

How Does the Climate Affect What We Eat?

Cindy Fry, Sandy Kelnhofer, Barbara Quintasket
Paschal Sherman Indian School, Omak Washington

Summary

Students explore how climate affects the food supply, yesterday and today.

Grade level

Second

Time required

Three hours, plus a fieldtrip

Materials

Variety of foods, including traditional Colville foods such as salmon, berries, roots, and dried meat

[Pictures of traditional food gathering and related equipment](#)

Internet access

Goals

By completing this lesson, students will

- 1) understand that climate affects the available food supply, both past and present,
- 2) become aware of technologies used to prepare and preserve food and
- 3) develop process skills in inquiry based science

Science standards addressed

National Science Standards

- Abilities necessary to do scientific inquiry
- Changes in Earth and sky
- Science as a human endeavor
- Abilities of technological design
- Organisms and environments
- Science and technology in local challenges

American Indian Science Standards

- Changes in Earth's surface, weather fluctuations and movements of celestial objects and how they affected historical American Indian community locations, annual migrations, and agricultural and ceremonial cycles
- Elements of nutrition and how they were understood and applied in the diets of American Indians prior to the arrival of the Europeans

Teacher tips

Try to schedule the lesson at a time when there will be an event related to gathering or preparing traditional foods, such as berry picking, root digging or meat drying. Arrange for students to visit and work with elders in gathering and preparing traditional foods – digging roots, picking berries, drying meat, etc. Obtain traditional food gathering tools, such as a digging stick, fish weir, berry basket, etc., to show to students.

Background information

In times past, Okanogan People’s activities were centered around the seasonal availability of food. The year was divided into periods named for the foods gathered in each. For example, spring was known as bitterroot and sunflower time. Summer was serviceberry and huckleberry time. Fall was the major salmon run. Although deer could be taken year round, deer was a main source of food in the fall and winter.

All types of foods were dried for use in the winter months. Deer meat, for example, was cut into thin strips and hung over a slow fire of alder wood. Salmon was either dried over smoke or speared with thin strips of wood and wind dried. Roots and berries were dried in the open air. They were turned often to prevent spoiling. Today, food preservation technology and the ability to ship foods quickly makes our diets much less seasonal.

In space, special climate and technology considerations determine the types of food astronauts eat. Visit the NASA web sites listed in the Resources section to get excellent background information along with lessons about food in space.

Procedure

Engagement

1) Facilitate a discussion with students about where people get food.

- Where does your food come from?
- Where do people in the desert or in polar areas get food?
- In times past, where did people get their food?

Show pictures or equipment related to traditional food preparation such as a digging stick, fish weir, etc.

2) Have students sit in a circle. Serve each student a small plate of locally grown food, including traditional foods. Facilitate a discussion about the climate needed to grow each of the foods.

Exploration

- 1) Ask a cooperative extension agent to provide a presentation on food preservation. Allow students to taste samples of frozen, fresh, dried, irradiated and canned food that is available from our supermarkets. Discuss the technologies that make preservation possible today - refrigeration, flash-freezing, canning, radiation, etc.
- 2) Take students to work with elders in gathering and preparing traditional foods – digging roots, picking berries, drying meat, etc.

Explanation

- 1) Make a class list of the types of food that students eat today and what Okanogan people ate in times past. Compare and contrast the two.
- 2) Brainstorm the following two questions: What foods were seasonal in the past? Are there any foods today that are seasonal? Why?
- 3) Split the class into two groups. Have students create a web with the topic of seasonal foods in the center and the seasons on four spokes. Have half the students think about today, and the other half think about life in times past. Have them list the seasonal foods on each spoke.

Elaboration

- 1) Working with a partner, have students predict the types of climates where food grows best. Show them the world climates map (see Resources). Then have them predict where they think most food comes from in the world.
- 2) Ask students what types of limits space flight would have on food availability (weight, microgravity considerations, lack of refrigeration, etc). Ask students to research what kinds of food astronauts eat while on space flights. Refer them to the web sites found in the Resources section.

Evaluation

- 1) Assess students' understanding of content by reviewing their prediction and justification of where most of the world's food is grown
- 2) Ask student to answer the following question in their journal: What things limited the types of food eaten by Okanogan people in times past?

Follow up activities

- 1) The *NASA Explores* web site has a number of K- 4 lessons related to food in space that would enrich this lesson. Visit the site at nasaexplores.com and perform a search with the keyword "Food" to find a wide variety of relevant lessons.
- 2) Visit a local food processing plant

Resources

Web sites

NASA Explores – Provides lessons, information and resources on many topics, including food in space.
nasaexplores.com

Lift off to Space Exploration – Provides information about food in space
liftoff.msfc.nasa.gov/Academy/ASTRONAUTS/FOOD.HTML

Blue Planet Biomes – Provides a world climate map
www.blueplanetbiomes.org/climate.htm