

Topic: Polar Exploration**Goals and Objectives:**

Instructional Goals

1. Learn about the geography of the North Pole.
2. Learn what the "North Pole" means.
3. Discuss why an explorer would want to go to the North Pole.
4. Discuss the physical requirements for a person who wants to take such a trip.
5. Plan supplies for a trip to the North Pole.
6. Learn about current environmental changes at the North Pole.

Behavioral Objectives

1. TWSBAT debate supplies needed to take a trip to the North Pole.
2. TWSBAT discuss the physical and mental requirements for a person going to the North Pole.
3. TWSBAT discuss the motivations for a person going to the North Pole.
4. TWSBAT will compare aerial photos of the North Pole at different dates in history.
5. TSWBAT discuss possible reasons for the melting ice cap.

Rationale:

Climate change affects us all. This lesson will connect students to the entire globe and their local community; help them understand why and how an explorer could take up the challenge of traveling to the North Pole, changes that have happened to the North Pole and reasons for those changes. They will also connect physical fitness to these extreme challenges.

Procedure:**Introduction of SCHS: (1 Minute)****Anticipatory Set: (5 Minutes)**

1. In groups of three, the students will put together a 50 piece puzzle of the North Pole ice cap. (So that the students can see the changes in the ice cap. See second frame of power point.)
2. Discuss the differences in the two photographs of the North Pole at different years in history, showing a copy of the photo used as a puzzle on the PowerPoint.
3. Ask students:
 - How far north have you traveled? (Mark responses on a globe or map.)
 - Do you know what kind of animals live at the North Pole?
 - What is the difference in these pictures? (Ice cap is smaller)
 - Why do you think that the ice cap is smaller?

Activity: (30 minutes)

- (5 minutes) Show PowerPoint story of Jonathan Ruth, Buzz Kaplan, Will Steger, and Ann Bancroft.

PowerPoint: "Explorers to the North Pole"

1. **This is the North Pole. Look at your puzzles. It shows two pictures of the polar ice cap at two different years.**
 - a. What is the difference in the photos? (Ice cap is smaller.)

- b. Why do you think that the ice cap is smaller?
- c. Ask students:
 - i. How far north have you traveled? (Mark responses on a globe or map.)
 - ii. Do you know what kind of animals live at the North Pole?

2. People from Minnesota who have traveled to the North Pole:

- a. Buzz Kaplan lived in Owatonna all his life.
- b. Ann Bancroft lives in a cabin in Scandia, Minnesota.
- c. Will Steger is from Richfield, Minnesota. Today he lives on a houseboat on the Mississippi.

3. Buzz Kaplan loved adventure. He loved to fly, fish, and hunt. He was the Chief Executive Officer of Owatonna Tool Company. In his lifetime, he flew his airplane throughout the world. He visited six out of seven continents and more than 76 countries. He was inducted into the Minnesota Aviation Hall of Fame. He collected and restored vintage airplanes.

4. The Lost Squadron

In 1992, he joined the crew that went to the Polar Ice Cap to dig up one of the planes from the Lost Squadron. During World War II, seven airplanes crash-landed and were abandoned. They were quickly covered with snow, which in 50 years compacted into the ice cap.

5. The Greenland Expedition society tried many times to uncover one of the planes. In 1992, using a steam-heating melting device, they sank a shaft through 257 feet of ice to reach one of the planes. Kaplan returned to Owatonna to find a mechanic capable of bringing the plane to the surface. The recovered parts were first displayed at the Oshkosh Air Show in 1992. The restored P-38 airplane "Glacier Girl" is shown here at the Air Show in 2012.

6. Buzz Kaplan went on to lead the "Friendship Flight to Antarctica in 1999. He and his crew flew to every country in Central America, South America, and the Caribbean. They connected with school children and adults through the Internet, posting photographs and journal entries. One reason for the trip was the excitement and adventure.

7. Ann Bancroft struggled with a learning disability in school. One of her teachers showed her that she had skills that she could share by asking her for lessons in skiing. Ann became a physical education teacher, coach, and wilderness instructor until she joined the Will Steger International North Pole Expedition in 1986 She travelled 1,000 miles by dogsleds from the Northwest Territories in Canada to the North Pole. She was the first known woman in history to cross the ice to the North Pole.

She was also the first woman to stand at both the North and South Poles.

8. In February 2001 - Ann Bancroft and Liv Arnesen became the first women in history to sail and ski across Antarctica's landmass - completing a 94-day, 1,717-mile trek. ?Seven million? students followed his expedition online.

9. Skiing Across Antarctica

Ann Bancroft pulls her sledge up the glacier and past "The Wolf's Tooth." Why is it called the Wolf's Tooth? How is Ann moving forward? (Skiing) When the Antarctic winds were blowing, she raised sails and used wind power to help her ski faster. Can you guess how much that sled weighs? (250 lbs) How strong is Ann to be able to pull that sled by herself? What do you think is in the sled?

10. To train for this journey, Ann and her partner, Liv, pulled old tires behind them and practiced untangling sail lines at -40 degrees Fahrenheit.

11. Dedicated to inspiring and educating

Ann Bancroft was born in Mendota Heights, Minnesota. She grew up exploring the wilderness areas of Minnesota, reading adventure books, and dreaming of exploring.

She is one of the world's preeminent polar explorers, who is dedicated to inspiring women and girls around the world to unleash the power of their dreams.

12. Will Steger was born in Richfield, Minnesota. After many accomplishments, he now lives in a houseboat on the Mississippi River. He travels around, speaking to groups about climate change. [Climate Generation: A Will Steger Legacy](#) in 2006 (formerly Will Steger Foundation), a Minneapolis, MN-based nonprofit that educates and empowers people to engage in solutions to climate change.

13. Will Steger and his Trans-Antarctic Expedition team struggle to pack their sleds during a ground blizzard. Will has traveled tens of thousands of miles by kayak and dogsled over 50 years, leading teams on some of the most significant polar expeditions in history.

- Steger led a journey to the North Pole in 1986.
- He led a 1,600-mile south-north traverse of Greenland in 1988.
- He led the first dogsled traverse of Antarctica which took seven months and crossed 3,741-miles in 1989–90.

14. Jonathan Ruth, a 1990 graduate of Owatonna High School, climbed Mt. McKinley in 1993. Mt. McKinley, which was renamed Denali in 2015, is 20,320 feet tall. That's almost 26 times as tall as the highest building in Minnesota!

- He became interested in climbing in high school and spent his weekends with friends climbing nearby hills.
- He is pictured here with all the gear he needed for the climb. He carried the gear in a pack that weighed about 75 pounds and dragged a sled that weighed 40 pounds.
- Denali is a dangerous climb, even today. From 1903 through 2006, 96 people died trying to scale the peak.

15. What are the characteristics of an explorer? What would you take on a trip to the North Pole?

- Discuss:
Why do you think that Jonathan Ruth wanted to climb mountains? Why do you think that Buzz Kaplan, Will Steger, and Ann Bancroft wanted to go to the North Pole?
What level of physical fitness does it take to travel to the North Pole?
What sort of vehicle could you use to travel to the North Pole?
What qualities do these people have that make them good explorers?
What physical characteristics did they have to have to make these trips?
- (10 Minutes) Split class into groups of four. Give each group worksheets with lists of supplies, the weight of each item and the total weight that they can bring.
- (5 Minutes) Post the list in a larger form on the wall. Have students use Post-it notes to tag each item they have decided to take with them.
Discuss: With which items did the groups agree/disagree?

Materials:

1. Puzzles of aerial photos of the North Pole at different points in history.
2. Form for recording data.
3. Larger form to mount on wall.
4. Post-it notes of different colors, one color for each group.
5. PowerPoint

Assignments:

- Go to Ann Bancroft’s website to find out more about her project. <http://www.annbancroftfoundation.org/>
- Go to Will Steger website to find out more about his project. <http://www.climategen.org/>
- Discuss what students could do to stop the melting of the polar ice caps.

5.3.1.2.2	Explain how slow processes, such as water erosion, and rapid processes, such as landslides and volcanic eruptions, form features of the Earth's surface.
5.3.4.1.3	Compare the impact of individual decisions on natural systems. For example: Choosing paper or plastic bags impacts landfills as well as ocean life cycles.
5.4.2.1.2	Explain what would happen to a system such as a wetland, prairie, or garden if one of its parts were changed. For example: Investigate how road salt runoff affects plants, insects and other parts of an ecosystem. Another example: Investigate how an invasive species changes an ecosystem
5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems. For example: Recreation, pollution, wildlife management.

A form with pictures of various supplies, their weight, the total weight they can carry.

What does it take to go to the North Pole?

Supplies

Food

For how many days?

Transportation

Clothing

Warm!

Support

Can you use satellite phones now?

Weight

Sleds

Dogs

Maps

Ropes

First aid supplies

Physically fit

Able to carry X weight

Experience in Mountain Climbing

(Hunting skills?)

What Characteristics?

Bravery

Courage

Good planning

Leadership