

**Elder Quote/Belief:**

*“If crescent moon is tilted, it could drain water. A sign it will rain. Tilted moon, where water can drain out. Talking about the crescent moon, if the moon is crescent it leans towards one side or the other. If it will look like the crescent moon is leaning backwards, it’s holding back the weather. If the crescent moon is leaning forward it’s dumping out the weather.” -Patience Faulkner, Cordova.*

**Grade Level: PreK-2**

**Overview:**

Traditional Sugpiaq people not only relied on their observation of the sun, moon and stars to make weather predications but also as indicators of hunting/ gathering seasons. There were no calendars back then so the ancestors would observe the moon as a way keeping track of the days because they did not know about months but only that days led into seasons. In the summer, the days are longer. As summer turns to fall the days begin to get darker because the sun is lowering in the sky. When spring arrives, the sun begins to gets higher in the sky and summer is getting closer.

For example, in Port Graham, residents know when the seasons change by the elevation of the sun in the sky. When summer is turning into fall the sun will get lower each day than fall turns into winter the sun will be lower and will set behind the mountain. Local traditional ecological knowledge (TEK) in the community is to wait and watch for the full moon. When there is a full moon, the moon’s gravitational force is a lot stronger and creates the minus tides. Minus tides allows us to collect the seafood that we traditionally eat.

For weather forecasting, there are many indicators such as when there is a ring around the sun or moon it is an optical effect and known as a Sun or Moon Dog.



The Elders have shared their TEK when we see the Moon or Sun Dog it is a sign bad weather is coming.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>E1</b> Recognize and build upon the inter-relationships that exist among the spiritual, natural, and human realms in the world around them, as reflected in their own cultural traditions and beliefs as well as those of others	<b>B4</b> Develop an understanding of motions, forces, their characteristics and relationships, and natural forces and their effects.	<b>S8</b> Students should be able to learn/observe the weather and tides.

**Lesson Goal:**

The students learn about how our ancestors used their observation of the sun, moon and stars as indicators for weather prediction.

**Lesson Objective(s):** Students will:

- Learn the Eyak and Sugt’stun vocabulary words for this lesson
- Learn about a traditional Kodiak Sugpiaq story.
- Create a mask that represents the traditional Sugpiaq story

**Vocabulary Words:**

Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Sun	Macaq	Macaq	
Moon	Tanqik	Ingik	
Day	Ehnuq	Erneq	
Night	Unugtuq	Unuk	

**Materials/Resources Needed:**

Paper plates, single hole punch, hole punch, reinforcing hole stickers, elastic string, crayons or colored pencils.

**Books:**

- *Tlingit Moon and Tide, Teaching Resource: Elementary Level.* By Dolly Garza, University of Alaska Sea Grant
- *Old Belief Stories in Port Graham*, page 28 “The Fork and the Spoon.”

**Websites:**

<https://www.youtube.com/watch?v=cbk9tcZaeb8> for the video about *The Girl who married the Moon*, a Kodiak traditional story

**Teacher Preparation:**

- Invite and Elder or Recognized Expert into the classroom who can share a story regarding weather predictions by observing the sun, moon and stars.
- Compile the materials and supplies needed.
- Pre hole punch on each side of the paper plate and use the reinforcing stickers, then tie the strings in each hole.

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- Pre-cut elastic strings, two for each student.
- Review the Tlingit Moon and Tide Teacher Resource book.
- Locate and review the “Fork and the Spoon” story from the Old Beliefs Stories in Port Graham
- Set up the YouTube video “The Girl Who Married the Moon” a traditional Kodiak Alutiiq Story.

### **Opening:**

A Long time ago, we did not have electricity, which meant there was no radio or television. How do you think our ancestors predicted the weather? (Allow time for answers.) The ancestors’ traditional ecological knowledge was developed by careful observations over many years and enabled them to successfully forecast weather. What types of indicators did they rely on to forecast the weather? (Allow time for answers.) Listen to a few of their beliefs:

- *“If there is a circle around the moon it means that there is going to be bad weather.” Jean Moonin, Port Graham*
- *“Every day he has to check the weather by watching the stars. When the stars twinkle slowly it’s going to be a fine day, no wind tomorrow. When the stars flutter fast that means it’s going to be windy the next day.” Sergius Moonin, Nanwalek, Aleksandrovsk Vol. 2 – Old Beliefs.*
- *“Full moon means there will be big tides and that indicates minus tides for octopus hunting.” Stella Meganack, Port Graham.*

Today, we will be learning about the traditional way of weather forecasting by observing the sun, moon and stars and then create a mask to represent the sun, moon or stars!

### **Activities:**

1. Introduce the Elder, if available, and remind the students to use best manners and be very respectful. Please listen carefully to what the Elder wants to share with us that will help us understand traditional weather forecasting.
2. If an Elder is not available, read the story from “The Fork and the Spoon.”
3. Show the students the video “The Girl Who Married the Moon.”
4. Discuss what they learned from the Elder, story and video. Some questions to ask the students could be;
  - What were the main indicators to forecast weather?
  - Was there a connection with the story, video?
5. Distribute the paper plate and strings to each student and ask the students to repeat the Sugt’stun or Eyak words as you say them.
6. After everyone has their materials, have the students place their paper plate to their face and locate their eyes. Assist the students if needed, to mark where the student points for eyes and then cut out the holes.
7. After the eye holes are cut, then ask the students to design and color their mask. Display a copy of the mask and help draw designs like the masks from the video they watched.

8. On the inside of the mask the teacher can help write an Elder quote or belief listed from above.
9. Tie the strings around to fit the student's head.



**Assessment:**

- Students are able to correctly pronounce Sugt'stun and Eyak Words.
- Students demonstrated comprehension of the story by recalling the plot.
- Students completed a mask that represented the story.



**TRADITIONAL WEATHER FORECAST: OCEAN AND TIDES GR: PREK-2 (LESSON 2)**

**Elder Quote/Belief:**

*“What’s the importance of going out for supplies? How important is it to go out today? You need a reason to go out, using safety and local knowledge. For example, if the weather is bad, do we really need firewood or can we wait? Are we already prepared if the weather turns? It is better to be prepared.” - Patrick “Swen” Selanoff, Valdez*

**Grade Level: PreK-2**

**Overview:**

The communities in Chugach Region are on the coastline and the majority of the travel is by boat. When traveling or hunting, the combination of wind and tides can make the water very dangerous. Our Elders were observant to the ocean’s movement and direction of waves and tides to determine when it was safe to travel. They knew how to be prepared and how much they could harvest while they were traveling so they could make it safely home. The Elders’ TEK that has been passed down through generations and they want to stress is to be very observant to the ocean before traveling because you do not want to get caught in rough weather.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>F2:</b> Promotes active involvement of students with elder in the documentation and preservation of traditional knowledge through a variety of print and multimedia formats.	<b>D3:</b> Develop an understanding of the cyclical changes controlled by energy from the sun and by Earth’s position and motion in our solar system.	<b>S7:</b> Weather and Tides- Weather forecasts influence decisions concerning human activity. Go/No go decisions made for land and sea travel are usually based on weather information.

**Lesson Goal:**

Students will learn to observe the ocean and tides for safety before they travel on the water for subsistence gathering or hunting.

**Lesson Objective(s):** Students will:

- Learn the Sugt’stun and Eyak vocabulary words.
- Observe the oceans waves for safety
- Learn to predict the ocean behavior by looking at a list of pictures when the ocean waves are calm or rough
- Students will use learn to use their common sense while observing the ocean to tell when it’s safe to travel by boat.

**Vocabulary Words:**

Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
big ground swells that are breaking on the beach across the bay		Nmerneret	

Wave		Qailiq	
Low tide		Ken'aq	
High tide		Tung'iq	
Wave breaks		Qagerluni	
Weather is calm		Pinarlluku	
Tide goes out		Kenlluni	
Tide comes in		Tung'irluni	

**Materials/Resources Needed:**

Construction paper, **red and green colored** crayons, pencils or markers

**Books:**

*Tlingit Moon and Tide* by Dolly Garza, Chapter 3, pages 31-48

**Teacher Preparation:**

- Invite an Elder or Recognized Expert to share their TEK on weather forecasting based on oceans and tides and Sugt'stun or Eyak words.
- Review the ways to show respect for guests with the students before the Elder arrives.
- Gather the materials and supplies needed. Handout and red
- Make a copy of the activity worksheet attached for each student.
- Review the book *Tlingit Moon and Tide* and mark the pages so readily available to read to the students.

**Opening:**

Our Elders have stressed the importance of being smart and safe regarding traveling on the ocean. We will be learning about the importance of observing the weather, ocean and tides before going out on a boat. Traditionally, our ancestors predicted the weather to determine whether or not they would go out on boats. Learning to be keenly aware of the wind direction, ocean's movement of tides and waves were indicators used to ensure safe travels. Elders have emphasized being prepared and knowing whether to travel or not. They shared many stories of people who have gotten stranded, hurt or perished because they travelled in bad weather or was not prepared if the weather changed while they were out on the water. Here are some quotes we would like to share...

*"Using the right boat to travel. The size of boat and distance from point A to point B. If you travel you should travel in pairs for using smaller boats." Tom Anderson, Cordova.*

*"When you are traveling by boat, leave earlier so you don't have to travel in the dark." Tom Anderson, Cordova.*

*"When there is a big swell breaking on the beach across the bay it means there are big waves outside the bay." Ben Meganack Sr., Port Graham.*

*“Paying attention to the full moon is when to expect big tides, high and low tides.” Stella Meganack, Port Graham.*

To emphasize when to travel on the water, we are going to play an activity game called “Green Means Go!” You all will receive an activity sheet for your answers. I will be showing you various pictures of the ocean and weather. Then I will ask you questions for each picture and you will circle the box on low and high tides and good and bad weather. The teacher will read through the questions for each picture and the students will circle the box with the correct answer.

There will be an activity sheet made up and the teacher will make copies and pass them out to students. The teacher will read through the questions and help the students circle the correct boxes and explain to the students the correct and incorrect decisions made.

### **Activities:**

#### **Class I:**

- 1) Introduce the Elder to share their TEK regarding watching the weather and ocean before traveling.
- 2) Read out loud the chapter out of *Tlingit Moon and Tide*
- 3) Distribute the activity worksheet with the pictures of good and bad weather and low and high tides.
- 4) After all the students received a copy of the picture worksheet, read the questions to the students one box at a time and explain that they will decide for themselves which one is right or wrong.
- 5) Ask the students to circle the box they think is the correct answer with a green marker and circle the incorrect answer box with a red marker.
- 6) When they students finish the activity, have a discussion on when was the correct times that they could travel. The students can keep the picture as future reference and show their parents what they learned.

### **Assessment:**

- Students can describe when it is safe to travel by observing the weather and ocean tides and waves.
- Students can correctly say the Sugt’stun and Eyak vocabulary words.
- Students can explain how to play the “Green Means Go” activity game that emphasized when it was safe to travel on the ocean.

## “GREEN MEANS GO”

For each question please circle the picture with green for your answer and circle red if it is not the answer.

**1. If you were going to go out on the water today, would you leave the dock when it is incoming tide or outgoing tide?**



Incoming tide - Tung'irluni



Outgoing tide - Kenlluni

**2. Would you go out in the boat if it was calm weather or rough weather?**



Calm Seas - Pinarlluku



Rough Seas - Qagerluni

3. Question: If you wanted to go out on the beach at low tide to gather seafood which tide should you leave?



**Low Tide- Ken'aq**



**High Tide- Tung'iq**

4. If you wanted to get in a skiff or boat and go out on the water, what is a good time to go? Please give your answers below.

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

**TRADITIONAL WEATHER FORECASTING: WIND DIRECTION GR: PREK-2 (LESSON 3)**

**Elder Quote/Belief:**

*“The weatherman, there was another one for that. He had a fine feather, a down feather. He tied the feather to the stick. In the morning he would go outside to check it. If a little wind stops for a while, there will be no wind that day. Even when there is no wind and the feather moves, there is going to be a storm today. If the feather moves, there is going to be a big storm today, sometimes later in the day. Sure enough it comes. They can tell by that feather they hold.”*

*-Sergius Moonin, Nanwalek, Alexandrovsk Vol. 2 Old Beliefs, page 41*

**Grade Level:** PreK-2

**Overview:**

The Elders from across the Chugach Region have a wealth of knowledge in predicting the weather by observing which direction the wind is blowing from. The Elders traditional ecological knowledge is still passed down through generations and used today by local community members to predict the weather.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>D(4)</b> Gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance	<b>A (3)</b> Develop an understanding that culture, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues.	<b>Survival S (7)</b> Students should be able to learn/observe the weather and tides

**Lesson Goal:**

Students will learn how our ancestors used observation of the wind direction as an indicator to predict the weather.

**Lesson Objective(s):** Students will:

- Learn the Sugt’stun names for the wind direction
- Create an activity that will help them learn the Sugt’stun names for the wind direction
- Learn how to predict the weather from the activity they create and Elder TEK

**Vocabulary Words:** Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Wind		Aqllaq	
Wind Blowing		Aqllalluni	
East		Ungalaq	
West		Ikakeq	

North		Kiakeq	
South		Waaqeq	

**Materials/Resources Needed:**

Colored pencil or markers

Compass

Folder for the teacher with the following items:

- a) Picture of a compass with the words in English and Sugt’stun for the wind directions
- b) List of the weather patterns that follow the wind direction it is blowing from.

**Teacher Preparation:**

- Locate the compass and display it so it is ready to pass it around to students.
- Locate the picture of the Sugt’stun compass for the wind directions.
- Make a copy of the Sugt’stun compass for each student.
- Read and practice the English and Sugt’stun names of the wind directions.
- Review the information sheet of the weather patterns that follow the wind direction.
- Review the Elder quotes on this lesson.

**Opening:** The Elders and local community members are able to predict the weather by observing the wind direction. Our Elders want to pass on this knowledge of weather predictors by first learning the directions of which way the wind is blowing. Listen carefully to the Elder quotes.

- *“When the wind shows up the rain will be right behind it.” Tom Anderson, Cordova.*
- *“East wind and northeast winds will bring overcast clouds. West and southwest winds bring nice sunny weather in the Port Graham area.” Elder consensus*
- *“You can tell when it is going to get windy by the change in temperature, if it’s cold for a few day and then it gets warm, it’s a sign it will get windy.” -Mary Malcoff, Port Graham*
- *“Fall and Spring time is usually the windiest of the seasons.” -Stella Meganack, Port Graham*

How many of you heard of different beliefs regarding wind from your family? Let us examine a compass and how to read it. We will also learn the Sugt’stun words for the names of the wind direction as it shows on the banner.

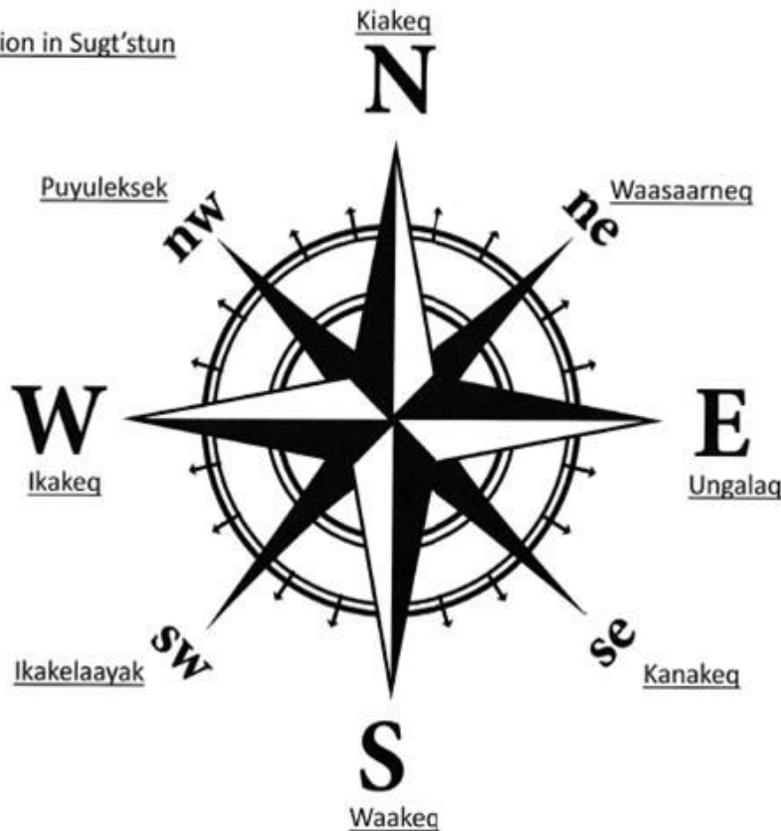
**Activities:****Class I:**

1. Show the students the compass and explain how it works. Pass the compass around to the students as you explain north, south, east and west directions.
2. Have the students point to each direction as you say them.
3. Show the picture of the compass as it includes the English and Sugt'stun names for the wind directions.
4. Give a copy of the wind directions to each student.
5. Read the English and Sugt'stun names of the wind directions out loud and ask the students to repeat afterwards.
6. Read the information sheet of the weather patterns that follow the wind direction.
7. As the weather patterns are being read out loud, ask the students to repeat the English and Sugt'stun words for the wind direction and point in the direction being said.
8. Read the Elder quotes out loud and ask the students to color or write an Elder quote on their wind direction picture.

**Assessment:**

- Students can identify the geographic directions by using a compass.
- Students can pronounce the Sugt'stun and Eyak Vocabulary words.
- Students can explain how wind direction was traditionally used to predict the weather.

Wind Direction in Sugt'stun



Weather Following Wind Direction  
according to our Elders

1. If the wind is blowing from the East, it is going to rain.
2. If the wind is blowing from the West, it is going to be clear and sunny.
3. If the wind is blowing from the North, it is going to be overcast, partly cloudy and cold.
4. If the wind is blowing from the South, it is going to be windy and clear.

**TRADITIONAL WEATHER FORECAST: CLOUDS GR: PREK-2 (LESSON 4)**



**Elder Quote/Belief:**

*“Cloud streaks high in the sky means it’s windy and it is going to be windy.” -Mary Malchoff, Port Graham*

**Grade Level: PreK-2**

**Overview:**

The Elders have shared their traditional ecological knowledge of predicting weather by careful observation of cloud formation and movement.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>D1</b> – Culturally knowledgeable students are able to engage effectively in learning activities that are based on traditional ways of knowing and learning.	<b>B4</b> - Concepts of physical science. A student should understand and be able to apply the concepts, models, theories, universal principals and the facts that explain the physical world.	<b>Survival S7</b> Students should be able to learn/observe the weather and tides.

**Lesson Goal:**

Students will be able to identify the different cloud formations and explain how each was used to traditionally predict the weather.

**Lesson Objective(s):**

Students will:

- Learn three Sugt’stun/ Eyak vocabulary words
- Observe cloud formations and what each indicated for weather forecast.
- Gather items outside to create a collage of what weather type they observed.

**Vocabulary Words:**

Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Cloud observation		Llat’surtet or Llaciurtet	
Cloud	Amirluq	Amirluq	
Cloudy, overcast		Taluluku	

**Materials/Resources Needed:**

Construction paper, colored pencils, glue  
 Cotton balls, Ziploc baggies  
 Found objects from outside: grass, twigs, gravel

**Books:**

- *The Chugach Eskimo*, Weather Lore, page 115.
- *Project learning Tree, Environmental Education Activity Guide*, Water Wonders Systems, P. 143
- *Alaska Native Science, A Curriculum Guide*, pages 104-105
- *Ellavut Our Yupik World & Weather*

**Websites:**

<https://thomeschoolscientist.com/using-clouds-to-predict-the-weather/>

<http://sassafrasscience.com/cloud-collages-uncle-cecil-activity/>

<https://www.youtube.com/watch?v=yod3wMbFHUY> Types of Clouds

[https://www.nasa.gov/centers/langley/pdf/245892main\\_MeteorologyTeacherRes-Ch16.r3.pdf](https://www.nasa.gov/centers/langley/pdf/245892main_MeteorologyTeacherRes-Ch16.r3.pdf)

<http://www.instructables.com/id/Predicting-Weather-with-Clouds/>

**Teacher Preparation:**

- Invite an Elder or Recognized Expert into the classroom to share stories and traditional knowledge relating to clouds as traditional weather predictors.
- Prepare the students on being respectful and courteous of Elders/guests in the classroom.
- Review the books, YouTube video and gather materials needed for the lesson.
- Send out permission forms for a field trip, if needed, to observe the weather, clouds and collect items to make their weather collage.

**Opening:**

Our Elders have shared their traditional ecological knowledge of predicting weather by careful observation of cloud formation and movement. (Introduce the Elder guest if available). There are many different beliefs that were used to predict weather, listen carefully to the following Elder quotes:

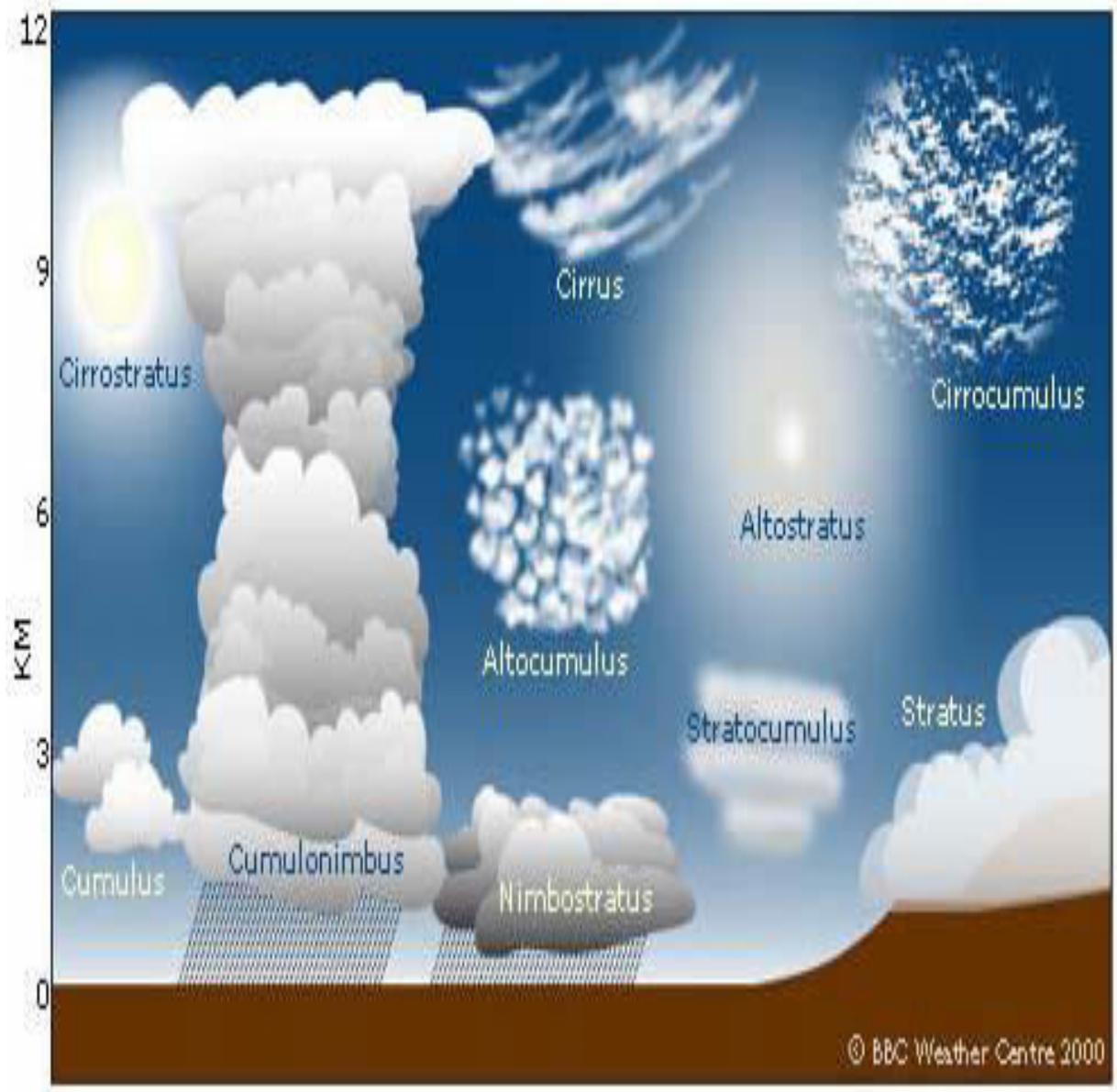
- *“Cloud streaks high in the sky means it is going to be windy.” -Mary Malchoff, Port Graham*
- *“Cap on St. Elias. In Cordova, if there is a cap (clouds) on it (St. Elias Mountain) means it is going to blow.” -Tom Anderson, Cordova.*
- *“Dark clouds means there will be rain, snow, or wind” Tom Yeaton Sr., Port Graham.*
- *Elders have also stated that when clouds create a circle around the sun and the moon is an optical effect which is a sign that the weather is going to get bad.*

How many of you have seen these types of clouds that streak in the sky? Have you seen clouds over a mountain like a cap? What about clouds those seem to create a circle around the sun or moon? Did you hear about the various beliefs before today? Now, I will be reading about the weather lore of the Chugach people from the Chugach Eskimo book. Again I would like you to listen carefully and think about whether you have personally seen or experienced some of these weather lores. (Read the excerpt in *Chugach Eskimo*, on page 115, out loud to the students.)

## **Activities:**

### **Class I:**

1. Pass around the picture of different clouds and explain which clouds can help indicate the weather. For example: dark clouds mean it is going to rain, streaking clouds mean it is going to get windy, fluffy clouds are clouds on nicer calm days and clouds that are moving are caused by the wind in the direction the clouds are moving from.
2. Show the YouTube video on identifying types of clouds.
3. Say the Sugt'stun or Eyak words out loud and ask the student to repeat after you as you point to the clouds. Repeat this process until you feel the students can say and identify what they are saying.
4. Have the students get prepared to go outside so they can observe the clouds and compare them to the pictures they were shown earlier.
5. Hand out a Ziploc baggie to each student and ask them to gather items like grass, twigs, gravel, etc. that they can use to create an art collage (picture) that shows a replica of what they have observed.
6. When return to the classroom, ask the students to draw a picture and design the clouds they observed outside by gluing the cotton balls on a sheet of construction paper. Then have them decorate it by gluing on the grass, twigs, and gravel they found outside to create a realistic picture.



**Assessment:**

- Students correctly identify various cloud types.
- Students are able to recite the Sugt'sun/ Eyak vocabulary words used for clouds.
- Students can explain and give an example of how cloud observation was traditionally used to predict the weather.

**TRADITIONAL WEATHER FORECAST: SEASONAL WEATHER GR: PREK-2 (LESSON 5)**

**Elder Quote/Belief:** *“Springtime the herring and trout return. By late spring, when the swallows and robins come back, you start to see the black flies. That’s a sign that spring is almost over and the red salmon will start running.” -Ben Meganack Sr., Port Graham*

**Grade Level:** PreK-2

**Overview:** The Chugach Sugpiaq people were observant to the changing season by observing the animal behavior and the change of the plant life around them. The traditional Sugpiaq people did not have months instead they counted by days, observed the sun and moon rotation, and the animal and plant behavior.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>A3</b> Acquire and pass on the traditions of their community through oral and written history.	<b>D3</b> Develop an understanding of the cyclical changes controlled by energy from the sun and by earth’s position and motion in our solar system.	<b>Survival S1</b> Students should know the importance of outdoor/seasonal survival skills and the potential risks that are involved.

**Lesson Goal:**

Students will learn the seasonal weather months, patterns, animal behavior and plant activity as the seasons change.

**Lesson Objective(s):** Students will:

- Learn the Sugt’stun or Eyak names for each season
- Learn two traditional observations about each season changing
- Color the calendar of the seasonal change

**Vocabulary Words:**

Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Summer		Kiak	
Winter		Uksuq	
Spring		Iciwaq	
Fall		Uksuaq	

**Materials/Resources Needed:**

- *Nupuget Sugt’stun Book* for Sugt’stun names for seasonal months and weather
- Nupuget Seasonal Weather Calendar

- Colored pencils, crayons, or markers

### **Teacher Preparation:**

- Invite an Elder or Recognized Expert who can explain the traditional observations of seasons and the predictions associated with each.
- Print off copies of the Nupuet seasonal weather calendar for each student.
- Locate and mark the pages in the Nupuet Sugt'stun Book, pg. 72 for Sugt'stun and pg. 107 for English
- Classroom items to color the calendar

### **Opening:**

(Introduce the Elder if available and remind students the ways we respect a guest who is willing to share their knowledge with us.)

Today, we will be learning about activities that helped predict the coming weather or season.

Please listen to one of the beliefs shared regarding seasonal change.

*"Springtime the herring and trout return. By late spring, when the swallows and robins come back, you start to see the black flies. That's a sign that spring is almost over and the red salmon will start running." -Ben Meganack Sr., Port Graham*

We will be learning Sugt'stun/ Eyak words for each season and what are some of the several activities and identifiers in each season the Elders have passed down through the years. Please pay close attention to the Elder as he (she) helps us pronounce the Sugt'stun or Eyak words and repeat the words back, so we can learn the words for each season. As we talk about the seasons and the activities, I would like you to color only the season we are talking about at the time. Please observe the picture of the season, repeat the Sugt'stun or Eyak word after the Elder and then we will give you time to color in the season on the calendar picture and move on to the next season.

### **Activities:**

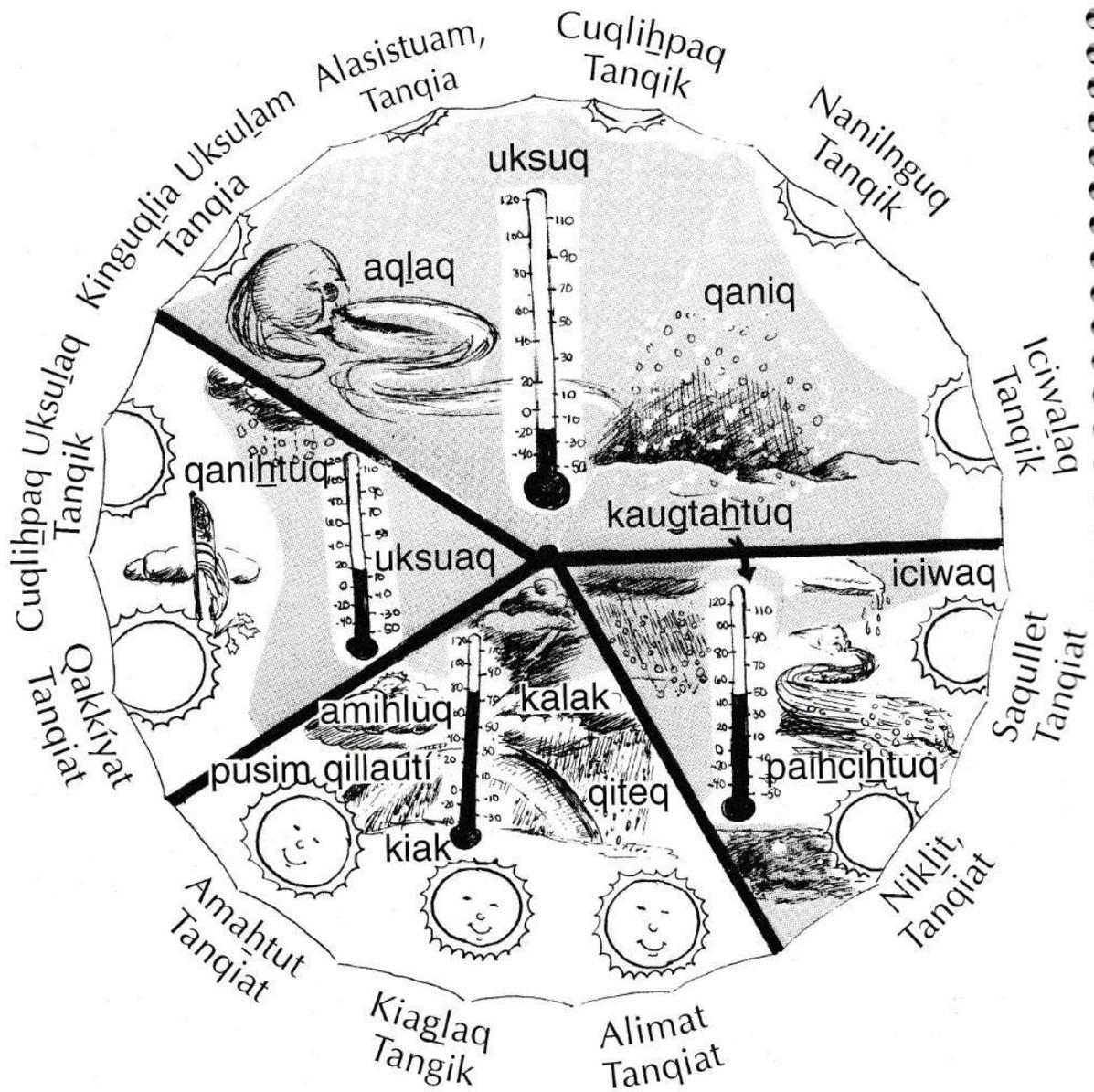
#### **Class I:**

1. Introduce the Elder or Recognized Expert, if available. If not, please read the following beliefs shared by Elders:
  - a. *"When the weather is about to change, sometimes you can smell it, like the rain or snow, before it gets to your village." -Alma Moonin, Nanwalek*
  - b. *"The fireweed is a clock for the summer season. When the fireweed flowers start to bloom, they start from the bottom and move to the top. When the flowers reach the top and the bottom flowers begin turning to seed, that is a sign summer is almost over. They start blossoming from bottom to top, when the flower bloom at the top of the fireweed, it means that fall is going to start and summer is ending." -Mary Malchoff, Port Graham*
  - c. *"When the skunk cabbage comes out, the bears will start showing up in spring." -Ed Vlasoff, Tatitlek.*
  - d. *"Late summer and early fall, silver salmon start running and the plants are starting to die off. By then the humpies (pink salmon) are spawning and that's when you can go walk in the higher parts of the creek to collect humpy eggs." -Stella Meganack, Port Graham*

2. Hand out a copy of the seasonal calendar to each student.
3. Read through each season saying the English and Sugt'stun/ Eyak name of each season.
4. Describe a season and name two identities (activities) done during that time that help predict the coming seasonal changes.
5. Ask students to repeat the Sugt'stun or Eyak words being taught and what observations are used for each season.
6. After the Elder and teacher discuss the season and two seasonal observations, pause and ask the students to color in the season discussed until the calendar is fully colored.

**Assessment:**

- Students can explain the seasonal round and activities that the Elders TEK use to predict the changes in each season.
- Students are able to pronounce the Sugt'stun or Eyak words.





**TRADITIONAL WEATHER FORECAST: ANIMAL BEHAVIOR GR: PREK-2 (LESSON 6)**

**Elder Quote/Belief:** “When you observe animals, look at how ruffled their necks are, the more ruffled they are means how cold the winter will be.” -Diane Selanoff, Valdez.

**Grade Level: Pre-K-2**

**Overview:** Traditionally the hunters from the Chugach region could predict the weather by observing wild animal behavior. The animals have adapted to survive in the wild and its harsh environment. Careful observation of various animal adaptations helped the hunter’s ability to predict the weather and seasonal changes by watching the animal’s behaviors, such as; migration, foraging, color change, etc. in their environment and as they migrate.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>D1</b> Acquire in depth cultural knowledge through active participation and meaningful interaction with Elders.	<b>C3</b> Concepts of life science. A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and process of life science.	<b>SS5</b> Students should be familiar with habits and behavior characteristics of traditional subsistence animals, fish, and birds: Migration patterns, seasonal/cycles for safe use/eating.

**Lesson Goal:**

Students will learn that observing animal behavior can be used to indicate changes in the weather or the season.

**Lesson Objective(s):** Students will:

- Learn the Sugt’stun/Eyak vocabulary words
- Learn the Elder TEK to predict the weather by observing animal behavior during the seasonal change

**Vocabulary Words:**

Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Summer	Kiak	Kiak	GALxa'L
Winter	Uksuaq	Uksuq	XAlaag
Spring	Icuwaq	Iciwaq	xahLch'aad
Fall	Uksuaq	Uksuaq	XAlaagLch'aad
Black bear	Tan'erliq	Tan'erliq	ts'iyuh
Sea Otter	Ikam'aq	Ikam'aq	sahs
Eagle	Kuskalaq	Saqrtuliq	GuujaAlAG

### **Materials/Resources Needed:**

- School supplies; scissors, glue, pencils and paper
- Pictures of birds/animals that change colors during seasons, such as; ptarmigans, ermine and rabbits, etc.

### **Books:**

*Disappearing Lake, Natures Magic in Denali National Park* written by Debbie S. Miller  
*Chugach Legends*, page 80, “The Brown Snipe and the Weather Which Changed Most Opportunely”

### **Teacher Preparation:**

- Invite an Elder or Recognized Expert to share their knowledge about animal behavior
- Locate and review the book *Disappearing Lake*
- Locate the *Chugach Legions* book and mark page 80 for the story to be read to students
- Locate and make copies of animal pictures that have the ability to change their fur or feathers during the changing seasons to help them adapt and camouflage with their environment.

### **Opening:**

(Introduce the Elder if available) Today, we will be learning how our ancestors watched animal behavior to help predict the weather and seasonal changes. One traditional ecological knowledge (TEK) passed on through generations is to observe how the animal prepares for the changing seasons. Some examples are the Elders quotes as follows:

- “Eagles flying up high in the sky mean it’s going to get windy.” -Ben Meganack Sr. Port Graham
- “When crows eat small rocks on the road is a sign that it is going to be getting cold.” - Stella Meganack, Port Graham

Please listen carefully to the story about “The Brown Snipe and the Weather Which Changed Most Opportunely” out of the *Chugach Legions* book. (If the Elder is available, ask them to read the excerpt.)

### **Activities:**

#### **Class I:**

1. Read the excerpt from *Chugach Legends* on page 80, “The Brown Snipe and the Weather Which Changed Most Opportunely”
2. Say the Sugt’stun/Eyak words and have the students repeat each word several times.
3. Have a discussion with students on the various behaviors or color changes of animals/birds that they know or heard about.
4. Read the book *Disappearing Lake* to the students.
5. If available, hand out photos of animals that change their fur or feathers when seasons change and animals that prepare for winter hibernation. Hand out a blank sheet of paper to each student.
6. Ask the students to cut out the pictures of animals as they listen to the story or a picture book describing the changes or behaviors of birds/animals during changing weather or seasons.
7. As the book is being read and showing pictures, pause and ask the students to glue one animal down at a time. Then move on to the next animal. Continue reading to the students until all the animals have been cut out and glued on the blank paper, so that the students can see which animals to observe due to changing weather and seasons.



**Assessment:**

- Students will give examples animal indicators/ behaviors traditionally used to help predict the weather.
- Students can correctly pronounce the Sugt'stun/ Eyak vocabulary taught



**TRADITIONAL WEATHER FORECAST: SUPERSTITION AND BELIEF GR: PREK-2 ( LESSON 7)**

**Elder Quote/Belief:** “*Superstition and Belief – like the story of the swallows may be more of a teaching tool rather than a superstition teaching that for every action, there is a reaction. How do we integrate that into the lesson plan? In the past these were taught by parents, aunts and uncles instead of at school.*” -Pat Norman, Port Graham.

**Grade Level: PreK-2**

**Overview:** Superstition and belief has always been a part of our culture and heritage. These stories have always been a way of teaching the younger kids. If the child disobeyed their parent, there would be consequences. These beliefs and superstitions were a way to help guide each other through various situations in life. Superstitions are difficult to explain but are very real and should be heeded. Our ancestors have used superstition and beliefs as guidelines through many years of observation of the environment in which they lived.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>D4</b> Gather oral and written history information from the local community and provide an appropriate interpretation of its cultural meaning and significance	<b>F2, 3</b> Cultural, social, personal perspectives and science. A student should understand the dynamic relationship among scientific, cultural, social and personal perspectives.	<b>CE</b> Students should have knowledge of traditional stories and methods of teaching through story telling.

**Lesson Goal:** Students will learn about various beliefs and superstitions and how the Elders used these stories as a way of teaching.

**Lesson Objective(s):** Students will:

- Be introduced to traditional superstitions and beliefs that the Elders knew and passed on as lessons used through generations.
- Learn the Sugt’stun or Eyak vocabulary for superstition and belief

**Vocabulary Words:** Sugt’stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
story		Quliyanguaq	
Old Belief		Qangirllat Picit	
Listen to him, pay attention		nitniqluku	

**Materials/Resources Needed:**

Books: (OR, if there are teaching beliefs/superstitions in your community, replace these ones with local)

- *Old Beliefs of Port Graham*
- *Fireweed – Life and Times in Port Graham*

### **Teacher Preparation:**

- Invite an Elder to share their beliefs and teaching stories if available. Review ways to show respect for guests with students before they arrive.
- Research for local beliefs and superstitions from your community to share with students.
- Review and mark the following stories, so can quickly locate to read out loud:
  - “*When to Take Toys Out*” on page 8
  - “*When February and March Fight*” on page 24
  - “*The little boy and his words*” on page 32

### **Opening:**

(Introduce the Elder, if available, to share some of their teaching superstitions/beliefs regarding weather.)

How many of you heard of a superstition? For example, one old superstition is that if you step on a spider, it will rain. Superstitions and beliefs have played an important part of the Chugach Region’s culture and heritage. These stories have always been a way of guiding and teaching others and children. Sometimes superstitions are difficult to explain, but the Elders want to stress they are very real and should be heeded. Our ancestors have used superstition and beliefs as guidelines through many years of observation of the environment in which they lived.

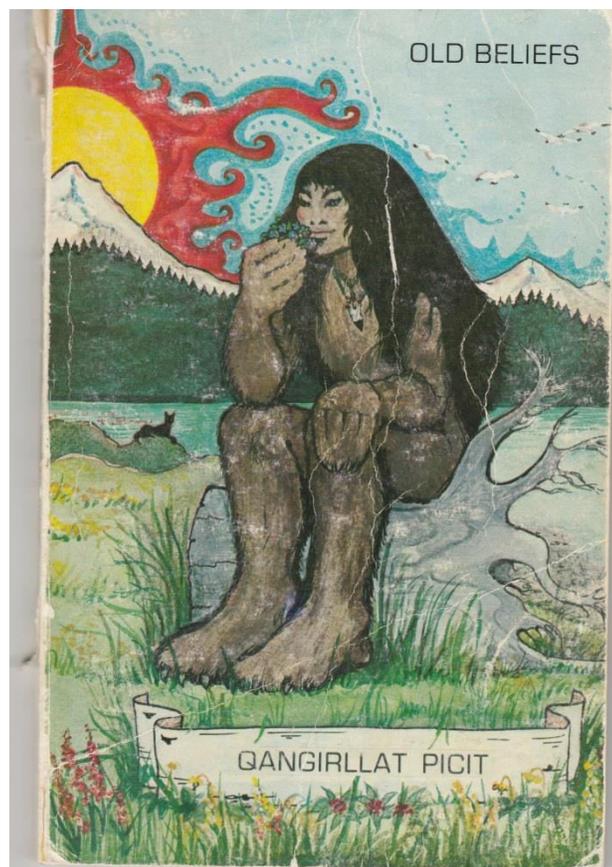
We will be reading stories from the books *Old Beliefs of Port Graham* and *Fireweed – Life and Times in Port Graham*. Hopefully these stories will help give a better understanding of what some of the Chugach Regions superstitions and beliefs are and how the Elders used them to teach. Please listen carefully, as I will be asking you to tell me what you think the lesson was supposed to be after each story.

### **Activities:**

#### **Class I:**

1. Read and discuss the following Elder quotes to the students:
  - a. “*Beliefs – don’t whistle when you’re in the wheelhouse, in the boat. You’re calling the bad weather.*” -Tom Anderson, Cordova
  - b. “*It was considered taboo for young girls to talk about the weather and that they should always wear a scarf around their head, like a pelat’uuk, like the women wear in church.*” – Jennie Kamluck, Port Graham.
  - c. “*If you burn green grass, it will make it rain.*” -Stella Meganack, Port Graham.
  - d. “*Fog leads the salmon into the bay. If you’re lost in the fog, you look to the sky and see which way it’s moving. The fog moves inland from the ocean, and if you’re lost in the fog in the woods you find a creek and follow it down stream.*” -Stella Meganack, Port Graham
  - e. “*Superstition and Belief – the story of the swallows may be more of a teaching rather than a superstition, for every action there is a reaction, how do we integrate that into the lesson plan? In the past these were taught by parents, aunts and uncles instead of school.*” -Pat Norman, Port Graham.

2. Ask the students if they have heard of these beliefs and are they aware of other beliefs in regards to weather.
3. Read out loud to the students, the following stories from the book *Old Beliefs of Port Graham* and after each story is read, ask what the students think the plot of the story was.
  - a. “*When to Take Toys Out*” This story was about the timing of seasons. The lesson was for kids, that if you took your toys out before the geese returned, you would make the winter last longer into spring.
  - b. “*When February and March Fight*” This story is about the spring months that fight each other on who is the most stormy.
  - c. “*The Little Boy and His Words*” This story is about a boy who wished for summer and made the winter longer.
4. The teacher will show the students pictures from the book “ Old belief”



**Assessments:**

- Students can correctly pronounce the Sugt'stun or Eyak words
- Students are able to retell the superstitions and beliefs read to them and what types of weather they would forecast.



**TRADITIONAL WEATHER FORECAST: SAFETY GR: PREK-2 (LESSON 8)**

**Elder Quote/Belief:** *Another essential question was, “What’s the importance of going out for supplies? You need a reason to go out, using safety and local knowledge. For example, do we need firewood now or do we have enough to last until weather changes and we are prepared? Ask yourself, how important is it to go out today? It is better to be prepared.” - Patrick “Sweeney” Selanoff, Valdez*

**Grade Level: PreK-2**

**Overview:** *“Every action needs a reaction; be prepared on what you need to know and what to do in bad weather. With this quote have it integrated in a lesson.” -Patrick Selanoff, Valdez*

In this lesson, the students will learn about being prepared for outdoor safety. Accidents happen all the time, so the emphasis is on the importance of staying aware to the surroundings, weather, prepare for it and what to do if an emergency does happen.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>A4</b> Practice their traditional responsibilities to the surrounding environment.	<b>B4</b> Develop an understanding of motions, forces, and their characteristics and relationships, and natural forces and their effects.	<b>Survival-S1</b> Students should know the importance of outdoor/seasonal survival skills and the potential risks that are involved.

**Lesson Goal:** Students will learn about outdoor safety, what to do in the event of an accident and how to take care of themselves if they do get hurt.

**Lesson Objective(s):** Students will:

- Learn about outdoor safety.
- Learn how to prevent an accident by staying cautious and aware of surroundings.
- Learn the Sugt’stun or Eyak vocabulary.

**Vocabulary Words:**

Sugt’stun Dialects			
English:	Prince William Sound:	Lower Cook Inlet:	Eyak:
Be aware		llatuumaluni	
Become aware		llangluni	
He is always aware		Cilla llatuumalartuq	
She became aware of her surroundings		Ikna llangaartuq	

**Materials/Resources Needed:**

Paper and Pencils

Seasonal Calendar page in the Nupugut Sugt'stun picture dictionary.

**Book:**

*Outdoor Survival Training for Alaska's Youth Student Manual*

**Teacher Preparation:**

Locate and review the book, *Outdoor Survival Training for Alaska's Youth Student Manual*

Make copies of the seasonal pictures for each student

Make copies of the safety prevention sheets for each student

**Opening:** Our Elders have stressed the importance of being aware of your surroundings and plan accordingly to stay safe traveling and playing outdoors.

Today, we will be learning about outdoor safety. We will be discussing how to prepare to minimize any accidents. These include; what is the proper clothing to wear for the environment and activity, what to be aware of, how to prevent an accident and if an accident does happen what to do. Here are some of our Chugach Region's Elder quotes regarding being prepared for safe traveling:

- *"You have to be in the right state of mind before you travel, the conditions have to be right, remember responsibility." - Patrick "Sweeney" Selanoff, Valdez*
- *"Be prepared before you travel." -Ephim Moonin Sr., Nanwalek*
- *"Tell someone where you are going before you leave." -Ephim Moonin Sr., Nanwalek*
- *"Preparation is number one, and make sure you bring the right gear and survival suit." - John Boone, Valdez*
- *"Create a float plan, what to do in change of weather patterns." -Patrick "Sweeney" Selanoff, Valdez*
- *"Confidence is a double edged sword, always be prepared." -John Boone, Valdez.*

**Activities:****Class I:**

1. Pass out copies of the pictures of the seasons to the students
2. Pass out the safety prevention sheet to each student.
3. Read through the safety preventions sheet out loud as class.
4. Review what was read and give examples of accidents that can happen during different scenarios and seasons.
5. After the class has reviewed the safety prevention sheet, ask them to turn it over and trace their hand on the back of the sheet as their signature saying they understand and promise to stay safe.



**Assessment:**

- Students will be able to explain what safety means and the importance to follow safety precautions regarding outdoor activities.
- Students are able to identify hazards during the different seasons in outdoor safety.
- Students can pronounce the Sugt'stun/Eyak vocabulary words.