

# WHAT CAN YOU OBSERVE ABOUT SEASONS IN YOUR AREA?

## UNIT 3: Seasons Lesson 7 — Grades 4 -5 INSTRUCTIONS



### Overview

In this lesson, students learn about seasons from a cultural perspective. An elder or culture bearer visits the classroom to discuss various seasonal activities and observations about seasonal changes.

### Objectives

On successful completion of this lesson, students will be able to:

- identify an activity that people in their community do during each season; and
- list plants and animals that can be found during specific seasons.

### Alaska Standards

#### Alaska Science Standards / Grade Level Expectations

- [4, 5] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [4, 5] SA1.2 The student demonstrates an understanding of the processes of science by using quantitative and qualitative observations: observing, measuring, and collecting data from explorations and using this information to classify, predict, and communicate.
- [4, 5] SA 2.1 The student will demonstrate an understanding of the attitudes and approaches to scientific inquiry by supporting their ideas with observations and peer review.
- [4, 5] SD3.1 The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by recognizing changes to length of daylight over time and its relationships to seasons.
- [4, 5] SE2.2 The student demonstrates an understanding that solving problems involves different ways of thinking, perspectives, and curiosity by identifying multiple explanations (e.g., oral traditions, folklore, scientific theory) of everyday events (e.g., weather, seasonal changes).
- [4, 5] SF1.1–SF3.1 The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by connecting observations of nature to a local or traditional story that explains a natural event (e.g., animal adaptation, weather, rapid changes to Earth's surface).

### Alaska Cultural Standards

- [A] Culturally-knowledgeable students are well grounded in the cultural heritage and traditions of their community.
- [B] Culturally-knowledgeable students are able to build on the knowledge and skills of the local cultural community as a foundation from which to achieve personal and academic success throughout life.
- [D] Culturally-knowledgeable students are able to engage effectively in learning activities that are based on traditional ways of knowing and learning.



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### Bering Strait School District Scope & Sequence

4th Grade Sequence #10: Earth in the Solar System

5th Grade Sequence #11: Earth in the Solar System

### Materials

- Student Worksheet: Seasonal Activities
- Student Information Sheet: Our Seasons
- Teacher Overhead: Subsistence Calendar
- Refreshments for elder / culture bearer

### Additional Resources

Harcourt School Publishers Science IV: Ch. 10, Lesson 1

Harcourt School Publishers Science V: Ch. 13, Lesson 1

### Activity Preparation

1. In advance: Invite an elder or culture bearer to discuss seasons and seasonal changes with your class. Depending on the time of year and your location, you may wish to do this activity outside.
  - a. When you make arrangements, give them information about what they will be sharing:
    - i. A story or impression about seasons.
    - ii. Seasonal changes they have witnessed.
    - iii. What signals a new season (arrival of birds / plants available for harvest, etc.).
    - iv. Why knowledge about the seasons is valuable and important.
    - v. Traditional language terms associated with the seasons and seasonal resources.

NOTE: If you are unable to secure a guest speaker, you should still meet with a Native language speaker to learn the Native language terms for the seasons.

2. Prepare students ahead of time to have appropriate and respectful behavior when an elder is present
3. Prepare the projector for displaying the Student Worksheets and the Teacher Overhead: Subsistence Calendar.

### Whole Picture

Scientifically, seasons are the result of the Earth's tilt, rotation, and orbit around the sun. When the North Pole is tipped away from the sun, it is winter in the Northern Hemisphere and summer in the Southern Hemisphere. Conversely, six months later, when the North Pole is tipped toward the sun, it is summer in the Northern Hemisphere and winter in the Southern Hemisphere.

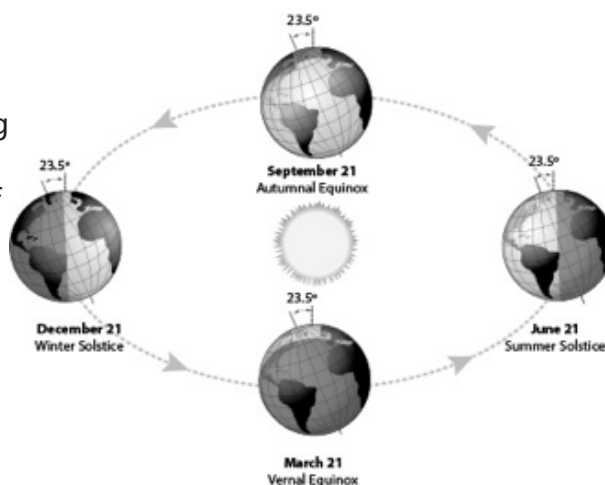


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Each season brings a different amount of daylight, different temperatures, and changes on the landscape. In Alaska, birds might be returning from their winter habitats in the south, salmon might be swimming up river to spawn, or berries might be ripe for picking. Understanding what to expect during different seasons allows people the opportunity to live off the bounty of the land and preserve cultural traditions.



The observation of seasons by Alaska Native people is crucial for subsistence hunting, food gathering, celebrations, and other activities important to life in the Arctic. Awareness of seasonal migration patterns and animal behavior, such as mating and birthing, ensures successful fishing and hunting. For example, some animals, such as bears and beavers, hibernate and cannot easily be found throughout the winter season. Salmon return to the rivers from the ocean to spawn at certain times each summer. Some berries, like salmonberries are only available in early summer, while others, like cranberries are good only after the first frost in the fall. Understanding seasons, and being aware of seasonal cues, helps people make use of available resources.

The importance of certain seasonal activities is evident in traditional place and time names. For example, in Yup'ik territory, spring has traditionally been marked by the return of migrating waterfowl; accordingly, "the name for April is Tegmiirvik, or 'time that birds come'" (Fienup-Riordan & Rearden, 2012, p. 14). Customarily, people knew when it was time to hunt and harvest based on seasonal events and / or landscape changes. In the early spring, for example, women and children know to venture onto the tundra "...to gather a variety of edible greens, including the greens of marsh marigold and wild celery and the roots and shoots of wild parsnips." (Fienup-Riordan & Rearden, 2012, p. 14). Keen observation of the changes on the land, like noticing the cotton flying, told people to prepare for the arrival of certain species, like salmon.

### Climate Change Affecting Seasons

Climate change is having a significant impact on the reliability of seasonal indicators. Keen observation skills allow people to notice minute changes in the climate. According to Ruth Jimmie of Toksook Bay, "The crowberries turn brown quicker, and they taste different. These days, one cannot delay in picking them. Sometimes we wait to pick them until they taste better, and when we finally pick them, we'll see they've turned brown" (Fienup-Riordan and Rearden, 2012, p. 312). Another elder from Toksook Bay, Lizzie Chimigak, shared concerns about unpredictable seasons and temperatures spoiling food: "At the present time, the sun's heat spoils some food. In the past, when they got herring, they left them alone for a while [before hanging them to dry]. Nowadays, their intestines start to rot right away. And many fish hanging to dry are ruined when people don't turn them and cover them" (Fienup-Riordan and Rearden, 2012, p. 58). Understanding these changes and what each season brings, or will bring, will help people continue to live off the land.



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### Vocabulary

<b>sun</b>	The star at the center of our solar system, around which all the planets revolve; it supplies the heat and light that sustain life on Earth
<b>rotate</b>	The motion of an object around its own axis
<b>axis</b>	An imaginary line around which an object rotates; on a rotating sphere, such as Earth, the two ends of the axis are called the poles.
<b>revolve</b>	The motion of an object around a point, especially around another object or a center of mass
<b>orbit</b>	The path one body takes in space as it revolves around another
<b>equator</b>	An imaginary line around Earth equally distant from the North and South Poles; this line divides Earth into the Northern and Southern Hemispheres
<b>Northern Hemisphere</b>	The half of the globe that is above the equator
<b>Southern Hemisphere</b>	The half of the globe that is below the equator

### Activity Procedure

1. Show students a copy of the Student Worksheet: Seasonal Activities. Review the kind of information students will be listening for as they hear from the invited guest. Do not pass out the worksheets yet, they will not be writing while they are listening to the guest speaker, just listening for information.
2. Choose a couple responsible students to greet the elder or culture bearer when they arrive and escort them to the classroom.
  - a. Offer refreshments and invite the person to a comfortable spot until they are introduced, but do not keep them waiting long. As Athabaskan Chief Robert Charlie says, "Would you keep the governor waiting?"
3. Introduce the elder or culture bearer. Tell them that students are learning about seasons and would like to learn local stories about seasons, seasonal changes, what signals a new season, why such knowledge is important, etc.
  - a. Give students an opportunity to ask questions.
  - b. Invite the elder or culture bearer to stay for the remaining class time, if they wish. (They may also leave when they are done sharing.)

NOTE: If you are unable to secure a guest speaker, assign this portion of the lesson as homework, as described in the Extension Activity.

4. Pass out the Student Information Sheet: Our Seasons. Read it aloud together as a class.
  - a. Alternatively, you could break students into groups and assign each group a section to read. Each group would then report out to the entire class about what they learned from the reading.
5. Instruct students to think about what they learned from the elder/culture bearer, as well as from the reading, and fill in the Student Worksheet: Seasonal Activities.



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- a. If needed, help them with the Native language terms by writing them on the board.
6. When most students have finished their worksheet, display the Teacher Overhead: Subsistence Calendar.
  - a. Instruct students to compare their own lists with the one projected and ask the following questions:
    - i. Are there any differences? Explain.
    - ii. Did students add anything to their own lists, which is not on the subsistence calendar? Explain.
    - iii. Thinking about the presentation, why do some of the activities on the subsistence calendar happen in more than one month?

### Extension Activity

- For homework, have students talk to cultural knowledge bearers to learn about local seasons. Students may learn what harvestable plants and animals can be found during each season, what environmental indicators suggest the arrival of a particular animal species (e.g., when the cotton flies, the salmon will come), or what changes locals have noted in the seasonal timing of certain plants and animals. Students should share their findings with the class on a specified day.



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### Answers

Answers for each seasons will vary depending on your area, but may include some or all of the following:

Fall	Winter	Spring	Summer
Fishing	Skiing	Fishing	Berry picking
Trout	Dog mushing	Trout	Salmonberries
salmon	Snow-going	Rockfish	Blueberries
Hunting	Hunting	Hunting	Raspberries
Caribou	Caribou	Swans	Fishing
Beaver	Wolverine	Ducks	Salmon
Rabbit	Ptarmigan	Geese	Dip-netting
Beluga	Fishing	Harvesting	Set-netting
School starting	Smelt	Beach greens	Fish Camp
Berry Picking	Whitefish	Sea lovage	Drying fish
	Dancing and drumming	Wild onions	Cutting fish
	Sewing	Labrador tea	Building smokehouses
	Beadwork	Ferns	Hunting
		Cottonwood	Seal
			Walrus
			School is out
			Camping

### References

- Corral, Roy. (2002). *Alaska Native Ways: What the Elders Have Taught Us*. Portland: Graphic Arts Center Publishing.
- Charles, Walkie. (2002). "See Connections — All Things are Related." In Corral, R. (Ed.). *Alaska Native Ways: What the Elders Have Taught Us*. Portland: Graphic Arts Center Publishing.
- Fienup-Riordan, Ann, and Alice Rearden. (2012) *Ellavut: Our Yup'ik World and Weather. Continuity and Change on the Bering Sea Coast*. Seattle and London: University of Washington Press.
- Noongwook, George. (2002). "Take Care of Others — You Cannot Live Without Them." In Corral, R. (Ed.). *Alaska Native Ways: What the Elders Have Taught Us*. Portland: Graphic Arts Center Publishing.
- Ramoth-Sampson, Ruthie Lee Tatqavin. (2002). "Honor Your Elders — They Show You the Way in Life." In Corral, R. (Ed.). *Alaska Native Ways: What the Elders Have Taught Us*. Portland: Graphic Arts Center Publishing.



# WHAT CAN YOU OBSERVE ABOUT SEASONS IN YOUR AREA?

## UNIT 3: Seasons Lesson 7 — Grades 4 -5 STUDENT WORK



### Student Information Sheet: Our Seasons

#### Introduction

Alaska Native activities have always followed the seasons. Walkie Charles is a Yup'ik culture bearer from Emmonak. He says, "Every season brings with it a reason to celebrate: a time to gather berries; a time to work at fish camp, drying and smoking fish; a time to look for big game, or seals, or ducks; a time to remember a person who is gone or to observe a holy day" (Charles, 2002, p. 26).



Subsistence is a way of using resources to survive.

Subsistence hunting and gathering are major sources of food for many people. It provides food to last the through the long winter. During these activities, elders also share their wisdom with young people.

In the past, young people learned about the seasons by observing and listening to their elders. Seasonal changes on the landscape told people what animals could be hunted, and what plants could be harvested.

#### Spring

After a long winter, food supplies can be low. Spring is a time to replenish, or refill, supplies. When waterfowl like geese, ducks, and swans return from their winter habitat in the south, people know that spring has arrived.

Spring also brings the whale and walrus migrations. This provides an opportunity to hunt larger animals. Iñupiaq people who live on the coast, celebrate the return of the whales with the Spring Whale Catch Festival. This festival is a time to honor and give thanks to the whales. By respecting the whales in this way, the people ensure the whales will continue to give themselves to be harvested.



In addition to new animal sources, spring also means fresh vegetables are available. People gather young plants like beach greens, seaweed with herring eggs, and wild onions.



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## Summer



Summer is marked by long days. These long days provide ample time for many subsistence activities. Many people travel to prime fishing, hunting, and harvesting camps. People work hard harvesting and preparing food for storage.

Throughout summer, different salmon stocks return from the ocean to the rivers to spawn. In the early summer, King Salmon arrive. People catch the fish and process them into long, delicious strips. After the Kings come the Humpys (or Pinks), Dogs (or Chum), and Silvers (or Coho).

Summer also provides an abundance of berries. Like the salmon, different berries are available at different times. People harvest buckets of salmonberries starting in the early summer. Raspberries ripen in mid-summer. Finally, blueberries mature in late summer. Summer truly is a time of bounty and hard work.

## Fall

By the end of summer, the days start to get shorter. But there is still plenty of work to do before winter. The last of the salmon, the Reds (or Sockeye) arrive in late summer or early fall. Women cut the salmon and hang them to dry. After drying, they will be stored for eating during winter.

Other activities include hunting waterfowl. At this time, geese, cranes, and swans begin to migrate south. They are fat and good to hunt. Moose and caribou are also ready to hunt during the fall.

Additionally, there are late season berries to harvest. These include late blueberries, low-bush and high-bush cranberries, and rosehips. Other plant materials, to be used medicinally or for making crafts and tools, are also harvested. These include Labrador tea, cottonwood, beachwood, and alder. Fall is the time to make final preparations for winter.





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## Winter

When winter arrives, the long, cold, dark days force people to stay sheltered inside. People work on sewing, beadwork, and basketry. They tell stories and pass important information from generation to generation.

Winter is also a time for games, which build strength and agility. People come together to celebrate and honor their elders and relatives who have gone. They build and keep traditions by singing, dancing, and drumming.

Some people also go ice fishing for trout and smelt during winter. These small fish supplement the stores of salmon from the summer. Other people do some trapping. They might catch wolverine, marten, or rabbit. Winter is the time to celebrate the good life.



## Conclusion

Each season brings with it different activities. Knowing about seasons assists people in determining what foods and resources can be used.

Take some time to think about the activities you participate in during the year. Are some reserved for particular times of the year?





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## Student Worksheet: Seasonal Activities

Name \_\_\_\_\_

Directions: Write your community's Native language word for each of the seasons on the correct line. In the oval below, list traditional activities that take place during the various seasons.

 <b>Activities:</b> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ <b>Write your Native language word for Fall</b>	 <b>Activities:</b> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ <b>Write your Native language word for Winter</b>
<b>Activities:</b> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ <b>Write your Native language word for Summer</b>	<b>Activities:</b> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ <b>Write your Native language word for Spring</b>

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## UNIT 3: Seasons Lesson 7 — Grades 4 -5 APPENDIX



### TEACHER OVERHEAD: Subsistence Calendar

