It will take you 4-5 class periods to complete the minimum requirements.</p> <p><b>COMING UP:</b> Look through the extension activities in Lesson 4 and 5 now to see if you need to order any materials. Good resources are "Science Nuggets" by N. Davis and the Alaska Geographic books listed in the Teacher's Guide.</p>	
<p><b>WARM-UP:</b> Complete this first.</p>	<input type="checkbox"/> Pig Pen Cipher, p. 35
<p><b>INFORMATION:</b> Complete this next.</p>	<input type="checkbox"/> Alaska's Panhandle, p. 37
<p><b>EXTENSION ACTIVITIES:</b></p> <p>Complete #1 and at least one other.</p>	<input type="checkbox"/> 1. Alaska's Panhandle, map, p. 40 <input type="checkbox"/> 2. Glacier Research, p. 43* <input type="checkbox"/> 3. Make Your Own Glacier, p. 49 <input type="checkbox"/> 4. Tell Us What You Know, p. 51 <input type="checkbox"/> 5. Census Sleuth, p. 51 <input type="checkbox"/> 6. Hubbard Glacier, p. 52 <input type="checkbox"/> 7. Coastal Forest, video, p. 53* <input type="checkbox"/> 8. Extended Reading, choose from:* <small>*Early Visitors to Southeastern Alaska,* R.N. DeArmond;  <small>*Chilkoot Pass Then and Now,* A. Satterfield; *Alaska's Southeast: Touring the Inside Passage,* S. Eppenbeck</small> </small>
<p><b>SOURDOUGH LINGO*:</b></p> <p>Complete this as you study the lesson.</p>	<input type="checkbox"/> archipelago fiord (fiord) strait delta  <input type="checkbox"/> glacier maritime climate Japanese current muskeg
<p><b>ALASKA TRIVIA*:</b> Optional</p>	<input type="checkbox"/> Glacier Greatness, p. 61
<p><b>ASSESSMENT:</b></p>	<p>There is no test with this lesson. Review your work. Have you accomplished all objectives?</p>

\*May be sent via e-mail if student has access.



**Pig Pen Cipher**

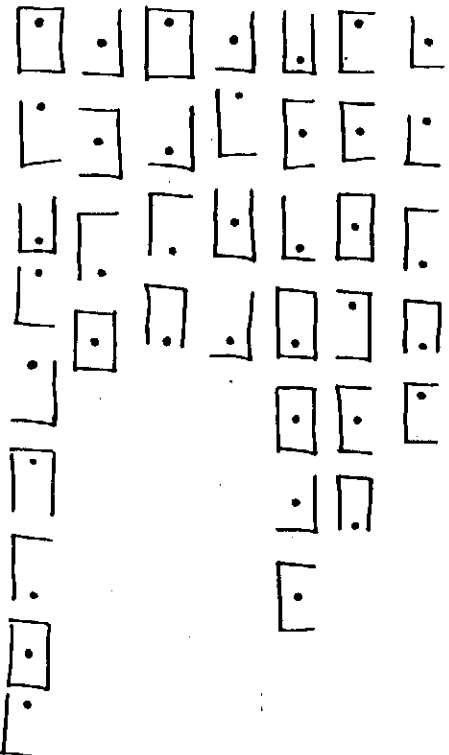
One code system used in the 14th and 15th centuries was the Pig Pen Cipher. Baptista della Porta developed a version of it and some secret societies used it as late as 1600. It was also used during the American Civil War by Union prisoners in Confederate jails to send messages to friends outside.

Can you see why it is called "pig pen cipher?"

Here is the clue to the code:

ABC	DEF	GHI
JKL	MNO	PAR
STU	VWX	YZ

Each letter is made up of some lines and a dot. The lines show in which part of this grid the letter is found. The dot tells you which of the three letters in that part of the grid is to be used.



Look at a map of southeast Alaska. All the names have something in common. What is it? Write your answer in Pig Pen Cipher:

Now turn this page over to read the objectives for Lesson 2.

## **OBJECTIVES**

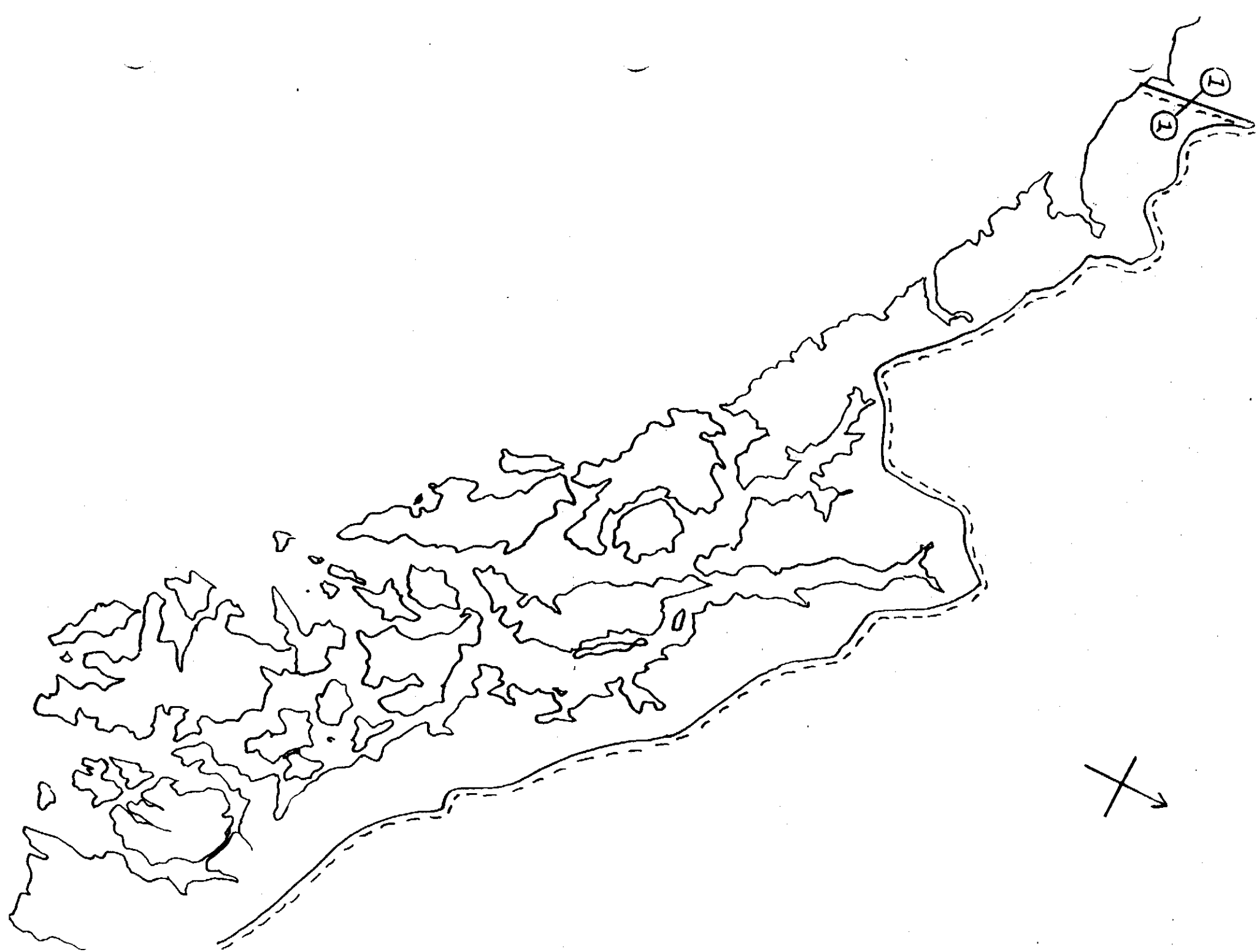
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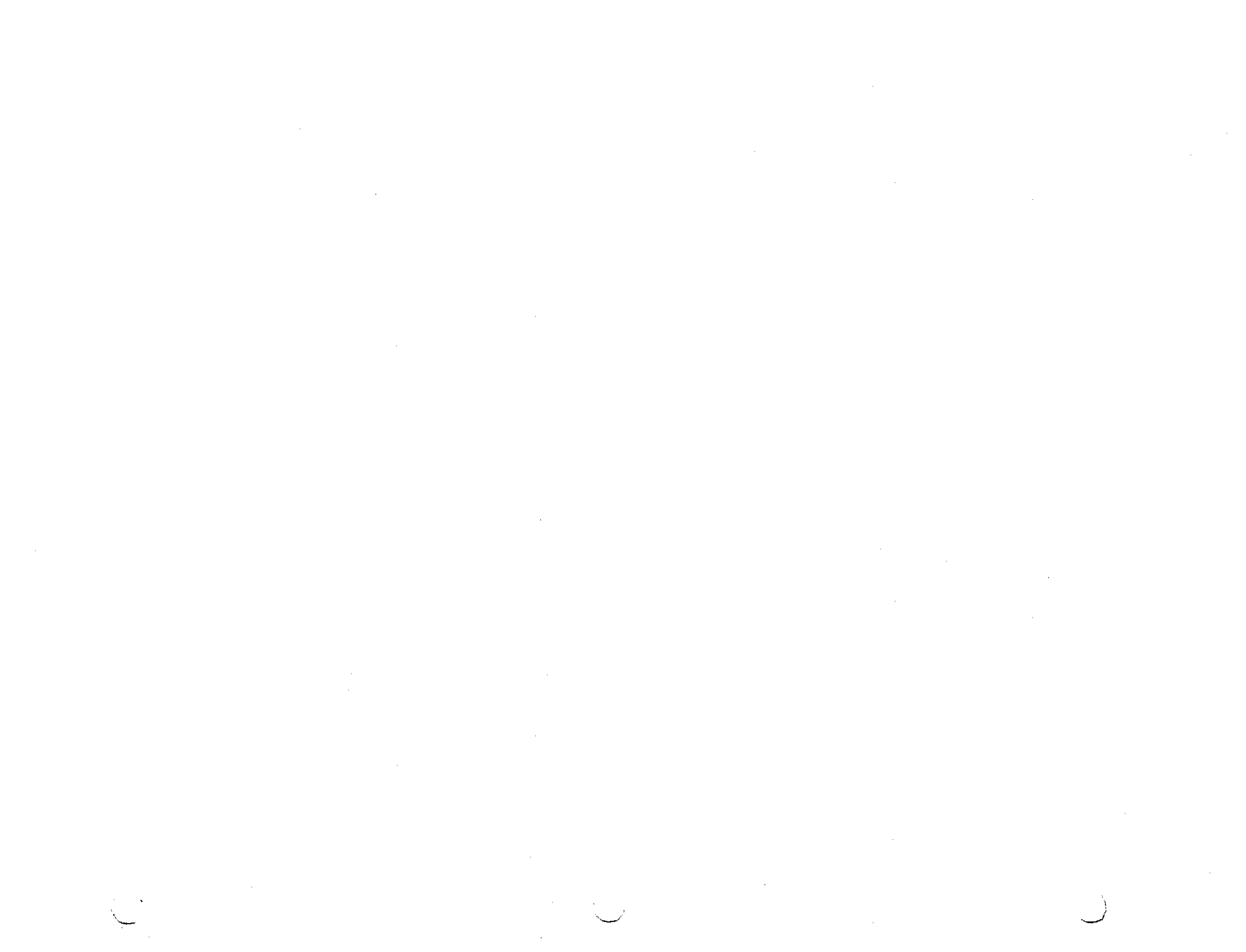
**1.2**

### **Panhandle**

Here's what you will be studying in Lesson 2. Upon completion, you should be able to answer these questions.

- How do geographic location and topography explain the climate of southeast Alaska?
- How were the glaciers of southeast Alaska formed?
- How have geographic features influenced settlement and development of southeast Alaska? P GA pp. 10, 12, 14, 15
- What is the maritime climate like? P GA p. 9
- What are some major geographic features of Southeast?
- What are some Southeast communities? Where are they?





## Panhandle

### HOW DID GEOGRAPHY INFLUENCE SETTLEMENT AND DEVELOPMENT IN SOUTHEAST?

Review your Rand McNally map while reading the following passage.

The steep **topography** of this region often makes community development difficult. Most settlements are located on narrow strips of land along the seacoast. Land transportation is very limited. The Alaska Marine Highway System and air travel provide access into and throughout this region.

The Chatham Trough divides the coastal St. Elias Range from the Coast Mountains along the U.S./Canada border. The coastal range in southeast Alaska consists of the Fairweather Range, the Alsek Ranges, the Glacier Bay Section, the Chichagof Highland, and the Baranof Mountains. The Fairweather Range, the most rugged in southeast Alaska, is the coastal extension of the St. Elias Mountains.

The major rivers of this region begin in Canada. Some of the principal rivers are the Alsek, Taku, and Stikine. Many rivers have **glaciers** at their headwaters. Ironically the watershed of the Yukon River, Alaska's major river, begins a dozen or so miles from Skagway, just over the border in Canada. The rugged mountains prevent water from flowing west to the sea. Instead, the water begins a 2,000 mile journey through the Yukon and Interior Alaska to the Bering Sea. See the Rand McNally map of Alaska in your packet.

### WHAT ARE THE MAJOR GEOGRAPHICAL FEATURES OF SOUTHEAST?

The Southeast Region stretches for nearly 600 miles along a narrow strip of mainland and many mountainous islands. It averages 120 miles wide. The region extends from Dixon Entrance on the south to the Malaspina

Glacier on the north. Its eastern edge is the Canada-Alaska border. Sixty percent of the land area of this region is on the mainland while 40 percent consists of islands. The islands lie directly west of the mainland and are known collectively as the Alexander Archipelago. An archipelago is a group of many islands.

Cross Sound divides the Southeast Region into two parts. To the north of the sound the coast is regular and is bordered by a low, hummocky coastal plain less than 200 feet high. Here, the Malaspina Glacier flows from the coast mountains to the Gulf of Alaska. South of the sound, the land is cut by many **fiords**. Fiord is a Norwegian word for long, narrow arms of the sea that reach inland between steep cliffs and slopes. Southeast's spectacular fiords were former drainages that were eroded and deepened by glaciers and ice currents. (Read pp. 68-69 in the A.A. for description and statistics on glaciers.) On the mainland, peaks are often 10,000 feet high. The most prominent inter-island waterway is Chatham Strait, a deep trench 4 to 15 miles wide and at least 200 miles long.

The Alexander Archipelago has hundreds of islands, many with mountains up to 3,500 feet tall. Six islands are more than 1,000 square miles in area. These six are Prince of Wales, Chichagof, Admiralty, Baranof, Revillagigedo, and Kupreanof. These islands are separated by a system of marine features such as sounds, straits, canals, rivers, and lakes.

Lakes in this region are not very big. Freshwater lakes vary in size from a few acres to several thousand acres. They vary in type from coastal marsh lakes to high alpine lakes. Only Harlequin Lake (south of Yakutat, at the foot of the St. Elias Mtns.) exceeds 10 square miles. Water storage in Southeast is principally in the glaciers and winter snowpack.

Southeast is home to many large glaciers. The Malaspina Glacier is one of the largest ice masses on the North American continent. Glaciers flow down between mountain peaks throughout Southeast. Read PGA pp.9-29 for more details and pictures of the geography of Southeast Alaska.

**WHAT'S THE CONNECTION BETWEEN ALASKA'S GLACIERS AND THE LAST ICE AGE?**

Everyone has heard of the Ice Age. A more scientific name for this period of earth's history is the Pleistocene (Plystuh seen) Era. During this time, approximately 2.5 million to 9,000 years ago, scientists believe much of the world was covered by glaciers.

Over a period of centuries the glaciers began to melt, due to a warming of the environment. Yet they did not melt entirely. One can find glaciers and ice fields today in southeast and southcentral Alaska. They cover approximately 30,000 square miles, or 3 percent of Alaska's land area.

At this time read the bottom of page 28 in the A.A. to see how atmospheric pressure causes wind. Many of the communities in southeast Alaska are situated along hills and the Coastal Mountain Range. Air being funnelled through the mountain passes creates a higher pressure. This mixture of high and low pressures disturbs equilibrium, causing gusting winds. Juneau is familiar with the "Taku Wind," which can be very destructive and cause a home to shake, rattle, and roll. Read page 209 in the A.A. to find out about the Taku and other Alaskan winds.

**WHAT IS A MARITIME CLIMATE?**

The climate of southeast Alaska is maritime. This means small temperature changes, high humidity, much rainfall and cloudiness, little freezing weather, and an average temperature of around 40°F. The average annual precipitation is well over 100 inches in much of the region, although precipitation varies greatly from place to place depending on distance from the sea and elevation. Page 9 of PGA and pp. 28-29 in the A.A. have more details about the maritime climate. Please take time to read them now.

The cool, moist conditions of Southeast produce a lush forest growth, which is an extension of the rain-belt forest of the Pacific Northwest. The forest is interrupted by muskeg, glacial outwash plains, and marshlands in river valleys and deltas.

The Japanese Current is a warm stream of ocean water in the north Pacific Ocean. It flows north along the Japanese Islands and then heads eastward toward the North American continent. Once it reaches the west coast of North America it swings north and south. The north arm warms the land north from Oregon to southeast Alaska and the Gulf of Alaska.

How does a current of water warm the land? In the winter months the land tends to be cooler than the water. As the warm air from the current rises it seeks a cooler environment, therefore moving toward the land. As it moves toward the land it pushes the cool air out toward the ocean where it is warmed. This creates an on-going cycle.



**WHAT ARE SOUTHEAST'S MAJOR COMMUNITIES?**

Juneau, the state capital with about 20,000 people, contains 5 percent of the state's population. The next largest population center in the region is Ketchikan, which is the southernmost major town in Alaska. Sitka, Haines, Petersburg, and Wrangell are also found in Southeast. Skagway is a historic goldrush town in this region. It was a staging area for many people on their way to the Yukon gold rush of 1898. Several communities in Southeast are not major population centers, but are significant to the Native people. Some of these smaller communities are Metlakatla, Angoon, Hoonah, Hydaburg, Klawock, and Klukwan.

**TO DO: LEARNING LOG**

What do you know now that you did not know before?

What do you still want to know?\*

\*You could use this for an extension activity or research project.

## **EXTENSION ACTIVITY 1**

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**1.2**

### **\*Alaska's Panhandle: Map Study**

You have acquired some knowledge about the Southeast region. On the following page you will find a map of this region.

You should insert at least the following:

- Three major geographic features.
- Five communities of varying population densities.
- And any other information you have learned.

**Be sure to devise a legend of the symbols you use.**

**\*You will not be handing this in until Assessment 2.**

## EXTENSION ACTIVITY 2

1.2

### Glacier Research

#### TO DO:

For this activity follow the five steps to research and prepare a written or pictorial description of one or more of the following glacier questions.

- How are glaciers formed?
- Are they being formed today?
- How are icebergs formed?
- Why do you suppose Alaska's existing glaciers are predominantly in the Southeastern and Southcentral regions?
- What is the geologic history of southeast Alaska glaciers?

Step 1. Read the information that follows Step 5 as the first part of your research.

Step 2. Now find some other sources to read about glaciers. Here are some suggestions.

Alaska Geographic Society: Glacier Bay: Old Ice, New Land  
Alaska's Glaciers  
Yakutat - the Turbulent Crescent

You may find more books and/or magazine articles in your library as well. Remember to take notes on what you read.

If you have a glacier nearby, a visit would provide plentiful information.

Step 3. To write your report, use your notes to create an outline. Then write a rough draft from your outline. Proof your rough draft, then write a final draft. Don't forget to list your sources of information. Your written report should be at least four pages, hand-written, or two pages on a word processor.

Step 4. If you decide to report using a pictorial description, you could use videotape, snapshots, slides, or pictures you have drawn.

Step 5. Make your report interesting and informative in your own words, and be sure to answer the questions you chose for research.

## EXTENSION ACTIVITY 2 (continued)

1.2

The sparkling rivers of blue ice called glaciers are a feature for which Alaska is well-known. They add much to the beauty and fascination of Alaska's Pacific coastal regions.

Glaciers form where warm, moisture-laden winds and clouds climb high enough to precipitate snow, and where the summer is too short and cool to melt each winter's snowfall. Great masses of snow accumulate, which, under pressure, turn gradually to ice. They fill the valleys between mountains, and flow downhill like rivers, but much more slowly. A glacier moves because of the weight of the snow. As it snows more at the top of the glacier, the glacier moves forward. When little snow falls at the top, the glacier moves (melts) backward (recedes). The area at the top of the glacier where all of the snow falls is called the icefield. The ice begins to move when it becomes 150-200 feet thick.

What are some interesting facts about glaciers?

- Alaska has more square miles of glaciers than the rest of the inhabited world.
- Alaska and British Columbia together have five-sixths of the glaciers located in the temperate zones.
- Alaska's glaciers are the finest from the standpoint of size, accessibility, and beauty. They cover over 3 percent of the state or about 30,000 square miles--which is greater than the area of Switzerland (15,941 square miles).
- One estimate is that Alaska has 270 glaciers that have been named and explored and probably as many more that are unnamed. Other estimates put these figures higher.
- Some of Alaska's glaciers are advancing (growing) while others are receding. Generally, it is thought that Alaska's glaciers are gradually on the decrease.
- A daily travel rate (forward movement) for a glacier of an inch or two is common, a foot or two is comparatively fast and 20 or 30 feet a day is rare and torrential. The fastest glacier in the world (in Greenland) moves on an average of 60 feet a day.
- The 2,600 mile Pacific coastline from Dixon Entrance to Cook Inlet is known as Alaska's glacier belt.
- Strange as it may seem, glaciers are not associated with extremely cold climate conditions. Practically all of Alaska's glaciers are located south of the Arctic Circle.
- One theory is that glacier ice can't exist in vertical sheets higher than two to three thousand feet because the pressure of the ice burden generates heat that melts the ice. This may account for the rivers that flow out from beneath many glaciers.
- Interior and northern Alaska, which are much drier and, in winter, colder than the coastal area, are practically free from glaciers. Exceptions are the Alaska Range, of which Mt. McKinley is a part, and to a minor extent the Brooks Range.

## EXTENSION ACTIVITY 2 (continued)

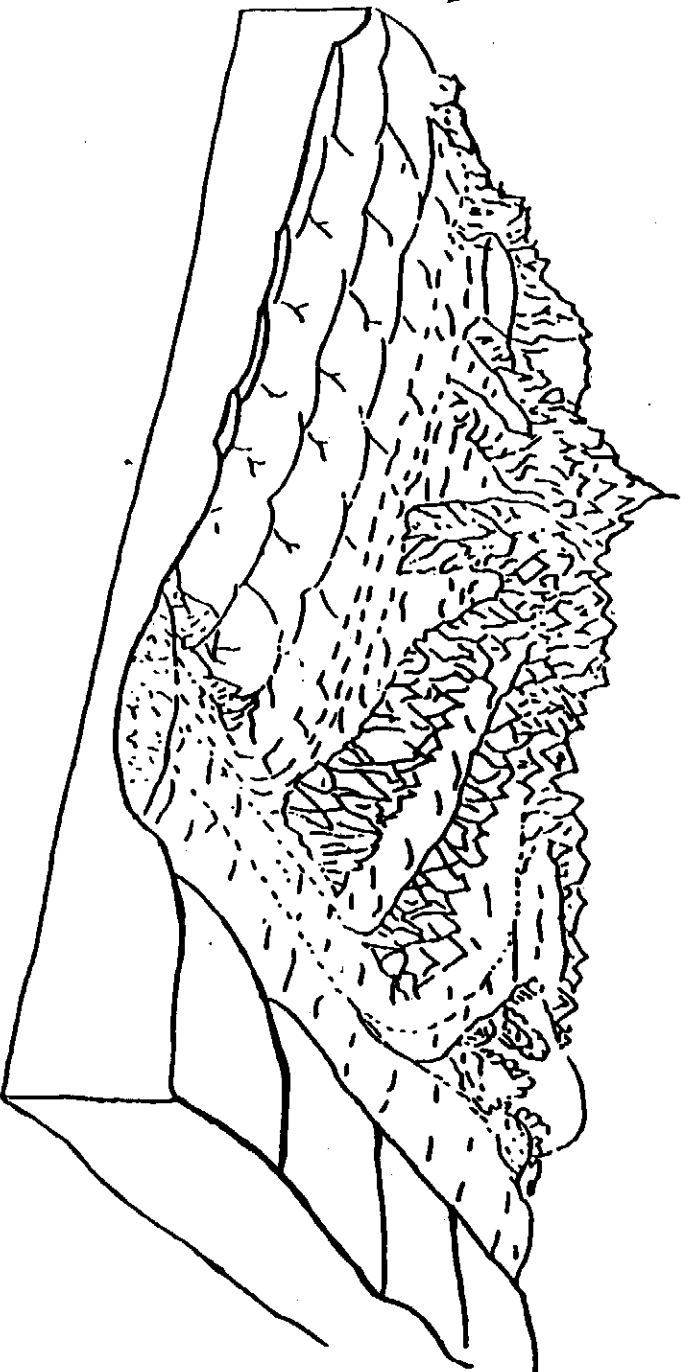
1.2

### Glacier Research

There are various ways to classify glaciers. Types overlap and a glacier can change its characteristics by becoming active, stationary, or receding. The three major types are the alpine glacier, the piedmont glacier, and the continental glacier.

#### **ALPINE GLACIER**

Alpine glaciers get their name from the Alps in Switzerland. They are also known as valley glaciers. They are found in mountain valleys in Southeast and Southcentral and in the Alaska Range that continues in the southern part of the Interior. High in the mountains, snowfields become so deep that the ice made from the snow starts to flow down the valleys. If you look at the picture below, you can see what the snow-filled mountains look like.



The glacier rubs against the sides of the valley and mountains, carrying off rock. It eats away at mountain peak sides until nothing is left but a sharp peak or a very jagged mountain top. If the glacier becomes so thick that it goes over a mountain top, the mountain top will be rounded. If you walk in an area that was carved by glaciers, you may find long scratches on the bare rocks.

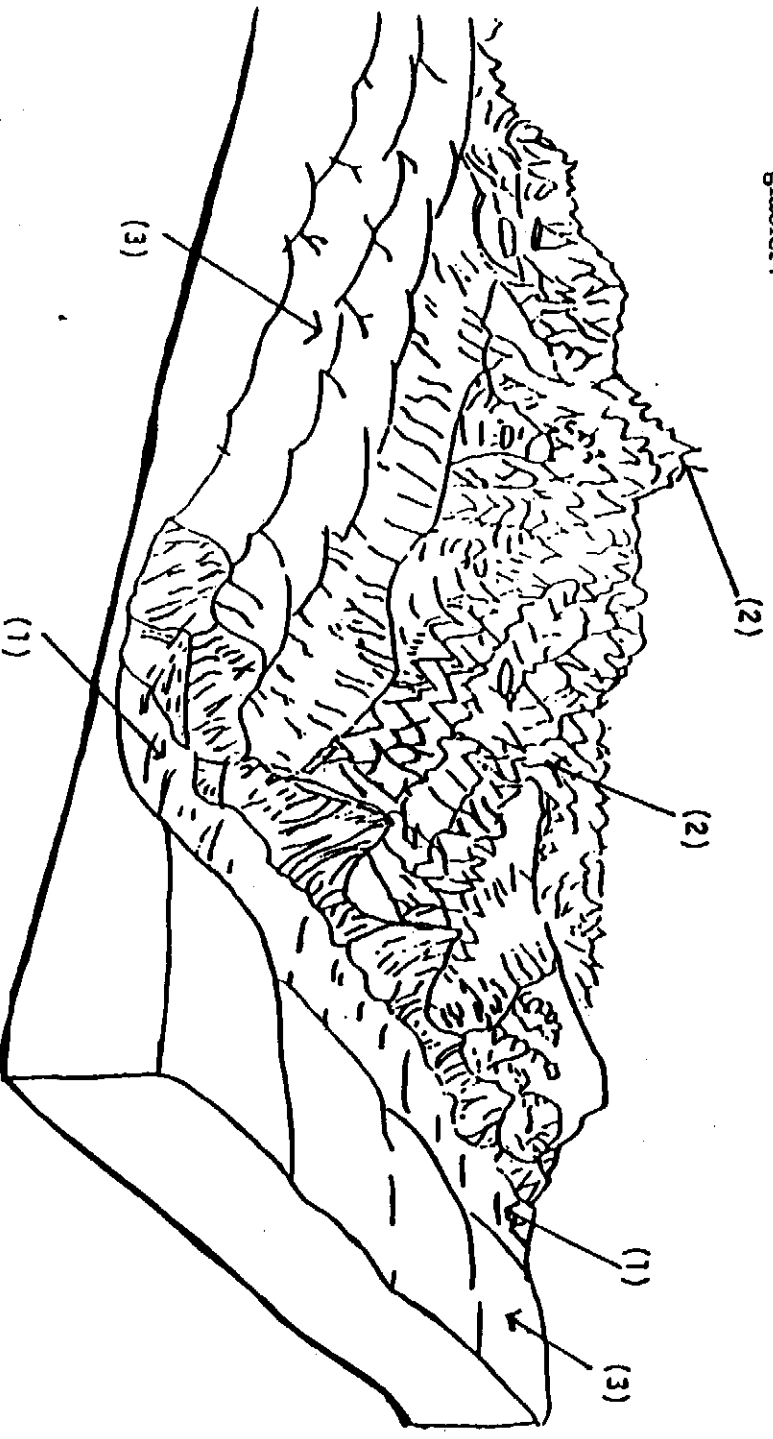
## EXTENSION ACTIVITY 2 (continued)

1.2

### Glacier Research

If it becomes warmer and the snow decreases, the glacier finally melts. Look at the picture below. (1) Notice the U-shaped valleys. Whenever you see a U-shaped valley such as this, you will know there was once a glacier there. If you see the other type of valley, that is V-shaped, you know it was carved by a river, not a glacier.

Sometimes glaciers leave behind mountain lakes. (2) Notice how jagged the mountains are. (3) Can you find the rounded hills that were once covered by a glacier?



Alpine glaciers are the most common glaciers. There are literally thousands of these lone glaciers, severed in the past from the main ice body, which hang in high canyons on the mountains or travel down the valleys, often coming below the timberline.

Hanging glaciers are generally located in a pocket high on the mountainside and lack the weight and increasing accumulation of ice and snow to cause them to move actively down the mountain slope.

The front edge of glaciers that reach the sea break off to form icebergs. There are only about 30 glaciers that reach the sea in the world today.

**Glacier Research**

**PIEDMONT GLACIER**

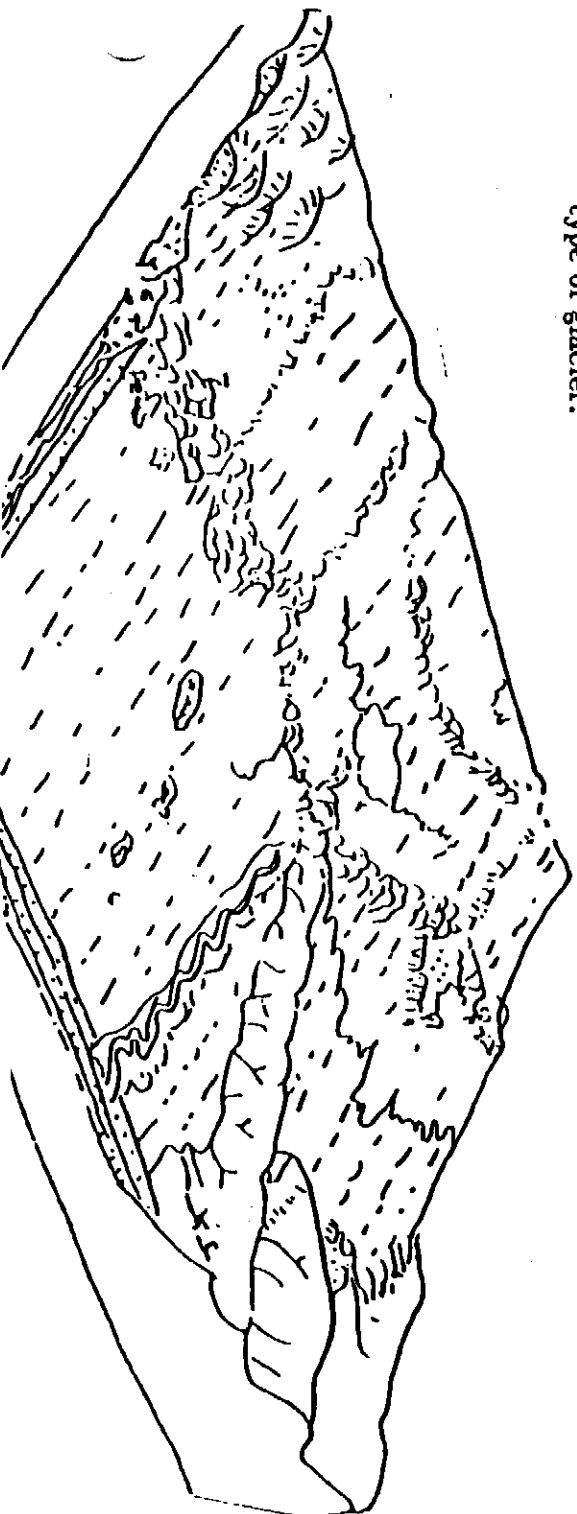
A piedmont glacier occurs when a group of alpine or valley glaciers come together at the bottom of the valleys and flow out on comparatively flat land. In other words, the glaciers are no longer confined in a valley. They spread out, advancing or receding as the climate changes. Sometimes when glaciers recede they leave piles of sand, rocks, and crushed rock in long, low ridges. These landforms are called **moraines**. Often a lake will form between the moraine and the face of the glacier. The Mendenhall Glacier, in Juneau, has a lake in front of it that was formed in this way.

Piedmont glaciers are relatively rare. There are slightly more than a hundred of these glaciers in the world today.

The Malaspina, Alaska's largest glacier, is a splendid example of a piedmont glacier. Named for an Italian navigator who explored this region in 1791, it is larger than Rhode Island. Six large ice streams merge to form this immense ice plateau. Malaspina has a 25 square mile forest with trees up to three feet in diameter growing on its back. The Malaspina Glacier is on the coast of Alaska between Glacier Bay and Yakutat. On a clear day, you can see it as you fly from Juneau north.

**CONTINENTAL GLACIERS**

The third kind of glacier is a continental glacier. Alaska has no continental glaciers. Greenland and Antarctica are the only places these exist today. This glacier spreads out in all directions like pancake batter on a griddle over relatively flat land. They are not in mountain areas. The picture below shows you what the land might look like after the ice from a continental glacier has melted. Much of the midwestern United States was at one time covered by this type of glacier.



## EXTENSION ACTIVITY 2 (continued)

1.2

### Glacier Research

#### WHAT ARE SOME INTERESTING ALASKAN GLACIERS?

Columbia Glacier in Prince William Sound is the largest glacier in the world that ocean-going vessels approach. Columbia's sparkling wall of blue ice moves on the average of six feet a day, which is considered very rapid. It has a spectacular front that is 150 to 250 feet high and three to four miles wide. It is about 25 miles long.

LeConte Glacier is near Petersburg. Icebergs from this glacier are frequently seen in the main channel from Petersburg to Juneau.

Glacier Bay National Monument contains glaciers, of which Muir is probably the most famous. It moves 20 to 30 feet a day, which, with its sheer face rising 265 feet into the air, makes it a prolific producer of icebergs.

Mendenhall Glacier, a short driving distance from Juneau, is a beautiful glacier which is much visited and photographed. It is receding at the rate of 50 feet a year. The relatively rapid change makes it interesting to observe. Its beautiful lake at the base is used for ice skating in the winter, and ice is harvested from the floating icebergs for personal use. (Glacier ice does not melt as rapidly as artificial ice because the air has been pressed out of it.)

Matanuska Glacier can be seen from the Glenn Highway about 100 miles east of Anchorage and is admired by many highway travelers.

Worthington Glacier is near Valdez and tourists can drive up to its base and get free ice for their trailer's ice boxes.

Portage Glacier, which in many ways resembles Mendenhall Glacier, can be reached by car from Anchorage and Seward. It is noted for the huge icebergs in its lake.

Black Rapids Glacier, facing the Richardson Highway, some years ago moved forward three miles in less than five months. This is an average of 115 feet a day! It has since slowed down. Sometimes inland glaciers come to life and move this rapidly.

Hubbard Glacier, near the town of Yakutat, caused a sensation in the summer of 1986 when it galloped forward to plug Russel Fiord. World-wide attention was focused on the marine mammals trapped in the fiord. Later the ice wall broke and the mammals escaped to the sea.

Now, remember to turn back and follow steps 2-5 to finish your report.



## **EXTENSION ACTIVITY 3**

1.2

### **Make Your Own Glacier**

by Carl Proujan

(From "Science World" magazine, February 17, 1984, page 20)

Is it warm where you are? Well, it isn't that way everywhere. Tongues of ice are on the move--in Greenland, the Antarctic, Alaska, and other very cold places on the Earth. As a matter of fact, more than 10 percent of the Earth's land is covered with this kind of moving ice.

Once, 18,000 years ago, a great deal more of the Earth was covered with moving ice. New York City was blanketed with 1,000 meters of the glistening white sheets of frozen water. The ice dipped below Chicago in the midwestern U.S. and covered much of northern Europe. This was the time of the last great "Ice Age," which forever changed the face of our planet.

A moving river of ice is called a glacier. And like its liquid cousins--ordinary rivers--a glacier can carve away the land. A glacier is a huge earth and rock moving "machine." It is a "chisel" that can carve valleys. It is a "scoop" that can produce enormous bodies of water, such as our country's five Great Lakes.

Scientists called glaciologists travel far and wide to study glaciers in their natural settings. You can learn something about how glaciers act--in your own home! Make your own glacier now.

#### **TOOLS YOU WILL NEED:**

Modeling clay (enough to produce a mini-landscape of your choice), small pebbles (to simulate large boulders), some sand or fine soil (to stimulate small rocks), two flat pieces of ice (made by placing a partition across an ordinary ice tray, adding water, and freezing), and a large aluminum baking or roasting pan (get the disposable kind, which are inexpensive). If you own a camera, you may want to photograph different aspects of your project.

**WHAT TO DO:** Using the clay, construct a more or less flat landscape in the aluminum pan. Place sand and pebbles on your landscape in any way you wish. In other words, your landscape can have as many "rocks" and "boulders" as you desire.

Place a piece of ice at one end of your landscape. Now, gently tilt the pan until the ice begins to move. If the ice does not move by itself, lightly and slowly move it across the surface of the clay until the ice reaches the other end of the tray. This "trip" should take at least a minute.

## **EXTENSION ACTIVITY 3 (continued)**

**1.2**

### **Make Your Own Glacier**

Next, pick up the piece of ice. Look at its underside and record what you see. (You might want to use a magnifying glass for this observation. You might also want to photograph what you see.) In the same way, examine the landscape your "glacier" moved over. Again, record your observations.

Repeat the entire experiment. But this time, place something heavy on top of the ice. Again, observe the bottom of the ice sheet and the "land" surface under the ice.

### **YOU BE THE SCIENTIST**

Use your own paper, an audiotape, or word processor to answer these questions.

If you have the equipment, you could also videotape your experiment and explanations.

1. How does the landscape affect the "glacier" in each experiment?
2. How does the "glacier" affect the landscape in each experiment?
3. What is the relationship between the mass of the "glacier" and its effect on the landscape?
4. Deposits of rocks and boulders dropped where the glacier melts are called "till." Did your "glacier" produce till? If so, what in your model represents till?
5. From your observations of your model, what would you expect to find where real glaciers once moved over the land? If you live in an area where glaciers once existed, organize a field trip so you can discover whether your model is a good example of the "real thing."

## **EXTENSION ACTIVITY 4**

**12**

**Tell Us What Juneau (You Know) About Alaska**

### **MATERIALS:**

TriviAlaska Game (available through CCS or bookstores)  
Alaska Almanac  
Alaska Blue Book  
Alaska Map  
Other Alaska reference books  
3x5 index cards or other similar cards you make yourself

### **TO DO:**

Develop an Alaska Trivia game that will quiz your classmates, teachers, friends, and family about Juneau, our capital city. You'll need at least thirty questions (and answers). You may divide your questions about Juneau into categories such as History, Geography, Landmarks, People, Nature, Sports, etc.

Decide on the scoring system for your trivia game. Will you give points for categories? Any correct answers? How does one win? It's up to you.

Try your game out. Have fun!

## **EXTENSION ACTIVITY 5**

**12**

**Census Sleuth**

### **MATERIALS:**

Old census data (try old Alaska Almanac editions or old Alaska Blue Book editions)  
Current census data  
Graph paper or graphic capability on your computer

### **TO DO:**

Locate old census data for at least five Southeast communities and compare to the most recent census by use of charts. Identify changes (+ or -). Predict future populations for the year 2,000 and provide rationale.

Present your findings with graphs or charts, either drawn by hand or on a computer. You may want to trace population changes by decade for one southeast Alaska community.

## EXTENSION ACTIVITY 6

1.2

### Hubbard Glacier

In 1794, Captain George Vancouver sailed for the first time into southeast Alaskan waters. He was seeking the fabled entrance to a northwest passage to Asia. Further exploration was stopped as he met a 300-foot-high wall of ice, "extending," he said, "from shore to shore and connected with a range of lofty mountains."

In 1879, naturalist John Muir, travelling by canoe, arrived at the same spot. Muir was not greeted by the 300 foot high wall of ice. The glacier which stopped Vancouver had since split in two and retreated 30 miles! This allowed John Muir to discover Glacier Bay.

Glaciers advance as well as retreat. Scientists are not sure what causes this movement. Movement once was determined purely by comparing photographs taken over time. Now laser technology can measure movement.

One southeastern glacier, by the community of Yakutat, recently has been under intense study. It's called Hubbard Glacier. You can find a picture of it on page 28 in A Photographic Geography of Alaska.

State newspapers and national magazines have reported this natural phenomenon. Your assignment is to be an investigative reporter. Locate and read articles on the movement of Hubbard Glacier and its effect upon the environment. Present a summary of your findings in a written report.

## EXTENSION ACTIVITY 7

1.2

### Coastal Forest

#### MATERIALS:

Videotape 1, program 2 "Coastal Forest"

#### TO DO:

#### BEFORE:

1. Be thinking of what the terms "old growth" and "second growth" forests may mean. What different needs do forests meet?
2. Look at the map of Alaska and predict where coastal forests may be found?
3. Be looking for the conditions that make coastal forest living conditions unique. What special characteristics do coastal forest plants and animals have that help them adapt?
4. Be looking for the following terms in the video:  
carrying capacity      condensation  
evaporation            old-growth forest  
precipitation          rain forest  
second growth forest    succession  
transpiration  
water cycle              vapor

#### DURING:

Watch the video looking for relationships you can make between the ecosystem of the coastal forest and the climatic and geographic conditions of Southeast that you have read about.

#### AFTER:

Answer the following questions and submit them to your teacher.

1. What are ten characteristics of the coastal forests?

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**EXTENSION ACTIVITY 7 (continued)**

**1.2**

2. Where in Alaska would coastal forests be found?

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3. Indicate whether the forests described below are old-growth or second growth?

a. Forest fire occurred there 30 years ago

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b. Forest fire occurred there 100 years ago

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c. Large, healthy deer population

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d. Forest that, if left undisturbed, will look about the same a couple of hundred years from now as it does now

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e. Spruce trees 30 inches in diameter

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f. Closely spaced, evenly aged trees

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4. Compare and contrast old growth and second growth forests.

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5. Name two ways second growth forests are created.

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6. Many factors make a coastal forest ecosystem. List these climatic, geographic, or topographic aspects of southeast Alaska's coastal forest ecosystem.

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**EXTENSION ACTIVITY 7 (continued)**

**1.2**

7. Write definitions for these terms:

evaporation \_\_\_\_\_

precipitation \_\_\_\_\_

transpiration \_\_\_\_\_

condensation \_\_\_\_\_

rain forest \_\_\_\_\_

vapor \_\_\_\_\_

old-growth forest \_\_\_\_\_

second-growth forest \_\_\_\_\_

## EXTENSION ACTIVITY 9

1.2

"Eagle, Eagle, Everywhere"

### MATERIALS:

Eagle Kit (Alaska State Museum)

### TO DO:

Not only is southeast Alaska home to the state capital, but it is the bald eagle capital of the world. During the winter months, bald eagles from as far as 500 miles away gather at the Chilkat River, near Haines, to feed on salmon that spawn in the unfrozen river.

Find out more about eagles by using the Eagle Kit provided by the Alaska State Museum. (The resource section of the Teacher's Guide can give you ordering information. Many interesting activities and reference materials are included.)

Now think of an innovative way of presenting some of the information you have learned about eagles in Southeast.



# EXTENSION ACTIVITY 10

1.2

Southeast

## MATERIALS:

Tape Recorder  
Audiotape; Unit 1, Side 1  
Alaska Rand McNally map  
Paper and pencil

## TO DO:

Locate on your Alaska Rand McNally map the locations of the geographic places mentioned. You might want to listen to the tape, write down the geographic places mentioned and then locate them on your map.

Now that you have a general idea about the Southeast, write a paragraph describing the main geographic features of southeast Alaska, and complete the following word puzzle.

### WORD PUZZLE

1.    --- A ---
2.    --- R ---
3.    --- C ---
4.    --- H ---
5.    --- I ---
6.    --- P ---
7.    --- E ---
8.    --- L ---
9.    --- A ---
10.  --- G ---
11.  --- O ---

### CLUES

1. Island in Alexander Archipelago, named by Capt. Vancouver, 1798.  
Russian name (O(strov) kutsnoi" meaning "fear island."

2. Island in Alexander Archipelago, named for Russian man who established the first fort at Sitka or New Archangel.
3. Inland waterway surrounding a community whose name was derived from Tlingit word, Hoon, meaning "Northwind" or "the place where the north wind doesn't blow."
4. Inland waterway, extends north 150 miles from Coronation Island on Gulf of Alaska to junction of Icy Strait and Lynn Canal. 57°03' N; 134°32' W.
5. Island in Alexander Archipelago, Tlingit name published in 1948 as "Ostrov kuyū" by the Russians.
6. Island in Alexander Archipelago, home of community named for a Norwegian-American, Peter Buschmann.
7. Inland waterway, named by Capt. Vancouver in 1794 for His Royal Highness Frederick, Duke of York, son of King George II of England.
8. Island in Alexander Archipelago named by Capt. Vancouver in 1793 for the Count of Revilla Gigedo and Viceroy of Mexico.
9. Inland waterway, named by Capt. Vancouver in 1794 for his birthplace, King's Lynn, Norfolk, England.
10. Island of Alexander Archipelago, home of a town named for the fishing boat "The Pelican," owned by Kalle (Charley) Raataikainen.
11. Island of Alexander Archipelago---third largest island under the U.S. flag.

## EXTENSION ACTIVITY 11

1.2

### **Glaciers**

#### MATERIALS:

Tape recorder  
Audiotape; Unit 1, Side 1  
Rand McNally map of Alaska  
Paper and pencil

#### TO DO:

While you are listening to the tape recording on glaciers answer the following questions. It might be necessary to listen to the recording a second time to accomplish this task.

1. What is a glacier?
2. Why is glacier ice harder than ice from a freezer?
3. How fast do glaciers move in a day? In a year?
4. How is a glacier formed?
5. What is a receding glacier?
6. What is an advancing glacier?
7. What is an iceberg?
8. What do glaciers do as they move?
9. What is a moraine?

## EXTENSION ACTIVITY 12

1.2

### Climate Differences

#### MATERIALS:

Computer  
Appleworks  
Data Disk #1,  
The Alaska Almanac, additional resource material as available  
Printer

(If you do not have a printer you will need to send your data disk to the advisory teacher.)

#### TO DO:

##### BEFORE:

Investigate the climate of Southeast. Locate information about maritime climates from several sources.

##### DURING:

1. Load Appleworks and insert Data Disk #1 into the computer.
2. Load the word processing file, Activity 3, up on the screen from Data Disk #1.
3. Type your information into the word processing file, Activity 3. You only have to complete the information about the maritime climate in this lesson.

##### AFTER:

Save the information with and OPEN-APPLE S command. You will be returning to this activity during lessons 3 and 6, when you will learn about Alaska's other climates.

If you have access to the electronic mail system, you must convert your Appleworks file to an ASCII file. (See your Appleworks Reference Manual) Upload your file to the advisory teacher.

## **EXTENSION ACTIVITY 13**

**1.2**

### **Geographic Database, continued**

#### **MATERIALS:**

Computer  
Appleworks  
Data Disk #1  
The Alaska Almanac, additional resource material as available

#### **Printer**

(If you do not have a printer you will need to send your data disk to the advisory teacher.)

#### **TO DO:**

#### **BEFORE:**

Load Appleworks and the data file, Activity 2.2 from Data Disk #1 into the computer.

#### **DURING:**

1. Type in information about Alaska's Panhandle. Use the command OPEN-APPLE Z to add information to the data base. Press RETURN after typing each entry.
2. Press OPEN-APPLE S to save the information in the database.

#### **AFTER:**

Remove the disks. Store your data disk in a secure place. You will continue this activity during the next lesson.

If you have access to the electronic mail system, you must convert your Appleworks file to an ASCII file. (See your Appleworks Reference Manual) Upload your file to the advisory teacher.

## **ALASKA TRIVIA**

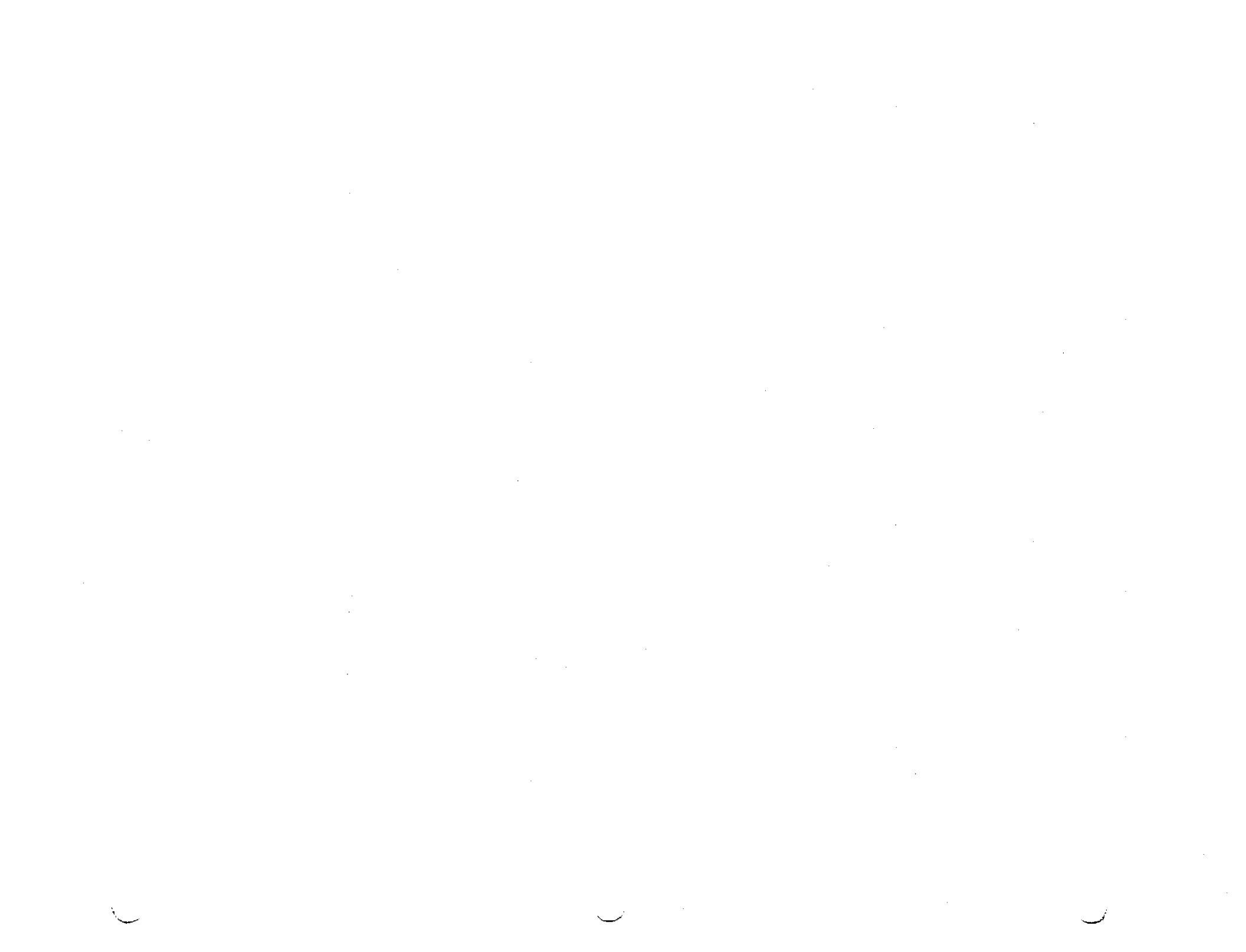
**1.2**

### **Glacier Greatness**

About 75 percent of all the fresh water in Alaska is stored as glacial ice. The largest glacier in the state is the Malaspina--850 square miles.

1. What Yakutat area glacier is named for the unusual color of its moraines?
2. What is the nation's largest National Forest?

Add your own fun fact about Southeast Alaska.



# Unit 1, Lesson 3

# Southcentral Region

Here is your lesson for Lesson 3.

It will take you 4-5 class periods to complete the minimum requirements.

**COMING UP!** Look through the extension activities in Lesson 6 and 7 now to see if you need to order any materials. Good resources are the Alaska Geographic books listed in the Teacher's Guide.

**WARM-UP:**

Complete this first:

- Mt. Katmai Eruption, p. 65

**INFORMATION:**

Complete this next.

- Southcentral Alaska, reading, pp. 67-68

**EXTENSION ACTIVITIES:**

You must do #1.

Complete at least one other of your choice.

- 1. Southcentral Alaska, map, p. 69
  - 2. Research Options, p. 75\*
  - 3. Kodiak Projects, p. 76\*
  - 4. Legend of the Sleeping Lady, audio, p. 80\*
  - 5. Taiga, video, p. 81\*
  - 6. The Alaska Tribune, writing, p. 83
  - 7. Extended Reading, choose from:
    - \*Katmai, \*W. Erskine; \*Between Two Rivers: the Growth of Chugliak-Eagle River, \*N. Cochran; \*Cook Inlet Collection, \*M. Sherman; \*Alaska's Copper River, \*W. Harable; \*Only in Alaska, \*T. Thomas; Mountain of My Fear, \*D. Roberts
  - 8. Southcentral Region, audio, p. 84\*
  - 9. Climate Differences, cont, computer, p.85\*
  - 10. Geographic Database, p. 86\*
- \* May be sent in by e-mail if student has access.

**SOURDOUGH LINGO\*:**

Complete this as you study the lesson.

- transitional climate continental climate inlet tidal bore "Ring of Fire"

**ALASKA TRIVIA\*:**

Optional

- What's the Answer, p. 87

**ASSESSMENT:**

No test this lesson. Re-read your objectives. Have you learned them all?





## Mt. Katmai Eruption

... We are waiting for death at any moment. A mountain has burst near here. We are covered with ashes, in some places ten feet and six feet deep.

All this began June 6. Night and day we light lanterns. We cannot see daylight. We have no water, the rivers are just ashes mixed with water. There are darkness and hell, thunder and noise. I do not know whether it is day or night.

The earth is trembling, it lightning every minute. It is terrible. We are praying. . . .

Ivan Orloff, an Aleut fisherman, wrote the above excerpt in a letter to his wife from fish camp. He was experiencing the Mt. Katmai volcanic eruption of 1912, which caused climatic changes around the world for several years.

Find Mt. Katmai on your Alaska map. Now look Mt. Katmai up in the reference below or another reference. Find at least one interesting fact about the eruption, and write about it below:

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When you are finished, turn this page over to find this lesson's objectives.

\*Alaska Geographic Vol. 4, No. 1, 1976  
Alaska's Volcanoes Northern Link in the Ring of Fire

## **OBJECTIVES**

**1.3**

### **Southcentral**

Here's what you will be studying in lesson 3. Upon completion, you should be able to answer these questions:

- How do geographic location and topography explain the climatic conditions of southcentral Alaska?
- What is the history of earthquakes and volcanoes in southcentral Alaska and the Aleutian chain?
- How have geographic features influenced settlement and development in southcentral Alaska?
- What is a transitional climate?
- What is a continental climate?
- What are three major geographic features of this area? Where are they?
- Can you locate five communities in southcentral Alaska on your map?

# INFORMATION

1.3

## Southcentral Region

### WHAT ARE SOME OF THE MAJOR GEOGRAPHIC FEATURES OF THE SOUTHCENTRAL REGION?

Review your Rand McNally map while reading the following passage.

Southcentral is characterized by rugged, mountainous terrain. It also has lowlands bordering Cook Inlet, the lower Susitna Valley, the Copper River, and along the coast. These lowlands have attracted human habitation. Southcentral is the most populated region in Alaska and boasts the state's largest city -- Anchorage. It includes part of the Wrangell Mountains, the eastern and southern Alaska Range, and the Kodiak Archipelago.

Extensive glacier systems lie in the Alaska, Wrangell, Chugach, and Kenai Mountain Ranges. Most of the large rivers in the region flow from these glaciers. Two of the state's major rivers are in this area -- the Susitna and the Copper. The plains of the Copper River, the Susitna lowlands, and the Kenai Peninsula contain many lakes such as Tustumena, Skilak, George, Clark, Tazlina, and Louise.

Frequent violent movements of the earth's crust give rise to severe earthquakes in this region. Some major volcanoes that reflect this activity include: Katmai, Augustine, Iliamna, Redoubt, Spurr, and the Wrangells.

The shoreline from Icy Bay (northwest of Yakutat) to Stepovak Bay on the Alaska Peninsula extends about 11,500 miles (about 25 per cent of Alaska's tidal shoreline). This shoreline is the most complex in the state. There is the beach of the Bering Glacier, the islands and fiords of Prince William Sound, and the wide, shallow Cook Inlet. Fiords are also found on Kenai and Alaska Peninsulas and Kodiak Island.

Two mountain systems dominate the coastline: The St. Elias-Chugach-Kenai Ranges and the Alaska-Aleutian Ranges. Cook Inlet and Prince William Sound contain many small coves and harbors. Cook Inlet tides are surpassed in North America only by the phenomenal tides of the Bay of Fundy on the eastern shore of Canada. See page 49 top in PGA for a picture of the tidal bore created when water rushes to cover the exposed sands of the Turnagain Arm.

### FYI (for your information)

When Captain James Cook was searching for a northwest passage in 1778, he hoped he had found it in Cook Inlet. But, forced to turn back by a swift, shallow stream at the head of the Inlet, he wrote, "Turnagain River" on his chart and went searching elsewhere. In 1794, Captain George Vancouver found it to be an arm of the sea, swift because it has the second highest tides in North America. He called it Turnagain Arm, and gave Cook's name to the inlet.

Southcentral Alaska has three climatic zones: maritime, transitional, and continental. We have already discussed the characteristics of the maritime zone in Lesson 2, Southeast Alaska.

The transitional climate zone means change. Sometimes the weather is influenced by the sea, bringing much rain and mild temperatures. Other times, the precipitation is very light with extreme temperatures. Not only does transitional describe the climate but also the day-to-day weather. In transitional zones, weather may change more than several times each day. (Remember climate is the weather characteristics of a particular zone over a long period of time and weather is the atmospheric conditions on a day-to-day basis.)

In Southcentral, continental climate occurs north of the mountains which border the Gulf of Alaska. The continental zone has a wide range of temperatures. It is far below freezing in winter and up to 100°F in summer. Thunder storms occur in the warmer months. The precipitation is considerably lighter than in the maritime and transitional types of climate.

Look at the map in the A.A. under "Climate." You can see how the climatic zones tend to follow mountain ranges. Read "Climate" on p. 28 to discover the role of mountains and air masses on climatic conditions.

**WHAT IS THE GEOLOGIC HISTORY OF EARTHQUAKES IN SOUTHCENTRAL ALASKA?**

In Lesson 1 we talked about the theory of plate tectonics. We mentioned two plates, the Pacific plate and the North American plate. Earthquakes are caused by stress between plates. In southern Alaska stress is caused as the Pacific plate tries to slide under the North American plate in southcentral and southwest Alaska and to slide along the North American plate in southeast Alaska.

Probably the most famous earthquake in Alaska's history is the Good Friday earthquake of March 24, 1964. This earthquake occurred in Prince William Sound killing 131 people and causing a half-billion dollars worth of damage. A good source of information on this would be Introductory Geography and Geology of Alaska by Leo M. Anthony and Arthur Tunley.

Have you ever heard of the "ring of fire?" You probably realize that volcanoes in Alaska seem to be confined to southern Alaska, from the Aleutian Chain to the Alexander Archipelago. Southern Alaska is part of the ring of active volcanoes that circle the Pacific basin, from the northwest states of the continental United

States to the many islands of Malaysia. You will be learning more about the volcanoes of the Aleutian Island chain in the next lesson, "Southwest Region." Please feel free to skip ahead and read about volcanoes in Lesson 4 if you so wish. See Student Guide, p. 89.

Another excellent source of information is Alaska Science Nuggets by Neil Davis of the Geophysical Institute, University of Alaska, pp. 104-121.

**HOW HAS THE GEOGRAPHY INFLUENCED SETTLEMENT AND DEVELOPMENT IN SOUTHCENTRAL?**

Read pp. 32-39 in PGA.

**WHAT ARE SOME COMMUNITIES OF THE SOUTHCENTRAL REGION?**

Everybody knows by now that Anchorage is in southcentral Alaska. From your reading in PGA and studying the map on p. 35, what are some of the other communities in this area? Compare population densities by looking under "Population" in the A.A.

**TO DO: LEARNING LOG**

1. What do you know now that you did not know before?
2. What would you still like to know?\*

\*Could be used by student(s) for interest activities and projects.

## **EXTENSION ACTIVITY 1**

**1.3**

### **\*Southcentral Alaska Map**

You have acquired some knowledge about the southcentral region. On the following pages you will find a map of this region. Tape the map together if it is more than one page. Keep the arrows parallel. Match dots of E1 over dots of E2.

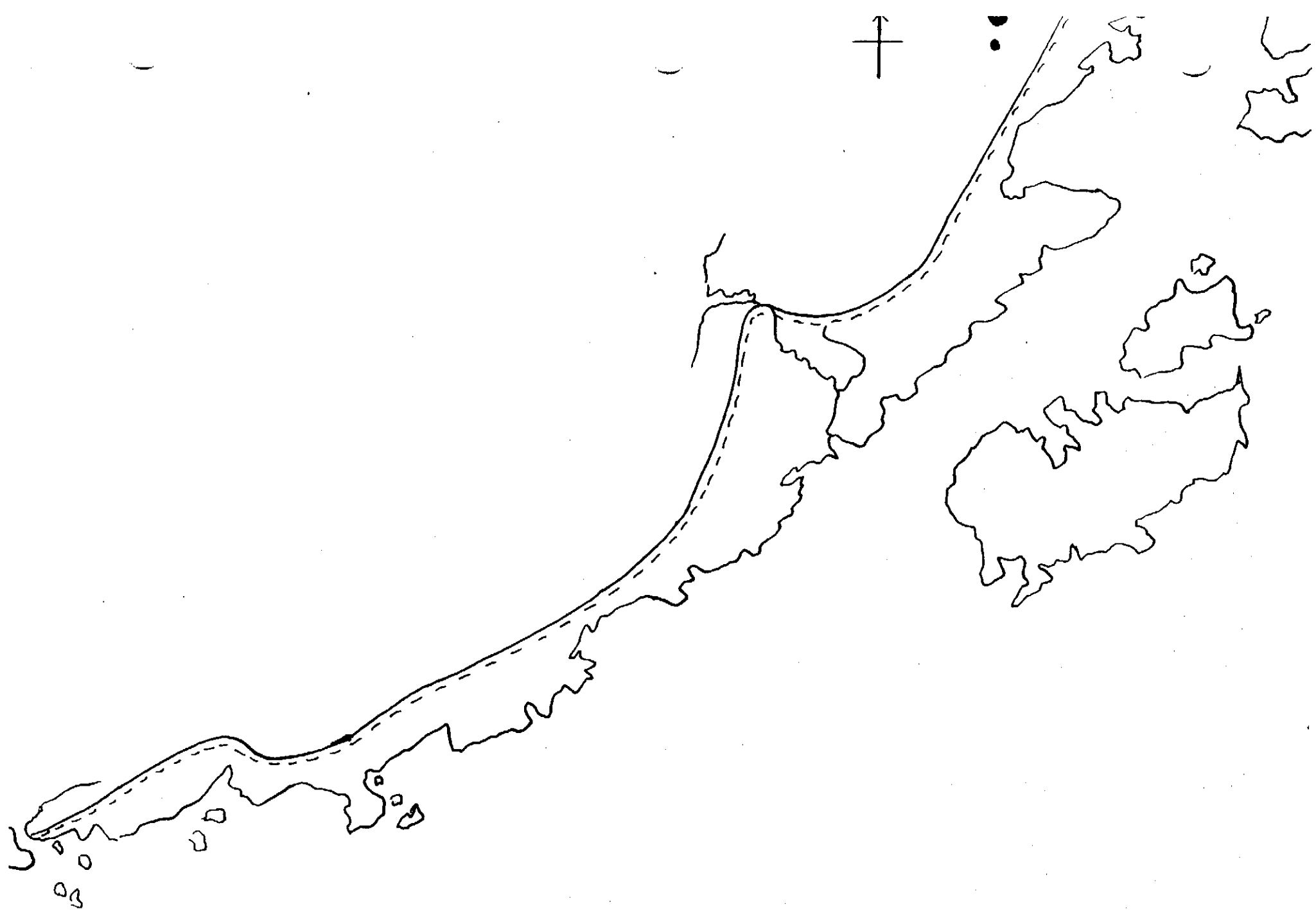
You should insert at least the following:

- Three major geographic features.
- Five communities of varying population densities.
- And any other information you have learned.

**Be sure to devise a legend of the symbols you use.**

**\*You will not be handing this in until Assessment 2.**











Susitna River

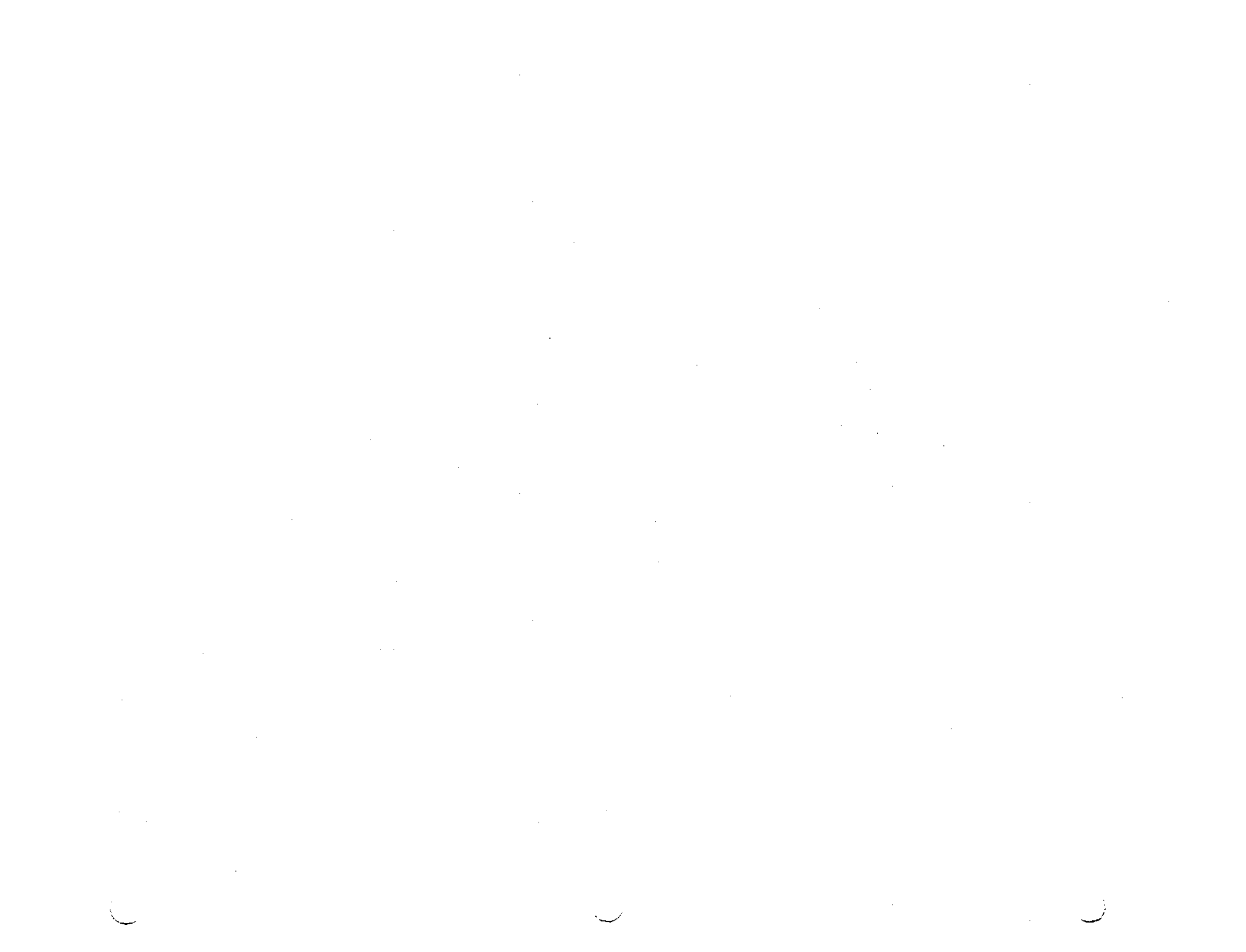
Copper River

2

3

1

4



## EXTENSION ACTIVITY 2

1.3

### Research Options

Choose one or more of these options to study and research.

1. Using primary and secondary resources, investigate the theories behind why earthquakes and/or volcanoes occur. Using the maps on the following pages, what inferences can you make between Alaska's location and the theories you have investigated? You may choose to discuss in particular the Good Friday Earthquake of 1964, the Mt. Katmai Eruption of 1912, the Augustine Eruptions of 1976 and 1986 or any other geologic activity that interests you. (Do not feel limited to just the Southcentral region. You may also consider Southeast and the whole of the Aleutian Chain.) This may be a written report or a photo essay.
2. Interview three people (may be written, audiotaped or videotaped) who lived during a volcanic eruption or an earthquake in Alaska's past. What did you find most interesting about these people's experience?
3. Create a replica of one of Alaska's volcanoes (active or inactive.) You may use materials that are convenient, like plaster of paris, paper mache, mud, etc. See Alaska Geographic book, Alaska's Volcanoes for ideas. Include the name, location and a brief history about the volcano.
4. Using materials that are convenient, like plaster of paris, paper mache, mud, etc., construct a cross-section of a volcano. Label all parts.
5. What events, political and economical, led to the Matanuska Valley becoming "Alaska's food basket"? (See Alaska Geographic's Anchorage and the Cook Inlet Basin and/or Alaska's Farms and Gardens. Chart the agricultural output from the Matanuska Valley since the 1930's. (Remember not only to include crops, but livestock and poultry, also). Prepare your information or poster board as a timeline of events and charting through graphs the agricultural output.
6. Research the history and status of the eight dairy farms that are part of the farmers' cooperative, "Matanuska Maid." Create a TV or radio advertisement for "Matanuska Maid" encouraging area residents and other Alaskans to buy locally produced goods. Considering the current economic environment, should the Alaska state government continue to support and subsidize the dairy cooperative?
7. Review and record through the use of charts and/or graphs the population change in several Southcentral communities over the past half century. What conclusions can you make to support the information? Considering the present state of the economy and future trends, predict the population of several communities of Southcentral for the year 2000 and support your predictions.

## **EXTENSION ACTIVITY 3**

**1.3**

### **Kodiak Projects**

#### **MATERIALS:**

Alaska Geographic, Kodiak - Island of Change

#### **TO DO:**

1. Read the short history of Kodiak from the next page and complete the map study on the page following the history.
2. Choose one of the following projects to complete.
  - A. Organize an essay on the impact on Kodiak of the Good Friday Earthquake of 1964 or the Katmai Eruption of 1912.
  - B. Write a Kodiak brown bear adventure story.
  - C. Find out about Kodiak's importance as a fishing capital. What kinds of fishing are important in this area? Choose charts, graphs, audiotapes, videotapes, word processing, or writing as a way to report.

**Kodiak Island History**

(Thanks to Mr. William Fearn, Teacher, Kodiak Jr. High School, Kodiak, Alaska.)

The Kodiak Island Group lies in the Gulf of Alaska, south of Cook Inlet. The group has an area of about 4,900 square miles and extends for a distance of about 177 miles. Kodiak is the largest island in Alaska, and the home of the Kodiak bear. It was first discovered by Stephen Clotov in 1763.

Russian interest in Alaska was stimulated in 1742 when Bering's crew returned to Russia with 900 sea otter pelts, worth a fortune in gold rubles. A Siberian merchant, Grigorii Shelekhof established the first white settlement on Kodiak Island in 1784. His reason for exploration and settlement was to obtain the valuable pelt of the sea otter. Shelekhof had let his imagination be fired by this "Fur Fever." Thus, in 1792 Alexander Andreovich Baranof hired by Shelekhof, began to build a settlement on the present site of the City of Kodiak, after the original settlement at Three Saints Bay was destroyed by earthquake and tidal wave.

The early settlement at Kodiak was said to have been called many different names, including St. Paul Harbor, Chiniak, and Paulovski, in honor of the Prince of Imperial Russia. The hunters employed by Baranof were the Natives of Kodiak Island, the Koniags, and the Natives of the Aleutian Chain, called the Aleuts. These Natives soon intermarried and intermixed, and after the coming of the Russian traders, a mixture of Russian and Native was begun. This is the background of many of the inhabitants of Kodiak today.

From the settlement in Kodiak, Baranof and his hunters pushed their explorations onward. Baranof built the first ship to be launched in Alaska. Constructed in Resurrection Bay, she sailed into Kodiak in September, 1794. In 1796, the Russian Church in Kodiak was completed, its brass bells being forged by the colonists themselves. In 1794, Father Herman, a monk of the Russian Orthodox Church, came as a missionary and settled to start the first school for girls in Kodiak. Because of his dedicated work, Father Herman was canonized in 1970 by the Russian Orthodox Church. Relics of Saint Herman remain in the Holy Resurrection Church in Kodiak.

In March, 1867, the United States purchased Alaska from the Russian government. In August, flags were exchanged in Kodiak and the U.S. military arrived and established a military post. The population of Kodiak in 1880 was 400, which included inhabitants of Woody Island (an island lying two miles from the City of Kodiak). By the early 1900's the population had increased to 800.

On June 6, 1912, Mt. Katmai, 100 miles away on the mainland, erupted, covering Kodiak in some areas with 18" of volcanic ash on the level ground. A layer of ash can still be found under Kodiak's top soil.

## **EXTENSION ACTIVITY 3 (continued)**

**1.3**

### **Kodiak Island History**

The United States, worried that the Japanese might use the Aleutians as a doorway to the continental United States, began construction of a naval station, seven miles from the town of Kodiak in 1939. It is estimated that during the war years there were over 15,000 soldiers and over 5,000 construction men, in addition to several thousands of sailors and marines in the Kodiak area. The population of Kodiak exploded and it became a "boom town."

On March 27, 1964, an earthquake and tidal wave struck Kodiak. About \$22 million worth of damage was done to the city of Kodiak as well as washing away many cabins and village sites on the island.

#2

#1

#3

#4

#14

#13

KODIAK ISLAND

#6

#7

#8

#15

#9

#10

#5

#12

#11



\* Extra Credit

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_

\* Extra Credit

- 15.
- 16.

## **EXTENSION ACTIVITY 4**

**1.3**

**"The Legend of the Sleeping Lady"**

### **MATERIALS:**

Audiotape; Unit 1, Side 1  
Tape Recorder  
Dictionary  
Paper and pencil

### **TO DO:**

Listen to the tape about how Mt. Susitna was formed according to an Indian legend.

Choose a landform or geographic location and write a legend about it. Illustrate your legend if you wish, or relate another known legend that can be found through research in the library or has been told to you.



## EXTENSION ACTIVITY 5

1.3

Videotape

### MATERIALS:

Videotape 1, "Taiga", program 3  
VCR and monitor

### TO DO:

#### **BEFORE:**

Be thinking of what aspects of life on earth are cyclical.

Look at your map of Alaska and predict where you think taiga will be found.

While you watch the video, look for the conditions that make taiga living conditions unique. What special characteristics do taiga plants and animals have that help them adapt?

Be looking for these terms as you watch the video.

conifer	old-growth forests
predator	prey
solstice	taiga
upland	wetland

#### **DURING:**

Watch the video program looking for the relationship between the taiga ecosystem and the transitional and continental climates as well as any special geographical features of southcentral Alaska you have read about. Don't forget to use the pause button if you need to jot down ideas, and remember that you may look at the video as many times as you wish.

#### **AFTER:**

Complete the following questions and submit them to your teacher.

1. What are ten characteristics of taiga?

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## EXTENSION ACTIVITY 5 (continued)

1.3

### Videotape

2. Look at a world map or globe. In what other countries would you expect to find taiga?  
\_\_\_\_\_  
\_\_\_\_\_
3. Compare and contrast upland and wetland taiga.  
\_\_\_\_\_  
\_\_\_\_\_
4. If an area of upland taiga were cleared of all plant life, describe the plant succession that would likely occur to establish an old-growth forest.  
\_\_\_\_\_  
\_\_\_\_\_
5. In what parts of the Southcentral might you find the coastal forest ecosystem? Why?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Where would you find taiga in Southcentral? Why?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Define these terms.  
conifer: \_\_\_\_\_  
solstice: \_\_\_\_\_  
upland: \_\_\_\_\_  
taiga: \_\_\_\_\_  
wetland: \_\_\_\_\_

## **EXTENSION ACTIVITY 6**

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**1.3**

### **The Alaska Tribune**

**Comments:** You are the editor-in-chief, head reporter, key photographer and lay-out designer for a daily Alaskan newspaper called, "The Alaskan Tribune." It is March 27, 1964, the day of the Alaskan earthquake. Write and design the front page of your newspaper. Don't worry about being technically perfect. Your news stories should give factual information.

## EXTENSION ACTIVITY 8

1.3

### The Southcentral Region

#### MATERIALS:

Audiotape; Unit 1, Side 1  
Tape recorder  
Alaska Rand McNally Map  
Alaska regional map  
Paper and pencil

#### TO DO:

Locate on your Alaska Rand McNally map and the regional map the location of the geographic places mentioned. You might want to listen to the tape, write down the geographic places mentioned, and then locate them on your map while you listen to the tape a second time.

You should now have a good idea where the major mountain ranges, volcanoes, communities, rivers and other bodies of water are located in the southcentral region.

How many mountain ranges, volcanoes, communities, rivers and other bodies of water can you remember after listening to the tape and taking notes.

Without the use of your notes and maps see how many rivers and other bodies of water you can remember---volcanoes, communities and mountain ranges.

\*Rivers and other bodies of water:

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\*Volcanoes:

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\*Communities:

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\*Mountain Ranges:

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If you named 14 geographic places you did a great job of listening and taking notes.

## **EXTENSION ACTIVITY 9**

**1.3**

### **Climate Differences, continued**

#### **MATERIALS:**

Computer  
Appleworks  
Data Disk #1  
The Alaska Almanac, additional resource material as available  
Printer

(If you do not have a printer you will need to send your data disk to your advisory teacher.)

#### **TO DO:**

##### **BEFORE:**

Investigate the climate of southcentral Alaska. Locate information about transitional and continental climates from several sources.

##### **DURING:**

1. Load Appleworks and insert Data Disk #1 into the computer.
2. Load the word processing file, Activity 3, up on the screen from Data Disk #1.
3. Type your information about transition and continental climates into the word processing file, Activity 3.

##### **AFTER:**

Save the information with an OPEN-APPLE S command. You will be returning to this activity during lesson 6, when you will learn about Alaska's other climates.

If you have access to the electronic mail system, you must convert your Appleworks file to an ASCII file (See your Appleworks Reference Manual) Upload your file to the advisory teacher.

## EXTENSION ACTIVITY 10

1.3

### Geographic Database

#### MATERIALS:

Computer  
Appleworks  
Data Disk #1  
The Alaska Almanac, additional resource material as available  
Printer

(If you do not have a printer you will need to send your data disk to your advisory teacher.)

#### TO DO:

##### BEFORE:

Load Appleworks and the data file, Activity 2.2 from Data Disk #1 into the computer.

##### DURING:

1. Type in information to describe the Southcentral region. Press RETURN after typing each entry.
2. Press OPEN-APPLE S to save the information on the database.

##### AFTER:

Remove the disks. Store your data disk in a secure place.

#### COMMENTS:

You will continue this activity during the next lesson.

If you have access to the electronic mail system, you must convert your Appleworks file to an ASCII file. (See Appleworks Reference Manual) Upload your file to the advisory teacher.

# ALASKA TRIVIA

1.3

What's the Answer?

TO DO:

Here are some questions about Southcentral. Write or tape your answers to them, then think up your own fact question about Southcentral.

1. Alaska is the home of the largest land carnivore in the world, the Alaska brown bear. What is the difference between a brown bear and a grizzly bear?

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2. Lake Iliamna is the largest lake in Alaska. How big is it?

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3. Lake Hood in Anchorage is the busiest seaplane port in the world. What makes it so busy?

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4. What body of water has the second greatest tidal range in North America?

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5. (Your own question and answer)  
Fact - question:

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Answer:

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## Unit 1, Lesson 4

## Southwest Region

Here is Lesson 4. It will tell you about the geography and climate of the Bristol Bay and Aleutian Chain areas.

It will take you 4-5 class periods to complete the minimum requirements

**COMING UP:** Look through the extension activities in Lesson 8 now to see if you need to order any materials.

### WARM-UP:

Complete this first.

- The Last Musk-oxen, p. 91

### INFORMATION:

Complete this next.

- Southwest Region, pp. 93-95

### EXTENSION ACTIVITIES:

Complete #1 and at least one other.

- 1. Southwest Alaska, map, p. 96
- 2. Southwest Research Options, p. 103\*
- 3. Taiga Videotape, p. 104\*
- 4. Extended Reading: "Carma-i Book," A. Vick\*
- 5. Southwest and Northwest, audio, p. 106\*
- 6. Geographic Database, cont', computer, p. 107

\* May be sent via e-mail if student has access.

### SOURDOUGH LINGO\*:

Complete this as you study the lesson.

- subsistence  
transitional climate

### ALASKA TRIVIA\*:

Optional

- Southwest Specialties, p. 108

### ASSESSMENT:

- Review lessons 1 through 4. When you are ready, complete the assessment you'll find in your test packet.

