

SCHS
North Pole?

Class: 5th Grade Science

Lesson: What does it take to travel to the

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. (one suggestion: have three pictures from different years, and one picture of the polar bear on ice on one page. So that the students can see the changes in the ice cap and the effect of the ice melting on the polar bear. Besides, the polar bear is cute.)
2. Discuss the differences in the photographs of the North Pole at different years in history, showing a copy of the composite photos 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 with story of Jonathan Ruth, Buzz Kaplan, Will Steger and Ann Bancroft.

PowerPoint: Explorers 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

Kaplan

Collect planes

Greenland trip

Antarctica Trip

Jonathan Ruth

Photo at High School

Climbed Mt. McKinley, Alaska; highest mountain in North America

Ann Bancroft

First woman to travel to

Environmental Awareness

Climate change

Inspire Others